

NATIONAL QUALITY FORUM
+ + + + +
PATIENT REPORTED OUTCOMES
WORKSHOP #2
+ + + + +
TUESDAY
SEPTEMBER 11, 2012

The Workshop met at the National Quality Forum, 9th Floor Conference Room, 1030 15th Street, NW., Washington, D.C., at 9:00 a.m., Patricia Brennan and Joyce Dubow, Co-Chairs, presiding.

PRESENT:

PATRICIA BRENNAN, PhD, University of Wisconsin-Madison, Co-Chair

JOYCE DUBOW, AARP, MUP, Co-Chair

RICHARD BANKOWITZ, M.D., MBA, FACP, Premier Healthcare Alliance

ETHAN BASCH, M.D., MSc, Memorial Sloan-Kettering Cancer Center

JIM BELLOWS, Ph.D., Kaiser Permanente

DAVID CELLA, Ph.D., Northwestern University Feinberg School of Medicine

ANNE DEUTSCH, Ph.D., RN, CRRN, Brookings Institution

STEPHAN FIHN, M.D., MPH, Veterans Health Administration

JACK FOWLER, Ph.D., Informed Medical Decisions Foundation

LORI FRANK, Ph.D., Patient-Centered Outcomes Research Institute

BARBARA GAGE, Ph.D., MPA, Brookings Institution

TED GANIATS, M.D., University of San Diego

Health System

KATE GOODRICH, M.D., MHS, Centers for Medicare & Medicaid Services

JUDITH HIBBARD, DrPH, University of Oregon
DENNIS KALDENBERG, Ph.D., Press Ganey
Associates
IRENE KATZAN, M.D., MS, Cleveland Clinic
LEWIS KAZIS, ScD, Boston University School of
Health
UMA KOTAGAL, M.D., Cincinnati Children's
Hospital Medical Center
KEVIN LARSEN, M.D., Office of the National
Coordinator for HIT
KATHY LOHR, Ph.D., RTI
ELIZABETH MORT, M.D., Massachusetts General
Hospital
CHARLES MOSELEY, Ed.D, National Association of
State Directors of Developmental
Disability Services
GENE NELSON, DSc, MPH, The Dartmouth Institute
KENNETH OTTENBACHER, Ph.D., OTR, The
University of Texas Medical Branch at
Galveston
GREG PAWLSON, M.D., MPH, FACP, BlueCross
BlueShield Association
ELEANOR PERFETTO, Ph.D., Pfizer
COLLETTE PITZEN, RN, BSN, Minnesota Community
Measurement
CHERYL POWELL, Centers for Medicare & Medicaid
Services (via telephone)

DAVID RADLEY, Ph.D., MPH, Institute for
Healthcare Improvement
TED ROONEY, RN, MPH, Maine Quality Counts
DEBRA SALIBA, M.D., MPH, UCLA Borun
Center/VA/RAND
MARCEL SALIVE, M.D., MPH, National Institutes
of Health

LAURA SMITH, Ph.D., Brookings Institution
BARBARA SUMMERS, Ph.D., RN, University of
Texas-MD Anderson Cancer Center (via
telephone)
KALAHN TAYLOR-CLARK, Ph.D., MPH, National
Partnership for Women & Families
MARY TINETTI, M.D., Yale New Haven Health
System
PHYLLIS TORDA, MA, National Committee for
Quality Assurance

JOHN WASSON, M.D., Dartmouth Medical School

ROB WEECH-MALDONADO, Ph.D., MBA, University of
Alabama-Birmingham

LINDA WILKINSON, MBA, Dartmouth Hitchcock
Medical Center

ALBERT WU, M.D., MPH, Johns Hopkins Health
System

NQF STAFF:

KAREN ADAMS, Ph.D., MT

HEIDI BOSSLEY, MSN, MBA

HELEN BURSTIN, M.D., MPH

SHEILA CRAWFORD

EUGENE CUNNINGHAM, MS

KAREN PACE, Ph.D.

JESSICA WEBER

EVAN WILLIAMSON

T-A-B-L-E O-F C-O-N-T-E-N-T-S

Welcome and Setting the Stage
 Patricia Brennan, University of Wisconsin-Madison6
 Joyce Dubow, AARP8
 Lessons from the Field - Using PRO-PMS for Accountability (Public Reporting, Payment)
 Greg Pawlson, BlueCross BlueShield Association 36
 David Nuttall, Department of Health, UK. 38
 Liz Goldstein
 Stefan Larsson. 80
 Discussion.104

Recap of Key Characteristics for Selecting Individual-level PROs for Use in Performance Measurement
 Overview of Related NQF Endorsement Criteria.140
 Elizabeth Mort, Massachusetts General Hospital.147
 Patti Brennan, University of Wisconsin-Madison, Project HealthDesign . .155
 Laurie Burke, FDA168
 Discussion.178

Methods that Contribute to Trust - Demonstrating Reliability of PRO-PMs
 Overview of NQF Endorsement Criteria.202
 Key Issues from Commissioned Paper
 Lewis Kazis, Boston University School of Public Health221
 Lori Frank, Patient-Centered Outcomes Research Institute.235
 Jack Fowler, Informed Medical Decisions Foundation.246
 Discussion.257

Methods that Contribute to Trust -
Demonstrating Validity of PRO-PMs as
Indicators of Quality

Overview of NQF Endorsement

Criteria.229
Key Issues from Commissioned Paper.283
Steve Fihn, Veterans Health Administration.306
Albert Wu, Johns Hopkins.315
Discussion.333

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

P-R-O-C-E-E-D-I-N-G-S

9:00 a.m.

DR. BRENNAN: Good morning.

Welcome to the National Quality Forum's Patient-Reported Outcomes. This is our second workshop.

I'm Patti Brennan. I'm from the University of Wisconsin-Madison. I'm very happy to see familiar faces in the audience today. Welcome back to those of you who were at our first workshop in August. I also want to extend a special welcome to the number of people who are connected to us via the phone and the internet. We'll be doing our best to monitor to make sure you have the participation in the meeting over the next 2 days that can help us grow and accomplish our task.

However, before we get onto the tasks today I want to take a moment to remember that this is a very special day in the history of our country and just pause for

1 a moment to those who might need to have us
2 remember with them what they lost and perhaps
3 learned on this day.

4 (Moment of silence)

5 DR. BRENNAN: Thank you. This
6 morning we have a lot to get going with on
7 understanding the difference between PROMs and
8 PROs and PRO-PMs. And we'll have an opening
9 session here that will take you through some
10 of the foundational concepts. We'll have
11 several different panels today on workshops on
12 -- working panels on validity and reliability.

13 And we have some tasks ahead of us
14 to come to some consensus about the process
15 that we'll be recommending to the National
16 Quality Forum of how to endorse the PRO-PM and
17 by the end of the day you will know what that
18 means.

19 I'm going to turn over to my co-
20 chair Joyce Dubow from the AARP who's going to
21 take us through our introductory remarks.

22 Thank you, Joyce.

1 MS. DUBOW: Thanks, Patti. Good
2 morning, everybody. Yes, if we can all master
3 the vocabulary we'll be in great shape because
4 it's going to be quite challenging I think.
5 All right.

6 All right, well the first, can we
7 go back to the first slide, please? Starting
8 with the meeting objectives because here's
9 what we want to accomplish this morning --
10 actually, during the entire meeting.

11 First, I hope -- you can't hear?
12 Okay. Okay, better? All right.

13 We're going to -- one meeting
14 objective is to discuss the methodological
15 issues related to reliability and validity.
16 The paper is very specific. This is not a
17 paper that's supposed to answer all the
18 questions about patient-reported outcomes. It
19 was specifically commissioned to identify and
20 to discuss these issues around reliability and
21 validity when aggregating PROM data into a
22 performance measure. We're going to come back

1 and talk about those terms in a minute.

2 We also need to remember that
3 ultimately we're going to want measures that
4 NQF can endorse. And so what we need to do is
5 to think about patient-reported outcome
6 measures in the context of the NQF criteria,
7 the evaluation criteria.

8 And what we need to think about is
9 whether these particular types of measures
10 present unique circumstances, are there
11 specific or unique attributes about these
12 types of measures that need to be taken into
13 account within the evaluation criteria? So
14 we'll need to be thinking about that.

15 And finally we're going to want a
16 pathway, a critical pathway from the PROM to
17 the PRO-PM endorsed by NQF for use in
18 accountability and quality improvement. Okay,
19 next slide, please.

20 So, a word about terminology. And
21 I personally have a lot of trouble tripping on
22 these terms but we're going to be using the

1 terminology very, very specifically and I
2 think throughout the day we'll try to remind
3 you. But you may want to refer back to this
4 particular slide.

5 The patient-reported outcome or
6 the PRO is the concept of any report of the
7 status of a patient's health condition that
8 comes directly from the patient without
9 interpretation of the patient's response by a
10 clinician or anybody else. So this is what
11 the patient says.

12 The PRO measure or the PROM is the
13 scale or the instrument or a single item
14 measure -- I use that word softly -- to assess
15 the PRO concept as perceived by the patient.
16 So an example is the PHQ-9. So it's the tool,
17 it's the instrument. It's not that which we
18 will be endorsing. Next slide, please.

19 So just a reminder about what a
20 performance measure is. It's a numeric
21 quantification of healthcare quality for a
22 designated accountable healthcare entity like

1 a hospital, or a plan, a nursing home, et
2 cetera, physician.

3 The PRO-PM is the PRO-based
4 performance measure that is based on the PROM
5 data aggregated for an accountable entity. So
6 the illustration here is the percentage of
7 patients in an accountable care organization
8 whose depression score as measured by the PHQ-
9 9 improve. So it's the PRO-PM that we are
10 seeking to endorse, okay? All right.

11 Now, in addition to these terms
12 around PROs, PRO-PMs, we also have to remember
13 and had discussion at the last workshop you
14 may recall about the proper way to refer to a
15 person, an individual, a patient, a consumer.
16 And this is subject to very wide debate and
17 discussion a lot at NQF and elsewhere.

18 And I think we need to be very
19 clear up front in the report about what we
20 mean. These terms are circumstantial and they
21 really depend on the context of what we're
22 talking about.

1 Admittedly we all use shorthand so
2 sometimes people like to say "person,"
3 sometimes people will say "consumer." I think
4 there is broad recognition that these terms
5 while not interchangeable are sometimes used
6 that way because we are speaking shorthand.

7 The disability community in
8 particular is sensitive to the use of
9 terminology and we heard this last time from
10 Chas and from others about their perception of
11 the words. So I think we need to remember to
12 be very sensitive to the language. Vocabulary
13 matters.

14 We will understand if each of us
15 lapses into the vernacular that we're most
16 comfortable with but I think, at least I hope
17 we'll be understanding, but I think we have to
18 recognize that these terms do mean something
19 particular to different groups and different
20 people and different individuals, and we need
21 to be sensitive to that.

22 We discussed this, Patti and I

1 discussed this with Karen and Karen and what's
2 her name over there, Helen.

3 (Laughter)

4 MS. DUBOW: Our leader. Our
5 leader, Helen Burstin. And we hope that we
6 will be able to identify a way perhaps, a way
7 of being sure that we meet everybody's needs
8 and understanding without doing violation to
9 sensibilities and sensitivities. So, we are
10 aware of it and we will try to address it.
11 Okay, next slide, please.

12 So here we have our bubble diagram
13 that NQF has used for a long time that shows
14 basically an episode of care. And this tries
15 to illustrate the concept -- I'm not going to
16 go through this in detail -- how patient-
17 reported outcomes would be taken into account.

18 And if you look at the far right,
19 lifestyle and health behaviors, and look at
20 the illustrations on the right-hand side
21 you'll see the types of areas that we will be
22 discussing today that need to be taken into

1 account as we consider these episodes and how
2 a patient person experiences these episodes.
3 But we are interested in functional status,
4 health-related behaviors, symptoms, symptom
5 burden, et cetera. So if we could move to the
6 next slide, please.

7 Just a reminder about what NQF
8 does. It endorses performance measures, not
9 the tools. So it endorses PRO-PMs, not PROMs.
10 NQF endorses PRO-PMs for use in accountability
11 such as public reporting and quality
12 improvement. So remember, we have two
13 purposes. It's we need to be sure that these
14 measures that ultimately are endorsed are
15 suitable both for quality improvement and
16 accountability, not one or the other but both
17 of them.

18 NQF has criteria as we mentioned
19 earlier to evaluate measures that come through
20 the endorsement process. And these are NQF
21 board-approved. They have been widely vetted
22 and as I said earlier we're going to have to

1 think about whether these criteria need to be
2 tweaked in some way if at all for purposes of
3 considering the patient-reported outcome
4 measures.

5 So, just to remind you and I think
6 we'll go through these in a little bit more
7 detail later. Karen Pace will take us through
8 that. Importance to measure and report is one
9 criterion and it's a must-pass criterion. If
10 a measure doesn't -- is not -- cannot be
11 determined to be important it doesn't go
12 through the rest of the criteria.

13 In addition, the measures under
14 consideration by NQF committees are evaluated
15 for their scientific acceptability,
16 feasibility, usability and use. And this
17 slide simply gives you a little bit more
18 information about what the criteria look like.
19 I think we'll probably be paying a lot of
20 attention to the second criterion, scientific
21 acceptability of measure properties because
22 we're going to be talking about reliability

1 and validity. Okay, next slide, please.

2 So, finally -- I did this very
3 fast. We're going to have a conversation.
4 Finally, what we want out of the workshop.
5 And you see in your materials a straw man
6 pathway that is probably too big to show on
7 the screen. But you have it in your diagram,
8 at least it's too hard to read here. You have
9 it in your diagram. And this -- we will go
10 through this, you know, at another time.
11 Everybody says it will be excruciating detail.
12 But I mean, it's important to understand how
13 this stuff is all going to work and so we have
14 developed a pathway, a straw man pathway to
15 think about how this will happen.

16 But ultimately we would like to
17 reach consensus by the work group at this
18 workshop on what the pathway should look like.
19 So with that I think we're ready to have
20 questions and discussion and -- oh, did we
21 want to talk about the -- there's a time line.
22 Yes, okay.

1 So, and we are -- you can see
2 where we are here. We're right in the middle
3 of the process. There's going to be a review
4 of the paper which I think you've all
5 received, public comment. The expert panel
6 will review those comments and ultimately this
7 report is going to the CSAC and the board for
8 their approval.

9 So, is there conversation,
10 questions, observations? How are you, Ethan.
11 Yes. Speak up. And oh, could you -- Ethan,
12 could you reintroduce yourself so the people
13 on the phone can hear you, please?

14 DR. BASCH: Oh, sure. Hi,
15 everybody. Good morning. Ethan Basch,
16 University of North Carolina.

17 A couple of quick comments. I'm
18 very glad to see these red boxes at the top
19 which I know wasn't -- we, I think our initial
20 conversation was starting with the measure and
21 now it looks like we're going back and
22 starting with the population of interest and

1 finding outcomes that are meaningful and
2 important to the population. So I think
3 that's a terrific addition and is consistent
4 with the thinking in other quarters about how
5 to develop tools that are meaningful to
6 patients.

7 One thing, one question or comment
8 I have is we spend a lot of time talking about
9 the methods for assuring the measurement
10 properties of the tool once we have figured
11 out what we want to use, the validity, the
12 reliability, all this. But we don't really
13 specify how to identify outcomes that are
14 important and meaningful to the target
15 population, number one.

16 And I wonder the extent to which
17 we want to be a little bit prescriptive about
18 how somebody who's proposing a measure can
19 actually assure to us that the outcomes,
20 right, are actually meaningful in the
21 population for the context of interest.

22 MS. DUBOW: We are going to have

1 more discussion about meaningfulness. And in
2 fact Patti just a little while ago volunteered
3 to fill in on a panel where she will be
4 specifically addressing that and we'll have a
5 chance to talk about that in greater detail.
6 I think it's a really important question.

7 Greg? Greg, you have to tell us
8 who you are, please.

9 DR. PACE: So let me just orient
10 us to these microphones just to remind because
11 it's a little bit different. The ones on the
12 table, the red light means that it's activated
13 and then you press the button till you get a
14 green light. That means the microphone is
15 actually on. Thanks.

16 DR. PAWLSON: Okay, and that was a
17 good instruction. We've got the green light.
18 I'm Greg Pawlson.

19 Sort of an observation. I think
20 that this is going to be, in the continued
21 sort of evolution of NQF endorsement this is
22 going to be a very interesting test case if we

1 really are saying that you're going to endorse
2 PRO-PMs.

3 And why I say that is that if you
4 are really talking about accountability
5 measures for a specific population I think
6 you're going to be into what we're going to
7 actually talk about in the first panel is
8 measurement reliability and parameters in a
9 much perhaps deeper way than before.

10 What I'm talking about is measures
11 that will be endorsed for a specific purpose
12 for a specific population perhaps with
13 specifics around how big the sample size has
14 to be and that kind of stuff. Not necessarily
15 an endorsement of the measure for general use
16 if you will.

17 And I think this is going to be an
18 interesting dialogue that will have to be
19 played out in the review panels and so on.
20 How far down that road do you really need to
21 go to say that we are endorsing a pro-
22 performance measure, almost measurement

1 approach, rather than the PROMs. And I think
2 that that's going to be a very interesting
3 challenge.

4 DR. BURSTIN: For Joyce's sake I'm
5 Helen Burstin. I'm the senior vice president
6 of performance measures at NQF.

7 I just want to respond briefly to
8 Greg's point. I think it's a really
9 interesting one. I think the closest analogy
10 we have currently are the CAHPS surveys which
11 actually do have a very similar approach to
12 giving much more details on some of those key
13 nuances around measurement that we've had
14 before.

15 But you're absolutely right, this
16 is going to be more complex, and we've already
17 seen that for example with the few PRO-PMs we
18 have brought forward and endorsed, including
19 the one on improvement in visual function or
20 the one on depression where I think, you know,
21 all these issues come forward in a much more
22 significant way than I think some of our more

1 classic process or outcome measures.

2 The issue about whether it needs
3 to be assigned to a specific use I think is in
4 question. I think the goal would be that you
5 would want to select performance measures
6 based on PROMs that in fact can drive
7 improvement as well as accountability. But I
8 think that's a good question for us to talk
9 about today.

10 MS. DUBOW: Other questions?
11 Observations? Kathy?

12 DR. LOHR: One question about your
13 time line.

14 MS. DUBOW: -- who you are?

15 DR. LOHR: Oh, sorry. I'm Kathy
16 Lohr from RTI in North Carolina.

17 And I know you're on a fast track
18 and you have to get moving and so forth and I
19 know that the panel is supposed to be giving
20 you some feedback in October, November,
21 whenever it is, but after we kind of see a
22 second round of the second paper and so forth.

1 But I was wondering whether you've
2 given any thought to sort of in some sense
3 reconvening 6 months or 9 months or somewhere
4 down the road not only to see whether we've
5 done a good job with sort of giving you all
6 some advice and guidance and our best thinking
7 on all this which is I think a point that Ted
8 might make as well.

9 But then also to see whether
10 you're making the progress you want, whether
11 we can give you any feedback on mid-course
12 corrections and that sort of thing. So it was
13 really a question of is that the end of the
14 time line kind of thing or can we be of help
15 down the road.

16 MS. DUBOW: That's a question for
17 staff.

18 DR. LOHR: I don't necessarily
19 need an answer. You all may need to sleep on
20 it but I wanted to put it forward.

21 DR. BURSTIN: I think it's a great
22 suggestion, Kathy, and I think the question

1 for us as well is if we move forward in fact
2 and do a consensus development project on PRO-
3 PMs.

4 But I think one question might be
5 we'd love to sort of pepper that committee
6 with some of you. But I think it might be
7 nice to have a couple of test cases to bring
8 back for reaction to say did we get it right
9 as part of that process. That's a great
10 suggestion.

11 MS. DUBOW: It does speak to the
12 broader question that NQF faces with other
13 measures and that's to get feedback. I mean,
14 feedback is really very important for all
15 measures, not just these. I mean these are
16 obviously of interest at the moment but NQF
17 needs to get feedback to understand how these
18 measures are working, whether they are
19 accomplishing what we seek through the
20 endorsement process. So it's a really good,
21 good marker for doing it. I think it's a good
22 idea.

1 Other observations or comments
2 that somebody wants to make? Is there anybody
3 on the phone who would like to weigh in? Do
4 we have to ask the operator to do that?

5 OPERATOR: At this time in order
6 to ask a question press * then the number 1 on
7 your telephone keypad. At this time there are
8 no questions.

9 MS. DUBOW: Okay, thank you. Is
10 there somebody in the audience who wants to
11 make an observation or a comment? No? Okay.
12 Karen?

13 DR. PACE: We have a few minutes
14 before we can begin the next panel so if
15 anyone wants to make any other observations
16 about the pathway. As we said we're going to
17 come back to that in great detail tomorrow.
18 But you know, if you want to make any comments
19 now we can address that or if you have any
20 questions that we can address we can take
21 those now. Otherwise we'll check in with our
22 other speakers and see if they're ready yet.

1 Kathy?

2 DR. LOHR: This is Kathy Lohr
3 again and I did have one question. I would
4 second what Greg said about the, you know, red
5 boxes across the top. But I will confess,
6 maybe it's just where I grew up, that I wasn't
7 certain about the process performance measure
8 versus outcomes.

9 And so in the green boxes like
10 with six and all, is that supposed to be an
11 example of what you would do now with what
12 classically we would think of as process of
13 care measures rather than outcome measures or
14 is it something else?

15 But I also wasn't certain why
16 you'd have PROM in there, you know, for a
17 patient-reported outcome measure attached to
18 process performance measurement. And it may
19 just be me and age and you know, cohort or
20 something, but the distinction between process
21 and outcome has been around a long time and I
22 wasn't certain why I was seeing outcomes

1 mushed up there with processes.

2 DR. PACE: Right, good question.

3 And this comes from our discussion last week
4 and I'll just give you a real clear, hopefully
5 clear distinction of a process measure would
6 be just the process of using a PROM in your
7 clinical practice. So the process measure
8 might be percentage of your patients or
9 percentage of your depressed patients that
10 were administered a PHQ-9 versus using that
11 actual PROM data value on the PHQ-9 to say the
12 percentage of your patients who were depressed
13 who are now in remission.

14 So it's a distinction but it's
15 very important for us to keep in mind. And
16 one of the discussions that we had last week,
17 and that's why it'll be definitely open for
18 discussion, is that the pathway we should
19 take. I mean, ultimately we're interested in
20 outcomes. And so there's some thinking that,
21 well, the first step is to get people using
22 these PROMs before we can get to the step of

1 having an actual outcome measure.

2 Maybe there's some concepts that
3 we need to do process measures first. Maybe
4 there's some that we can go directly to
5 outcome measures. And so the pathway kind of
6 shows two ways to get there and that's
7 something that we'll definitely want to have
8 some discussions about.

9 MS. PITZEN: Hi, this is Collette
10 from Minnesota Community Measurement. I just
11 wanted to make a couple of observations.

12 One in terms of identifying a
13 population or having something where you have
14 a gap in care that you want to start with I
15 think is really important. And then if a
16 functional status or a healthcare quality of
17 life is key in improving that quality of care
18 then one goes and selects the appropriate
19 instrument to collect that information.

20 The second point I wanted to make
21 is we've found that in implementing some of
22 these measures in our state we really do need

1 to do process and outcome measures together
2 because as you're putting this in place in
3 clinical practice you want to make sure that
4 you're capturing enough of your patient
5 population and how successful are you at
6 measuring these patients.

7 For example, we have some
8 orthopedic measures that we're collecting at
9 1 year post-op. So at the same time we are
10 giving groups that feedback of what percentage
11 of your patients are you actually capturing at
12 1 year before we can determine if we have a
13 valuable measure that we can use for public
14 reporting. Thanks.

15 MS. TORDA: Hi, I'm Phyllis Torda
16 from NCQA. I think a number of us, I'm going
17 to add myself, are making the same point and
18 that is that the context in which the PROMs
19 are used is very, very important for a number
20 of reasons.

21 The point that Collette just made
22 is it's important because it's going to give

1 you the sufficient sample size to actually
2 measure outcomes but it's also important
3 because these processes are much less immature
4 than many other processes that we measure
5 through clinical quality measures. And we
6 need to really recognize that, use measurement
7 to promote adoption of the processes before
8 you can get to outcomes.

9 MS. DUBOW: I'd just make an
10 observation before I call on you. You know,
11 think that in the endorsement process this is
12 going to be a challenging idea because of
13 where NQF, where the CSAC has been going, and
14 that is really to emphasize outcomes.

15 And the notion that these
16 processes are immature and that we might need
17 to think about processes on the way to having
18 the outcomes I think needs to be well
19 understood. At least, that's one former CSAC
20 member's opinion.

21 Would you like to make a comment?

22 DR. FIHN: Yes I would, thanks.

1 And I was just going to say exactly what you
2 said, Joyce.

3 So, we discussed this in the
4 taxicab on the way over here. I work in a
5 system where we have mandates for lots of
6 these to measure with process measures.

7 And just as a cautionary note we
8 just finished a large survey of all our
9 primary care providers throughout our system.
10 Morale is actually quite low and the greatest
11 barrier to care that they identified was
12 clinical alerts and reminders which include,
13 you know, the mandated screening for
14 depression and so on and so on.

15 So, you know, I think the problem
16 is they, unless these are really linked to
17 systems and to identifiable mechanisms for
18 care improvement then that could actually be
19 a self-defeating process to put in place
20 mandates for data collection prior to
21 understanding, a good understanding and
22 implementation of the systems to which they

1 need to be connected. So, and I think -- so
2 I would really argue more for Joyce.

3 I think part of that is part of
4 the validation process. And on one hand I
5 know you're under pressure to get things out
6 and time lines, et cetera. But you know,
7 we're reminded again and again what happens
8 when measures get hurried to market. And we
9 just -- we're also discussing this morning one
10 in which CMS probably hurried to market in
11 terms of the catheter-associated UTIs. And we
12 now learned this week that it's probably a
13 seriously flawed measure despite the fact now
14 it's tied to the payment system.

15 So you know, I just, I'm not
16 arguing against doing that but I think we
17 ought to be cautious. All too often I've
18 heard people defend this as the -- not letting
19 good be the enemy of -- perfect being the
20 enemy of good here and you know, sometimes we
21 want, you know, we won't get perfect but we
22 may want better than good.

1 MS. DUBOW: That was Steve Fihn.
2 John's going to be the last question.

3 I just want to be very clear. I
4 think this is a necessary step in the pathway
5 but ultimately we know where we want to go.
6 And as a consumer representative you can be
7 sure that there is going to be a sense of
8 urgency to get where we want to go. But
9 recognizing that this is very hard, this is
10 very challenging, just to be clear.

11 John, you get the last word before
12 we adjourn this session.

13 DR. WASSON: I hope it's not the
14 last word. But in any case the other point on
15 the diagram and also amplifying what Steve
16 said is when we start talking about outcome
17 measures we are talking about re-contacting
18 patients which really does require consent.
19 And that's a killer in the real world in terms
20 of people even willing to measure before if
21 they know they're going to be contacted later
22 as an after. A lot of people will stop right

1 there. So that's not in your diagram and
2 you're going to have to put consent in there
3 somewhere, and that is a very important
4 practical step.

5 DR. BRENNAN: This is Patti
6 Brennan. I want to thank John for that
7 comment because it's a segue way to my message
8 to you.

9 This afternoon at 4:30 we're going
10 to be breaking up into small groups as we did
11 in the past. This is in part response to the
12 comments from our expert panel and from the
13 last session there was a great need for more
14 discussion.

15 We will have a half an hour to be
16 talking specifically about what are the
17 aspects of the NQF evaluation process that
18 need to be tailored for patient-reported
19 outcome primary -- performance measures and
20 aspects of what John identified just now will
21 be important.

22 So as we go through the day today

1 please jot notes on your sheet and we'll have
2 time in small group discussion with a recorder
3 from the NQF at each table to get those
4 thoughts down.

5 And I'll now turn back to Karen to
6 continue the program.

7 DR. PACE: Okay, we'll ask Greg
8 Pawlson to come up. He's our moderator for
9 our next session. And I understand that all
10 three of our panelists are online so I'll let
11 Greg get started and then we'll go from there.

12 DR. PAWLSON: Good morning,
13 everybody. Well, we hope the technology is
14 going to work on this. It's a great test of
15 both doing things locally and across the pond
16 shall we say.

17 You know, as a very veteran as you
18 can see by my white hair, my granddaughter
19 points out my hair is now white. So, I don't
20 get excited about meetings very often but this
21 one I did and especially this session.

22 I think that where we are with

1 this although we still have clearly some
2 challenges in terms of the importance of these
3 measures and how we can illustrate the
4 importance of these measures. And in
5 assessing the scientific kind of
6 characteristics of the measures themselves I
7 think we're actually farther along in that
8 than appears to be the case.

9 But in terms of the feasibility
10 and usability of these measures and really
11 getting even past the PRO-PM stage and moving
12 from the concepts to the measures to
13 performance measures and then to measurement
14 and the actual application of these measures
15 in practice I think is our greatest challenge
16 in this area.

17 And I think the panel that we've
18 assembled this morning is really an exciting
19 one to give us some insights on that because
20 it represents efforts in three different
21 countries including the United States to use
22 PROMs in a very direct and structured way, and

1 in some cases to actually have results of
2 these in terms of application to specific
3 populations either of disease-specific or
4 condition-specific kinds of measures, or in
5 the case of the Health Outcome Survey that CMS
6 uses the health status of a general
7 population, and what some of the contrasts are
8 between those two approaches.

9 To guide us along this pathway
10 this morning we're very fortunate to have
11 first of all David Nuttall who's the deputy
12 director of the PROMs Programme with an "e" at
13 the end which I always find interesting. And
14 he is the deputy director for patient-reported
15 outcome measures at the Department of Health
16 of England and he's actually been with that
17 program really from its outset.

18 Secondly, we have Elizabeth or Liz
19 Goldstein whom I think a lot of you know who
20 is director of the Division of Consumer
21 Assessment and Plan Performance at CMS. And
22 she's going to talk about the Health Outcome

1 Survey. Liz has always been a very strong
2 proponent of patient-reported outcomes and has
3 also been a very major player in the CAHPS
4 survey process.

5 And finally, from Sweden we have
6 Stefan Larsson who is the senior and managing
7 director of the Stockholm office of Boston
8 Consulting and has been deeply involved in the
9 program that has been developed for the use of
10 patient-reported outcome performance measures
11 in Sweden.

12 So without further ado I hope we
13 have David to start off the process. David?

14 MR. NUTTALL: Hi, good morning.

15 DR. PAWLSON: And by the way,
16 David, congratulations on your Scotsman's
17 victory last night.

18 MR. NUTTALL: Thank you very much.
19 Well, good morning. Can you hear me okay on
20 the line?

21 DR. PAWLSON: Yes, we hear you
22 quite clearly.

1 MR. NUTTALL: Can you hear me
2 okay?

3 DR. PAWLSON: Yes, we can.

4 MR. NUTTALL: Okay, fantastic.
5 Well firstly, thank you for inviting me to
6 this Quality Forum meeting. I've put some
7 slides together which are intended to give an
8 overview really of the program of work that we
9 are doing here.

10 And I think by its nature in 15
11 minutes it will be a relatively quick overview
12 of some of the issues but I think maybe the
13 important thing is to sort of set out what
14 we're doing completely and then obviously at
15 the end if there's any specific questions I'm
16 happy to go into those in a bit more detail.

17 So, if I could just go onto the
18 first slide, fantastic. And I don't know if
19 this is going to work with testimony but
20 there's this little animation that will bring
21 in four pieces, a jigsaw puzzle. And I use
22 this slide really to try and demonstrate why

1 we're interested in patient-reported outcome
2 measures at the Department of Health and what
3 we're trying to achieve.

4 And in a nutshell I think that the
5 National Health Service here has got a good
6 history of collecting information about care
7 but to some extent it's a bit partial. So I
8 think historically we've had a good set of
9 information about patient's experience from
10 the viewpoint of patients through national
11 survey programs which have been in existence
12 for some time. And I think we've got a wealth
13 of data about healthcare professional's view
14 of patient experience from other routine data
15 sources.

16 In terms of the effectiveness of
17 care I think again we've got a long track
18 record in measuring from a professional's
19 point of view how effective care is through
20 things like clinical audits and clinical
21 indicators which we derive from routinely
22 collected administrative data.

1 What I'd argue though is that the
2 effectiveness data is relatively partial
3 insofar as clinical audits are not carried out
4 continuously. They tend to be carried out at
5 point in time looking at particular issues and
6 clinical indicators that we have are generally
7 focused on where things go wrong. So they
8 would be looking at things like mortality,
9 complication rates, transfers to high-
10 dependency care, that sort of thing, less
11 focused on the quality of care for let's say
12 the majority where there isn't an adverse
13 outcome as part of their care. So that
14 problems -- patient-reported outcome measures
15 data is important not as a replacement for the
16 other sorts of information that we collect but
17 really to complement and complete the quality
18 picture that we have about care in the round.
19 So that's kind of the overarching reason and
20 rationale for collecting this kind of
21 information.

22 If I just go onto the next slide

1 then. Great. So, in terms of the history of
2 the program we actually carried out or
3 commissioned rather I should say a piece of
4 research in about 2004 which was to look at
5 all of the available patient-reported outcome
6 measures that were available sort of off-the-
7 shelf and to assess their relative merits and
8 performance, psychometric property and come up
9 with recommendations for what would work best
10 in a small number of acute elective
11 interventions.

12 So the four on the list there, hip
13 replacement, knee replacement, varicose vein
14 surgery and groin hernia repair, and there was
15 a fifth originally around cataract surgery as
16 well.

17 And what that research concluded
18 was that there was merit in putting together
19 a generic patient-reported outcome measure
20 alongside a condition-specific for each of the
21 five areas we were looking at and made various
22 recommendations as to what each measure ought

1 to be.

2 We then commissioned some further
3 work which ran between 2005-2007 to pilot the
4 collection of those measures in a range of
5 different sorts of units from large hospitals
6 through to much more smaller, elective
7 ambulatory care units and to see how the
8 administration methodology would work, to have
9 a look at collection, to have a look at the
10 acceptability of these sorts of measures from
11 the point of view of both the patients that
12 were completing them and the staff that were
13 administering them.

14 A couple of points to make from
15 that. I think the first was that we concluded
16 that this was a scheme that had merit, that
17 was cost-effective and ought to be rolled out.
18 But equally that there were some really tricky
19 methodological problems around the collection
20 of this kind of information for cataract
21 surgery with the instruments we had at the
22 time so that the size became flawed over a

1 period of time.

2 In terms of the final point there
3 where I say it evolved over time I think
4 really that's just to say that at the outset
5 we were looking at the collection of this kind
6 of information because we were concerned about
7 the relative performance of different types of
8 units in the NHS where we had good information
9 about cost models and clinical approaches but
10 less good information about outcomes data.

11 And I think the aims and
12 objectives have changed over time as we've
13 become much more interested in facilitating
14 patient choice of provider, of providing much
15 more comprehensive information. So it's
16 evolved over a period of time until now in
17 terms of the sorts of uses of the data, but it
18 continues to attain strong support across the
19 board as a program with merit.

20 If I can just go onto the next
21 slide. The questionnaires that we administer
22 are administered to patients at two time

1 points, once preoperatively and a second
2 questionnaire post-operatively at either 3
3 months or 6 months depending on the
4 intervention that's in question.

5 And we have questionnaires which
6 are effectively batteries of measures. They
7 comprise a standard EQ-5D profile and the EQ-5
8 currently. And we paired those up with a
9 condition-specific for three of the conditions
10 apart from hernia where we didn't identify a
11 condition-specific measure which was of
12 sufficiently good performance.

13 And around that core battery we
14 then have on the preoperative one demographic
15 information. We collect information about
16 patient comorbidity and so on. And on the
17 post-operative one we don't replicate the
18 patient demographic information but we would
19 also collect some information about
20 complications, infections, allergy, whether
21 they'd been back to hospital, and so on. And
22 that pair of health data measures then give us

1 a sense of outcome when we look at the
2 difference between them for any individual
3 patient.

4 I won't get into detail about
5 precisely how we do this but we have contracts
6 in place with a range of organizations which
7 help on the logistics side distributing,
8 producing those questionnaires, scanning them
9 in and turning them into electronic records.

10 But during this point in the process is that
11 it comes back into a body, organization known
12 as the Health and Social Care Information
13 Centre which is not part of the Department of
14 Health but a related organization who have
15 responsibility for publishing end results as
16 what we call official statistics.

17 If I could just go onto the next
18 page. Just very quickly in terms of the
19 program we think it's large and significant.
20 Each -- well, the four interventions comprised
21 about 250,000 patients per annum. We've been
22 collecting the data since 2009 and the table

1 shows the sorts of volumes of information that
2 we've had returned to date.

3 A large and growing data set I
4 think and I think one of the -- perhaps the
5 most comprehensive data set of its nature as
6 we have a census approach and although
7 voluntary we'd approach everybody that's
8 eligible for interventions from as well as NHS
9 to complete questionnaires.

10 And we had quite a lot of interest
11 in the program and have spoken to
12 representatives across a whole range of
13 countries about what we've been up to and how
14 some of this can be reproduced. Next slide.

15 This is just to demonstrate the
16 return rate that we had got. And what the
17 graph is showing that for orthopedics we have
18 historically enjoyed a very high rate of
19 patient participation at around 80 to 90
20 percent. And we've done less well over time
21 at collecting information for general surgery.

22 There's a bunch of reasons why

1 this might be the case from complexity of the
2 questionnaire in the case of varicose veins to
3 how much time individuals spend in hospital.
4 It tends to be admitted whereas the general
5 surgery procedures will tend to be day cases
6 and people are in hospital for less time. So
7 there's a bunch of reasons.

8 But I think the key message that
9 comes from this slide is that actually it can
10 be done at very high rates. And actually even
11 within varicose veins and groin hernia which
12 have slightly lower -- rates. There are
13 hospitals that will be doing this at nearly
14 100 percent and have been doing so for a long
15 period of time. Next slide.

16 And once the preoperative
17 administration is within gift of the providers
18 they physically distribute the questionnaires
19 to people in their clinic. The post-operative
20 questionnaire which is sent out through the
21 post mail 6 months later, the response rate is
22 much more of a parameter. And the parameter

1 is about 85 percent for orthopedics of those
2 that complete a pre-op will go on to complete
3 a post-operative questionnaire, about 75
4 percent for groin hernia and slightly lower
5 again for varicose vein. And that's being
6 consistent -- if we ignore the kind of the
7 wobbly line on the very right-hand side of the
8 data, it's a bit more recent in this graph,
9 then you'll see that they're effectively
10 constant over a period of time. Next slide.

11 Now, in this slide I'm kind of
12 summarizing an awful lot of information quite
13 quickly but this is really to say that the end
14 product of that data collection, there is a
15 large number of steps which go on in -- period
16 but the data that's collected will form
17 electronic records.

18 It's linked together with
19 routinely collected administrative data on the
20 sort of nature of the episode. So what
21 interventions took place, how long are they in
22 hospital, what comorbidities were recorded in

1 the patient record, et cetera, et cetera. All
2 that data is stitched together into an
3 electronic record for each patient. Outcomes
4 are calculated in terms of distance between
5 the pre-op and post-op scores. Measures are
6 available for -- just like the index, the
7 bands in a condition-specific measure.

8 And we apply a case-mix adjustment
9 to take out of differing case loads of each
10 hospital in this case before constructing
11 average outcomes per unit. This will be
12 displayed on a graph like this. And the
13 funnel plot has become a standard way of us
14 reporting this information back to the
15 providers themselves. And I'm sure many of
16 you are very familiar with it. I think that
17 the volume of records across the x axis, the
18 adjusted health gain changes to the pre- or
19 post-op score accounts for patient case
20 experiences plus unit control limits at 99.8
21 percent, 95 percent limit.

22 And then we would publish this

1 data on a quarterly basis back to providers
2 indicating where their -- statistically
3 different from the national average. They --
4 where expect the providers to take action as
5 a result. So, as I say -- unfortunately
6 there's an awful lot of work that goes on and
7 needs to be included. This is one of the
8 sorts of output that we would generate for the
9 program. Next slide.

10 Effectively I started off by
11 saying that one of the rationale for, one of
12 the main reasons for collecting information
13 was to round out and complete the quality
14 picture by giving us a complementary source of
15 information about outcomes and quality. But
16 actually being a bit more specific about that
17 there's a whole range of particular
18 applications that we can use this data for.

19 And I think the general point is
20 that we don't see that being as primary or
21 necessarily predominantly application of data.
22 We see the outcome information as being a

1 resource which could be applied to a whole
2 range. So, I won't get into this in detail
3 but it ranges from things like using the
4 outcomes measure at a local hospital level to
5 look at the relative performance of clinical
6 meetings, to have a look at whether the care
7 that's being offered has particular
8 consequences on specific domains of the
9 outcome measures, patient pain or what have
10 you.

11 We have an initiative, the name is
12 Quality Counts where all hospitals have to
13 provide reports on their performance, provide
14 a descriptive narrative of why their metrics
15 look a particular way. And PROMs is being
16 made a mandatory component of that. So each
17 provider would have to explain why their data
18 shows what it shows. Through patient choice
19 right up to the national level where we can
20 use this data in aggregate to tell us
21 something about the relative efficacy of
22 different interventions from the patient

1 effectiveness point of view. Next slide.

2 I just noticed the time so I'll
3 just move through these. But I think over the
4 3 years since we started collecting this
5 information routinely the data has become part
6 and parcel of the information landscape that
7 we have. I think when we started this
8 initiative the data was seen as very much
9 something which collected in a one-off program
10 and you know, you have to be convinced that
11 there's merit. And I think 3 years on it's
12 just seen as part of the fabric, the set of
13 information that we collect has become
14 terminology that people are comfortable with
15 and are familiar. And it is embedding itself
16 into a whole range of things. We have
17 something, maybe the outcomes framework which
18 is a method for holding the NHS to account and
19 appears -- comprise patient-reported outcome
20 measures. Sort out quality account.

21 And I think most interesting from
22 my point of view, it's taken a few years but

1 we're now starting to see the academic
2 research using this data to flow with some
3 interesting papers coming out. Next slide.

4 And just picking up on that point,
5 I mean particularly looking at case studies
6 too. This is an example of the sort of
7 academic research which is coming out. We've
8 just seen a peer-reviewed paper appear which
9 is looking at the relative effectiveness of
10 unicondylar or unicompartmental knee
11 replacement relative to total knee
12 replacement. And although I think the
13 unicondylar are of increasing popularity I
14 think the research has shown that from a
15 patient outcome point of view they were very
16 similar in terms of their effectiveness and
17 yet the unicondylar has a high revision rate.
18 So the paper sought to question doing that.
19 From my point of view I think that's a really
20 interesting piece of research because it's
21 getting -- leading it away from being just
22 about patient outcomes and you know, the

1 softer side of things, to driving some really
2 meaty clinical -- next slide.

3 And this is just coming to the
4 end. So, looking into the future we've
5 covered four elective interventions. We have
6 quite a lot of work in the pipeline which is
7 looking to extend the scope of the program.
8 And this includes a trial which is currently
9 underway for coronary revascularization, CABGs
10 and angioplasties where we are piloting some
11 competent measures with 11 providers. We have
12 done a cancer survivorship study which was
13 using elements of the FACS questionnaire and
14 was sent out much like a general population
15 survey out to patients which got a very high
16 participation rate. And looking at other
17 areas like mental health, care and treatment
18 of depression, lots there as well.

19 A few things that we're doing at
20 the moment. One is the development of a, what
21 we're calling a shorter, sharper generic PROM
22 questionnaire the point of which will be to

1 use a much wider range of intervention. And
2 then very briefly we have made some quite
3 significant changes to the way we collect and
4 report the data which allows much greater
5 access to the patient level identifiable data
6 for clinical teams which is something that
7 clinical teams have asked us for. And we are
8 starting to introduce new methods of
9 collecting the data including iPad touch
10 screens, electronic data capture as well as to
11 try and make this the best around.

12 Then the final slide. To
13 summarize I think our PROMs collection at a
14 national scale with comprehensive coverage
15 gives us a pretty unique insight into the
16 effectiveness of care from the patient's point
17 of view. And we feel confident that the
18 volume and response rate that we've got make
19 the kind of findings that we're coming to
20 quite robust.

21 You know, a huge amount of work
22 has gone into devising and developing the

1 methods for getting this data. I think when
2 we started the program there was relatively
3 limited evidence-based literature about how we
4 use this kind of data in the context of
5 routine performance management assessment of
6 this as opposed to the use of it for the
7 appraisal of let's say drugs and the like.

8 I think there's a huge variety of
9 uses we can put the data to and we're now
10 starting to see the evidence build up about
11 the kind of conclusions we can make from this
12 data. I think we'd view it successful and
13 that's why we're starting to roll it out into
14 the other clinical areas. I think that's
15 easily my 15 minutes so I should probably stop
16 there.

17 DR. PAWLSON: Okay, thank you very
18 much for I think a very good overview of a
19 very complex and somewhat longstanding program
20 that I think is very exciting.

21 I just, as we start some comments
22 and discussion of this presentation. It's

1 interesting to me that this is one of the few
2 ways, and from a measurement wonk's
3 perspective very exciting way of starting to
4 get at clinical appropriateness.

5 We have I think been very stymied
6 in trying to measure the quality of procedures
7 in this realm because of the lack of data of
8 appropriateness. If the procedure wasn't done
9 for appropriate reasons the quality of it I
10 think is very much sort of perhaps even an
11 insubstantial kind of question.

12 Do you want to comment on how this
13 is beginning to be used in the determination
14 of the appropriateness of some of the
15 procedures that you're looking at?

16 MR. NUTTALL: Sure. I mean, I
17 think we -- I think our general position is
18 that we don't oppose using the data as a sort
19 of preoperative screening tool. So our
20 position is that it's always at clinical
21 discretion as to whether a procedure is needed
22 or not. And so we wouldn't oppose the use of

1 PROMs as any sort of screening or rationing
2 mechanism, however you want to think of it.

3 Instead, the way we see it is
4 actually the value is added by looking post-op
5 and having an assessment of whether actually
6 in different parts of the country we could
7 adopt better scores, had clinical referral,
8 specialty different. So, it's not that the
9 data in itself will allow us to conclude who
10 should have an intervention, that's left to
11 clinical discretion. But we would use the
12 data to assess after the event whether there's
13 something in there which can inform the
14 clinical decision-making if that makes sense.

15 DR. PAWLSON: Okay. Follow-up
16 comment on that back there?

17 DR. BASCH: Yes, hi. Hi David,
18 it's Ethan Basch at the University of North
19 Carolina. Nice presentation as always.

20 A quick question, actually a two-
21 part question about missing data which has
22 come up a bit in our conversations here. The

1 first is a question about response bias, that
2 certain of the hospital trusts may have higher
3 or lower response rates. And in general when
4 they are lower response rates there may be a
5 lower response from patients who are sickest
6 who have the worst outcomes. And therefore,
7 those institutions with the better response
8 rates may actually be at a disadvantage
9 because higher response is associated with a
10 higher number of people reporting worse
11 outcomes. And how you adjust for that.

12 And the second is what has been
13 your approach to missing data not at random,
14 particularly from hard-to-reach patient
15 populations who may systematically be missing,
16 particularly in some of your lower response
17 rate groups like the varicose vein cohort.

18 MR. NUTTALL: Sure. Yes, I think
19 good questions. And we have a piece of advice
20 which we've put out to providers which is that
21 we're looking for 80 percent preoperative
22 participation to ensure that the data we're

1 collecting is being representative. And the
2 work we've commissioned suggested that over 80
3 percent participation then the data is
4 generally going to be reliable in and of
5 itself. So that's kind of a first point.

6 And obviously some providers don't
7 meet that, particularly if you look at
8 varicose veins with a lower average
9 participation rate. So there is an issue to
10 deal with around missing data and potential
11 response bias.

12 And I think -- two ways of dealing
13 with that. One is that we have done work
14 which has looked at response bias and allowed
15 us to get a handle on what the impact of
16 missing data from particular patient
17 populations is so that we can get, you know,
18 understand what the data is actually telling
19 us when we look at it.

20 I think the second thing that we -
21 - perhaps most important when we're looking at
22 provider comparisons is through our case-mix

1 and risk adjustment process then we can
2 effectively give a provider a sort of national
3 average basket of patients and look at what
4 their scores would have been for them. And
5 that's kind of the underpinnings of how our
6 case-mix adjustment works. So, we can take
7 into account the patient mix, we can have a
8 look at what we would have expected to see
9 from them, what we actually got, and correct
10 the data in some sense.

11 So I think two bits of response.
12 One is that we do the work which actually
13 tells us what the consequence and response
14 bias is and allows us to get a handle on that
15 in the first instance. And secondly, in
16 reporting the data adjust it to take account
17 of that to some extent.

18 DR. PAWLSON: Thank you. I think
19 in the interest -- I mean this question that
20 you raised and I suspect some others are going
21 to apply to all three data sets. And I think
22 we've just begun to scratch the surface of the

1 richness of the information they've collected
2 I think and how it impacts.

3 So what I'd like to do is go onto
4 Liz Goldstein, get that perspective, and then
5 Stefan and then come back and loop in some of
6 the questions. So, after Liz's presentation
7 we'll take questions that are sort of
8 specifically about the issues or methodologies
9 of that set alone. Okay? So Liz, do you want
10 to go ahead?

11 DR. GOLDSTEIN: Yes, thank you.
12 So today I'm going to be talking about our
13 Medicare Health Outcome Survey, or often it's
14 referred to the HOS survey. So for the next
15 slide.

16 The goal in implementing this
17 survey in the Medicare program was to gather
18 valid, reliable and meaningful health status
19 information for Medicare Advantage enrollees.
20 So we use this information in quality
21 improvement, plan accountability, public
22 reporting, to focus on improving the health of

1 our Medicare beneficiaries. And I'll be going
2 into some of these activities in more detail
3 in this presentation.

4 The intended uses for the HOS
5 data, as I said, public reporting. And I'm
6 going to be talking a little bit about our
7 public reporting program and how HOS is
8 integrated into this public reporting program.
9 Most recently we're using it for our pay-for-
10 performance program and I'll quickly review
11 that today. It's used for quality improvement
12 activities of the plan, program oversight and
13 in general to advance the science of health
14 outcomes research. There's a wealth of
15 studies that have been done using the HOS
16 survey.

17 In terms of the HOS overview the
18 survey was implemented by CMS in 1998 so it's
19 been going on for many years. All Medicare
20 Advantage organizations or health plans with
21 at least 500 members are required to
22 participate in this survey.

1 The survey is done annually with a
2 2-year follow-up period and I'll explain that
3 in a moment a little more. The focus of the
4 survey is to measure whether the health plan
5 has been able to maintain or improve the
6 physical and health of its members.

7 In terms of the survey design and
8 questionnaire the sampling unit is a Medicare
9 contract. And as I said before if a contract
10 serves less than 500 enrollees, and we in the
11 Medicare program have a lot of small contracts
12 so this does exclude a number of our contracts
13 that are just very small. The number of small
14 contracts has been decreasing over time so
15 hopefully eventually most contracts will be
16 doing the survey.

17 If a contract serves anywhere
18 between 500 and 1,200 enrollees all the
19 enrollees are included in the survey. And if
20 they have more than 1,200 enrollees a random
21 sample is taken.

22 So a beneficiary is surveyed in a

1 baseline period and then 2 years later we go
2 back to those same enrollees with the same
3 cohort to do the follow-up survey. So a
4 contract at any given year is doing both a
5 baseline survey as well as a follow-up survey.

6 Just to give a little information
7 about how the survey is done, our contracts
8 have to contract with HOS survey vendors that
9 are certified or approved by the National
10 Committee for Quality Assurance. So they
11 can't use any survey vendor. The survey
12 vendor has to be approved or certified to do
13 the survey. It's very important to us for all
14 of our survey activities that contracts use
15 approved vendors because we provide oversight
16 of these vendors, ensure that they're
17 following standard protocol.

18 In terms of survey administration
19 it starts out with a pre-notification letter,
20 then goes to a first mail survey. Then the
21 sample member gets a reminder postcard and
22 then a second mail survey if they haven't

1 responded yet. If a beneficiary does not
2 respond to the first two mailings then
3 telephone follow-up is used.

4 And we have found in a lot of our
5 survey activities using this mix mode
6 methodology gets the highest response rate and
7 also gets people more likely to respond by
8 mail or by telephone. Just to note, the
9 survey is done in English, Spanish and
10 Chinese.

11 The HOS 2.0 survey has 64
12 questions. And I'll be giving a little bit
13 more information about the questions in a
14 moment. The one thing I want to emphasize
15 here, that this survey is population-based,
16 it's not condition- or disease-specific.

17 This slide provides just some
18 sample questions on the HOS survey. As I said
19 before the current version of the survey
20 includes 64 questions. It includes the
21 Veterans RAND 12 Item Health Survey. It
22 includes questions about activities of daily

1 living, chronic conditions. It includes some
2 measures that we collect for our HEDIS survey
3 which includes measures such as monitoring
4 physical activity. It includes information
5 about height and weight, clinical symptoms
6 such as depression and pain items, and a
7 series of sociodemographic questions that are
8 used for our case-mix adjustment model.

9 The next slide. The HOS survey
10 focuses on two outcome measures of physical
11 and mental health changes for Medicare
12 beneficiaries as I said over a 2-year period
13 from baseline to follow-up. There are -- I
14 just want to give you a little bit more detail
15 on that.

16 There are eight scales that form
17 the basis of these two summary measures, the
18 physical and mental health status changes.

19 I'm just going to quickly go over these eight
20 scales so you can get some picture of the
21 types of things included in this measure.

22 They are two questions related to

1 physical functioning such as the extent to
2 which a respondent's health limits their
3 physical activities. There are a couple of
4 questions related to whether the respondent's
5 physical health limits them in the kind of
6 work or other usual activities they perform in
7 terms of time and performance.

8 There's one question that
9 determines the extent to which pain interferes
10 with a respondent's normal activities.

11 There's one question that asks respondents to
12 rate their current overall health status.

13 There's one question that asks
14 respondents to rate their well-being by
15 indicating how frequently they experience
16 energy. One question asks respondents to
17 indicate limitations in social functioning
18 specifically because of their health.

19 There are a couple of questions
20 assessing whether emotional problems have
21 caused respondents to accomplish less in their
22 work or other activities in terms of time and

1 performance. And there are a couple of
2 questions that focus specifically on how
3 frequently they felt calm and peaceful and
4 felt downhearted and blue. So these eight
5 scales as I said before provide the basis for
6 the two summary measures.

7 On the next slide the HOS survey
8 was developed under guidance with a technical
9 expert panel. A lot of industry experts have
10 provided input into the initial development of
11 the survey.

12 We continue each year to look at
13 the survey, look at new methodologies as the
14 state of the art changes. For example, next
15 week we have a technical expert panel that's
16 going to be looking at the survey and seeing
17 if there are additional items to add related
18 to patient-reported outcomes as well as are
19 there any revisions to that current
20 instrument.

21 Just to provide a little bit more
22 detail, the HOS outcomes are determined by

1 comparing observed to expected changes in the
2 physical and mental health for individuals in
3 the sample.

4 One thing that we continue to
5 evaluate each year and it's something that
6 we're going to be paying close attention to in
7 the coming year to see if we want to make some
8 revisions is that the case-mix adjustment
9 methodology is very critical to producing
10 valid plan-to-plan comparisons. The current
11 adjustment for HOS includes variables such as
12 age, gender, education, socioeconomic status,
13 chronic conditions and functional limitations.

14 I'm going to spend a couple of
15 minutes talking about how we use the HOS data.
16 So HOS for public reporting, and you can go to
17 the next slide. We have a five star plan
18 rating system and HOS is included in this
19 system. So for our health plans that offer
20 drug coverage they're rated on approximately
21 50 different measures. And so HOS is part of
22 that measurement. So we produce, for every

1 health plan and drug plan in the country we
2 produce a five star rating and that's our
3 overall rating.

4 For health plans that offer drug
5 coverage we have nine domains or topic areas.
6 So the topic areas cover things such as
7 staying healthy, managing chronic conditions,
8 experiences of the health plan members,
9 patient safety. So for public reporting
10 purposes we roll it up to these nine domains.

11 If someone who's using one of our
12 websites wants to look at the individual
13 measures they can go down and look at the
14 individual measures that make up each domain.
15 And for each individual measure we provide a
16 five star rating as well as a numeric number
17 that goes with the measure.

18 So for HOS it's included in this
19 plan rating system. Last year we made some
20 changes to our public reporting system. Prior
21 to last year all measures were treated equally
22 in the plan rating system so our process

1 measure and outcome measure were weighted
2 equally, suggesting that they had equal
3 importance.

4 Last year we moved away from that
5 and right now outcomes and intermediate
6 outcomes receive a weight of 3, patient
7 experience and access measures receive a
8 weight of 1.5, and process measures receive a
9 weight of 1. So the health outcome, those two
10 measures receive a large weight in our system,
11 receiving a weight of 3.

12 The next slide just is one
13 screenshot from our website. And this shows
14 you when you pull up a plan. Some of the
15 basic information you get up front is our
16 overall plan rating. And then you can drill
17 down to more detailed information as I was
18 talking about.

19 I'm going to switch just for a
20 couple of minutes and talk about pay-for-
21 performance. Next slide. As part of the
22 Affordable Care Act CMS implemented a quality

1 bonus payment system for health plans or
2 Medicare Advantage contracts.

3 As part of the Affordable Care Act
4 it said that in implementing this system it
5 should be based off of a five star rating
6 system. And so CMS decided that the quality
7 bonuses would be based off the Medicare
8 Advantage plan rating. So it's the same
9 system that we use for public reporting.

10 CMS is conducting a demonstration
11 for the first 3 years of the implementation.
12 And through this demonstration CMS adjusted
13 the amount of money or the percentages that
14 contracts would get for each of their star
15 ratings, trying to really generate more
16 quality improvement, more rapid and larger
17 year-to-year quality improvement.

18 The slide that's up right now
19 shows the different amounts for the different
20 star ratings. So the current -- under current
21 law contracts would only get a quality bonus
22 if they had four or more stars. During the

1 demonstration they do get quality bonuses if
2 they have three or more stars. Once the
3 demonstration ends we'll go back to current
4 law and it will be four or more stars.

5 So, we've seen since the quality
6 bonus payments were announced to plans there's
7 a lot more emphasis on quality improvement by
8 the plans. A few years ago when we put out
9 the plan ratings each year some plans paid
10 attention but they weren't paying a lot of
11 attention. Right now since they do get paid
12 based off of HOS and our other data collection
13 activities they do pay a lot of attention. We
14 get a lot of questions about data and using it
15 for quality improvement. So there's clearly
16 a lot of emphasis right now among Medicare
17 Advantage plans and seeing how they can
18 improve performance across all of their
19 quality performance measures.

20 The last slide is really just a
21 summary of what I've gone through. CMS uses
22 the HOS data to determine performance of

1 Medicare Advantage plans and to reward high-
2 performing plans. It's really used for
3 quality improvement activities and to just
4 monitor how plans are doing. Medicare
5 beneficiaries can use this information to make
6 a decision about which plan to go into. And
7 researchers have used a lot of this
8 information to advance the state of science
9 and patient-reported and functional health
10 outcomes measurement. So, I think I'll turn
11 it back to Greg to open it up for questions.

12 DR. PAWLSON: Thanks very much.
13 This is sort of a little hidden gem of the
14 Medicare program that a lot of people don't
15 know about. So I hope this gets it to a wider
16 audience than in the past in terms of both its
17 use for performance improvement but also in
18 terms of health services research.

19 Questions specifically? Judy?
20 And just identify yourself so Liz knows from
21 whence the questions are coming.

22 DR. HIBBARD: Hi, this is Judy

1 Hibbard from the University of Oregon. Hi,
2 Liz. My question for you is about the
3 sensitivity of these measures to change. And
4 I was wondering when you developed the
5 measures was that a criteria and what has your
6 experience been over these years of use.

7 DR. GOLDSTEIN: So when it was
8 developed that was something they really
9 looked at, how sensitive it was to change. I
10 think the thing that we're -- the struggle
11 that we have right now and it's something
12 we're spending a lot of time looking at is
13 that there's some variation across plans but
14 there's not a lot of variation.

15 So we're spending some time right
16 now in the coming year really looking at that
17 and seeing how the measurement could be maybe
18 improved or tweaked to, you know, increase
19 that variation across plans. But looking at
20 the sensitivity to change, that was
21 incorporated in the initial development
22 activities.

1 DR. PAWLSON: I think, Judy, you
2 brought up a very key issue with a lot of
3 patient-reported outcomes in contrast to
4 patient experience measures where we've got
5 some pretty good indicators that a lot of the
6 variance is provider-specific. In this case
7 I think and actually David brought -- one of
8 his PowerPoints where it has the outcomes data
9 published by provider organizations adjusting
10 for differences in case-mix. If you look at
11 that it shows very clearly the 99 percent
12 confidence limits around an estimate of the
13 adjusted average health gain. And they're
14 pretty broad.

15 It reminds me of when we did the
16 resource use measures and the costs where you
17 see pretty wide variation. And that means the
18 sample sizes for these two have adequate
19 reliability and adequate amount of variance
20 due to provider-specific factors is up in the
21 two, three, four hundred range. And so I
22 think that's a real challenge to a lot of the

1 measures we're going to see in this field.

2 Yes.

3 DR. KAZIS: Hi, this is Lewis
4 Kazis from Boston University. Hi, Liz. I
5 enjoyed your presentation.

6 I've been involved with -- as a
7 consultant to the CMS project for HOS for many
8 years and what Liz says is absolutely correct.
9 There are some weaknesses in the variability
10 that we're seeing across the plans using the
11 VR 12 broken out into physical and mental.

12 There is new work that we are
13 currently conducting where we combined both
14 the physical and mental into a utility metric
15 called the VR 16. And in very preliminary
16 work we are seeing more signal across the
17 plans as a result of that. So I just wanted
18 to mention that.

19 DR. PAWLSON: I think that's
20 another good point in terms of how one
21 aggregates different measures into a
22 composite. Starts to build and I know there's

1 some methodological approaches that can start
2 to filter out some of the noise and boost the
3 signal which is I think a real challenge here.

4 Thank you very much. Can we go
5 on? And I understand, Stefan, you're going to
6 have a little bit of an extra challenge
7 because you've got some internet problems and
8 you aren't going to be able to see the slides.
9 Is that right?

10 DR. LARSSON: Yes, that's true. I
11 have them in front of me. So as long as we're
12 looking at the same slides we should be fine.

13 DR. PAWLSON: Well, if you can
14 just as you address a slide perhaps just use
15 a brief introduction of the title of the slide
16 to make sure we're on the same one, okay?

17 DR. LARSSON: Yes and I'll ask you
18 to switch slides for me. Okay, thank you very
19 much for having invited me to the meeting. So
20 I'm Stefan Larsson. I'm a partner with BCG in
21 Stockholm. I'm a medical doctor by training
22 but I am a management consultant nowadays

1 although scientifically trained. I've worked
2 as an advisor as BCG does to the healthcare
3 industry broadly, to governments and to
4 corporates and I have worked very broadly in
5 the industry.

6 One of the things that struck us
7 was very, you know, it's been striking and I'm
8 sure it has been to all of you is the very,
9 very strong focus on budgets and the cost of
10 healthcare over the past years. And we've
11 found an anti-innovative climate that led us
12 to start looking at these registries.

13 And being a Swede and quite close
14 to the scientific community here I started
15 looking at disease registries, or we did
16 locally in Sweden, and discovered that there
17 is in fact a means to combine the analysis of
18 cost of care with disease-based high-quality
19 data on the outcomes of care.

20 And we have since -- well, the
21 past 3 years invested heavily in what we and
22 others call value-based care which is on a

1 disease-by-disease basis to thoroughly make
2 sure that we have data on outcomes, both
3 traditional outcome measures as well as PROMs,
4 and then use that as the numerator to then
5 compare to the money spent on that particular
6 disease along the entire care chain.

7 Registries in Sweden were started,
8 the first ones in the seventies. If we switch
9 to the next slide today there are about 100
10 registries covering -- and they're all
11 disease-based with maybe -- there are a few
12 exceptions. There are one or two which are
13 registries monitoring outcomes for elderly
14 care patients, so multi-disorder patients.
15 But 95 percent of these registries are
16 disease-based.

17 The focus is on outcomes. These
18 have been research registries from the
19 beginning where clinicians, the specialist
20 societies and not government and not payers
21 took the initiative to set up these registries
22 to discover within the clinician community

1 what determined good outcomes in terms of
2 which clinical procedures, which medical
3 devices were better than others and so on and
4 so forth.

5 This has evolved to become
6 increasingly a tool to drive continuous
7 improvement. That's where we as management
8 consultants and interested in transformation
9 of healthcare, the improvement of healthcare
10 found this to be an extraordinarily exciting
11 tool.

12 The majority of these 100
13 registries have over 75 percent of the patient
14 population covered which means that from a
15 reliability point of view at least in terms of
16 coverage these are quite unique repositories
17 of rather complete populations.

18 Furthermore, as these have been
19 used primarily for research purposes validity
20 and so on and so forth has been a lot of time
21 invested into making sure that the data
22 quality is high. And that's also why the

1 results, the analyses of these registries have
2 had a lot of impact on the medical community.

3 The measures chosen, the way the
4 data has been captured through genuine
5 engagement by the clinicians and then the
6 validity done by highly qualified peers has
7 led to the analysis resulting to have been
8 interpreted as very important to determine
9 best practice and change clinical procedures
10 and clinical guidelines.

11 A majority of registries have
12 PROMs as part of the tool set that they use.
13 And there is a lot of interest in PROMs which
14 has grown over the past couple of years. Some
15 of the registries were fairly early to look at
16 PROMs and I'll come back to that. And the
17 data they have shown and the impact that has
18 had on clinical practice has led many others
19 to say we also need to find good PROMs that
20 will let us, would allow us to be smart about
21 how we treat patients. And as was said
22 earlier, to make sure that we have appropriate

1 treatment and not overuse of surgery and so
2 on.

3 The next slide has four points to
4 it. These are the official arguments why
5 there is a strong surge of pushing for PROMs
6 across the Swedish registry. You know, as we
7 understand the diagnosis and treatment of
8 disease we realize the complexity of patient
9 segments and we need to gather more phenotypic
10 data than before. There's an increasing view
11 that personalized medicine will not be
12 answered through genomics alone, but we need -
13 - we understand by obviously combine genetics
14 and genomics with phenotypic data, that's
15 where the observational registries play a very
16 important role.

17 Secondly, there is the continuous
18 growth of the treatment options for patients.
19 And we need to find ways of understanding who
20 should have what. If we were trying to
21 discover that through classical prospective
22 double-blind studies that would take forever

1 and therefore these registries turn out to be
2 a very important tool by which we were able to
3 match treatment alternatives to patient
4 segments, patient cohorts.

5 Thirdly, the healthcare system is
6 changing very rapidly. There are new players
7 coming in. The Nordic in Sweden is
8 privatization happening. There's concern that
9 there will be slippage of indications for
10 elective surgery for instance. Therefore
11 PROMs have been seen as a very important tool
12 to make sure that we don't treat in ways that
13 don't benefit the patients.

14 And finally, and that's the point
15 I often made above, the individualized
16 medicine need, this is seen as a very
17 important contribution or tool as well.

18 On the slide after that I've just
19 summarized a set of points to illustrate that
20 there is a national organization for payers in
21 Sweden. That organization has defined as one
22 of its top strategic priorities to promote the

1 use of PROMs in Swedish healthcare.

2 So they brought together a group
3 of highly qualified experts who are advisers
4 to the registries who are seeking to develop
5 PROMs to make sure that that's done the proper
6 way through a dialogue with other colleagues
7 who have experience from it, and that the
8 validation models, et cetera, are thought
9 through properly so that the data can be
10 interpreted correctly.

11 I'm not either an epidemiologist
12 nor a statistician so I will not be able to
13 answer questions about the methodologies used
14 for validation here, but as I understand it
15 this is a well-equipped team that's supporting
16 the registries to do the right thing.

17 The next page, page 4, illustrates
18 the types of PROMs which are being used to the
19 right of the graph with the dark green color.
20 We've grouped the PROM categories into four.
21 And as you see roughly somewhere between 40-60
22 percent of the registries use PROM. And more

1 than half of the registries use at least one
2 of these categories of PROM measures in the
3 surveys they have to patients. So, both
4 activities of daily life, the patient
5 perception of the symptoms they have, general
6 satisfaction measures as well as quality of
7 life measures are being used. Often some of
8 the standardized tools, international tools,
9 in many cases but some cases these are unique
10 for the particular disease and thus specific
11 for the registry question.

12 On the next page, page 5, I just
13 wanted to illustrate something that we've seen
14 also internationally. I'll come back to that
15 when we look at PROMs in registries across the
16 world. That is differences between segments
17 of medicine.

18 The orthopedic registries were
19 some of the first ones in Sweden. A hip
20 arthroplasty registry was founded in 1979.
21 Cancer registries were also quite early. But
22 it is interesting to note that, it shouldn't

1 be surprising maybe, but the orthopedic
2 registries have quite early on invested quite
3 heavily in PROMs and more so than in most of
4 the other disciplines that we have represented
5 on this and the next slide.

6 It is interesting that in the
7 cancer field even for cancers such as breast
8 cancer where a very large number of the
9 patients treat, you know, nowadays survive for
10 a long time PROMs are very uncommon. And
11 we've seen that globally when we've looked
12 through cancer registries in many countries.

13 Here the survival data completely
14 dominates and even the -- if the patient
15 survives and many do in some cases, you know,
16 these quite heavy treatments we're not really
17 following up how that influences the activity
18 of daily life short- or long-term. And I do
19 think that if we want to have -- our view as
20 advisers to the drug industry for cancer drugs
21 is many of the innovations do not necessarily
22 extend the length of life but may have

1 radically better outcomes in terms of other
2 consequences for the patients. And we're not
3 really looking at that in most of the
4 registries. And here we think adding some of
5 the PROMs for some of the conditions will be
6 important in order for the pharma community
7 for instance to drive innovation in a way that
8 also benefits the patients beyond survival.

9 We can skip the next page. It
10 just shows a set of therapeutic areas that
11 we've -- in Sweden and the degree to which
12 they use PROMs, and move over to page 7. We
13 have over the past year initiated an effort
14 together with Michael Porter and the
15 Karolinska Institute formed something we call
16 the International Consortium for Health
17 Outcomes Measurements, ICHOM.

18 This is a not-for-profit effort
19 that will be launched first of November this
20 year. And what we've done there is we have
21 gathered the measures from 55 registries
22 across 16 conditions around the world, and in

1 a very systematic way organize those measures
2 to make it easy for clinicians around the
3 world to be able to search and compare what is
4 being measured across different diseases and
5 then across geographies.

6 The intent of it is by having
7 chosen registries that are perceived to be
8 leading for, you know, this limited set of
9 conditions we want to make it easy for
10 clinicians who want to start measuring to
11 choose measures that others have chosen and
12 validated and where there are large amounts of
13 data so they could easily start comparing
14 themselves to others.

15 So the intent of this effort is to
16 contribute to a standardization of what we
17 measure disease by disease, and therefore
18 contribute to a general standardization of the
19 way we look at outcomes and thus allow the
20 medical community across borders to an
21 increasing extent compare -- identify best
22 practice, compare results, identify best

1 practice and share that and thus drive the
2 development of clinical practice forward much
3 faster than will happen if we don't have these
4 measures and are enabled to compare apples
5 with apples.

6 If I could -- I won't dwell longer
7 on that but will be happy to -- could be a
8 topic for a separate discussion. But we, this
9 is a very exciting effort and we can talk more
10 about that if somebody has any questions.

11 But this particular slide
12 illustrates some of the PROMs that we have
13 pulled together and which ones are used, which
14 instruments are used for some of the different
15 registries we've looked at. You see for
16 instance the Swedish spine registry, Swespine.
17 We have the Singapore General Hospital low
18 back pain registry. There's a Norwegian
19 arthroplasty registry, et cetera. They're all
20 using EQ-5D for some of the PROM measurements
21 they do.

22 You see that the same registries

1 also use other instruments and there is a fair
2 amount of variation. We hope that
3 transparency on this will allow for comparison
4 discussions and maybe ultimately a larger
5 degree of standardization making comparison
6 across diseases and geographies easier.

7 The final two slides I wanted to
8 show you are the question of so how is this
9 being used, how are these PROMs being used.
10 Do they really influence clinical practice or
11 not? And one of the registries -- there are
12 two registries I'll talk about. The first one
13 is for hip arthroplasty, the other one is for
14 rheumatoid arthritis.

15 The hip arthroplasty registry
16 started using PROM protocols in 2002 and it
17 came about because of the fact that they had
18 registered for many, many years the duration
19 of the hip arthroplasty. So, and found
20 surgical techniques and medical devices which
21 led to much longer survival rate of the
22 implant and thus higher degree of satisfaction

1 of the patient.

2 But it took maybe 10 years to
3 optimize that and then they've had
4 difficulties in improving further. So they're
5 now turning to say we've taken innovation and
6 development of the surgical technique as far
7 as we can. How can we improve the health of
8 the patient further?

9 And of course the indication of
10 hip arthroplasty is that you have, you know,
11 pain or you are unable to function normally.
12 You are impaired quality of life and yet the
13 measurements, quality measurements have often
14 been the more mechanical one, whether the
15 implant has a long survival time or not.

16 So in 2002 they started looking at
17 PROMs. And without going through the details
18 there was a THA thesis published 2 years ago
19 about the PROMs. I spoke Friday met with the
20 leader of the registry and discussed a bit of
21 this with him.

22 One of the observations they've

1 made which is very interesting is that there
2 is a strong correlation between the mental
3 status of the patient preoperatively and the
4 degree to which they find that the surgery has
5 become better or has led to significant
6 improvement of their health. We've of course
7 seen that in other conditions in medicine but
8 here numerically it's become quite clear.

9 They've also found that if a
10 patient has been taken off antidepressive
11 antianxiolytic drugs prior to surgery well
12 then the outcome post surgery is also worse.

13 So what they're doing now is
14 they're translating some of the data into
15 decision support to try to help the surgeons
16 customize the treatment depending on the
17 profile, pre-surgical profile the patient has,
18 and to make sure that the outcome in terms of
19 quality of life and functionality is
20 significantly better. So the PROMs turns into
21 a decision support tool for the clinicians in
22 order to optimize the outcome beyond the more

1 classical outcomes looked at.

2 The next page and the final one is
3 from the rheumatoid arthritis registry that
4 quite early also started using PROMs in 1996.
5 They have taken this further than any other
6 registry in Sweden and earlier. It fully
7 integrated the PROMs into the registry.

8 Every patient fills in a set of
9 questions prior to visiting the doctor. In
10 the doctor's office the results from the
11 registry are visibly seen graphically and the
12 patient gets immediate feedback as well and
13 can see how the functionality has changed over
14 time. So it becomes a disease management, you
15 could say a support tool for the patient. It
16 increases their disease awareness at the same
17 time as it allows the physician to be more
18 effective during the patient visit by having
19 seen what the patient has reported in the
20 balance of the interview, the meeting.

21 The PROMs in this registry, you
22 know, has led to generally a much more

1 holistic view on the disease. It has raised
2 the patient's knowledge and influence over the
3 treatment and enabled them to influence the
4 choices to be made.

5 It's actually also, because it's
6 been done in a very rigorous, scientifically
7 sound manner actually increased the status of
8 the subjective dimensions of rheumatoid
9 arthritis discussion or diagnostics within the
10 physician community. So it's now seen now as
11 a very beneficial way of contributing to
12 better clinical outcomes.

13 And finally, it's -- the results,
14 the outcomes, the PROM-based outcomes is also
15 leading to changes in resource allocation so
16 that more resources are placed in some of the
17 subcategories of patients. And they're
18 classified partially through the PROMs now
19 which contributes to the choice of
20 pharmaceutical intervention which has been
21 shown to lead to a better outcome and thus
22 more productive use of some of the expensive

1 drugs that you have as treatment alternative
2 for this patient group.

3 So I'll stop here. I wanted to
4 provide you with an overview specifically from
5 Sweden where there are more registries than in
6 any other country in terms of high coverage
7 registries where PROMs have been used for
8 quite awhile.

9 And I think we're seeing some very
10 exciting examples of how it leads us into not
11 only continuously improving clinical practice
12 but also serving as an online decision support
13 tool to the clinicians as well as a tool to
14 help patients manage their disease. And thus
15 contributing to more efficient care while at
16 the same time improving the outcomes and the
17 quality of care.

18 So I'll stop there and open for
19 questions.

20 DR. PAWLSON: Thank you. You
21 know, two quick observations. One is isn't it
22 striking that we're just getting around to

1 including the patient perspective on diseases
2 that are defined by patient symptoms and
3 patient functional status in terms of
4 outcomes.

5 And the second is I have this
6 vision dancing in my head of orthopedic mental
7 health teams collaborating.

8 (Laughter)

9 DR. PAWLSON: That may be a little
10 farfetched. Questions specifically for
11 Stefan? And then we'll open it up for general
12 questions. In the back, all the way in the
13 back on the right then I'll move this way.

14 DR. SALIBA: Hello, this is Deb
15 Saliba from Los Angeles, UCLA VA and RAND. I
16 think it's phenomenal what you guys have done
17 to use your data and to take a look at it and
18 ask questions about improvement and what's
19 been driving improvement and why you've seen
20 a flat line in some areas of improvement.

21 One thing you may want to think
22 about when you're looking at arthroplasty, I'm

1 not seeing a whole lot about post-acute care
2 or rehabilitation issues. And I completely
3 agree that mental health is really important
4 but I think you also want to look at what's
5 happening in that recovery period.

6 DR. LARSSON: Yes, that's
7 absolutely right. Today reimbursement is
8 increasingly looking at the 2-year period and
9 the outcomes achieved in that 2-year period is
10 what some of the prior providers are being
11 paid for. That of course includes the whole
12 recovery phase and it provides a strong
13 incentive to do not only the surgery well and
14 avoid surgical infections but actually be very
15 early on in mobilizing the patient.

16 I think that what the registry
17 allowed to do quite early was to, you know, to
18 at the same time as you put the RG system in
19 place you have the registries in place. So
20 the length of stay for hip arthroplasty
21 patients is extraordinarily short as I think
22 it is in many places in the U.S. But it's

1 been demonstrated through the registries that
2 that early mobilization has many advantages
3 and not the opposite. So absolutely, the
4 patient part is absolutely an element of what
5 they measure that didn't show that properly.

6 DR. WU: Yes. Hey, Stefan.

7 Albert Wu.

8 (Comment in Swedish)

9 (Laughter)

10 DR. LARSSON: Nobody has
11 understood that, but that was Swedish.

12 (Laughter)

13 DR. WU: Oh sorry, I forgot where
14 I was.

15 (Laughter)

16 DR. WU: I think this is fantastic
17 and I wonder if you could give us some
18 examples or if there have been examples where
19 you have used PROMs to compare one institution
20 to another since you have such good coverage,
21 particularly for some conditions.

22 DR. LARSSON: Let me see. I think

1 in the rheumatoid arthritis registry they've
2 seen big differences between centers and how
3 they have -- what they have achieved on PROMs.
4 And the registries take a fairly active role
5 in not only making the data public. You know,
6 they each -- there are roughly I think for
7 many of the registries somewhere around 70
8 hospitals involved and much of the data is
9 made publicly available today. So not only
10 can you see where you are yourself but you see
11 where all your peers are.

12 So, the outliers typically will be
13 contacting those and have -- those with poor
14 results contact those who have very good. And
15 for some of the PROMs in the rheumatoid
16 arthritis registry there have been big
17 differences between centers. And that
18 typically leads to a dialogue where they then
19 figure out what to do to improve.

20 I can't give you an example of
21 specifically what those, you know, examples of
22 those measures but I have heard several

1 examples were cited that the big differences
2 that are leading to learning across and
3 changes in clinical practice.

4 DR. BASCH: Hi Stefan, it's Ethan
5 Basch at University of North Carolina. Nice
6 presentation.

7 To Albert's question because I
8 think that actually is, it's a really
9 important question. So the Swedish Rheumatoid
10 Arthritis Quality Register collects data at 64
11 clinics and it actually looks at change scores
12 over time and compares them between those
13 clinics. It looks at swollen joints, tender
14 joints, EQ-5D and a couple of other measures
15 of functional status.

16 But to my knowledge that's the
17 only one of the registries that's really
18 actively been comparing between practices.
19 And I think it really highlights the
20 difference between using registries for
21 effectiveness research versus performance
22 assessment.

1 There are lots of registries that
2 use PROs but they haven't explicitly been
3 designed to compare performance either within
4 or between practices. So I think the
5 challenge here is to take some of the
6 techniques that have really been honed in CER
7 and various contexts and bring them into the
8 performance improvement setting.

9 Nice presentation. Thank you.

10 DR. PAWLSON: Very good point. I
11 think we'll open up now to all the
12 presentations. So if you can just direct your
13 questions on who and we'll go to the back
14 there and then we'll move forward.

15 DR. GAGE: Thank you, Greg.

16 Barbara Gage from Brookings.

17 A little bit of a follow-up on
18 Ethan's point. In thinking about -- that was
19 a very nice presentation and in thinking about
20 the use of performance measures for payment
21 policies and some of the monitoring that
22 happens in a regulatory nature, Stefan, could

1 you say something about the discussions that
2 occurred regarding holding a provider or a
3 clinician responsible based on the patient-
4 reported outcomes relative to the clinician's
5 assessment of those outcomes? That's been
6 kind of a critical issue over here in the
7 States.

8 DR. LARSSON: Well, first of all
9 there's been no reimbursement linked to the
10 outcomes of the registry so far. There are
11 some early events that are happening in
12 Stockholm that have actually been so far no
13 reimbursement, you know, difference linked to
14 the performances. Sorry, I lost part of your
15 question. Could you repeat that?

16 DR. GAGE: Sorry about that. The
17 question had to do with the discussion even in
18 holding -- even in using the registries in
19 order to make the decisions about the
20 treatment options to --

21 DR. LARSSON: -- to the physician
22 responsibility. Yes. So, what the view is in

1 many of the registries that use this is that
2 the team treating the patient has a very
3 essential role to play in ensuring that the
4 patient reports satisfaction or that the
5 functionality for a newly operated hip joint
6 patient, et cetera, is high.

7 In discussions with the hip
8 arthroplasty registry, they clearly see that
9 as a failure on their part if the patient is
10 not reaching the target levels of satisfaction
11 and physical function that they had set out.
12 So there is no responsibility in legal terms,
13 that's obviously of big importance in the U.S.
14 because we don't have the litigation component
15 very much at all in the healthcare system, but
16 it is more from a professional integrity and
17 peer pressure point of view very important.
18 And you're seen as in charge of making sure
19 that the team, be it rehab team or others who
20 -- or physical therapy teams that will
21 contribute to your reaching the functional
22 target. You as the physician are seen as

1 responsible but not in a legal sense. I hope
2 that answers your question.

3 DR. LOHR: I wanted to compliment
4 all three of the speakers, I thought they were
5 terrific presentations. And this question is
6 directed at any of you who might care to
7 answer. And it has to do with, say,
8 feasibility and usability and costs. And I'm
9 curious whether any of you have any
10 information that would tell us something about
11 the administrative burden, the burden on
12 patients, what these systems cost for getting
13 this kind of information.

14 And sort of moving on from that
15 set of questions to whether anybody has ever
16 really tried to look at the cost-effectiveness
17 of doing this. I mean, we're all here because
18 we believe passionately perhaps in using
19 patient-reported outcomes and so forth but
20 lots of people are more skeptical and I'm
21 curious whether there have been -- any
22 analyses of sort of the cost-effectiveness,

1 the return on investment of doing this kind of
2 effort. Thanks.

3 MR. NUTTALL: It's David here. I
4 can have a stab at that if that helps. In
5 terms of from my experience --

6 DR. PAWLSON: We just --

7 MR. NUTTALL: Hello?

8 DR. PAWLSON: We're losing our
9 foreign end. Not so foreign speakers.

10 MR. CUNNINGHAM: Are you still on
11 the phone?

12 MR. NUTTALL: Yes.

13 DR. PAWLSON: Okay. So David or
14 Stefan or Liz, would you address that issue?

15 DR. LARSSON: David started I
16 think, at least I heard him well.

17 MR. NUTTALL: I'm not sure how
18 much you got. I'll have another go. I'll
19 keep it short. But I'll just say from my
20 experience that I think the cost question is
21 probably going to be contingent on the nature
22 of the system in which you're trying to

1 collect this data.

2 So, in England, in the NHS we make
3 the collection of this data a mandatory
4 requirement. It's a contractual term that
5 anyone that's providing NHS-funded services
6 must collect this data as, you know, a term
7 and condition of doing business with the NHS.
8 So, in terms of the burden around
9 administering a preoperative questionnaire,
10 that falls to the provider.

11 We have done some work to have a
12 look at what that burden is and to be honest
13 I think it's correlated highly with let's say
14 the quality of management of the institution.
15 So, some providers tell us this is trivial, we
16 fit it into existing practice, it takes no
17 time at all. Others tell us you know they had
18 to appoint a senior manager to oversee the
19 entire process.

20 And so the kind of cost of that
21 side of it go hand in hand with how
22 complicated they've made the administration

1 method. I think the message would be it can
2 be done very light touch and easy.

3 And then the way we have
4 implemented the actual collection of the data
5 and the processing is to do that through an
6 outsourcing contract. And I think it's --
7 while I can't go into the detail in terms of
8 unit costs of that contract I think it is fair
9 to say that over time as people have
10 understood the "ask" a bit better and
11 understood precisely how to collect and
12 process information, then the unit costs are
13 falling. As people become more familiar with
14 what's required we learn how to iron out some
15 of the bit that we put into specifications
16 which perhaps are less necessary and we've
17 streamlined the collections and so on and so
18 forth.

19 So I think burden is dependent on
20 how it's implemented. I think costs are
21 dependent on the nature of the system which
22 are implementing it, and I think over time

1 those costs will come down.

2 DR. PAWLSON: Stefan or Liz?

3 DR. LARSSON: Yes. The situation
4 in Sweden is similar to in Great Britain. The
5 majority of healthcare is publicly delivered
6 and publicly funded. But even now that the
7 privatization is growing quite rapidly
8 contributing with data to the registries is
9 compulsory for the private providers as well.
10 It's part of the contract that you have to
11 submit the data. And it becomes part of the
12 quality control also of the private providers.

13 The costs involved have been you
14 could say hidden in the monthly salaries of
15 the staff. It's been seen as one of the tasks
16 of team members to gather the data and submit
17 the data. And there have been some
18 calculations done as to so how much is that
19 all in all. We've seen some of those. I'm
20 not sure they're accurate.

21 The specific funding that's come
22 from the government to support these efforts

1 were very, very small. You know, at the time
2 a couple of years ago when we did our first
3 study on this there was 6 million Euro being
4 paid by the government to the registries which
5 supported some staff across some 65
6 registries.

7 We did a business case for the
8 government on this and said you should at
9 least fivefold this allotment to make sure the
10 registries are sufficiently staffed and that
11 IT platforms are being built appropriately, et
12 cetera. So now the -- and the decision was
13 taken by the government to do so. So this
14 year the budget is 20 million Euro and it's
15 growing to 30 million over the next year or
16 two.

17 But that's still a quite, you
18 know, small amount of money. So much of the
19 time is in fact salary time paid by the health
20 system as such.

21 When it comes to the return on
22 investment, you know, one of the things that

1 PROMs would allow you to do is to look at the
2 appropriateness of care. And we have a team
3 currently looking at the U.S. healthcare
4 system from the point of view of if it was
5 managed more on outcomes and value what would
6 be the savings.

7 I would argue that it would be
8 hard not to have a business case that would be
9 convincing for PROMs when you compare the
10 healthcare cost in the U.S. and the outcomes
11 compared to other OECD countries. I'm
12 absolutely convinced that the business case
13 would be staggering. I don't know if that's
14 the right word for it -- that's the word that
15 comes to mind.

16 But there is, I mean a challenge
17 is data-gathering is done by clinical staff
18 that are pressed for time and who if they
19 spend time gathering data like this would see
20 one or two fewer patients a day which is where
21 the bread comes in. So the challenge will be
22 not that the business case overall from a

1 societal payer point of view wouldn't be
2 convincing, it would be to motivate finance to
3 gathering of data and to motivate the
4 clinicians to do so at the expense of
5 potentially seeing fewer patients and reducing
6 revenues. So I think that's one of the key
7 hinges here.

8 And finally, I think it would be
9 key to make sure that the data-gathering is as
10 simple as possible, that some of this is
11 integrated into the electronic medical record,
12 some of it is web-based, automated as David
13 described in his presentation is happening
14 over in the UK. And in Sweden that is
15 happening but it's been reasonably slow. So
16 it's actually taking a lot of time from
17 clinicians to gather the data so far.

18 But I think the business case
19 would be absolutely convincing, you just need
20 to find the -- move money from one place to
21 another in order to fund it.

22 DR. PAWLSON: The point you just

1 made I think is really important to keep in
2 mind, and that is the extent to which this
3 information is really critical in treating the
4 patient. And I think a reasonable amount of
5 it is, or at least should be. It's nice to
6 know what our outcomes are.

7 I think we can probably take two
8 more questions. So, here.

9 DR. FRANK: Hello, this is Lori
10 Frank. I'm with the Patient-Centered Outcomes
11 Research Institute. Thank you all for those
12 presentations.

13 My question is a follow-up to the
14 last question about optimizing use of
15 collection of these PROMs. In what ways is
16 the full value of the PROMs being recognized
17 in terms of their value for direct-to-consumer
18 communication? So, you know, for David I know
19 there's some efforts with regard to choice and
20 for Liz, I'd be interested in hearing more
21 about the rating scale and how that's
22 communicated and how PROMs play into that.

1 DR. PAWLSON: Okay, Liz, you want
2 to address it first and then David?

3 DR. GOLDSTEIN: Sure. So for the
4 Health Outcomes Survey we've made these
5 outcome measures very prominent in our system,
6 or at least prominent in our calculations of
7 our overall rating for a health plan. So,
8 these measures receive our highest rate as an
9 outcome measure. So, we're trying to convey
10 to the public that this is really critical
11 information, actually, one of the most
12 critical pieces of information in our rating
13 system.

14 We encourage -- we do a lot of
15 testing of our displays for Medicare
16 beneficiaries. And so it's really hard to get
17 them to drill down to this detailed
18 information. Some of them are really
19 information gatherers and go down to the
20 details a lot, just use that overall rating
21 and ignore the details below it.

22 But something at least CMS is

1 doing a lot of work on as well as doing more
2 research about how to get people to drill down
3 and really see the value of these measures as
4 well as the other measures included.

5 DR. PAWLSON: Thanks. David?

6 MR. NUTTALL: I think certainly
7 with our program we have a challenge in terms
8 of making best use of this data and conveying
9 it to patients. I think when we set up the
10 program our thought was that the data would be
11 used primarily by patients to help them make
12 informed decisions about where to go and we
13 would publish it via website and we would go
14 from there.

15 And I think actually the key piece
16 of learning has been that the main audience
17 for the data at the moment other than kind of
18 managers of organizations looking at the
19 aggregate stuff is the clinical teams who want
20 to have much greater access to the
21 disaggregated data so they can have a look at
22 which dimensions their patients are doing

1 particularly bad in, you know, is that pain,
2 is it to do with pain control, and so on and
3 so forth. So, I think that's been a really
4 important learning point, that it's the
5 clinical teams that has the bigger oversight
6 than patients in the first instance.

7 And I think the other learning
8 point was that we have a lot of work to do to
9 try and convert EQ-5D profile scores, EQ-5D
10 index scores into meaningful information for
11 patients that's kind of digestible. I think
12 aggregate scores saying one is better or worse
13 than the national average is probably fine but
14 turning in a kind of 2.7 percentage point move
15 on the EQ-5D index is kind of meaningless to
16 a lot of people. So that is a challenge I
17 think.

18 DR. PAWLSON: Thank you. Steve?

19 DR. LARSSON: If I could just
20 comment --

21 DR. PAWLSON: Sure.

22 DR. LARSSON: -- on the way it's

1 been used in Sweden. You know, the data has
2 been public but oftentimes the data has, as
3 David said, very complex to interpret. And I
4 think an effort to just broadly disseminate
5 this information I think would be completely
6 confusing to patients. And in order for it to
7 be a useful tool we, clinicians need to spend
8 time making sure that we help with the
9 interpretation of it so it becomes meaningful.
10 So I think the specialist societies play a
11 very important role here in making it
12 available in a way that makes it useful for
13 patients.

14 We just did a survey across 9
15 nations for 1,000 consumers randomly picked in
16 each country. And it turns out that clinical
17 outcomes is the determinant that patients
18 primarily want to see in their choice of
19 medicine. It's often been viewed that
20 proximity and a hospital close to home is
21 important but it's clear that patients don't
22 have access to the information but when the

1 question is asked if you had access to high-
2 quality information what of all these
3 variables would you be using, would be most
4 important to you, and by far clinical outcomes
5 comes out as the measure they want to have
6 access to. So I think we would do medicine as
7 well as the public safer by helping package
8 that in a good way.

9 In some cases media has done it
10 reasonably well with, you know, scientific
11 journalists who understand enough of medicine
12 to make sense of the data. But there can
13 often be errors there as well.

14 DR. PAWLSON: Steve.

15 DR. FIHN: I think this question
16 is directed mostly to David but perhaps Stefan
17 could respond as well. I'm curious about the
18 extent to which you've been able to evaluate
19 whether implementing the PROMs has changed the
20 case mix of patients who are undergoing the
21 procedures. You could think about changes
22 that would be both in a positive and negative

1 direction. And I'm just curious the extent to
2 which that front end part has been evaluated
3 as well as the sort of change and outcome
4 piece.

5 DR. PAWLSON: And that was Steve
6 Fihn from our VA.

7 MR. NUTTALL: It's a good
8 question. To be honest I don't think we've
9 done a huge amount of work to have a look at
10 changes to, you know, as you suggest the case
11 mix which is going through. I think there's
12 probably a couple of points I'd try to make
13 there.

14 One is I think, you know, although
15 it has been running for some time since 2009
16 I suspect it may be too early to tell in terms
17 of it's only really it feels that now, kind of
18 3 years later that we're getting a lot of
19 traction with people looking at this data in
20 a very serious way and using it to kind of
21 think about clinical practice.

22 So it's almost like the first

1 couple of years were just embedding the
2 collection and getting it firmly lodged into
3 people's minds as a valid data collection
4 tool. So it may be too early to kind of do
5 that kind of analysis although it is feasible.

6 I think the other sort of factor
7 to bear in mind with all of this is the impact
8 of the general impact of the economy in terms
9 of our funding of interventions. There's a
10 line of argument which is that we will be --
11 irrespective of the data set we would be
12 seeing the more severe cases going through now
13 as commissioners decide to -- or implicitly or
14 explicitly put more stringent referral
15 criteria on. And I think that's something
16 that we could look at in time.

17 And then the only other kind of
18 final, final point on that would be I think
19 what we have seen is that on average the mean
20 scores have gone up over those 3 years. And
21 so that would be consistent with either
22 quality of care going up which would be great

1 but that's a short period of time for that to
2 happen in, or that we're actually focusing on
3 the cases where there's most potential
4 clinical benefit. So that's not really a full
5 answer, more just a set of things to think
6 about I guess.

7 DR. PAWLSON: And Stefan, do you
8 have a quick comment on that?

9 DR. LARSSON: I can't say that
10 it's influenced case mix to my knowledge. I
11 know one of the observations done in the
12 rheumatoid arthritis registry was the
13 observation that smokers turn out to much less
14 responsive to TNF-alpha inhibitors. I think
15 that piece of information came through the
16 PROMs. That clearly led to changes in the
17 prescription pattern for those patients. So
18 I think that might be an example but it's not
19 the typical PROM measure either. So I would
20 have to look into that.

21 DR. PAWLSON: Well, on behalf of
22 everyone here I'm sure thank you so much for

1 your really excellent presentations.

2 (Applause)

3 MR. NUTTALL: Thank you very much,
4 it's been a pleasure.

5 DR. LARSSON: Thank you.

6 DR. PACE: David and Stefan and
7 Liz, thank you for joining us. And you're
8 welcome to stay online and listen as long as
9 you like but we're going to take a short break
10 here. And again, thank you so much for taking
11 time out to share your experiences with us.

12 We'll take a break now and try to
13 limit it to 10 minutes. We'll reconvene the
14 next panel at 11:25.

15 (Whereupon, the foregoing matter
16 went off the record at 11:13 a.m. and went
17 back on the record at 11:28 a.m.)

18 DR. ADAMS: Okay, so our next
19 panel is going to be on a recap of the key
20 characteristics for selecting PROMs for use in
21 performance measurement. First I'm going to
22 introduce our panel to you but if you recall

1 from our first workshop we spent quite a bit
2 of time on these characteristics and also
3 everyone was sent out a survey because staff
4 took an attempt to distill that information
5 which was very rich.

6 So we're going to have a chance to
7 do a bit of recap not so much to spend time on
8 the first workshop but to really use this as
9 a springboard for our discussions as we take
10 deeper dives into discussions around
11 reliability and validity.

12 So I did want to introduce our
13 panel for this session. My colleague, Karen
14 Pace, who is our evaluation methodologist
15 expert here at NQF. And Karen's going to for
16 each panel you'll see she's going to go
17 through in a bit more detail the NQF
18 endorsement criteria and how this relates.

19 And of course what we're going to
20 be asking from you and including our audience
21 and those listening on the line is what are
22 some considerations we might need to take in

1 regards to PRO-based performance measurement.

2 I'm also pleased that Liz Mort is
3 joining us from Massachusetts General Hospital
4 and Laurie Burke from the Food and Drug
5 Administration. Regrettably, Jennifer Eames
6 who was also going to be on the panel could
7 not join us today. She does send her regrets
8 but Patti Brennan is going to fill in for her.
9 So, I want to thank our panelists for the prep
10 that really helped shape this and for their
11 contributions during the session.

12 So I'm just going to get started.
13 If we could have the next slide, please. So,
14 we're always going to touch back to this
15 terminology. As Joyce said earlier, the terms
16 we use of course are important. And here
17 we're going to be talking about the
18 characteristics that you had identified for us
19 last time from a PROM which is an instrument
20 or scale to a PRO-based performance measure,
21 a PRO-PM.

22 And as we think about the entire

1 day we're building a pathway. So we have a
2 schematic representation that was sent out in
3 your handouts. We have a color version at
4 your seats. But what we're trying to do very
5 pragmatically is build this tool or these
6 building blocks as we think of how we would go
7 from a PROM to a PRO-PM. So we're keeping
8 that in mind as we go. So if I may have the
9 next slide, please.

10 So I'm going to do a little bit of
11 history. At our last workshop, the expert
12 panel, we discussed what I would consider the
13 highest leverage characteristics for
14 identifying PROMs which are most ready for
15 prime time as we start to think about
16 performance measures.

17 And I think that there was general
18 consensus that the psychometric properties
19 that were very elegantly detailed in the paper
20 with David Cella and colleagues was really a
21 baseline. And so David, allow me to thank you
22 and your team for the terrific work you did on

1 the paper but also from the last workshop,
2 some really great discussions.

3 So we felt that what we're calling
4 affectionately it was Table 4 in your handout
5 really was a very good baseline for us.
6 However, I think that the discussions last
7 time really offered some very helpful
8 guideposts. You know, what do we hold true
9 particularly as we think about moving this
10 into accountability type of programs.

11 And so from that rich discussion
12 the NQF staff -- I say this humbly because we
13 got such great feedback -- we tried to distill
14 that into some additional statements which you
15 provided input on. And those were sent out to
16 you and you completed a survey saying, you
17 know, did you agree, did you agree with some
18 modification or did you disagree.

19 From a survey perspective we're
20 very pleased with the response rate, over 70
21 percent from our expert panel so thank you
22 very much. And I think particularly since

1 this was done during holiday time at end of
2 August I thank many of you for doing that from
3 your vacations.

4 So today we're going to really
5 spend time on refinement of these
6 characteristics, and I think in particular
7 looking at this in relationship to the NQF
8 endorsement criteria. And I think from my
9 perspective having done some of the synthesis
10 here with our team these are very mutually
11 reinforcing. So I'm going to ask for the next
12 slide.

13 So, if you'd like to look along in
14 your handouts that you received we provided an
15 attempt to do some redline edits to the
16 statements. And we had statements around
17 actionability and meaningfulness and
18 facilitating shared decision-making and
19 implementableness.

20 As opposed to going through the
21 redlines at this time we really wanted to
22 focus on the high-level concepts and of course

1 our reactor panel here will be helping us.
2 And as we said, terms and words are important.
3 So as we go throughout the day we will further
4 refine these statements. But I thought it
5 would be important to share back some of the
6 comments that were received and some of the
7 themes that converged around this survey data.

8 And I hope that we've captured
9 your voice adequately but I know that you'll
10 be able to help us out here. But I think in
11 this theme around actionability it's this
12 notion that key end users, and importantly
13 patients and persons and providers and systems
14 should be motivated by the PROM to lead
15 improvement.

16 And this thing of amenable to
17 change or would this spur, but I think this
18 was an important theme, particularly in the
19 written comments that came through. Also,
20 that the evidence should indicate that care
21 can be improved in a relatively short time
22 period for the patient respondents. So we're

1 always taking our patient- and person-centric
2 view and that there should be value with this.
3 And many felt that this was very much linked
4 to our meaningfulness criteria. So many of
5 these characteristics aren't mutually
6 exclusive but I would say mutually
7 reinforcing.

8 Also, it was pointed out that
9 certainly randomized control-level information
10 or evidence is critically important, but that
11 we should, and particularly when we're looking
12 at this now and in our early stages take into
13 consideration a range of evidence. And
14 certainly what we're doing now with expert-
15 based opinion, face validity, other things
16 that those would also be important things to
17 consider. I think we had this discussion last
18 time, that certainly evidence is along a
19 continuum and it needs to be applied
20 appropriately to what's being examined. So,
21 but this was reinforced with several of your
22 comments so I did include it here.

1 And then this was a very
2 enlightening comment for me. I think that we
3 touched on this a little bit but I welcome
4 additional insight here. It's that some
5 outcomes are worth measuring that might not be
6 amenable to change by providers but patients
7 need to make informed decisions and it could
8 be quite useful to them. And so some of the
9 examples were given were pain after
10 intervention and functional status and
11 treatment.

12 And because I spoke with Jack
13 about this earlier I'm going to tee him up for
14 that. And I thank you for raising that for us
15 because I think that is -- it's beyond a
16 nuance and I'd love for us to have a bit more
17 further discussion on that.

18 And so these are the key themes
19 from our first area around actionability.
20 We're going to go to our next area in the next
21 slide and meaningfulness.

22 And when I looked at the

1 qualitative comments that were provided we saw
2 lots of intersections with meaningfulness and
3 burden, and in particular burden to
4 respondents and administrators, and the
5 implications for that.

6 In our chart that David Cella and
7 team very succinctly distilled for us burden
8 was called out as a characteristic in and of
9 itself. It raised to that level. But I think
10 Patti, you as well as others remind us but
11 also saw very strong connections to the
12 meaningfulness.

13 And when we think about the PRO
14 it's the concept that the PRO is capturing,
15 that it's -- we have to think about what the
16 PRO is capturing, not just the PRO itself.
17 And that it's important to include the
18 patient's perspective on the impact of the
19 condition or the treatment and this impact on
20 their life. And I think when Karen speaks to
21 the NQF criteria this certainly is something
22 that we'll touch on a bit more.

1 I think many in our disability
2 community emphasize for us and we tried to
3 capture that in the redlines but we welcome
4 further refinement here is that we often think
5 of things like health-related quality of life,
6 symptoms, et cetera, but that also we would
7 want to think of certain long-term care
8 service and supports that you would want to
9 capture that move us beyond an acute episode
10 of care and into our community support. So
11 keeping in mind that we have been pushing
12 beyond the hospital walls.

13 And importantly that when we think
14 about perspectives that caregiver's
15 perspectives would be important to include as
16 well.

17 So I'm going to go to the next
18 category. And this is the facilitate shared
19 decision-making characteristic that we would
20 like to apply to PROMs. Based on the comments
21 and naturally we welcome discussion here I
22 don't think that the respondents disagreed at

1 all. They supported that certainly shared
2 decision-making is a critical concept and a
3 critical process that needs to take place.

4 What there was some indecision and
5 so I put this forth simply to capture some of
6 the insights that were shared is that not all
7 performance measures need to facilitate shared
8 decision-making. This was a common theme
9 amongst a couple of the respondents. And so
10 if this is going to be a characteristic that
11 we apply universally is this something we
12 should consider. I put that forth. Obviously
13 this is up for discussion but since it was
14 raised.

15 And also there was a comment that
16 shared decision-making, not all patients want
17 this or it may not be evenly distributed, et
18 cetera. So are these things we need to take
19 into consideration.

20 And a couple of respondents
21 thought that this might actually have some
22 redundancy or duplication with actionability.

1 Once again, not to say that the respondents
2 firmly supported shared decision-making and
3 that this part of engagement is critical, but
4 just some considerations in that regard.

5 If you recall we, in some of the
6 discussions from last time we talked about how
7 there might be a -- how we might sufficiently
8 standardize some of these outputs and roll
9 them up to a population or accountable entity.
10 And some felt that saddling that only onto
11 shared decision-making wasn't quite fair
12 because really these aggregation issues apply
13 across all our PROMs.

14 But I think here it was, you know,
15 how do we -- since we want to look at
16 patient's preferences and things like that how
17 might we standardize that. Because you're
18 customizing but you need a level of
19 standardization. So, whether we should in
20 that statement not hang the aggregation issue
21 specifically on that because it is
22 crosscutting across all of these.

1 And then you know, there was a
2 comment around is shared decision-making too
3 broad, should we say that this is patient
4 engagement, that certainly patient engagement
5 and using PROs as a step. We can discuss that
6 more. I think the important thing is that we
7 wanted to bring out patient engagement and
8 shared decision-making. And there could be
9 certainly additional wordsmithing to the
10 actual statement but where we stand on these
11 other issues is part of our dialogue today.

12 And then last but not least we had
13 the criteria which I have difficulty
14 pronouncing but implementableness or is it --
15 you know, when you're typing this stuff it's
16 like how do you -- is it -ability, is it -
17 ness. But anyhow, implementable. And so --
18 thank you. That was a tongue-twister for me.

19 And you know, in this
20 characteristic I think we were trying to
21 capture a lot of things. We talked about IP
22 issues. We talked about many things. And so

1 several respondents did say you're covering a
2 lot here and it may be hard to map to all
3 these requirements. And what measure, not
4 only a PROM, could possibly meet all these
5 requirements.

6 But the important message is that
7 implementation issues and as we learned from
8 our prior panel are very critical and they
9 should inform our decision-making. And as we
10 look on our action pathway when we go from
11 PROM to PRO we have number 5 which talks about
12 how do we implement this in clinical practice.

13 However, maybe this criteria we
14 might want to look at how we can streamline
15 this. Some felt it was already covered under
16 the other topical areas of actionability and
17 meaningfulness. And then we kept wanting to
18 insert disparities because that was very
19 important to this group but some felt that
20 disparities were not indicators -- disparity-
21 sensitive measures were not indicators of
22 implementability.

1 And then importantly it was raised
2 that we need to think about ease of fielding.
3 I think a lot of this gets into missing data
4 elements and things like that, but ease of
5 fielding this and testing it could have impact
6 on implementability.

7 So this is a quick synopsis of
8 your feedback. And then if we can go to the
9 next slide. Okay, great. Just wanted to make
10 sure we were at the last.

11 So, with that discussion it was
12 just a bit of a primer. We wanted to feed
13 back to you what we heard from the survey,
14 what some of the key themes are. We'll
15 continue to refine those statements over time.
16 We're going to discuss in this order. Liz is
17 going to speak with us about actionability,
18 Patti about meaningfulness and then Laurie
19 certainly last but not least but certainly
20 around the implementableness. And certainly
21 you have experienced that. But Karen's just
22 going to give us a brief overview of the

1 intersections here with the NQF endorsement
2 criteria. Thanks, Karen.

3 DR. PACE: Good morning. So, what
4 I'll be doing at each session is just giving
5 a brief overview of some of the criteria.
6 Next slide, please.

7 So we'll be always -- next one.
8 There we go. So again keep in mind that NQF
9 does endorse the performance measure which
10 we're referring to as PRO-PM versus the
11 instrument. However, our criteria, there's a
12 lot of overlap of how these things apply to
13 the data that are going to go into the
14 performance measure. So I'm going to just
15 highlight some of the criteria that although
16 we're talking about performance measures also
17 have an intersection with the PROM, the
18 instrument or scale. Next slide.

19 So, I'm just going to quickly
20 mention psychometric properties. We're going
21 to have three panels talking about that. But
22 basically our criterion about scientific

1 acceptability of measure properties
2 specifically focuses on reliability and
3 validity.

4 And we do allow for testing at the
5 data electronic or the performance measure
6 score. And we'll get into some of those
7 distinctions in the specific panels. But just
8 wanted to mention that we do have reliability
9 and validity of the data which would be from
10 the PROM instrument or scale. And then we're
11 very interested in the reliability and
12 validity of that actual performance measure or
13 the score that a hospital or a healthcare
14 facility would receive. Next slide.

15 So in terms of actionability we
16 would see this falling under our major
17 criterion of importance to measure and report.
18 And there's a couple of related sub-criteria.
19 One is a performance gap or opportunity for
20 improvement. And generally when we endorse a
21 performance measure we like to endorse
22 something where, you know, everyone's not

1 doing well because we want to put our
2 resources for data collection, reporting,
3 analysis on those areas that are really going
4 to push us forward in improving healthcare and
5 health.

6 But the key one here is our
7 criterion about evidence. We do under
8 importance to measure and report have a
9 criterion about evidence. We say under this
10 criterion that the measure focus is a health
11 outcome or it's evidence-based meaning that
12 there's evidence that links the structure,
13 process or intermediate outcome to a desired
14 health outcome. And when we're looking at
15 this evidence we're looking at the quantity,
16 quality and consistency of the body of
17 evidence.

18 And I want to emphasize that our
19 criteria do not require that this be
20 randomized controlled trials. Depending on
21 the focus of measurement and healthcare in
22 general there's lots of different kinds of

1 evidence but we are talking about empirical
2 evidence, not just expert opinion. Next
3 slide.

4 The reason we have "health outcome
5 or" and Helen mentioned this at our last
6 workshop, that we really have a preference for
7 health outcomes. And we think that health
8 outcomes by their nature have a special place
9 in terms of performance measurement because
10 that's the reason for providing healthcare
11 service, it's the reason for seeking
12 healthcare service. And for these -- and also
13 there's multiple processes that influence any
14 particular health outcome.

15 So we really for health outcomes
16 ask for a rationale that supports the
17 relationship of that health outcome to
18 processes or structures of care. So some of
19 the PROMs that we're talking about would be
20 considered health outcomes. Some might be
21 considered intermediate clinical outcomes.
22 And I think that's an area where we'll have

1 some discussions.

2 Certainly for intermediate
3 clinical outcome and an example of this in a
4 clinical sense would be something like blood
5 pressure or a particular lab value or a
6 process or structure is that we really want to
7 see a systematic assessment and grading of the
8 quantity, quality and consistency of the body
9 of evidence, that that particular aspect of
10 healthcare that's being measured actually is
11 linked to desirable health outcomes.

12 And then certainly experience with
13 care, what our guidance states is that the
14 evidence -- there should be evidence that the
15 measured aspects of care are those valued by
16 patients and for which the patient is the best
17 and/or only source of information, or there
18 may be evidence that experience with care is
19 correlated with desired outcomes.

20 So, all of these things that are
21 already in our criteria we think relate to the
22 idea of actionability but we probably will

1 need some more discussion about where we have
2 our emphasis on health outcomes. Next slide.

3 So, meaningfulness. We think this
4 again relates to our NQF criterion of
5 importance to measure and report, certainly
6 evidence that the measure is a health outcome
7 or is evidence-based and what I just mentioned
8 about experience with care relate to
9 meaningfulness. We also have a criterion, a
10 sub-criteria of high impact, that it's related
11 to a national health goal or priority. And
12 we've heard that patient engagement, patient
13 experience are certainly important aspects of
14 our national health goals and priorities.

15 And certainly we look at the data
16 on numbers of persons affected, high-resource
17 use, severity of illnesses or consequence of
18 poor quality. And then our criterion about
19 usability and use also relates to
20 meaningfulness. Next slide.

21 And this is a criterion. In your
22 handout it's an addendum. We're in the

1 process of revising this particular criterion
2 so this is the new information here. But this
3 really focuses on accountability and
4 transparency and improvement.

5 And we've already mentioned that
6 NQF-endorsed measures are intended for use in
7 an accountability application. And we really
8 want to see that they end up being in use or
9 that there's a credible plan to get them in
10 use. But certainly all of the measures should
11 be available for improvement. And again, we
12 want to look at how these measures are really
13 helping with progress in achieving high-
14 quality and efficient healthcare. Next slide.

15 And implementable really relates
16 to our criterion about feasibility. And next
17 slide.

18 And the elements that we look at
19 under feasibility are that the data -- if it's
20 clinical data generated and used during care
21 process we think that this certainly makes it
22 more feasible. And I think this again is an

1 area that we'll talk about. What we're
2 talking about here is if it's something that's
3 done outside of the care process it becomes
4 more burdensome.

5 And I think that's part of our
6 discussions about PROMs actually being used in
7 clinical practice. If they're relevant for
8 clinical practice then the data will be there.
9 Certainly electronic sources make things more
10 feasible. And we want to see information that
11 the data collection strategy can be
12 implemented.

13 Okay, I think that's the end of my
14 slides. And we'll turn it over to Liz.

15 DR. MORT: Thank you, Karen. Can
16 everybody hear me okay? No. The mike is --
17 can you hear me now? Okay.

18 So, I've been asked to speak a
19 little bit about accountability. I think some
20 of the comments that Karen and Karen made were
21 very clear and I don't want to be redundant
22 but I do want to put some focus on this from

1 the provider's perspective.

2 I think the actionability issue is
3 critical and that actionability defined as
4 responsiveness to healthcare interventions, if
5 we don't have a healthcare intervention that's
6 going to advance or improve a patient-reported
7 outcome that measure really has no business
8 being in an accountability framework. That
9 measure may have a very important role in a
10 measure to help stratify patients or
11 understand what basis you're dealing with from
12 a patient's perspective, and that measure may
13 have a very important role in research in
14 quality improvement but I think it's just not
15 a good thing to be taking measures, as
16 compelling as they may be, as interesting as
17 they may be, as important to patients as they
18 may be, I don't think unless there is an
19 intervention that those should be in an
20 accountability framework.

21 And then the reason I say that is
22 that we have enough to do in the course of

1 taking care of patients where there are
2 interventions that are known that we should be
3 spending our time working on the things that
4 we know we can improve. And I know myself and
5 my clinical colleagues feel bothered when
6 they're asked to do things that they feel
7 detract from the clinical value that you can
8 bring to a conversation. Again, not that
9 many, many of these things that we want to do
10 aren't important in the research environment,
11 but until you have a defined and either proven
12 through RCT or other forms of evidence they
13 really don't belong in the accountability
14 framework.

15 So, what about those actionable
16 measures? Now, there are actionable measures
17 and there are very actionable measures and
18 there are barely actionable measures. And
19 that's one of the reasons why I think the ones
20 that are clearly not should just not be on the
21 table. And I think it's important when we
22 look at these measures and we evaluate them

1 for endorsement that we consider the spectrum
2 of actionability because it's very, very
3 important.

4 So let me start. And this really
5 comes ripped from the headlines. We're trying
6 to implement these. We are implementing PROMs
7 at Partners Healthcare. I gave those of you
8 who were here last time a brief overview.

9 Well, it's marching ahead apace
10 and many, many of our clinicians are extremely
11 enthusiastic and anxious to get onboard this
12 data collection effort. And not surprisingly
13 the clinicians who are interested in
14 participating are those that have measures
15 that are highly actionable.

16 So let me give you an example. In
17 the urologist world we have lower urinary
18 tract symptoms. So frequency, urgency and the
19 like. I won't get into too much of the
20 clinical details.

21 But you can scale those, we've
22 been scaling those for decades, and you can

1 intervene in many, many different ways
2 including everything from watchful waiting if
3 that's what the patient's preference is to
4 lifestyle changes, to medications, to
5 minimally invasive surgery and to surgical
6 surgery. And guess what? The symptoms
7 change. So that is I would say a PROM measure
8 that is a very highly actionable measure.

9 And that the other key point I
10 would say is that what we find in RCTs in
11 efficacy studies translates reasonably well in
12 real life or in effectiveness. And so that's
13 why I think this particular example hits on a
14 bunch of different issues that are important
15 when you tease apart actionability. So it has
16 to be highly actionable and it has to be
17 demonstrated outside of an RCT that you can
18 actually do this in practice. So I think that
19 kind of -- a clinical scenario with those kind
20 of measures and those kind of interventions is
21 well suited.

22 Another one that I'm getting lots

1 of interest in is from the orthopedic surgeons
2 who are very, very interested in shoulder
3 repair, either rotator cuff or shoulder
4 replacement. And there are good measures, and
5 there are strong interventions, and there's
6 demonstrable improvement. Again, it's
7 important to stratify and so on and so forth
8 but it's highly actionable and there are
9 strong interventions.

10 So let's move to the next category
11 that I would say is more moderate, depression.
12 So we can measure depression and we can act on
13 depression. You can't treat everybody. You
14 can try and there's lots of different things
15 and there's referrals so I'm saying it's a
16 very important measure to have as an
17 accountability measure but we have to take
18 that into consideration when we set it up.

19 And how it's used as an
20 accountability measure because the last thing
21 you want to do is put out a measure that
22 incents providers to treat and treat and

1 treat, to add medications, to try referrals
2 that may end up for some patients not working
3 and potentially harm them. So that's what I
4 would say is kind of a middle ground.

5 And then I'll give you an example
6 of what I would call a weakly actionable,
7 probably weak to not actionable would be
8 dementia, Alzheimer's dementia. There are two
9 classes of medications that are used now in
10 practice to help slow the rate of decline in
11 patients who have Alzheimer's-type dementia.
12 But it's very hard to really demonstrate
13 improvement in clinical trials let alone in
14 practice. So I would not as a physician at
15 this point in time want to be held accountable
16 despite the fact that there are drugs out
17 there that have been shown to have impact on
18 some patients. It's a weak intervention,
19 therefore a weakly actionable, weak to not
20 actionable measure if you're looking at some
21 kind of functional status for patients with
22 dementia.

1 So I think that gives you the
2 range of types of actionability that must be
3 considered, that should be considered when
4 you're trying to set something through a
5 process to decide whether it's a good measure
6 for accountability.

7 But I hope I've made the point
8 that if there's no evidence for actionability
9 that it really should be off the table.
10 There's too much disease burden on the table
11 that we can treat. That's what we should
12 focus on first. And then all the cautionary
13 notes about strength of actionability,
14 differences between efficacy and
15 effectiveness.

16 And the last point I'll leave with
17 because I'm looking right at Jack Fowler and
18 I can't help myself is that and another really
19 important consideration is patients, how they
20 view all these symptoms. So you might have a
21 patient with a symptom that's highly
22 actionable, but if their tolerance or their

1 preference or their bother with it -- thanks,
2 Jack. Jack's one of my very favorite mentors.
3 If they're not bothered by the symptom and
4 it's perfectly legitimate for them to have the
5 quality of life they want then trying to move
6 that symptom would be harming the patient. So
7 I think you have to take that into
8 consideration as well.

9 DR. BRENNAN: Hi, I'm Patti
10 Brennan. I'm among other things the director
11 of the National Program Office of Project
12 HealthDesign which has been a multi-years
13 project trying to better understand health in
14 everyday living. So much of the work I'm
15 going to be talking about today and the basis
16 for my comments will come from my experience
17 with Project HealthDesign.

18 The concept of meaningfulness is
19 well laid out in our early discussions here.
20 And the idea that a patient-reported outcome
21 measure or a person-reported outcome measure
22 should be meaningful largely is linked to the

1 idea that it's meaningful to the individual
2 patient, meaningful to the individual or the
3 persons involved in that individual's care.
4 So I am going to be focusing significantly on
5 how meaningfulness intersects with the patient
6 and the person's experience of their health
7 services rather than meaningful in the course
8 of a treatment plan which I recognize is also
9 important.

10 Then we've been asked to talk
11 about two issues, how do we engage patients in
12 the selection of PROMs and then how do we
13 document that engagement.

14 So I wanted to begin discussing
15 meaningfulness by using three C's, three
16 words. First of all, meaningfulness on the
17 conceptual level, secondly, meaningfulness on
18 the contextual level, and third,
19 meaningfulness on the consequential level.

20 On the conceptual level we're
21 focusing on to what the PROM actually
22 measures. What is the patient-reported

1 outcome or the concept underlying this. And
2 often those PROs, the outcome -- sorry, the
3 concept is linked to some kind of clinical or
4 professional definition of what is health and
5 what is healthcare. As a starting point we
6 need to relax that a little bit and we need to
7 listen to the way patients identify their
8 health, their health experience, what they
9 understand.

10 And while we divide the world up
11 into clinical specializations or locations of
12 care, patients live in one body and they
13 divide the world up inside of the inside and
14 outside of their body, period. So as we're
15 talking about the conceptual basis of a PROM
16 listening and engaging the patients in a
17 dialogue and engaging people in a dialogue
18 around how the language shapes and determines
19 and provides meaning to the concepts that will
20 be measured is a critically important first
21 step.

22 In our case we use the phrase

1 "patient-defined and patient-generated" to
2 describe two rather separate areas. Patient-
3 generated are the sensations, the experiences,
4 the ideas that an individual and only that
5 individual can report. But they may be
6 reporting them in response to things that we
7 say, how is your pain, how much can you bend
8 your arm. Those are things that have clinical
9 meaning in our professional practice.

10 Patient-defined is the
11 individual's experience of that stimulus that
12 leads them to be able to report or generate a
13 response about it in response to their health
14 status. And that may include, for example,
15 can I lift up my child. Can I walk to work
16 holding hands with my son. The idea of not
17 can I flex my arm this much but can I do what
18 I want to do in my life.

19 Other aspects of patient-defined
20 may become much more abstract. The tenor of
21 a conversation at dinner being tense or not
22 tense is something that's really quite

1 difficult to map to a specific professionally
2 validated indicator but it may for that
3 individual patient be the concept that tells
4 them that their medication for depression is
5 improving or not improving.

6 So as we begin to bring patients
7 into the concepts and setting meaningfulness
8 of our patient-reported outcomes we need to
9 recognize that we first have to listen to
10 them. We don't stop at that point. There may
11 be very good reasons to have professionally
12 selected, professionally defined and patient-
13 generated PROs and patient-reported outcome
14 measures, but we can't begin the process
15 without first listening and finding the cross-
16 mapping between what is meaningful in the
17 patient's language and what is meaningful to
18 us about that individual.

19 The scope of care defines this
20 very much. And I heard discussions in our
21 earlier comments today of the tension between
22 a clinically targeted measure and a general

1 measure. And in fact I guess I'm asking to
2 think about a third way of defining the
3 measures, neither clinically specialty-focused
4 or general, but actually patient-focused in
5 terms and the experience that individuals
6 have.

7 Their experience of care is not
8 divided up based on the offices in a hallway.
9 Their experience of care is the experience of
10 the individual. So we may need to think about
11 indicators that transcend different points of
12 care as we find which concepts are most
13 meaningful to the individual.

14 Second, I want to talk about
15 contextual. Where do PRO and PROMs become
16 meaningful to the individual? They often
17 become meaningful we heard earlier today in
18 being able to learn of a provider's
19 performance and therefore begin to select
20 providers. This provider is responsive to or
21 has interventions for something that is
22 important to them.

1 But people also find it meaningful
2 to participate in the larger social exercise
3 of health. And there is an altruism
4 experienced by individuals when they believe
5 their input is sought and respected in
6 determining the quality of care for themselves
7 and those around them.

8 So to make the experience of
9 patient-reported outcome measures and
10 selecting PROMs for individuals meaningful to
11 patients may include thinking about how it
12 allows them to participate in the larger
13 social discourse about care.

14 Third and importantly, we heard in
15 our previous slides about the usefulness of
16 PROMs for an individual's own care. And I
17 want you to think about that from two
18 perspectives, one in the moment when we're
19 capturing that information, how meaningful is
20 it for a person to know this about him- or
21 herself at that moment, and second in the
22 clinical encounter. How meaningful is it for

1 that person to share that observation or share
2 that PROM with their clinician to make a
3 determination about how their own care is
4 progressing.

5 I've heard a lot of discussion
6 about the second kind of care, that it would
7 be nice to have measures, PROMs that can be
8 both useful to tell us about how a system is
9 functioning and how this particular patient is
10 improving or not improving. But I want you to
11 also think about the meaningfulness of the
12 individual who's capturing that, who may not
13 be sitting in the clinic waiting for a visit
14 or filling an after-survey, but may be 2, 6,
15 8, 12 months after the encounter and being
16 asked to recall something -- provide something
17 about their daily life to help us interpret
18 how good the care that they received was. At
19 that moment it would be also useful for the
20 individual to use that marker as a self-
21 assessment, as a way to meaningfully
22 understand how they have changed in their

1 life.

2 Now I want to move onto
3 consequential. The meaningfulness of PROMs
4 can be established by looking at the
5 consequence of knowing about them. And
6 although we don't think of this as a patient-
7 valued or patient -- an individual patient
8 experience, by ensuring that there's good
9 quality providers around we are providing
10 something for the patient. So the measurement
11 or the use of PROMs is in fact useful on a
12 consequential level.

13 So it is incumbent upon us as we
14 begin to observe, as we begin to collect
15 patient-reported outcome measures that they
16 feed back into assuring that the practice is
17 of good quality, that the clinicians are
18 fairly compensated, that the practice can
19 financially sustain itself or the institution
20 can sustain itself.

21 Assessment of patient-reported
22 outcomes through PROMs can in fact have

1 important consequences on the availability of
2 health services for individuals, the type and
3 the responsiveness to the individual's needs.

4 I want to close my remarks by
5 making two more points. The first is that our
6 work today is really not about PROMs. It's
7 about PROMs -- patient-reported outcome
8 performance measures. We're here to discuss -
9 - recommend to the National Quality Forum how
10 to address the performance measurement.

11 And we don't specifically think
12 about how patients will be engaged at that
13 level, what thresholds should be set, or how
14 much of a gain or loss is tolerable. And yet
15 it's important that we consider not only
16 having patients involved in the selection of
17 the measures but also in the way that they are
18 used and interpreted and reported.

19 So moving forward I have four
20 points for a national agenda related to
21 meaningfulness and engaging patients in
22 selecting PROMs.

1 The first is that we need to have
2 a national agenda. We need to have the
3 kindergarten curriculum of patient outcomes so
4 that it becomes a national everyday experience
5 for individuals to know that their reaction to
6 the care services they received is not only
7 important but meaningful in terms of shaping
8 their own care as well as shaping the
9 availability of care in society.

10 The reports we heard from England
11 and Stockholm today didn't occur because there
12 was a 2-year or a 5-year national program.
13 They occurred because of the context that took
14 many years to develop. And it's timely for us
15 to think about how we develop this.

16 Secondly, the patient voice
17 matters. The patient voice matters. That
18 means not only the individual who speaks for
19 him- or herself at various points in time, but
20 the ability for an individual to set policies
21 that are subsequently respected over time, the
22 inclusion of surrogates where appropriate and

1 properly denoted, and the inclusion of
2 caregivers who may not speak for the patient
3 but speak about the patient in a PROM-type
4 situation. It may be as useful to know that
5 there's a difference between what a spouse and
6 the care recipient perceive about the quality
7 of care that an individual received.

8 So recognizing that the patient
9 voice comes in three different forms as I see
10 it, the person him- or herself, the surrogates
11 and the caregivers, and sometimes it's
12 important to keep those separate as opposed to
13 aggregating them together.

14 Third, I've heard over the process
15 of these two workshops some indication that we
16 will have a national list that institutions
17 can select from -- of PROMs that institutions
18 can select to measure concepts, some
19 indication that there might be a set of
20 explicit measures.

21 We need to consider at the point -
22 - that the involvement of patients in

1 selecting PROMs will vary based on whether
2 we're talking about setting a national agenda
3 or we're talking about a clinic in a small
4 town who's trying to pick certain outcome
5 measures. There are different ways to engage
6 patients over those times to do each of those.
7 And we can't simply call patients up and
8 assign them to a task force immediately. We
9 need to cultivate and build the skill sets for
10 that.

11 And finally, I'm going to call for
12 some perhaps non-traditional ways of
13 understanding the patient's voice and the
14 patient's experience. I'm going to encourage
15 groups that are trying to bring the concept of
16 patients meaningfully into the selection of
17 PROMs to not only think about sitting patients
18 down at a table but also to look to see how
19 the creative literatures can help us
20 understand the patient experiences and help us
21 to target what might be useful or meaningful
22 about an adolescent who's facing a pregnancy,

1 or an older person living alone. Think about
2 ways to engage not just the person of patient
3 but the concept of patient as we select
4 participation.

5 We also need to find increasing
6 ways to use social media to get reactions from
7 individuals over time. Not only in the
8 selection of the PROMs, perhaps even in their
9 assessment, but at this point in time I think
10 using social media, using Twitter, using
11 Facebook as a way of making it more widely
12 known that there is an interest in selecting
13 PROMs and an interest in hearing the patient's
14 voice about them might give a way to get a
15 very broad and very diverse set of viewpoints
16 on the selection process.

17 I thank you very much for your
18 time and for listening to me instead of
19 Jennifer. I hope that I represented this
20 perspective well in the conversation.

21 (Applause)

22 MS. BURKE: I made one slide.

1 Everything I have to say is on one slide. I
2 have five points and I just thought it might
3 be helpful if I put those up in front because
4 I might not be able to read what I scribbled
5 on my paper.

6 But my -- I'm assigned the topic
7 of implementability but I think that the
8 implementability depends on this topic of the
9 key characteristics that we started out with
10 here and for selecting PRO measures.

11 First of all, my first point is
12 that we -- 2001 is the year that's the 11-year
13 anniversary of the birth of the term "patient-
14 reported outcome." And I can keep track of
15 that because of the monumental nature of that
16 year 2001.

17 And it was generated because there
18 was an initiative called the Health-Related
19 Quality of Life Harmonization group that were
20 deliberating on how to define health-related
21 quality of life. And we finally accomplished
22 that but then we realized that everybody was

1 using health-related quality of life to mean
2 everything else that health-related quality of
3 life does not mean. And so we needed a larger
4 grouping term for everything patient-reported
5 and that's when that term was developed.

6 And it's really important that we
7 maintain the meaning of that term just for
8 communication purposes. And I really
9 appreciate NQF and their efforts at doing that
10 for this meeting.

11 And so there's good measurement
12 science that's under development right now and
13 that we're talking about profusely in this
14 last workshop and today. It does not apply
15 only to patient-reported outcomes, however.
16 It applies to measures, all measurement used
17 in healthcare. And I wanted to make sure we
18 keep that point in mind because of course
19 there could be other things besides patient
20 reports of things that may be useful to use as
21 performance measures.

22 My second point is that the key

1 characteristics that we're talking about are
2 not characteristics of the PRO measure. These
3 characteristics apply to the use of the PRO
4 measure in a particular context. And this is
5 really important to know about because when
6 you select a PRO measure you have to think
7 about these characteristics in the context
8 that you're going to then apply it to.

9 I think that we very often lose
10 sight of that. And the red boxes at the top
11 of the diagram were added for this meeting and
12 I really appreciate that. And so if we
13 continue to keep that in mind. This is a very
14 key point for the implementability of these
15 measures in terms of future use.

16 My third point is that contrary to
17 classic psychometrics teaching it is not
18 efficient to test reliability first. Now, I'm
19 sure I'm going to get some pushback on this
20 topic but that our experience in the
21 regulatory setting where we're talking about
22 good measurement has really borne this out.

1 And for example, you have to first
2 decide what you're going to measure because
3 when you're going to measure something it's
4 not just grouping a bunch of things together
5 to create a score. You need to somehow
6 characterize a meaningful state in a context
7 of use that you're planning to measure it in,
8 in a disease group, in a patient group.

9 It's -- the score has to represent
10 a meaningful concept. I just was in a meeting
11 last week about an instrument to measure
12 suicide ideation, for example. And this is a
13 checklist where we have five graduating more
14 serious ideation concepts that the patients
15 check yes or no.

16 And it's an excellent measure.
17 But when I said, "Well, what does this score
18 represent?" they said, "Oh, we don't have a
19 score." But yet when you collapse the data
20 you try to assess whether or not we have
21 suicide ideation you do actually look at
22 everybody who checked for the fourth or the

1 fifth one and that's your score of suicide
2 ideation. So, we have to think in terms of
3 scores and what we're trying to make the
4 instrument actually represent. In this case
5 it is suicide ideation.

6 The items and responses need to be
7 available, need to be presented in a
8 hierarchical order so that we know that it
9 makes sense to a patient as they are assessing
10 and trying to match what they're reading on
11 the page and marking as a response to this
12 question.

13 There needs to be adequate
14 coverage in the target population. All of
15 these things represent what we would call
16 validity of the item.

17 Now, if you wait to assess all of
18 that until after reliability is tested you may
19 find out that the PRO measure is not measuring
20 the thing that you have been targeting. And
21 the content may need to change. And if that's
22 the case then repeated reliability testing

1 needs to take place. And if that -- and if
2 the content is not changed you will have some
3 compromised sensitivity to change with the
4 measure.

5 And this has been borne out over
6 and over in our experience in reviewing
7 clinical trial data. I do not think these
8 principles for good measurement are any
9 different outside of the clinical trial and in
10 the healthcare setting.

11 So then my fourth point is that
12 validity testing is iterative as the PRO
13 measure content develops. So that if you
14 spend adequate attention to the validity of
15 the measure to measure the concept that you
16 have intended in the context of use that you
17 have intended then you can very much influence
18 the reliability of this measure and therefore
19 its ability to change in the clinical setting.

20 For example, there are four major
21 types of variability as far as I can identify.
22 There is true patient heterogeneity. So that

1 is very much related to your context of use.
2 You need to identify all the ways that your
3 patient population really does validly vary
4 and you want to be able to consider that for
5 the PRO measure. So, that can be considered
6 in the early stages in this iterative approach
7 to generating validity of your measure.

8 Then there's random variation
9 which is often called error which is also
10 something that can be impacted by careful
11 consideration to the content of the instrument
12 and minimized during that early phases of
13 instrument development.

14 And then there's systematic non-
15 random variation, also something that can be
16 considered based on your population. What are
17 the characteristics of your population that
18 would cause -- what are the items in the
19 instrument that may be obscure or not
20 understandable to certain parts of your
21 population that are going to introduce this
22 non-random variation.

1 Then there's the experimental
2 design and the conduct error which is a huge
3 concern when you start administering your
4 instrument in large populations. This is a
5 big reason for a lot of the missing data
6 concerns that we've heard about earlier today
7 and it is the reason why we are focusing more
8 and more on the training and instruction
9 component that goes along with an instrument
10 so that it is adequately administered in the
11 way it's intended so that you can in fact
12 collect the results that you're looking for.

13 We find that training and
14 instructions are always an afterthought and in
15 the past we rarely even asked to see it or
16 review it. But it's really an important
17 aspect of being able to understand what you're
18 collecting and how you can actually implement
19 it. And if it's being administered in a way
20 that's not intended then you have to think
21 about that validity. So, this is just
22 following on the point that validity really

1 needs to be thought about first, not last, and
2 some of the aspects of that.

3 Then finally, because of all these
4 things that I've already mentioned and lots of
5 other examples we -- I think it's really
6 important that we quit, in terms of the
7 terminology that we use going forward, that we
8 stop calling -- we stop talking about a
9 measure as being validated. And this is
10 people who are in the inner circle of
11 measurement like all of you are need to be
12 really careful about this because people who
13 don't understand validation are going to take
14 and run with it and say well, they said it's
15 validated so we can use it and plop it into
16 whatever context of use is currently under
17 consideration. And so I think that this would
18 be really useful as we're focusing on
19 terminology and how we think about measurement
20 that we stop using that phrase.

21 Okay, those are my five points.

22 DR. ADAMS: Well, first I'd like

1 to thank all our reactors for really providing
2 us some thought-provoking comments. And I'm
3 going to open up to the room for some
4 discussion questions.

5 First, I want to tee up the
6 operator because we do want to be able to
7 bring in our people who are participating with
8 us virtually so that they can start queuing up
9 while we're doing a few questions. And I want
10 to make sure that our external audience that's
11 here with us live today, we do have
12 microphones and stands for you too so we
13 welcome your participation.

14 But I'm going to start the
15 moderating now. And I feel I need to stand up
16 because I can't see in the back.

17 OPERATOR: At this time in order
18 to ask a question press * then the number 1 on
19 your telephone keypad.

20 DR. ADAMS: Great. Yes, please,
21 Ted.

22 DR. GANIATS: Ted Ganiats in San

1 Diego. Not in San Diego but from San Diego.

2 I wanted to thank folks. The
3 morning just, you know, I've always been
4 excited about patient-reported outcomes and
5 the morning's presentation, the beginning just
6 increased my already high enthusiasm. And
7 then these three talks were able to highlight
8 one of my big concerns for performance
9 measurement but that means I can list all
10 three people.

11 You know, Laurie talked about
12 scores, so important. Not all PROs have a
13 score. Could just do a count of number of
14 joints, for example. But we oftentimes try to
15 collapse them into a score.

16 And I think that's left -- that
17 means Patti whose presentation was just so
18 great forgot one thing in that she talked
19 about it being patient-defined and patient-
20 generated but I think it should be patient-
21 scored.

22 And I think we have a very, very

1 hard time if we're going to try to be
2 actionable if we take a population preference
3 scored or just an average of I'm going to
4 count up the number of yeses and give us a
5 score and have that be actionable because it
6 may not mean anything to the patient. So
7 that's my opinion and I'm wondering if the
8 panelists would react to the idea of how
9 important it would be for an outcome
10 performance measure instead of a process
11 performance measure to be patient-scored.

12 In my opinion if it's not patient-
13 scored it should be a process measure. If it
14 is patient-scored it might be able to be an
15 outcome measure.

16 DR. MORT: I'd like to make a
17 comment. I think it's a really important
18 point. I think it's -- there are ways to
19 address it maybe that get at what you're
20 talking about without necessarily having a
21 patient score everything, every aspect of it.
22 But understanding how bothered the patient is

1 or how satisfied they are with the outcome
2 might be one way to do it.

3 I have a story of a patient with a
4 shoulder problem and the shoulder PROM didn't
5 really improve but he was happy as a clam
6 because he could do what he needed to do
7 because he figured out a way to play curling
8 was his thing, ice sports, and he figured out
9 how to use a broom in a different way that
10 didn't -- so he was pleased with what had
11 happened but you wouldn't have been given a
12 good rating because the shoulder functional
13 measure hadn't changed.

14 So I think you have to be a clever
15 in the way you assess patient's preferences,
16 how much they're bothered by it. And that
17 also gets complicated because they may not
18 have known enough to realize that they could
19 have actually improved more and so on and so
20 forth. But it's a very important point
21 because the clinical or the provider-based
22 assessment may not tell you the whole picture.

1 MS. BURKE: Well, I can't agree
2 more with the importance of the score because
3 the score is how you're going to make your
4 conclusion. If your score doesn't -- first of
5 all, if it doesn't represent the thing you
6 think it represents that's a big problem. And
7 that's part of the validity of an instrument
8 is making sure at the end of the day that the
9 people who are filling out the -- are actually
10 providing the input that generates the score
11 will agree at the end of the day that the
12 compilation of what they have reported
13 represents the thing that the score represents
14 in a way that they intended.

15 And this is a very complicated
16 issue, a lot of weighting of items and making
17 sure you have the right things that represent
18 the score. And change in the score represents
19 change in the thing that they're telling you
20 about. And this is critically important, yes.

21 DR. GANIATS: For example, the EQ-
22 5D which I'm going to understand every single

1 question that's there and I'm going to respond
2 appropriately for every single question that's
3 there but the score is irrelevant to me
4 because the score is based on population
5 preferences which may or may not reflect mine.

6 So, that's an example of my seeing
7 an EQ-5D score or worse if a clinician tries
8 to improve a patient's EQ-5D score you may end
9 up going in the wrong direction because those
10 scores just like the shoulder, it may not move
11 the patient in a way that the patient is
12 getting better, it's just that the score is
13 getting better.

14 DR. ADAMS: Ethan, you have a
15 response to this?

16 DR. BASCH: Yes, I was just going
17 to comment to this. I mean, I think this is
18 one of the reasons that many have really
19 focused on specific symptoms or very specific
20 dimensions of functionality. Certainly
21 regulatory agencies have focused on this
22 recently and that's because we want to know

1 what we're measuring. And we also want to
2 make sure that a change in that score is
3 meaningful to a patient.

4 And there are techniques for
5 demonstrating that a particular score change
6 is clinically or I should say meaningful to
7 patients. And it's much harder for example
8 with the EQ-5D to demonstrate that, a
9 composite EQ-5D score of those five different
10 dimensions is meaningful to an individual
11 patient. I couldn't agree with you more. I'm
12 sure Laurie would follow up.

13 DR. ADAMS: Yes, and I know,
14 Patti, you wanted to respond as well. Is that
15 a direct response, Laurie? Go ahead.

16 MS. BURKE: Yes, and I think that
17 it's really important to think about how we
18 present the results of whatever we measure.
19 For example, if you are in a clinical care
20 situation you're measuring an individual
21 patient and that individual patient's change
22 with respect to whatever the thing is you're

1 measuring, that is -- it's critical that your
2 instrument is adequately assessing that thing
3 on an individual basis.

4 Now, when we take that instrument
5 and move it into a clinical trial or in an
6 observational setting where we're looking at
7 populations of people then we're looking at
8 change in terms of an average or a proportion
9 of responders or whatever that metric becomes.

10 We -- that same degree of change is not --

11 does not carry the same meaning in that mean
12 score, for example. So, this is why we're
13 looking at other ways of displaying data so
14 that you can understand the distribution of
15 response across a population, for example.

16 And that has to be -- that's probably another
17 whole conference on how to display and present
18 the results that are being measured in a
19 population of people because it's very
20 difficult to understand the range of response
21 and how a patient can look at that population-
22 based data and interpret it in terms of the

1 meaning that it brings to them personally.

2 DR. BRENNAN: That's a nice segue
3 way into the comment I wanted to make which is
4 a call for greater research into the
5 methodologies of aggregation.

6 We make a lot of presumptions that
7 everything is monotonically related and
8 increasing in an equal fashion and then we add
9 things up. Most of the time they don't.

10 And the question about the extent
11 to which a score maps to my personal
12 experience versus the population as a whole
13 remains somewhat ignored by the methodologists
14 in the field and it may not be able to be over
15 time. Because if we want an individual to
16 interpret a gain from 7 to 9 is the same
17 degree of change as a gain from 14 to 16. We
18 have to be pretty sure for that individual
19 that experience is in fact trustable and has
20 that kind of an underlying process.

21 I think the other part is while we
22 need to look at summative measures they might

1 not all be scores. They might be
2 classifications, they might be displays, we
3 might be looking at Euclidian distances. So
4 think flexibly when you think about scores.
5 Thank you.

6 DR. ADAMS: Ted, did you have?
7 And I see we have someone in the back. Can
8 you come up to the microphone and Evan, if you
9 can have our audience member teed up after
10 Ted. Thank you, Ted.

11 MR. ROONEY: Ted Rooney from
12 Maine. This is a terrific panel and terrific
13 day. So I'm thinking as the discussion goes
14 as part of my informed decision-making if I
15 had -- I'm a male so and I'm going to have a
16 prostate problem someday. And I remember
17 seeing the videotapes of the informed shared
18 decision-making, you know, the differences
19 between the two docs explaining it.

20 So I'm going to come down this
21 road. I'm going to want to know although
22 there's different approaches who gets the best

1 outcomes and the quality of life and so I want
2 to see that there.

3 And then I want as part of my
4 informed decision-making I want to know if I
5 have three or four urologists over here who
6 gets the best scores on their treatment of
7 patients, so I want to know that.

8 And then when I go in and I
9 potentially have my procedure, afterwards I
10 want to know how my score relates to what
11 potentially could have been. Is it worth it
12 for me to go through whatever else I might
13 have to go through to get a better score. So
14 this is an incredibly rich discussion and very
15 complex.

16 But you know, so I want to make
17 sure that whatever I choose fits me but I want
18 to have enough standardized information that
19 I could choose among different treatment
20 options and among the people who deliver those
21 treatment options because I'm sure there's a
22 difference between the people who do medical

1 management and the people who do surgical
2 management. So, this is a great discussion.

3 DR. ADAMS: So those may be things
4 to benchmark against. Go ahead, Patti.

5 DR. BRENNAN: I want to comment on
6 that. The challenge is in part the
7 mathematical literacy of a population and
8 trying to help people understand that the guy
9 with the best score still might have had a
10 turkey day one day. And so they're not
11 necessarily a guaranteed performance but
12 rather a typical, not even likely-to-happen-
13 to-you performance.

14 DR. ADAMS: And Liz?

15 MR. ROONEY: And I think that's
16 part of what I would want to know so that if
17 I make my decision that that's -- I play the
18 odds.

19 DR. MORT: I love your summary of
20 the complexity and it makes me think do we
21 advise NQF to go slowly and go deliberately
22 rather than just throw a whole bunch of

1 measures through.

2 We've learned the hard way through
3 process measures that throwing a whole bunch
4 through may end up doing some harm that we
5 would have avoided had we don't it a little
6 differently.

7 So it's very complicated to do the
8 patient-reported work. So many issues, it
9 just makes me think boy, let's do a few really
10 well so we understand before we open the
11 floodgates.

12 DR. ADAMS: Sure, Ted, and then
13 we're going to go to our audience.

14 MR. ROONEY: So in Maine we're
15 playing around with a lot of these things.
16 And I agree, for the ones that have strict
17 accountability I absolutely agree with you.
18 But how about having some others in the field
19 that people could work with that get us
20 directionally towards where we want to go that
21 may not be a clinician accountability but may
22 be a group or an organization accountability.

1 So, I think there's a lot of room in there.

2 DR. ADAMS: Okay, we're going to
3 go the back. Thank you.

4 DR. KELLER: San Keller from the
5 American Institutes for Research. And this is
6 kind of related to what the last speaker said,
7 that I think we're talking about the context
8 of use. There's always been a tension between
9 meaningfulness in terms of the semantic
10 meaningfulness and precision of measurement
11 and the need to make decisions. So, a single
12 symptom is meaningful to the patient but may
13 not be precise in a statistical sense. And
14 that's why we create composites for the
15 signal-to-noise ratio, but also to allow us to
16 make decisions. So what we've done in the
17 past is take a composite score and then show
18 the relationship between that score and a
19 single symptom or a single ability to do this
20 or that so that you could have the best of
21 both worlds. I'm not sure that that's
22 possible but it's a longstanding tension.

1 DR. ADAMS: Thank you. Any
2 comment or reply from the reactor panel? And
3 I think we'll get into it a little bit too as
4 we get into our next two panels. Go ahead,
5 Laurie.

6 MS. BURKE: San, are you talking
7 about a composite of many things that you put
8 together in a score or are you talking about
9 a general concept of measurement that the
10 score represents? Is that the composite that
11 you're talking about or is it -- I'm thinking
12 of composite as multiple scores that are then
13 used in a way to get sort of a profile.

14 DR. KELLER: I think there are two
15 different things. If you want a composite to
16 make a decision, so you want to accumulate
17 across different kinds of outcomes and you
18 know, have them come up with a single answer
19 even though they're very different that's --
20 I think that's what people usually call a
21 composite.

22 But if you want to increase your

1 signal-to-noise ratio then you want things
2 that are very similar that just, you know,
3 enable you to do that. So, thanks for
4 pointing that out because I was kind of
5 conflating both of those.

6 MS. BURKE: Sure. And I just, my
7 response would be that it doesn't really
8 matter. If you have a score and your score
9 represents something that's -- we should be
10 able to name what that thing is and then the
11 measurement properties in terms of key
12 characteristics should relate no matter if
13 we're talking about a general, a score for a
14 general concept or something very specific
15 like a single pain intensity measure. The key
16 characteristics still apply.

17 DR. ADAMS: We have another
18 question. Go ahead.

19 MS. OKUN: Thank you. I'm Sally
20 Okun and I'm from PatientsLikeMe.

21 I really appreciated this panel.
22 I think there's been a lot of really important

1 points that have been brought out. I'm
2 wondering whether the -- it will be important
3 for us to consider things like we consider now
4 clinically important differences.

5 Maybe we need to be really
6 thinking about is there a measure for patient-
7 important differences and really understanding
8 with patients targets that they might want to
9 set that they can reach and that the
10 individual clinician can help them reach in
11 terms of how they're measuring how they're
12 doing, but then also being able to that into
13 consideration when you aggregate that data.
14 Because I think as we start talking about
15 patient-reported outcome information it's
16 going to vary so much by all the different
17 circumstances that patients putting into what
18 they want as their target versus what the
19 target composite score might indicate for
20 performance.

21 So the incentives that a patient
22 has to feel better, the incentives that the

1 clinician has to help them feel better and
2 then also to get paid particularly I think are
3 aligned quite differently. And so
4 understanding what the minimal clinical
5 important difference is and then what the
6 minimal patient-important difference would
7 look like I think will be something that we
8 can begin to talk more about.

9 DR. ADAMS: Okay, thank you so
10 much for that insight. Al, you had a comment?
11 And then I'm going to -- we queued up people
12 on the phone. I don't want to forget them.
13 So after, for those on the phone you're up
14 next. Go ahead, Al.

15 DR. WU: On the last point, the
16 idea of what is a -- or how much is a patient-
17 important difference is a very good question
18 but it's not so easy to measure because it's
19 one person. And so there is going to be a lot
20 more noise around that measurement. And it's
21 just a difficult question to confront. I
22 think it deserves to be looked at.

1 DR. ADAMS: Okay, I'm going to
2 check with the operator. Do we have anyone on
3 the line that has a question?

4 OPERATOR: At this time in order
5 to ask a question press * then the number 1 on
6 your telephone keypad. Please hold for the
7 first question.

8 DR. ADAMS: Thank you. So we're
9 ready to take the question from the person on
10 the line.

11 OPERATOR: Your first question
12 comes from Susan Tavernier.

13 DR. TAVERNIER: Hi. I was
14 wondering if the panel would address the issue
15 of response shift and the fact that that can
16 be defined in a number of ways, whether it's
17 in the scoring of it versus conceptual
18 response shift and how the panel feels that
19 relates to these patient-reported outcomes.

20 DR. BRENNAN: I think that's a
21 great question if I'm understanding response
22 shift the same way that the caller means it to

1 be. And I was thinking of this actually a few
2 minutes ago as Sally was speaking.

3 When we talk about the variability
4 in measures we need to consider the same
5 measure over time with the same person,
6 populations at the same time, variability
7 within that, and then populations over time.
8 So we have all these different dependencies.

9 And there is a -- I would imagine
10 that there's both a testing effect and as well
11 as historical effects that need to be
12 considered as we get socialized to be more
13 mindful or less mindful of certain things,
14 whether it's prescription drug in the news
15 because of our sports players or the
16 expectation that you should live to be 90 and
17 still play tennis. There's a shifting in what
18 we expect as a baseline.

19 And measures need at one and the
20 same time to be both sensitive and resilient.
21 And so I -- all I can simply say is yes, I
22 think that's important. No, I don't know the

1 methods to handle it.

2 MS. BURKE: Well, we're fortunate
3 in a clinical trial which is most of the data
4 that I review that we -- well, at least we
5 hope we're fortunate in that the randomization
6 between groups takes care of the response
7 shift that no doubt happens in both groups.
8 So, we don't have to worry about it too much
9 in that setting. But in an observational
10 setting that is clearly a concern and that has
11 to be taken into consideration somehow.

12 DR. ADAMS: Thank you. Any other
13 comments? Oh, Lewis, yes.

14 DR. KAZIS: I had a fellow a few
15 years ago who we published an article looking
16 at response shift. And what we found is that
17 if you ask a subject how much their health has
18 changed over the past year, over the past 12
19 months they're basically going to be telling
20 you about their current health and that's
21 correlated much higher with the current health
22 than an actual change score that you've

1 derived. So that's been published and I think
2 there have been other articles as well.

3 DR. ADAMS: Thank you. Ethan, you
4 have a response?

5 DR. BASCH: Yes. I mean response
6 shift happens but it's a small effect overall.
7 We know from many, many, many, many studies
8 done over time that we are able to detect
9 change over time, that people's scores do
10 change over time both in response to
11 interventions and as a part of disease
12 trajectory. So I think response shift is
13 real.

14 That said, you know, the answer
15 that many people have to this is that what the
16 patient says about how they're feeling is how
17 the patient is feeling. And so if the patient
18 changes the context in which they think about
19 a particular experience because their general
20 outlook has altered then that is actually an
21 accurate subjective portrayal of how they're
22 actually feeling at that point in time, right?

1 So you know, perhaps -- I'm an
2 oncologist, right, so you know perhaps the
3 patient's view of nausea or fatigue changes
4 after they've had multiple rounds of
5 chemotherapy, but how they feel about those
6 symptoms is actually -- at a later time point
7 is actually an accurate portrayal of how they
8 actually feel.

9 And so when we compare between
10 groups if you want to -- I don't want to
11 belabor it, but if you want to say to -- if
12 you want to portray to a patient before
13 starting chemotherapy how patients like them
14 will experience chemotherapy-related symptoms
15 later on it is actually a more accurate
16 conveyance, some feel, to explain to them how
17 people at the later time frame who have had a
18 response shift experience those symptoms
19 because that's where a patient might actually
20 be.

21 DR. ADAMS: Well, we're one minute
22 away from lunch so I'm just going to -- I

1 think we have one more question. We're going
2 to break for lunch at 12:45 and resume back at
3 1:30. But we have time for one more question.
4 I don't see any hands up. Oh, great.
5 Phyllis. Give us our great closing remark,
6 yes?

7 MS. TORDA: I thought that Patti
8 made some really important points about the
9 importance of the process of going through
10 patient-reported outcome measurement to the
11 patient. And I just wanted to note that if
12 that's the case that suggests that process
13 measures might measure that and we shouldn't
14 be apologetic about it. If it's a process of
15 being asked about how you feel and your
16 symptoms and all of that is important to
17 patients we can measure that in and of itself.

18 DR. ADAMS: Thank you, Phyllis.
19 So with those closing remarks let us thank our
20 panelists here. Well done, thank you.

21 (Applause)

22 DR. ADAMS: And lunch is in the

1 back and we'll see you back at 1:30. Thank
2 you.

3 (Whereupon, the foregoing matter
4 went off the record at 12:45 p.m. and went
5 back on the record at 1:29 p.m.)

6 DR. PACE: Okay, good afternoon
7 and welcome back from lunch. So we're now
8 going to really focus on the performance
9 measure. And this first panel is about
10 reliability of the PRO performance measures.
11 I'm going to introduce the panel and then I'll
12 make a few introductory remarks about our NQF
13 criteria just to put that in context.

14 So, we will be hearing from our
15 Commissioned paper authors and RTI and
16 Brookings are our authors. We selected them
17 because they have experience in developing
18 organizational performance measures and have
19 brought performance measures to NQF for
20 endorsement. And our speaker about
21 reliability from the Commission authors is
22 Laura Smith who's from RTI.

1 Our panel then will be Lewis Kazis
2 from Boston University School of Public
3 Health, Lori Frank from Patient-Centered
4 Outcomes Research Institute and Jack Fowler.
5 And his organization name has changed slightly
6 so it's Informed Medical Decisions Foundation.
7 Is that correct, Jack? Okay, great. All
8 right.

9 So without further ado I'll dive
10 into NQF criteria related to reliability.
11 Next slide.

12 So, again, just to put us on the
13 same page we refer to the PROM, that's the
14 instrument or scale or single-item measure
15 used to assess the outcome of -- or concept as
16 perceived by the patient. And then that
17 patient level scores or values on those PROM
18 instruments will be aggregated in some way for
19 a performance measure, aggregated for the
20 healthcare entity providing services. And
21 that's what NQF would be endorsing in terms of
22 these performance measures.

1 So, although -- and actually in
2 this session, reliability and validity, we
3 talk about data electronic and performance
4 score. We are -- our Commissioned paper
5 authors will specifically be addressing the
6 performance score. So let's go to the next
7 slide.

8 So in terms of NQF criteria
9 regarding reliability our subcriteria related
10 to this is first of all that the measure is
11 well-defined and precisely specified so it can
12 be implemented consistently within and across
13 organizations and allow for comparability.

14 Remember that NQF endorses
15 performance measures that will be used not
16 only for quality improvement which is of
17 paramount importance but also in
18 accountability applications. So we need to
19 have some standardization. And this starts
20 with having measures that are precisely
21 specified.

22 And how this relates to

1 performance measures based on PROMs is that in
2 order to -- you need to also specify what the
3 PROM instrument is that's going to be used in
4 the performance measure and if multiple ones
5 are going to be used then they would need to
6 have comparability or some equivalents as we
7 talked about last workshop.

8 The other aspect of our
9 reliability criteria -- so we think that
10 precise specifications form a foundation to
11 have reliability but it's not the only thing
12 that we look for. So we do look for some
13 reliability testing that demonstrates the
14 measure data elements are repeatable and
15 producing the same results, or that the
16 measure score is precise.

17 So we do allow in our current NQF
18 criteria for quality performance measures
19 testing at either the level of the data
20 element or the performance measure score. So
21 next slide and I'll talk about that a little
22 bit more.

1 So, in 2010 we had a task force
2 that specifically looked at measure testing.
3 NQF always had criteria for reliability and
4 validity but we wanted to get more guidance on
5 how our steering committee should evaluate
6 performance measures on these areas.

7 And so I'm just going to mention,
8 we have a whole report on this but I'll
9 mention a few key things. And one is that
10 reliability and validity require empirical
11 analysis. And it should be based on the
12 measure as specified.

13 Again, our task force and guidance
14 at this point in time suggested that we allow
15 for testing at either the data element level
16 or the performance measure score. So an
17 example of that is if we have a performance
18 measure about percentage of patients that
19 achieve a blood pressure below 140/90 the data
20 that goes into that is the blood pressure
21 value. And is that data reliable or your data
22 for identifying patients who have a diagnosis

1 of hypertension, is that reliable.

2 And in this case, and then at the
3 performance measure score we're looking at the
4 signal-to-noise analysis that people have
5 mentioned. If you have data on many providers
6 do you have good signal to be able to
7 distinguish among the providers who are being
8 measured.

9 In this case the PROM data would
10 be the data element. So we've already talked
11 about basing performance measures on PROMs
12 that would be reliable and valid, and I think
13 we all agree in the context for which they
14 were developed, but the question is should we
15 require that there be also testing at the
16 performance measure level whereas currently
17 our criteria would say at either level. So
18 these are some things that we'll get into as
19 we get into discussions. Okay, next slide.
20 Is that the last one? Okay.

21 So that's kind of the background
22 just on reliability in the NQF criteria. And

1 now Laura Smith is going to tee up some of the
2 issues and considerations in regards to --
3 that were pulled out in the paper.

4 DR. SMITH: Thank you, Karen. So,
5 in this section I am going to talk about some
6 methods for evaluating the reliability of the
7 provider-level performance measures and also
8 potential strategies for designing your
9 measure in order to address potential
10 reliability issues. Next slide.

11 Before I dive into that though I
12 just wanted to pause for a moment just to
13 acknowledge sort of the broader context that
14 we need to think about reliability within.
15 And so this first bullet is basically sort of
16 your basic psychometrics that the reliability
17 is necessary but not a sufficient precondition
18 for validity.

19 And when we think about
20 reliability of the performance measure there's
21 also a very direct importance relationship
22 with validity, especially if performance

1 measures are being used to rank facilities or
2 providers for public reporting or other types
3 of policies like pay-for-performance that if
4 you have the performance measure scores
5 largely determined by noise or measurement
6 error you're going to end up with
7 misclassification of the ranking of providers
8 which would be a serious threat to validity.
9 So just for that backdrop.

10 And then the last piece, I just
11 want to acknowledge that any of the
12 suggestions that I'm making about evaluation
13 methodology, all of this needs to be taken in
14 the context of a lot of the issues about
15 meaningfulness and validity that have been
16 discussed in the sessions earlier today. Next
17 slide, please.

18 So here I've shown how you can
19 basically depict reliability as an index. And
20 starting with patient-level, the classic
21 Streiner and Norman way of thinking about
22 reliability as the ratio of the subject

1 variability to the total variability in the
2 measure. And here in this first equation it's
3 decomposed into two parts. So it's the
4 subject variability, the true variability, and
5 then measurement error. And so if you have a
6 lot of measurement error then your reliability
7 score index is going to go down.

8 And in the next equation you can
9 see that actually this is an analogous way of
10 thinking about reliability at the performance
11 measure level. And so using the language from
12 NQF that we have the ratio of signal-to-signal
13 plus noise. And that noise can be decomposed
14 into measurement error at the patient level
15 and measurement error at the provider level.

16 So reliability can be quantified
17 as this index which has a range of zero to 1,
18 zero indicating that the entirety of the
19 variation that you see among providers is
20 attributable to noise, and a 1 indicating that
21 the entirety of variation that you see among
22 providers on the performance measure is

1 attributable to true differences among
2 providers.

3 And so the literature suggested
4 that a good threshold for evaluating the
5 reliability of your performance measure is
6 having a reliability index of 0.7. Next
7 slide, please.

8 So, to discuss further the
9 determinants of performance measure
10 reliability the components, the important
11 components are the magnitude of the true
12 differences among providers so that numerator
13 value and then the magnitude of within-
14 provider variation. So the measurement error
15 that you see at the PROM level and also at the
16 provider level. And then the size of the
17 provider sample or that denominator for your
18 performance measure.

19 So, one question that we started
20 talking a bit about earlier today are the
21 implications of how you might aggregate the
22 PROM data into a provider-level performance

1 measure. And in this case we need to pause
2 and think about how choice of using an average
3 change or a threshold might have on the
4 reliability of the performance measure.

5 I don't necessarily have an
6 endorsement of a particular strategy, but
7 rather a couple of examples to weigh in this
8 decision. So, one issue with using an average
9 amount of change, and I'm not editorializing
10 on this particular measure but to give you an
11 example of where this approach is used there's
12 the -- excuse me, "Change in Basic Mobility as
13 Measured by the Activity Measure for Post-
14 Acute Care."

15 And so what this measure does is
16 look at the average change from a baseline
17 score for mobility to a follow-up. And so one
18 concern about using an average change is that
19 this type of measure is vulnerable to
20 measurement error at both the baseline data
21 point and at follow-up.

22 For the threshold measure, and

1 another example would be from the nursing home
2 world the percent of patients who are able to
3 self-report moderate to severe pain. And in
4 this case one consideration would be what the
5 reliability is around that threshold where the
6 decision has been made that the patient would
7 be counted in the numerator as having moderate
8 to severe pain.

9 And then the last consideration
10 for this particular issue that I wanted to
11 touch on although I know there's lots more
12 that could be discussed is that also that
13 choice of threshold. So what I was just
14 talking about with both of those examples is
15 the impact on the within-provider variability,
16 but this choice of threshold could also have
17 an impact on the between-provider variability.

18 So if you chose a threshold that
19 was either very low and very easy for most
20 patients to clear, or very high and something
21 that would be very rare you'll end up with
22 very little variability for the most part at

1 the provider level and therefore reliability
2 is reduced. Next slide.

3 So, to sum up some of that
4 discussion, the performance measure
5 reliability is therefore dependent on the
6 characteristics of the set of providers but
7 also the patients included in the measure.
8 And also, another side effect is that
9 reliability is not static. So you can have
10 basically a set of reliability indexes for
11 providers at the beginning of public reporting
12 and if people's -- if providers begin to
13 improve performance and everyone is converging
14 on a similar score the reliability of the
15 measure is going to be reduced.

16 Then lastly, estimates for smaller
17 providers are more vulnerable to random error.
18 Next slide.

19 So in the next few slides I'm
20 going to discuss methods for reliability
21 testing that would help provide evidence to
22 support the endorsement of a PRO-PM score.

1 And for the most part what is included in the
2 paper and in this discussion, we really
3 haven't treated PRO-PM measures differently
4 from any other in terms of methods.

5 However, there are potentially
6 other conceptual considerations that I think
7 have been brought up earlier about whether or
8 not the decision to include the requirement of
9 reliability at the measure level should be
10 considered. I'm going to leave that panel to
11 discuss though. All right, next slide,
12 please.

13 So, here's a list of performance
14 measure reliability testing methods. In the
15 interest of time I won't go into a lot of
16 detail, but point out two of the strategies
17 here, so the two-level hierarchical model
18 allows estimation of the signal and noise that
19 I referred to in the initial slides. And it
20 basically results in a reliability estimate
21 for every provider.

22 The interclass correlation

1 coefficient also allows the estimation of a
2 reliability index for each provider which can
3 be very useful in some of the subsequent
4 discussion about trying to determine the
5 adequate sample size for your measure
6 necessary to have a reliable measure.

7 These two strategies have been
8 used in some recent measures that have gone
9 through NQF endorsement and were -- the two-
10 level hierarchical model is explained in some
11 detail in a recent paper by the Committee of
12 Presidents of Statistical Societies. And so
13 there's a lot of good information out there in
14 terms of how to implement this testing. And
15 also there's a report by RAND. All of this is
16 referred to in the paper.

17 There's other strategies that have
18 been used in the literature to examine
19 reliability, to examining the overlap in
20 confidence intervals calculated for every
21 provider. You can give a visual depiction of
22 the reliability of that particular measure.

1 Inter-unit reliability can be
2 derived from ANOVA and GLM that's derived from
3 the F test generalizability theory and Monte
4 Carlo simulation or other strategies. And
5 I'll refer you to the paper for references for
6 those.

7 So in the next section we talk
8 some about the issue of provider size. Just
9 remember that given the different components
10 that determine reliability provider size is
11 not the only determinant but it's an important
12 one. So actually we can go on to the next
13 slide.

14 So those two strategies that I
15 mentioned, the hierarchical modeling and the
16 intra-class correlation, because they give you
17 a reliability estimate for every provider
18 allows you an opportunity to look at what the
19 relationship between provider size and
20 reliability is and potentially identify a
21 threshold where your reliability estimates for
22 providers are 0.7 or higher. Next slide.

1 So if you find that a large
2 proportion of providers in your target
3 population have a reliability that are lower
4 than 0.7 you may want to consider some
5 additional strategies for improving
6 performance measures.

7 It was mentioned earlier today one
8 strategy would be to design a composite which
9 is combining two or more performance measures.
10 So at the provider level in order to increase
11 the data points that are being used in the
12 calculation of the performance measure.

13 Another strategy that increases
14 data points would be to change the time window
15 over which the measure is being calculated.
16 So if the measure is looking at results within
17 one quarter consider increasing the time
18 period to two quarters or a year.

19 One concern about this strategy is
20 that your performance measure is going to be
21 less sensitive to changes in quality which can
22 have multiple concerns, one having to do with

1 the use of -- the usability of the measure for
2 quality improvement but also in terms of the
3 acceptability to providers in terms of their
4 being able to make changes that appear later
5 and quickly in public reporting.

6 One other strategy is to work on
7 improving the reliability of the underlying
8 PROM which could have to do with changing the
9 way that questions are phrased or instructions
10 are made.

11 And then lastly which I'll spend a
12 little bit of time on is to apply reliability
13 adjustment. Next slide, please.

14 So reliability adjustment which
15 again can be applied using the hierarchical
16 modeling, in connection with the hierarchical
17 modeling that I mentioned earlier and then
18 also intra-class correlation coefficients.

19 Basically instead of dropping from
20 public reporting or whatever format that you
21 might be presenting results, instead of
22 dropping facilities that have small sample

1 sizes from being publicly reported, you can
2 actually adjust the provider scores by
3 shrinking their estimates towards the mean
4 value. And this mean value could be for all
5 providers or if there's a wide distribution of
6 sizes of providers you might consider
7 stratifying into a larger -- excuse me, you
8 might consider shrinking towards providers of
9 a similar size.

10 However, there's some concern if
11 you're using volume for provider size. This
12 might be something that's particularly an
13 issue if you're looking at physician practices
14 where there isn't sort of a hard way of
15 counting size other than patient volume, is
16 that there's endogeneity of volume with
17 quality, that current volume of patients that
18 a provider might be providing services to can
19 be affected by prior quality -- perception of
20 quality by patients.

21 So in light of that shortcoming
22 you may want to use in addition to volume

1 other provider characteristics. And nor
2 surprisingly given that smaller providers tend
3 to be more vulnerable to poor reliability the
4 smaller providers are more likely to be -- are
5 shrunk towards the mean values.

6 And then just in closing wanted to
7 bring back sort of my initial comments about
8 the importance of the relationship between
9 reliability and quality -- excuse me,
10 reliability and validity. And that you can
11 see in cases where there's poor reliability of
12 the provider performance measure that you can
13 have misclassification in public reporting and
14 other uses of performance measures. Thank
15 you.

16 DR. PACE: Okay. Jack? Or,
17 sorry, Lewis. Looking right at you and saying
18 the wrong name.

19 DR. KAZIS: Can you hear me? It's
20 indeed a pleasure to be on this panel today in
21 particular because of Jack Fowler. And in
22 fact Jack was my first instructor at the

1 Harvard School of Public Health more years ago
2 than I'd like to think. And Jack and I
3 haven't changed in our appearance since then.
4 But I'm delighted to be on the same panel with
5 him.

6 So, my charge today for this panel
7 is to speak about the relationship between
8 reliability and validity, or what is the
9 connection between these two concepts. In
10 some respect being in this field for more than
11 25 years has provided me with some historical
12 perspective I think on this issue and on
13 things going forward.

14 For a number of these years much
15 emphasis has been on the patient-reported
16 outcome measures with a view to assessing
17 reliability and validity of the instruments.
18 And this was clearly a mandate for a number of
19 years with such organizations as ISOQOL, the
20 Academy of Health and other organizations
21 where you go to the meeting and you hear about
22 reliability and validity of your particular

1 instrument or questionnaire.

2 More recently these meetings I
3 think have taken on a different context and
4 for that reason have become much more
5 interesting given that the instruments,
6 questionnaires and so forth are now for the
7 first time being applied to the front lines of
8 care in terms of how care is being rendered
9 and also in terms of the organization and
10 processes going forward to improve quality.

11 So Figure 1 is a pyramid. And
12 what the NQF calls PROMs includes the focus on
13 the consistency of the metrics using
14 approaches that build on the signal and noise
15 concept that Laura talked about earlier.

16 The precision of the measure --
17 and these assessments include such things as
18 test-retest, internal consistency reliability
19 which has not really been talked about here
20 but that's the Cronbach alpha that we all know
21 about. And other methods including
22 hierarchical models, Markov, all kinds of

1 things that are fairly sophisticated and bring
2 an appreciation for reliability.

3 The precision of the measure in
4 the world of legacy measures has been
5 considered as important to a reliable
6 assessment. The validity of the assessment or
7 more generally does the measure measure what
8 it purports to measure is really the bottom
9 line in my opinion as one can have a reliable
10 assessment but if it isn't valid then the
11 exercise becomes pretty futile.

12 More recently, the use of the
13 HRQOL assessments that measure a range of
14 functioning from the physical to the
15 psychological have undergone a continued
16 transformation with the advent of the PROMIS
17 approaches using IRT and CAT. And David Cella
18 did a great job at the last workshop detailing
19 those approaches and applications.

20 These assessments have important
21 applications in the measurement world and now
22 have begun to be applied in a range of

1 settings to evaluation healthcare. Both
2 legacy and PROMIS measures are now being
3 introduced to a new world of performance
4 measurement applications. The use of these
5 measures in this context is fairly recent in
6 the United States and present important
7 challenges as we begin to think about how such
8 measures can be used in the context of
9 evaluating the healthcare processes at the
10 provider practice levels, among hospitals,
11 between plan organizations, and so forth.

12 The relationship of the metric for
13 performance measurement is well established
14 from a statistical and scientific vantage
15 point. The validity applied to a performance
16 measurement, however, is really in my opinion
17 very early on in its development. Clearly the
18 validity issues will become established with
19 more experience.

20 An analogy that I thought of this
21 morning, and maybe it wasn't a good one, and
22 it might be a bit of a stretch, but to use

1 this in the context of the space program, to
2 launch an astronaut to the Moon. This took
3 nearly a decade when John Kennedy announced
4 this challenge and goal in the early sixties.
5 Maybe being from Massachusetts I thought it
6 would be appropriate.

7 The physics for this had
8 historically been in place since Sir Isaac
9 Newton, many years, actually centuries before.
10 However, the proof in the pudding or of the
11 physics was not established until we actually
12 put a man on the Moon.

13 While we have many instruments and
14 metrics out there, the proof of concept of the
15 application and validity of these remains to
16 be applied and tested in the use of the
17 metrics in the real world, and then ultimately
18 to improve the quality of care in the
19 healthcare system. Perhaps we should develop
20 a time line with goals as this moves forward.

21 For purposes of performance
22 measurement and just to be a little technical,

1 reliability can be defined simply in terms of
2 what I call the expected and the residual
3 reliability. Expected reliability tests for
4 the consistency of the case-mix differences in
5 predicting outcomes among entities being
6 compared such as physician practices,
7 healthcare plans, et cetera. Case-mix is
8 based upon the sociodemographics and clinical
9 characteristics that are covariates in the
10 model. So, expected reliability would be the
11 consistency of those case-mix -- of that case-
12 mix across different entities that you're
13 comparing.

14 And Steve Fihn in fact you asked a
15 question this morning about case-mix and this
16 type of reliability in fact can get at that
17 issue as to whether case-mix in fact might be
18 changing amongst what's being compared. A
19 very important point I think.

20 The residual reliability on the
21 other hand which is actual values minus
22 expected values is an indicator of whether the

1 signal can discriminate amongst the entities
2 being compared which would be practices,
3 plans, or whatever, and is based upon the
4 magnitude of the signal among the entities and
5 the sample size of each of the entities where
6 there's baseline and follow-up data for the
7 outcomes that are being compared.

8 And this can be calculated using
9 intra-class correlation coefficients. Markov
10 modeling techniques can also be used which was
11 in the very nicely done report by Laura.

12 The residuals measure the extent
13 to which a member's experience exceeded or
14 failed to meet the expected health change. So
15 you are comparing these plans in terms of
16 whether in fact expectations are exceeded or
17 whether they failed. The reliability of these
18 residuals then describe the extent to which
19 the entities being compared are truly
20 different compared with measurement error or
21 noise.

22 So the science for measuring

1 reliability for purposes of performance
2 measurement is in place and the challenges as
3 I see them are in demonstrating the validity
4 or whether the measurements are resulting in
5 a meaningful difference in the comparisons
6 being made. So a couple of questions related
7 to this.

8 Are we measuring correctly the
9 appropriate domains for the purposes of
10 performance? Are the populations being
11 targeted correctly for this purpose? Are the
12 populations sufficiently homogenous so that
13 one is able to find meaningful differences
14 that one can act upon in terms of the HRQOL
15 outcomes being assessed? Is what is being
16 measured truly measures of outcomes that are
17 impacted on by quality or processes of care?
18 Could you go the next figure?

19 So, my charge was to look at the
20 differences between reliability and validity,
21 or to talk about the interface. And you'll
22 notice that the arrow there is bidirectional

1 with a question mark because I think there are
2 some that will think it should go only in one
3 direction, from reliability to validity.

4 Others that have a broader
5 perspective I think see it as bidirectional.

6 And the reason for this is that reliability
7 will give us a metric that is precise and
8 provides an understanding of the measurement
9 characteristics. Validity on the other hand
10 will determine if we're on target. Both can
11 inform each other. In the event that the
12 metric is not sensitive to the comparison
13 being made among, for example, doctor
14 practices, this could be a function of the
15 content and construct validity.

16 The content validity may be that
17 the domain of content being measured needs to
18 be modified or added to, or that the construct
19 being measured needs further refinement.

20 Also, are we measuring what is relevant to the
21 provider and patient? This then points to
22 both issues of reliability and validity.

1 The organizations being measured
2 which is at the top there are also an
3 important consideration. Is the measurement
4 being taken seriously within the organization?
5 And how much -- or in fact are they just
6 giving lip service to it? How much emphasis
7 is being placed on interventions that will
8 impact on the outcomes being assessed?

9 The measurement also may be so
10 rigid and specific that the processes of care
11 and interventions are not being reflected in
12 the outcome metric and the dynamics of what is
13 occurring in the entities being measured and
14 compared are not adequately represented.

15 Does this measurement provide a
16 depth and breadth of content so that the
17 dynamics of the processes of care impact
18 adequately on the outcomes being measured? Do
19 we need to consider generic measures and
20 disease-specific metrics as well? Is the
21 overall net of what is being captured
22 reflected in the signal in the entity being

1 compared with other entities so that
2 interventions and processes of care are
3 reflected in the variability and the outcomes?

4 And just a couple of last points.

5 Gaming is something which is at the bottom
6 there of that figure that can be defined as
7 meeting the target or threshold but clearly
8 missing the point. There are proprietary
9 efforts in companies designed to consult with
10 health plans or insurers designed to improve
11 the Stars ratings that was discussed this
12 morning. In fact, one of my former students
13 works for such a company.

14 And basically they'll go into the
15 insurers, to the health plans and they'll look
16 at how in fact can we improve the Star rating.
17 So some gaming clearly is going on,
18 influencing the metrics and in the future it
19 may be important to develop methods to better
20 understand gaming approaches and how this can
21 be revealed through the patterns of the
22 results.

1 Is it possible that the metrics,
2 for example, may influence the nature of the
3 case-mix to provide the physician practices or
4 plans with more favorable patient mix for
5 purposes of outcomes? This goes back years
6 ago to what we used to call adverse versus
7 preferential selection. But I think we all
8 know that some of that is out there.

9 To conclude, I think that the
10 science of performance measures for
11 reliability is far advanced in evaluating the
12 reliability of the metrics. On the other
13 hand, the validity of the metric as a
14 performance measure is pretty much in its
15 infancy.

16 Validity I view as when the rubber
17 hits the road. It involves the success of the
18 measure in adequately measuring entities among
19 health plans or physician practices or
20 whatever with sufficient precision and
21 variability that the results are found to
22 accurately reflect the outcomes of processes

1 of care.

2 Are the measures in populations
3 studied covering what needs to be measured for
4 purposes of improving performance in quality
5 of care? There are a number of methodological
6 issues that need to be addressed I think
7 related to the validity of performance
8 measures, and this includes face validity,
9 construct validity and criterion validity.
10 And I think you all are aware of what that is.

11 The sensibility and consequently
12 usefulness of what is being asked of the
13 patients needs to be present. And similarly
14 for the clinicians and administrators that
15 they also view the metric as important and
16 useful. So I think the clinical sensibility
17 issue becomes really paramount in this
18 context.

19 A last point is that much of this
20 work goes back to the buy-in of the patients
21 and providers at the front lines of care.
22 That's where it's at. And I begin to see that

1 as I age and I see clinicians and you know,
2 clearly that's where everything is happening.

3 That view of the metric of what is
4 being evaluated is very important. I think
5 that more experience with validity of
6 performance measures is needed as we move into
7 what Aldous Huxley used to say, a brave new
8 world, where performance measures become a
9 mainstay of healthcare. Thanks.

10 DR. PACE: Okay, thank you, Lewis.
11 And just also looking ahead we have two panels
12 that will specifically be targeted on validity
13 issues. But thank you for that relationship,
14 that's what we needed.

15 Okay, Lori? Or Jack? Which one?

16 DR. FRANK: All right, I'll go
17 next. All right, thanks very much. The
18 outline for my comments since reliability
19 relates so much to variation is variation on
20 a theme. I'll discuss how the concept of
21 patient-centeredness relates to reliability
22 and as with the last time my goal is to

1 explore how re-framing patient involvement in
2 PROs can improve measures and enhance the
3 value of PROs for use in clinical settings and
4 for performance measurement.

5 Communication, trust and
6 perspective are my main themes as I think
7 about performance measure reliability. And I
8 had a visual slide up as well.

9 DR. PACE: Yes, Jessica will put
10 it up.

11 DR. FRANK: Okay, great. First,
12 the authors made a distinction, an important
13 one between generic and condition-specific
14 PROs. And the distinction has implications
15 for psychometric assessment. How you approach
16 psychometric evaluation differs by the type of
17 PRO. I think that it's useful for us to think
18 about performance measures and whether they
19 are setting- or process-specific or setting-
20 or process-generic which is a point Laurie
21 Burke made in terms of context of use.

22 So my question to address is are

1 there any differences or unique considerations
2 for demonstrating and evaluating the
3 reliability of a PRO performance measure.

4 Really the question is what's special about
5 patient report. Psychometrically, nothing.

6 Is reliability of the PRO
7 performance measure score needed in addition
8 to reliability of the PROM? I would say yes
9 but it connotes something different for the
10 performance measure than it does for the PRO
11 which is a point I think made very well in the
12 paper.

13 Reliability is foundational which
14 is why I chose an image that had a table with
15 a strong base there. So we need to know for
16 an individual PRO that it demonstrates
17 adequate internal consistency reliability as
18 well. Are the items all pears or are there
19 some apples mixed in? Are there things there
20 that don't fit in? So I picked in image that
21 had different fruit in it as well.

22 And then we also need to know

1 about test-retest reliability. At a different
2 time and with no changes expected from time 1
3 to time 2 will we get the same results?
4 That's why I chose an image that also had a
5 clock in it.

6 And relatedly, at what time point
7 does it make the most sense to assess
8 reliability and for that matter, quality?
9 Have patients provided input into the timing
10 of the assessment?

11 For the theme of perspective which
12 is part of why I chose something that came
13 from a cubist tradition although this is
14 technically futurist which I think fits with
15 this meeting well, it makes us think about
16 perspective. Do we have trust in our PRO for
17 use with individual patients and do we have
18 trust that aggregating the responses will lead
19 to sound conclusions? So what's required for
20 us to have trust once we aggregate up? What's
21 required for the patients to have trust?
22 They're important reporters but also important

1 consumers of the information. What is it that
2 they need in order to trust this information?

3 So what's different about patient
4 report when we consider PRO performance
5 measures? As I said earlier, psychometrically
6 nothing but because we're dealing with
7 information obtained from people and
8 heterogenous people, everything's different.
9 People are variable. There's inter-individual
10 differences, there's inter-individual change
11 and a reliable measure needs to work across
12 different perspectives and faithfully transmit
13 differences and faithfully report on those
14 true changes.

15 The authors raised an important
16 issue, that of the provider-specific care
17 quality which requires that the provider is
18 considered in terms of the match with
19 individual patients. For this we're talking
20 about sample means or ratings, and what could
21 be termed goodness of fit between a provider
22 or a system profile and a patient's

1 preferences. There was some talk this morning
2 about the role of patient preferences in
3 performance assessment.

4 A separate type of reliability to
5 contemplate then is the extent to which the
6 provider consistently scores well for patients
7 with similar preferences on key variables.
8 This is a perspective issue which I think
9 those strange wavy lines on there help to
10 communicate beyond what we usually consider.
11 It's something we don't usually see.

12 How best can we communicate the
13 reliability of the quality measure, quality or
14 performance measure, to patients and to other
15 non-clinicians? How can we do so in a way
16 that builds and maintains trust? What else
17 should be communicated? Which goes to what we
18 were talking about this morning about
19 squeezing every last bit of value out of a
20 patient-reported outcome measure which would
21 include considering the direct-to-consumer
22 communication possibilities.

1 Creating trustworthy measures,
2 measures truly worthy of trust, is a very
3 important way to do this. Among the issues
4 that are hard to address let alone communicate
5 to a wide audience is when quality of the
6 evidence and the ability to draw inferences
7 from the data varies systematically by some
8 variables of interest as with the example the
9 authors gave of the shrinkage towards the mean
10 strategy which works better for top hospital
11 quality than bottom-quality hospitals.

12 How do we establish trust in our
13 measures? In the section on aggregating data
14 the authors rightly point out that means can
15 be misleading when the population of interest
16 is diverse in some important ways. Obtaining
17 reliability estimates of a measure can be
18 similarly misleading if a measure truly
19 performs differently in different populations.
20 So, getting back to perspective the shrinkage
21 technique referenced earlier, the performance
22 may differ by a specific variable.

1 In the case of measure reliability
2 that differs by populations clinicians and
3 also patients should have input into drawing
4 the meaningful distinctions between groups and
5 then the researchers can go onto hypothesis-
6 test the differences in terms of impact on
7 reliability. Cut points, for example, might
8 differ by patient groups in ways that we
9 haven't explored with patients helping to
10 define what those groupings should be.

11 Part of the point of involving
12 patients in performance measure development
13 and selection is opening up performance
14 measurement exercise to things that we as
15 clinicians and researchers have not considered
16 as important but in fact may actually be. So,
17 things that patients see that we might not be
18 able to until we view it from the patient's
19 perspective.

20 The authors reference a notion of
21 similar patients with similarity defined by
22 researchers or clinicians generally. But

1 there's room there to consider other types of
2 definitions of similarity, and even having
3 patients comment on those definitions.

4 An example of patient preference
5 given in the paper is an example of a
6 caregiver proxy measure. So I'd be remiss if
7 I didn't make the point that family and other
8 caregiver reporters are important but we need
9 to be mindful about loss of fidelity which
10 might be more of a validity issue but missing
11 the mark a little bit despite reliably hitting
12 that same spot on the target. Proxy report,
13 obviously not the same as a caregiver-reported
14 outcome, a point I think that we're all clear
15 on here.

16 The authors correctly point to
17 inter-interviewer variability as a threat to
18 validity. I would say it's a concern for
19 reliability as well. The example they gave
20 was a script used in the minimum data set to
21 support inter-interviewer reliability.

22 It's interesting to consider when

1 the standard step that we've all used to
2 minimize variation might actually introduce
3 unwanted variation in some cases. So are
4 there patients who need a different script?
5 Are there those who need the interviewer to be
6 able to bury the script in order to collect
7 the most reliable and most accurate data?

8 I want to end with the concepts of
9 "in" and "of." We talked last time about
10 patients involved in the research as subjects
11 but also helping to define the outcomes,
12 helping with recruitment, et cetera. And then
13 patients of the context of research, helping
14 to define the topics and prioritize, and
15 helping with some of the funding decisions.
16 I think that same in -- way to conceptualize
17 it can be applied to performance measurement
18 too and it's very exciting as we think about
19 futurism for us to contemplate that here.

20 As Ethan said, how are patients
21 involved in defining meaningfulness? How do
22 we measure meaningfulness of scores reliably?

1 Are patients involved in this?

2 And I really appreciated what
3 Patti Brennan said in terms of listening to
4 the patients about how they think about their
5 own care. And it's somewhat analogous to
6 hearing the patient voice in development of a
7 PRO. All of this reinforces the
8 trustworthiness of the measurement enterprise.

9 Should performance measurement be
10 patient-centered? Not always and not
11 necessarily, but I would challenge us to think
12 about situations in which inclusion of the
13 patient perspective does not improve the work.

14 Last time I discussed the idea of
15 involving patients in discussions of sources
16 of measurement error in performance
17 measurement. For this topic today I stand by
18 that recommendation. We have to recognize the
19 patients who are not being asked about their
20 healthcare in the best possible way for them
21 have the power to bring measurement error
22 including reliability in.

1 So last time I referenced Donald
2 Berwick's 2009 Health Affairs piece on
3 patient-centeredness. These are radical and
4 disruptive shifts as he would call them in
5 control and power. And if they improve care
6 quality then I think they're worth it.
7 Thanks.

8 DR. PACE: Thank you. And now
9 Jack.

10 DR. FOWLER: It's neat to follow
11 two people. You've covered a lot of things.
12 And the paper was very good. And I'm not
13 going to talk much about the calculation
14 strategies which I think there are other
15 people here better qualified to talk about
16 that.

17 But as I thought about the
18 reliability issue I keep thinking that there
19 are these two steps here, and without the two
20 steps working then it doesn't work. And so
21 the question that was raised I think that was
22 framed initially and -- is it enough to assess

1 the reliability of the patient-reported
2 measure or do you have to assess the measure
3 of the performance measure? And you've got to
4 do both.

5 And there are two steps, and there
6 are two sources of reliability that are here.
7 You've got whatever amount of error there is
8 in the measurement of how the patients turned
9 out and how well or badly we are measuring
10 what kind of shape they're in. And then we've
11 also got this relationship between whatever it
12 is the providers do and this outcome. And
13 that -- if that's got unreliability too, I
14 mean I think you reduce the reliability -- bad
15 reliability times bad reliability gets you
16 wherever you get.

17 And I think you've got to do both
18 steps. And without doing them both I don't
19 think you're there.

20 And so we do have quality measures
21 that are not two steps and I just want to
22 point that out, that these process measures

1 that folks talk about don't involve those same
2 kinds of two steps. So the CAHPS measures
3 involve saying did they talk to you in terms
4 you can understand. How long did you wait in
5 the waiting room to see a doctor. There are
6 not two steps there. You had the clinical
7 experience and you reported on it, and that's
8 got its own reliability but it's one step,
9 it's not two. We don't have to have a
10 hypothesis between waiting time in the waiting
11 room or in anything else, we just wanted to
12 hear about that.

13 We've been working a lot on
14 decision quality. And actually, the three
15 things we think you need for a good decision
16 are a process that involves interaction with
17 a physician in a certain way, being informed
18 and having a decision that is -- matches your
19 goals and values.

20 So, the first one, the one about
21 the process, again is a one-step thing. We
22 can ask people did the doctor -- how much did

1 the doctor talk about the cons as well as the
2 pros. Did he talk about alternatives and did
3 she ask you what you wanted to do. Those are
4 things with no steps in between, they're just
5 reporting on what you experienced. The
6 questions can be perfect or medium but the
7 measurement problem is just the one thing.

8 But then if you go to the next
9 step to say, you know, did you get a
10 concordant decision then you've got to have
11 some kind of link between the way the
12 physician interacts with a patient or whatever
13 you think the action is and the outcome that
14 you're measuring. So you've got to have both
15 of those steps.

16 And one of the things I sat around
17 and thought about, building on what Liz Mort
18 was talking about this morning is what are the
19 kinds of situations or patients that we can
20 think of where you could really say with some
21 confidence we think that the way the doctor
22 treats them could make them better, or keep

1 them from getting worse. Or at least you
2 could predict what the outcome would look like
3 or the change would look like if they got good
4 care, whatever that means.

5 And I had trouble making a list of
6 those things. You know, there are just a lot
7 of things -- so you know, and I know others in
8 the room have wrestled with this sort of
9 thing. For example, you take low back pain
10 and that's pretty cool but the problem is that
11 about 80 percent of low back pain resolves
12 itself in a couple of weeks. So probably no
13 matter what you do to them a bunch of people
14 are going to get better. So there you go.

15 So you say, well you've got to get
16 the right back pain patients in order to study
17 whether the intervention or the support they
18 get. And that, I keep going back to the
19 problem of how well can we do at identifying
20 the patients whose outcomes we're going to
21 measure.

22 I notice the Europeans, both of

1 their approaches were to take surgical
2 patients. So they actually ducked the patient
3 identification problem of who's eligible for
4 this by just picking the ones that got
5 intervened with.

6 Now, we thought a bunch about this
7 and that is the easy one to do. If you want
8 to do something reliable to sort of measure
9 outcomes you can measure people who get cut or
10 intervened with in some other serious way and
11 find out if they got better or enough better.
12 One of the nifty things for providers is that
13 with a few exceptions there are a whole lot of
14 interventions like that that make people
15 better at least if you measure symptoms before
16 and after. You kind of end up looking better
17 though we could say whether the Hopkins people
18 turned out as well as the MGH people turned
19 out as well as the UNC people or something
20 like that. We can work on that.

21 (Laughter)

22 DR. FOWLER: But the real problem

1 with that is the point that Liz Mort brought
2 up also, is that the -- where I'd really like
3 to start the evaluation of how do we treat
4 people are with people who have got the back
5 pain or who have got the knee pain or have got
6 BPH or whatever it is they've got. And I
7 don't want to -- and I don't want to give
8 people bad scores just because they're less
9 interventional. And if you just take the
10 people who get the big interventions you're
11 likely to get pretty big improvements but you
12 don't get to give credit to the providers who
13 let the guys live with their BPH symptoms or
14 who let the guys say that I'm willing to kind
15 of work with my herniated disk and treat it
16 conservatively, and if you measure me 6 months
17 later my back's going to hurt worse probably
18 on average than if I got surgery for my disk
19 but I didn't want to go through the surgery.
20 And that's -- I got better care in some way
21 even though my symptom score may be higher.

22 And I say I would hate to build in

1 interventions, you know, incentives for
2 interventions that will fix problems at some
3 cost and you're not measuring the cost so much
4 as just measuring how the symptoms come out.

5 And the other -- so I worry about
6 that and I keep coming back to the fact that
7 maybe the most complicated problem we have is
8 how to identify the patients whose outcomes we
9 really want to track. And how do we do that.

10 We've been working with a bunch of
11 medical practices to work again in this case
12 on quality of decision-making. And so one of
13 the things that we need to do is identify
14 people who were candidates for making
15 decisions who are not -- and that's a pretty
16 good group of the people that you might want
17 to see how things turn out for.

18 And boy, do practices have a hard
19 time identifying people who have a certain
20 symptom situation or medical condition. They
21 have trouble identifying their diabetics. And
22 if they do identify diabetics, maybe everybody

1 who's got a diabetes score at a primary care
2 visit, they can be in all kinds of different
3 stages and places in where they are.

4 Arthritis was another one that you
5 picked out as maybe could monitor pain. But
6 boy, the arthritis people, just because you've
7 got a code of arthritis, you know, you could
8 be somebody who's been managing it for a long
9 time, had it under control and you're just
10 sort of maintaining it, or you could be a new
11 onset person for whom actually how things get
12 managed could make a big difference.

13 And I think the patient
14 identification thing it seems to me is one of
15 the greatest challenges. And it is a
16 reliability problem, not a validity problem
17 because I think every practice is going to do
18 it differently.

19 And I was again interested in I
20 think it was the Swedes who seem to be
21 managing to get patients to fill out sort of
22 baseline questionnaires about what their

1 status is about things. And that would be a
2 big help in terms of patient identification
3 for these symptoms. But we don't do that in
4 this country and there's nobody who's got --
5 or hardly -- it's unpredictable who might
6 happen to have a back pain score or a BPH
7 score or something on their general practice
8 thing.

9 So the notion of who could you
10 reliably identify so I could have the same
11 patients with the same kind of clinical
12 characterization across a bunch of practices
13 is a problem I haven't been able to think of.
14 And that is a genuine reliability problem
15 because as we were talking about earlier
16 today, you know, the impact and the validity
17 of measuring performance, you've got to even
18 the playing field about treating the same
19 patients and how they're coming out.

20 And if there's differential
21 information about who they are and different
22 ability within practices to identify the same

1 people that really is an important source of
2 unreliability I think in the measurement
3 that's going to be really hard to wrestle with
4 and get right.

5 So there are a bunch of challenges
6 here and you know, it's such important and
7 good work, and there are -- there probably are
8 some cases where we can identify reliably some
9 people the care of whom we could take as an
10 outcome of care. But it's not a really,
11 really long list I don't think and I think the
12 problem of patient identification has got to
13 be paramount, and whether you can make a
14 reliable and meaningful assessment of whether
15 or not medical care is actually better, worse
16 or whatever for that set of people. Thanks.

17 DR. PACE: Okay, well thank you to
18 Laura and our panel. And now we'd like to
19 open it up for discussion with the rest of our
20 expert panel and audience. So again those of
21 you on the phone you can get ready. We'll
22 take your questions in a little bit but I'll

1 start with any questions or comments for our
2 panel. Patti. At the table they're green.
3 Sorry.

4 DR. BRENNAN: Sorry. Hi,
5 everybody. I woke you all up. This can be
6 addressed by anybody on the panel. I see an
7 oversimplification of the healthcare system
8 that we're going to have patients within
9 practitioners and practitioners within
10 practices and everybody's going to stay where
11 they're supposed to be.

12 And so can you help us think about
13 how we're going to deal with me who has a
14 primary care doc who I never see, a nurse
15 practitioner that I always see, but sometimes
16 I see the person who's covering that day
17 because one of those people is sick or I've
18 come on the wrong day. And I know that you
19 can't solve all the problems but are there
20 ways we can think about reliability and
21 validity at the level of the practice that we
22 could actually sum across clinicians?

1 DR. FRANK: Yes. So I just wanted
2 to raise the idea of the quantified self and
3 big data, and data are getting bigger and
4 bigger. So if we start from the patient up
5 then we can systematically review data for
6 patterns and come to some reasonable
7 conclusions about quality from that direction.
8 You're absolutely right, we're not there yet,
9 but it's to me an interesting notion. It has
10 to be top-down also. But I'm excited about
11 the possibilities for patient up.

12 DR. FOWLER: I mean I think the
13 only other thing I'd add is that the CAHPS
14 people have been wrestling with that for a
15 long time too. And partly it's sort of what
16 your unit of analysis is. And I think, you
17 know, a care team or a care provider or an
18 ACO. And if you get a little bigger then we
19 give the whole system credit for it and that
20 may be helpful. You still could have two
21 systems treating you too but that at least --
22 that solves the problem for a lot of people.

1 DR. PACE: Okay, Greg?

2 DR. PAWLSON: I think I've been
3 abandoned at this table. They're all up
4 there.

5 Two observations and a question.
6 One, I can't agree more with Jack about the
7 need to really characterize populations very
8 carefully. And even where we think we have
9 accurate diagnostic information we don't for
10 the most part. And there is so much range in
11 the labeling that we use at the current time
12 that it's almost meaningless. And so I think
13 if we're going to minimize the huge variance
14 that is introduced by patient-level variation
15 rather than provider effect, if that's what
16 we're actually trying to do I think that's
17 sort of a numero uno problem.

18 The second I think poses a real
19 problem for NQF. If we are to go beyond the
20 characteristics that -- of reliability and
21 validity that are sort of baked in at the
22 measure level and get into the performance

1 measurement level in a way it would be
2 interesting to get the panel to reflect a
3 little bit on how far do we think NQF has to
4 go in requiring testing at that second level.

5 In other words, I think most
6 people would agree what we want to see in
7 terms of reliability and validity
8 characteristics of the measure piece itself.
9 But when you're testing as both the paper and
10 a couple of panelists pointed out the
11 particular reliability that you find is
12 dependent somewhat on the population that you
13 tested in. So what's going to be sort of the
14 practical advice for the NQF panels in what
15 should we require, how much testing, how broad
16 does the population have to be, what can we
17 accept as enough to give us a reasonable idea
18 that this will work in most populations let's
19 say, or at least if you don't go way far
20 afield?

21 My favorite example is actually
22 one from the VA. There was a paper published

1 slamming the colon cancer screening measure
2 and it was done in a VA clinic in San
3 Francisco that was end-stage COPD. Well, we
4 never anticipated when we developed the colon
5 cancer measure that that's where it would be
6 used and obviously that population the measure
7 had no real validity or reliability for that
8 matter. So, the question is what do you think
9 NQF should do.

10 DR. KAZIS: Yes, it's a very good
11 question. I think that my recommendation
12 would be to begin with what I call low-lying
13 fruit and start with some success stories that
14 are going to get the clinical community
15 interested and involved in the process rather
16 than going after something that might be
17 initially viewed as being out in left field
18 and more difficult to reach.

19 So, perhaps to target some
20 populations very specifically and apply some
21 assessment tools that have some track record
22 already. And then provide the ability for

1 those metrics to be understood and recognized
2 by those that are using them through
3 recommendations and through other means. But
4 I think what's also important is not just to
5 provide a metric but to provide those that are
6 using it with some understanding of what they
7 need to do with it.

8 DR. PAWLSON: You were also
9 suggesting sort of post-marketing surveillance
10 after -- in other words, if we accept, you
11 know, testing. And I guess to use an example
12 that Jack was pointing out, if we sort of
13 focus on surgical procedures I would guess
14 that there is a fair amount of variance in
15 whom -- to whom surgical procedures are even
16 applied. So what level of testing would we
17 start with and then what about the sort of
18 post-marketing surveillance of, you know,
19 further evidence of its reliability and
20 validity as it's used more widely?

21 DR. KAZIS: Could I just mention
22 one thing related to that which is

1 variability. And the whole idea of health
2 services over the years was to reduce
3 variability. And is that -- I think we could
4 raise sort of a skeptical question, you know,
5 looking at it as a skeptic is variability
6 necessarily a bad thing. And are there
7 situations in medicine and clinicians out here
8 might clearly have some examples of this where
9 in fact a procedure is done in a very
10 different way by two different groups of docs
11 but in fact both are success stories?

12 DR. PACE: Right. And then in
13 that case you would have similar outcomes so
14 I don't think people would quarrel with that
15 as long as you had two effective processes.
16 Jack?

17 DR. FOWLER: That is my question a
18 little bit. And variability may not always be
19 bad but I think we have tons of data that show
20 that it's physician-driven most of the time
21 and is not related to either the patient
22 preferences or their conditions. And so while

1 I would not want to say stamping out
2 variability should be our goal by any means,
3 I think making sure that it's related to
4 outcomes and patient preferences and their
5 needs should be a really high priority here.

6 DR. FRANK: And I'm glad that you
7 raised the notion of post-marketing
8 surveillance because I think the FDA
9 regulatory pathway is instructive here. You
10 know, a measure is never valid or reliable for
11 that matter. We need to iterate and then it's
12 just drawing the line, when is it good enough.

13 DR. PACE: Al?

14 DR. WU: It seems to me that there
15 could be sort of a best case scenario for what
16 the reliability of the measure might be. At
17 least at the first phase I had two thoughts.
18 One was that the procedures, the prescribed
19 procedures for how to collect the measure
20 include -- in order to attempt to achieve good
21 reliability, acceptable reliability, should be
22 specified very clearly.

1 The second thing I wonder about is
2 it seems like this lack of reliability,
3 variability results from lots of things. And
4 I wonder if -- and a lot of those things could
5 be termed metadata. And I wonder if at least
6 when something is being rolled out if we
7 should make a concerted effort to collect some
8 of that metadata so we can parse out where the
9 variability is coming from.

10 And you know, for example if you
11 were to say have a checklist for an
12 administration procedure and checking boxes 1
13 through 5 essentially went along with the
14 score that you got and you could then
15 calculate your reliability you could see what
16 the relationship was of those boxes being
17 checked to whether or not you got an
18 acceptable reliability. And that sort of
19 thing might be worth thinking about as we go
20 from just PRO to PRO measure.

21 DR. PACE: Right.

22 DR. WU: I'm sorry, PRO quality

1 measure.

2 DR. PACE: All right, Laurie?

3 DR. WU: Whatever.

4 (Laughter)

5 MS. BURKE: This is Laurie Burke
6 from FDA. And I appreciate that last diagram
7 that showed the relationship between
8 reliability and validity because I think that
9 really is key in understanding what's going on
10 here.

11 But yes, and I agree, Al, that
12 there are many -- I have to think about four
13 sources of variability and the first one is
14 true heterogeneity amongst the people you're
15 trying to measure. So, and I also agree, Lori
16 Frank that there's never complete validity or
17 optimal reliability. It's always something
18 that can be improved upon.

19 However, if you're not measuring
20 what you think you're measuring at all that's
21 a big problem. So, I mean we can identify
22 validity that's not adequate. And we can also

1 -- but the amount of reliability that's not
2 adequate depends on what you want to use your
3 measurement for.

4 So in clinical trials where we are
5 always measuring very small differences
6 between treatment groups we have to have very
7 good reliability in order to be confident of
8 the differences that we're measuring so that
9 we can make a conclusion that's valid that a
10 treatment works.

11 So therefore when we're looking at
12 a measure to use as an endpoint in a clinical
13 trial we look very carefully at the entry
14 criteria for that clinical trial because
15 companies that are developing drugs are very
16 careful about who they let into their clinical
17 trial. They're going to exclude all kinds of
18 people and it's not, you know, and this is the
19 whole real world, not real world controversy.

20 But the clinical trials are very
21 clean. And they're going to exclude those
22 with certain severity of illness, they're

1 going to exclude those with concomitant
2 illness, they're going to exclude those with -
3 - in certain age groups.

4 And so when we look at a measure
5 to evaluation whether it is well-defined or
6 reliable for the purpose of use in this
7 clinical trial we compare the results of all
8 that validity and reliability testing before
9 the trial with this measure. We compare that
10 population that it was tested in to the
11 clinical trial entry criteria. So, because
12 you want to minimize that variability so much
13 that we can be confident of the effects that
14 are demonstrated in terms of an effect size.

15 So, for performance measures
16 that's what you're going to have to figure
17 out, how much reliability is necessary to be
18 able to use the population size that you're
19 going to use to make some sort of conclusion
20 and come up with a result.

21 I mean, we have, you know, the
22 argument that Dr. Fowler, the discussion that

1 Dr. Fowler presented in terms of identifying
2 the right population and the right
3 comparability between -- this is -- you're
4 describing the whole reason for the evolution
5 of the clinical trial methodology is because
6 we have to be able to compare and know what
7 we're measuring.

8 DR. PACE: Right. And just to --

9 MS. BURKE: So that's not possible
10 in performance measurement, we understand, so
11 we have to come up with another standard.

12 DR. PACE: Right. And we'll get
13 into this more in one of the validity panels
14 but obviously in clinical practice people
15 aren't being randomly assigned or selected as
16 Laurie talked about in clinical trials. And
17 so you know, we rely on methods such as risk
18 adjustment, stratification, et cetera. And
19 that definitely is important in terms of
20 looking at the validity of the conclusions you
21 can make from a performance measure score. So
22 definitely important in terms of getting to

1 that. Ted?

2 DR. GANIATS: I'm thinking about
3 cholesterol and it varies by season. We know
4 that. We heard earlier today that mood can
5 affect a patient-reported outcome and we know
6 that and that's just all variation that's
7 going to affect reliability. And we just have
8 to hope that it's going to wash out across the
9 groups.

10 So I'd like you to address
11 something different and that is a
12 controllable, a game-able reliability. I
13 mean, when I go to my car, get it fixed, they
14 say hey, we're going to mail you this
15 satisfaction questionnaire. Make sure you
16 mark them all fives. And we haven't talked
17 about external threats to the reliability that
18 would be important to the NQF. And I'm just
19 wondering if the panel can think about it.

20 I mean predominantly I think we
21 have satisfaction, information perhaps on
22 satisfaction though I don't know it, but it

1 would seem that patient-reported outcomes
2 might be game-able in a way that we're not
3 used to seeing in most other performance
4 measures.

5 DR. PACE: Go ahead, Jack.

6 DR. FOWLER: Actually we have --
7 again I'll use the CAHPS experience. We have
8 pretty good data that they've experimented
9 with having physician's offices collect the
10 data by handing out questionnaires, et cetera.
11 You get much better ratings if you do it that
12 way it turns out, much.

13 So the standard is really that you
14 have an external contractor that has to
15 collect data and you do it in a way that's
16 anonymous so that patients don't have to worry
17 about you seeing my report, guessing who I am
18 and knowing that I'm not pleased or something
19 or that I'm not doing well. So we haven't
20 talked about the protocols and there are all
21 kinds of ways to do it.

22 I did notice again in all three of

1 the ones I think this morning that presented
2 have outside people collecting I think at
3 least the follow-up data. I'm not sure about
4 the baseline data in Sweden. But I think
5 outside data collectors are pretty important
6 and some way to protect the patients from
7 feeling like they're exposed to their
8 providers.

9 There's some other reasons you
10 might collect data that you would feed into
11 providers but performance evaluations are
12 probably not the right one.

13 DR. PACE: Could we see if anyone
14 in the audience would like to ask a question
15 and Evan can get you the microphone. And
16 Operator, would you also ask the people on the
17 phone to signal if they want to ask a
18 question?

19 OPERATOR: At this time in order
20 to ask a question press * then the number 1 on
21 your telephone keypad.

22 DR. PACE: Go ahead.

1 MS. MASTANDUNO: Hi, this is
2 Melanie Mastanduno and I'm from the Dartmouth
3 Institute and working with clinicians at
4 Dartmouth in an observational setting as
5 opposed to a research study on collecting
6 patient-reported outcomes.

7 And so my question to the panel is
8 in the interest of promoting patient- and
9 family-centered care would not the panel of
10 patients or the clinical team, the practice
11 level be the right unit of analysis for
12 evaluating the aggregate results in order to
13 say we are not pitting one provider against
14 another but rather the approach in this clinic
15 is consistent because they share nurses, they
16 share medical assistants, the secretarial and
17 appointment staff are organized at the front
18 desk. And it's not one clinician practicing
19 at wide variation within a practice. And so
20 could you please respond to that given the
21 discussion of the very granular methodologic
22 concerns that you've raised?

1 DR. KAZIS: I think what you're
2 raising is an important point. The unit of
3 analysis clearly becomes really important at
4 the practice level in order to who you're
5 evaluating. And whether in fact, you know,
6 one can assume but maybe not always that if
7 you're dealing with a practice with a number
8 of clinicians and nurse practitioners and
9 others, there's a culture within that group.
10 And there may be more homogeneity within that
11 group then if you compare that physician with
12 somebody outside of that particular practice.
13 So there may be some -- and there's been data
14 to suggest that over the years.

15 There may be some evidence then to
16 suggest that dealing with a unit of practice
17 that includes a number of providers and others
18 that make up that practice is an approach and
19 one that might work.

20 DR. PACE: Okay, one more. Go
21 ahead.

22 DR. JAMES: Hi, Tom James from

1 Humana. A question that I have has to do with
2 that of attribution. That's a word that was
3 not on the listing of all the definitional
4 phrases.

5 Attribution is something that at
6 least in traditional medical measurement has
7 wide variation and no standardization. And
8 it's something which drives physician
9 practices crazy. It's clear that we can
10 expand the universe so that we don't have to
11 deal with attribution but then we lose some of
12 that accountability.

13 How do we get to the point of
14 having some common definitions on attribution?

15 DR. PACE: I'll just -- it's
16 something that comes up often at NQF and it is
17 one of those areas of measure harmonization
18 that we'd like to see some movement in terms
19 of having more standardized rules regarding
20 attribution. But it is something that plagues
21 us. So thank you for bringing that up again.
22 It's definitely going to be appropriate in

1 these types of measures as well. John?

2 DR. WASSON: Just to follow up on
3 Jack's point. This is just dirty laundry part
4 2 because a lot of issues being laid out are
5 certainly reasons for caution.

6 Jack mentioned, well it's very
7 important to have vendors. This morning we
8 were asked the question about cost and
9 everybody fudged it. The bottom line is that
10 when we play a vendor game it's billions of
11 dollars, everything we're talking about here
12 when you multiply it across the physicians.

13 When you think of newer
14 methodologies that are patient-driven from the
15 bottom up like internet you're talking a
16 fraction of that. And we haven't -- we'll
17 maybe get into this in terms of administration
18 but we're being rather glib about the cost
19 side of things and I think we do have to be
20 careful.

21 DR. PACE: Okay. Operator, do we
22 have anyone online that wants to ask a

1 question or make a comment?

2 OPERATOR: At this time there are
3 no questions.

4 DR. PACE: Okay. All right. Al?
5 And I think we've got to wrap it up.

6 DR. WU: Just in response to that.
7 This morning we had a terrific presentation
8 from Sweden and he mentioned the cost that
9 they had invested which was something like 20
10 to 30 million Euros. So, which doesn't sound,
11 you know, multiply it by 1.3. It's not that
12 much.

13 Then you remember that Sweden has
14 a population of about 9 million. So if you
15 scale it up it's \$1, \$1.5 billion U.S. for
16 what -- which would be an equivalent amount to
17 what they spent. Now, certainly there's some
18 economies of scale, maybe it would be a little
19 less than that, but it's still a big number,
20 not inconsequential.

21 DR. PACE: Okay. All right. Any
22 other questions or comments? Yes, Chas. You

1 want to tell us who you are?

2 DR. MOSELEY: This is Chas
3 Moseley. I'm with NASDDDS. And I'm on the
4 long-term support side of the discussion which
5 is a little bit different than -- a lot
6 different than what you're talking about with
7 the very narrow acute care measures.

8 But I think it's important to note
9 that even when you're doing the patient-
10 reported measures for folks who are receiving
11 clinical care it's important to recognize and
12 to characterize the populations very
13 carefully. It's important for the tool to
14 characterize the various populations closely.

15 People with intellectual
16 disabilities and cognitive disabilities
17 receive acute care along with everybody else
18 and would be expected to respond to various
19 types of survey instruments. We found in our
20 research with national core indicators over
21 about 20,000 people a year that there are very
22 strong factors that influence the response.

1 Level of intellectual disability is one. Home
2 residential situation, age, the type of care
3 a person receives, whether it's in an
4 institution or a community, a wide variety of
5 variables that could be expected to influence
6 how they're responding to a patient-reported
7 outcome in a narrow clinical setting.

8 And I think it's important that
9 whatever instrument is used be able to be
10 adapted for people who have different types of
11 learning styles so that they won't be excluded
12 from the numbers.

13 DR. PACE: Okay. All right, one
14 last comment.

15 MR. ROONEY: Hi, Ted Rooney from
16 Maine again. I actually work for a lot of
17 groups who pay the bills, employers and
18 organizations, consumers and unions. And in
19 Maine we have a \$7 billion spend. If you
20 believe most of the experts 25-30 percent is
21 waste. We have a totally un-patient centered
22 system.

1 So if you could say that we're
2 going to institute PROMs in the context of the
3 overall measurement system and the overall
4 measurement system would implement measures
5 that would help drive efficiencies and return
6 on investment in the system and make it
7 patient-centered I think you'd have people
8 rushing to do it.

9 So I think it's -- the cost is a
10 lot if it's done like we've traditionally done
11 things, one-offs that are marginally
12 effective. But if we can make this the
13 centerpiece of how we do performance
14 measurement going forward and use it to drive
15 real changes I think it's a bargain and that's
16 from the people paying the bills.

17 DR. PACE: Okay. Well, thank you
18 to our panel.

19 (Applause)

20 DR. PACE: And we'll take a break.
21 You can get a little bit of refreshment and
22 we'll reconvene in 15 minutes.

1 (Whereupon, the foregoing matter
2 went off the record at 2:50 p.m. and went back
3 on the record at 3:08 p.m.)

4 DR. PACE: Okay, if everyone would
5 take their seats we're going to get started
6 here. All right. So, our next panel is about
7 demonstrating validity of PRO-PMs. And this
8 is part one. We'll have part two tomorrow
9 morning. There's a lot that goes into
10 validity and we've already talked about the
11 relationship between reliability and validity.

12 I'm going to introduce the panel
13 and then I will make a few comments about the
14 NQF criteria, again, just to put that in
15 perspective in terms of our mission to endorse
16 performance measures. So, next slide. Okay.

17 And again, you know, most of this
18 panel will focus on the performance measure
19 versus the PROM because we dedicated last
20 workshop to the PROM instrument. But
21 obviously once again the validity of that PROM
22 instrument for the context in which it will be

1 used for performance measurement is an
2 essential building block to having a valid
3 performance measure.

4 So, let me introduce our panel.
5 And for our Commissioned paper authors this
6 time we'll have Anne Deutsch from RTI and
7 Barbara Gage from Brookings Institution. And
8 then our expert panel members are Steven Fihn
9 from Veterans Health Administration and Albert
10 Wu from Johns Hopkins. So all of our expert
11 panel bios are in your handouts as well. So,
12 next slide.

13 So, I'll make a comment about a
14 couple of things and get into our specific
15 criteria. I know Laurie Burke mentioned this
16 morning that in terms of testing they found it
17 to be more efficient to start with validity
18 testing and then go to reliability testing so
19 that you don't have to repeat. From NQF
20 perspective we're evaluating measures after
21 they've been tested and we tend to look at
22 reliability first and then validity. But I

1 think that's certainly an interesting strategy
2 for those who are going to actually be
3 developing and testing measures and probably
4 does have some efficiencies attached to it.

5 So, in terms of what NQF is
6 looking for with validity is that our first
7 thing is that we want measure specification
8 that are consistent with the evidence that's
9 been provided to support the measure focus.
10 And again, we see this as foundational so that
11 if the evidence -- if the measure is specified
12 to be consistent with the evidence that's a
13 foundation for validity, but then we do
14 require validity testing.

15 And we want validity testing that
16 demonstrates that either the measure data
17 elements are correct and/or the measure score
18 correctly reflects the quality of care
19 provided, adequately identifying differences
20 in quality.

21 Again, in the context of NQF we're
22 endorsing performance measures that will lead

1 to improvement but also will be used in
2 accountability applications. And so it's key
3 that you can make valid inferences about
4 quality. If you see a list of providers and
5 their scores on a quality performance measure
6 can you say -- can you know that higher scores
7 mean better quality versus lower scores, poor
8 quality or in some instances vice versa. So,
9 next slide.

10 In terms of NQF guidance on
11 validity testing again we'd like to see
12 empirical analysis. And again, currently we
13 allow for demonstration of validity at either
14 the data element or the performance measure
15 score. And in this case the data that would
16 go into a performance measure is actually the
17 PROM value or score on that particular PROM.

18 The other thing is that we do
19 currently allow for measure developers to
20 submit a demonstration of face validity of the
21 performance measure. We ask that this be
22 systematically assessed but this is kind of an

1 area of weakness in terms of face validity
2 done by a group of experts and then another
3 group of experts may have a different view of
4 the face validity of that particular
5 performance measure. So, it's something that
6 comes up periodically in just the quality
7 performance measures.

8 And again, you know, with any of
9 the testing we want an appropriate scope and
10 method and acceptable results. I think as was
11 already talked about validity is really
12 something that's built on over time. And so
13 we do expect that that will increase over time
14 and that our criteria for testing, our really
15 initial entrance to get NQF endorsement and
16 for you to be thinking about, you know, what
17 is the minimum amount of testing or
18 demonstration of validity and as we talked
19 about in the last panel reliability that means
20 it could be endorsed as a performance measure
21 that could be used in accountability
22 applications.

1 So with that I think I'll turn it
2 over to our authors and we'll go from there.
3 Thank you.

4 DR. GAGE: All right. I'm going
5 to start us off and then turn it over to Anne
6 to talk about some of these issues on the
7 validity. So, thank you.

8 So I'm going to kind of refocus
9 us. As Karen just mentioned we've been
10 talking a lot about performance measures,
11 about organizations or providers and holding
12 them accountable. We've also had a lot of
13 discussion in here about quality improvement
14 and about thinking about the measures that are
15 necessary for ensuring quality in the
16 organization or in the provider. And there's
17 a lot of -- I like to think in terms of a 2 by
18 2 cell.

19 So you have the instrument as we
20 talked about with the first paper gathering
21 and all of the issues associated with that.
22 And then we have the performance measure. And

1 what happens when you take that measure, that
2 instrument up to the organizational level and
3 start applying it? What are the differences
4 in the validity and the reliability as we
5 heard earlier?

6 But there's also the second row
7 are the differences between the performance
8 measures that are clinician-based and those
9 that are patient-reported. And really what
10 we're here to talk about today is that fourth
11 cell, the patient-reported voice in the
12 performance measurement.

13 And so it's a little bit different
14 than traditional thinking in developing
15 quality measures because you have to think
16 about if you're holding an organization or
17 provider accountable then you want to make
18 sure that that measure is appropriate to that
19 population as we talked about this morning.
20 And tomorrow I think we're talking about some
21 of the issues of risk adjustment so that you
22 know who's in, who's out, how to apply it.

1 But keeping that in mind, that
2 what we're really talking about is how do you
3 incorporate that patient's voice in the
4 performance measure and keeping in mind some
5 of the issues that came up this morning in
6 terms of if you're holding -- if you're trying
7 to measure quality at the organizational level
8 who -- what is the difference between the
9 clinician's assessment of that outcome because
10 we're talking about outcomes or the patient's
11 assessment of the outcome. And how is that
12 patient viewpoint affected by their
13 preferences, their knowledge of the care.

14 Some of the examples that Anne
15 will give come out of the rehab field and
16 there you have a real disconnect between what
17 the patient thinks will happen now that
18 they've had that nice little hip surgery and
19 what the physicians or therapists know is
20 possible. So it takes measuring performance
21 to a whole different level when you start
22 talking about accountability and the patient's

1 voice.

2 On that I'll turn it over to Anne
3 to go into some of the details.

4 DR. DEUTSCH: Great, thanks. Next
5 slide. Terrific. So can everybody hear me
6 okay? Great.

7 So one of the first questions that
8 we were asked to address is what are the
9 implications of various approaches to
10 aggregating the PROM data, for example, an
11 average or a medium amount of change percent
12 to improve or reach a benchmark. And what is
13 the validity of the conclusions about quality
14 and the ability to discriminate performance
15 among accountable entities. So next slide,
16 please.

17 So last workshop we spent a lot of
18 time talking about reliability and validity of
19 the instruments and so now as Barb and Karen
20 mentioned we're moving to aggregating that
21 data up to the provider level.

22 So there's really two options when

1 we have these measures. So one option for
2 looking at the information at the provider
3 level is to calculate a change score. And so
4 the example here is a decrease in pain or
5 perhaps an improvement in functional status
6 between the start of care and end of care.

7 Also, you could look at a
8 threshold which is the level that the patient
9 achieved at the time that care either was
10 ended or at a certain time point after care
11 was initiated. So here the example might be
12 percent of patients with moderate to severe
13 pain. Next slide.

14 So in many cases change is often
15 thought to be a good way to look at things.
16 And as Barb said I come from the rehab world
17 and so a lot of times we've looked at
18 improvement in function over time between
19 start of care and end of care.

20 But there's some limitations with
21 change. And I think this was mentioned a
22 little bit last time by Dr. Ottenbacher but I

1 just wanted to reinforce some of these issues.

2 So, an individual's change score
3 can vary in terms of the magnitude and the
4 direction. So you can have improvement of
5 positive 10 units or minus 10 units or you can
6 have an improvement of plus 2 or anywhere in
7 between any of those or even more. And so
8 individual differences can really be masked
9 when you start doing an average. So 10 plus,
10 10 minus, the average is zero. And so you
11 know, you had two very different outcomes and
12 yet your average really doesn't tell you what
13 happened to either one of those patients.

14 Change scores also tend to have a
15 lower reliability than the baseline at follow-
16 up scores. And Laura mentioned this this
17 morning, that basically if you have error in
18 your baseline and you have error at your
19 follow-up you might actually be adding those
20 errors up together.

21 Also, there's floor and ceiling
22 effects. I know this was also discussed in

1 the previous workshop. And so you might
2 actually have real changes that occur but your
3 instrument is insensitive at the low end
4 perhaps and so you don't see people gain when
5 there's a floor effect, or you may have
6 patients who are at the high end of the scale.
7 They have real change but your scale isn't
8 sensitive enough at the high end and so you
9 might have some patients who the scale really
10 doesn't fit them at either end.

11 And then also it's unclear
12 sometimes what the clinical meaningful change
13 -- what the change score really means. So
14 again, from my world in rehabilitation we
15 measure functional status. And so you can
16 have an improvement of 10 units. What does
17 that really mean?

18 And actually one of the research
19 projects that I've done recently is we
20 actually presented information to people in
21 the community and said, you know, if you were
22 trying to pick a good rehab facility which one

1 looks like it would be better. And we gave
2 them fictitious data. And we actually did
3 give them a change score and they looked at it
4 and they were like, well you know, I can look
5 at this but what does it really mean. So
6 nobody really knew what it meant. And I will
7 tell you a lot of rehab hospitals do actually
8 put that information on their web pages. But
9 it really is hard to know what it actually
10 means. Next slide.

11 So just some examples. There are
12 some patient-reported outcome measures that
13 are endorsed by NQF and so I wanted to
14 highlight some of those as examples of some of
15 the issues that I'm talking about.

16 So, and Laura mentioned this one,
17 the "Change in Basic Mobility as Measured by
18 the AM-PAC" is an instrument that has been
19 used in both outpatient and inpatient
20 rehabilitation programs. And that basically
21 is a change measure. And I'll get into more
22 detail about that when I talk about some of

1 the other methodologic issues.

2 There's also the measure that was
3 mentioned this morning, the percent of
4 patients with moderate to severe pain. And
5 that is a threshold value.

6 And then the last example I wanted
7 to highlight was depression remission within
8 6 months. And that basically is a threshold
9 value but the way that's designed, actually
10 the patients who are included in that measure
11 are people who at baseline have a PHQ-9 score
12 that indicates depression, possible
13 depression, and then the follow-up score looks
14 at how many patients moved into the area of no
15 depression based on the PHQ-9 score. So it
16 actually is threshold but it's kind of an
17 indirect measure of change. Next slide.

18 So the next area I wanted to talk
19 about is again aggregating this up to a
20 provider level. You can calculate a number of
21 different statistics. So you can calculate a
22 mean, a median, you can calculate a percent or

1 a ratio.

2 So I know in school you know we
3 were taught use as much data as you have. So
4 if you have age, use it as a continuous
5 variable when you're doing risk adjustment or
6 when you're doing analyses.

7 And so I think a lot of the work
8 that people initially think about is to
9 calculate a mean. But a mean or even a median
10 might not necessarily represent the diversity
11 of patients when you have a pretty
12 heterogenous population. And in many cases
13 when we're looking at these outcomes data they
14 really are heterogenous in terms of the
15 population.

16 And then also again when we're
17 looking at the provider level if the data
18 aren't normally distributed a mean or a median
19 may not really represent what's going on in
20 that particular provider. Next slide.

21 So a lot of the performance
22 measures that actually are endorsed by NQF are

1 percent measures. And so there's different
2 ways of calculating percents. So basically
3 it's how many patients reach a certain --
4 reach or exceed a benchmark.

5 And so one way to do that is to
6 say, you know, what's the national expected
7 value and what percent of patients meet that
8 expected value, whether it's a threshold or a
9 change. And again it should be similar
10 patients. I think that was mentioned earlier.

11 The second option would be what
12 percent of patients meets some kind of fixed
13 amount of change. So if there's some kind of
14 clinically meaningful difference that's been
15 identified that's, I don't know, 10 units,
16 what percent of people or patients actually
17 meet or exceed that 10-unit defined
18 difference. Or a minimal detectable change.

19 A third option could be a
20 threshold value that's associated with a long-
21 term outcome. So for example, if you wanted
22 to look at balance confidence with somebody's

1 ability to -- with balance you might say well,
2 this threshold is important because that
3 threshold is associated with a reduced risk of
4 falls.

5 So for PROMs that have established
6 clinically meaningful thresholds or cut points
7 I think it's easier to create quality measures
8 out of them. For areas like functional status
9 where there really aren't good clinically
10 meaningful thresholds or stages it's a little
11 bit harder I think or more challenging to
12 develop some of these quality performance
13 measures. Next slide.

14 So the last option I talked about
15 was a ratio. So basically that's a score that
16 may have a value of zero or greater and it's
17 derived from dividing the count of one type of
18 data by another count of data. And so the
19 example would be the number of patients
20 reporting a pain score of seven or higher
21 divided by the number of inpatient days. So
22 the number of days there is the bottom of that

1 metric.

2 So a ratio may be preferred when
3 the amount of time, in this case the number of
4 days that the patient is at risk for the
5 outcome is important to consider. Next slide.

6 So some of the examples I wanted
7 to highlight in this particular area. Again,
8 the depression remission within 6 months that
9 I mentioned before. Again, this classifies
10 patients into clinically meaningful groups.
11 So the people who are depressed at baseline
12 and then they change 6 months later into this
13 category of not being depressed.

14 Second example again is the change
15 in basic mobility a measured by the AM-PAC.
16 And this is a percent of patients who change
17 and the change here is defined as a difference
18 of more than one minimal detectable unit
19 basically.

20 So a minimal detectable change for
21 those of you not familiar with that term it
22 refers to the minimal amount of change that is

1 not likely due to measurement error and that
2 represents a true change. So one of the
3 questions that I would have about using that
4 threshold is whether there's a lot of
5 variability, whether all patients should be
6 expected to gain and you might have some
7 providers who have a lot of gain and that
8 wouldn't be reflected if you have this
9 threshold that's the minimal detectable
10 change. Next slide, please.

11 So the next set of questions were
12 about validity testing. So the first
13 question, what methods of validity testing
14 would support the demonstration of validity of
15 performance measure scores that are making a
16 conclusion about the quality of care. Second
17 question, are there any differences or unique
18 considerations for demonstrating and
19 evaluating the validity of PRO-PMs as compared
20 to other quality performance measures. So,
21 next slide, please.

22 I want to start off talking about

1 face validity. And I know that face validity
2 is not necessarily the strongest but I do
3 think it's a really important step personally.
4 As somebody who's been involved in measure
5 development and been involved in a lot of
6 TEPs, both participating and also running TEPs
7 I feel like you always learn when you hear
8 different people's points of view. And so I
9 do think it is an important step. So I
10 personally feel it would be important to have
11 face validity testing at a performance measure
12 level.

13 There is various methods that NQF
14 has put in their materials in terms of
15 recommended ways of systematically looking at
16 face validity including modified Delphi
17 survey, some kind of formal consensus process,
18 the UCLA/RAND appropriateness method, and then
19 there's also the American College of
20 Cardiology and American Heart Association has
21 a paper that outlines steps for considering
22 face validity, next steps.

1 So, of course we always talk about
2 expert panels being experts. And so I just
3 want to highlight here our experts here are
4 probably our patients. So sometimes patients
5 are included in expert panels but it seems to
6 me that we could do a whole series of validity
7 testing really using qualitative methods. So
8 for example, focus groups, semi-structured
9 interviews and cognitive testing with expert
10 patients.

11 I also want to highlight that the
12 patients would need to be people who are well
13 informed what they were being asked to do.
14 And there is actually a fabulous article that
15 Dr. Judy Hibbard wrote, and I know she's here
16 in the audience that I think could really help
17 frame this. It's "What is Quality, Anyway?"
18 And so she actually conducted some focus
19 groups and asked patients what terms that they
20 thought about in terms of quality.

21 And again, I've done research in
22 this area where I went out to senior centers

1 and gave people information, percent of
2 patients with moderate to severe pain and
3 asked them to interpret the data. And I
4 certainly gained a lot of insight into what
5 people really, you know, when they look at the
6 data what they're really looking for. And a
7 lot of the people that I spoke to without any
8 -- without much orientation were really quite
9 sophisticated in terms of what they were
10 looking at and were not sure that they wanted
11 to make decisions just based on one piece of
12 data.

13 So, I'll bring up some more
14 examples I think probably tomorrow when we
15 talk about threats to validity. But I do
16 think that there is an important role for the
17 public, patients, whatever word we're using to
18 be more involved in validity testing for the
19 performance measures based on the PROMs.

20 But I guess I also would say, just
21 to follow up with what Barb said, there's no
22 reason why non-PROM measures shouldn't have

1 more testing with actual public patients also.

2 So, next slide.

3 So the next area to talk about is
4 criterion validity. So again this is the
5 extent to which the measure agrees with the
6 gold standard.

7 So, one potential example of
8 testing here could be a PRO-PM being used and
9 the data compared to a performance score based
10 on clinician observation. So again the
11 patient-reported information being compared to
12 a clinician observation if it taps into the
13 same construct, so for example, functional
14 status. And let's say the clinician
15 observation measure was really found to be
16 valid and then you had this patient-reported
17 outcome that agreed with that. That would be
18 one potential way. Next slide.

19 The next area is construct
20 validity. And so this speaks to how the
21 measure performs based on theory. And so I
22 kind of made up this idea that -- and this is

1 all very theoretical, but a way to test this
2 would be basically if you had national data.
3 So everybody collected PROM data.

4 So I know I'm dreaming here but I
5 have national PROM data and I had some
6 facilities who did quality improvement
7 projects and it was focused on whatever topic
8 we're talking about, maybe it's functional
9 status or pain. And I was able to compare
10 their data before and after. And then also I
11 had all these control facilities who I know
12 they didn't do quality improvement projects.
13 And so you'd be able to really look at whether
14 there was improvement in the places because
15 the quality intervention -- quality
16 improvement project really did work, by the
17 way. That was the other assumption. And so
18 there would be improvement that you could see
19 there.

20 So I think this is probably an
21 important point to highlight that I think in
22 order to really do validity testing we

1 actually need people to collect this data. We
2 cannot test validity beyond the face validity
3 unless we have multiple providers collecting
4 this information and we're able to compare.
5 If we just have two places collecting data and
6 oh, aren't we good Karen and Barb, our three
7 facilities, you know we really are not in a
8 good position to make a judgment about
9 quality. And so we really need a lot more
10 implementation in order to really be able to
11 test validity at the level that we would love
12 to.

13 So I think it's ideal to obviously
14 have a lot of validity testing but I think
15 realistically at this point face validity is
16 very important and we can certainly learn a
17 lot with that. But I think the construct
18 validity, we need more widespread data
19 collection before we could expect to be able
20 to have measures meet those standards. Next
21 slide.

22 So the last question is is

1 validity of the performance score indicator of
2 quality needed in addition to the validity of
3 the PROM. So as I said I personally think
4 face validity is an important issue at the
5 performance measure level. I think the other
6 levels, it's ideal but we're not probably
7 going to be ready for that for awhile.

8 And I think that's my last slide.
9 Yes. Okay, great. So turn it back to Karen.

10 DR. PACE: All right. Steve, you
11 want to?

12 DR. FIHN: So, I had actually
13 prepared some remarks and slides but as we get
14 later and later in the presentations I think
15 the speakers are going to find that there's a
16 great deal of overlap in the comments. And
17 instead I decided to sort of abandon that
18 tack.

19 I was actually going to walk
20 through -- we thought with all the sort of
21 theoretical discussions that sort of a
22 practical story might be useful. And I was

1 actually going to walk through the story, a
2 20-year-old story actually of developing a
3 PROM related to ischemic heart disease and how
4 we went through the reliability test retest
5 and so forth, the validity assessment,
6 responsiveness, defining the minimal clinical
7 detectable or important difference. And the
8 use of this measure which is called the
9 Seattle Angina Questionnaire now and something
10 like two to three hundred clinical trials.

11 And make the point that we went
12 through a lot of this and it obviously
13 overlaps with much of the material from the
14 first workshop too. And then sort of pose the
15 question given all that work would I then
16 trust it because that's what we're talking
17 about. Do we trust these measures to be a
18 performance measure. And what would make me
19 want to trust that aside from the fact that
20 you know we did all that work.

21 (Laughter)

22 DR. FIHN: And you know, I think

1 all the previous panels have walked through a
2 lot of the concerns about rolling these up in
3 terms of statistical and methodologic and many
4 of the issues that I would have -- was going
5 to delineate.

6 And I think the answer to the
7 question really was even after 20 years not
8 yet. And this discussion for me has been
9 during both the earlier workshop and this one
10 has been I think very interesting and
11 exhilarating but in some ways also sort of
12 frustrating because we've been hearing similar
13 discussions now as I think back for two or
14 three decades.

15 And the question then that keeps
16 getting posed is sort of what do we need
17 actually to move these measures into clinical
18 or organizational use. And what would move us
19 forward.

20 And I think what I'm hearing is
21 again to sort of develop beyond the
22 methodologic and scientific basis a framework,

1 a use framework. And I was saying to Liz Mort
2 earlier I particularly liked the framework
3 that she presented which was I think, you
4 know, in terms of the tight linkage between
5 measurement and effectiveness of intervention
6 I think that's a key piece and she walked
7 through examples of that.

8 And why is that important? Well,
9 in our own measure we just completed and
10 reported a clinical trial in which we selected
11 out people with extreme scores and subjected
12 them to what we thought was a very effective
13 intervention. And by provider, almost 200 of
14 them, and found really no effect. And made me
15 then go back and wonder about sort of the
16 mutability of this measure in terms of linkage
17 to our therapeutic interventions. And I think
18 Liz pointed out there are some areas where we
19 do have, you know, good linkages there.

20 I also particularly like the NHS
21 examples. And you know, I think they are as
22 was mentioned picking on surgical or

1 procedural interventions which might actually
2 be a good place to start for a few reasons.

3 One is these are episodic episodes
4 of care. And one thing that hasn't been
5 talked about a lot today is sort of when you
6 apply these to longstanding chronic illnesses
7 you get into a whole `nother set of issues of
8 repeated measures, change over time or lack
9 thereof, what do you do in those
10 circumstances.

11 An example would be we've had
12 mandated screening for depression and PTSD in
13 the VA for years now. And annual at a minimum
14 and more often if it's positive. And we have
15 a prevalence of chronic depression of about
16 20-plus percent. So we, every time I'm in
17 clinic I have two or three patients who have
18 got to be re-screened. I know they're
19 depressed, they've been on therapy, they've
20 been through most of our treatments and they
21 represent sort of our residual chronic
22 depressed population. It's mostly prevalent,

1 very little incident depression.

2 So then you know how do you deal
3 with that in the context where you want to see
4 change and most of the literature really
5 demonstrates change with incident depression,
6 not chronic or sort of intractable depression.
7 So, episodic.

8 We largely have pretty good
9 measures as we heard for hips and GU and
10 cardiac disease. We know there's high
11 variability as Jack pointed out in many of
12 these areas. And the numbers I think actually
13 will be tractable.

14 One of the scary things in primary
15 care we face for instance in the VA is that
16 we've got 6 million people in primary care.
17 And if we're going to start surveying all
18 these people, you know, it gets back to what
19 John Wasson pointed out, just the logistical
20 and expense of it is actually I think
21 daunting. Whereas if we were just to do
22 certain limited procedures at least to start

1 like hips or cataracts or something that
2 that's probably tractable and a way to get
3 started.

4 And so I personally sort of like
5 the idea even though yes, it's biased, and no,
6 it doesn't get us to sort of the real
7 population base we want. It is a place to
8 sort of get going.

9 One of the interesting things also
10 I thought and Jack Fowler also brought this up
11 in terms of the issues of patient selection.
12 And I think there's a paradox here. In fact,
13 one of the uses, I think one of the goals of
14 using PROMs would be actually to influence
15 patient selection.

16 You know, in fact one of the
17 concerns I think we have, people have talked
18 about the waste in the system is the use of
19 procedures for individuals who don't
20 necessarily stand to derive a great deal of
21 benefit. And one of the things I think that
22 would be a positive if you started to do this

1 was to see a sort of up-shift of the patients
2 who started going, you know, who actually have
3 some -- who aren't floored out, you know,
4 already, or ceilinged depending upon your
5 perspective and could stand to benefit. You
6 know, you might actually see a bit of a Will
7 Rogers phenomenon where everybody sort of you
8 know gets a stage shift, gets better.

9 So again that was really the issue
10 I asked about case-mix was to sort of sense if
11 you're asking providers to demonstrate
12 improvement then they're really going to focus
13 on people who have an opportunity for
14 improvement as opposed to people who might be
15 mildly symptomatic.

16 And I think also just to comment,
17 I think Lew Kazis brought up the issues, he
18 brought up several important issues, but I
19 think the issue of gaming which we've seen a
20 lot in the performance measurement world of
21 ways in which these things can be gamed.

22 I think the PROMs actually present

1 us with some new avenues that will be
2 interesting to observe as we get in here in
3 terms of not only gaming by systems and
4 providers but by patients. We talked earlier
5 about the notion that occasionally there's the
6 temptation to drill down to the patient level
7 on these measures.

8 I mean, we're sort of in a reverse
9 situation where traditionally we've had
10 measures that we know work on groups and the
11 question is can they work on individual
12 patients. And now we're being asked let's
13 think about measures that we now think work
14 okay at the individual level. Can we roll
15 them up but roll them up in a different way,
16 not to the original populations but to the
17 providers they're seeing or to the systems in
18 which they're enrolled.

19 But nonetheless at the patient
20 level you could see where patients actually
21 now that they're contributing data to systems
22 might have motivations for eligibility for

1 certain procedures or drugs or whatever might
2 actually now have some motivations to frame
3 their responses in some ways.

4 You know, I think I have, you
5 know, a lot of concerns about the broad-scale
6 implementation of these. Nonetheless I do
7 think it's time. We're actually as we speak
8 implementing the heart disease measures for
9 the 30,000 or so elective cardiac caths that
10 we do to sort of look before and after as a
11 start in our system similar to what I think
12 the Brits have been doing for a couple of
13 years it sounds like and the Swedes for
14 longer.

15 But I think in systems that the
16 larger systems can get started doing these
17 things. So thanks very much for the
18 opportunity.

19 DR. PACE: Thank you, Steve. And
20 Al?

21 DR. WU: So, Steve this morning
22 had all his slides prepared. I had scribbles

1 on some, on you know, my clothing and my hands
2 and index cards. And so we've done a little
3 role reversal because to clarify my thinking
4 I put together some slides and so now I have
5 a couple of slides. But they still resemble
6 things that you might scribble on your palm
7 while you're thinking. Next, please.

8 So, first of all this is, you
9 know, sort of going back -- we keep going
10 forward and back a little bit and there's a
11 little bit of a theme to all of that. But
12 maybe we, you know, two steps forward, one
13 step back, two more steps forward. I think
14 we're getting there.

15 Sort of a must-pass criterion is
16 that our performance measures should have
17 scientific acceptability in measurement.
18 Next, please.

19 So I just -- I'm here to tidy
20 things up a little bit. And this is a -- it's
21 sort of maybe the second or third most famous
22 painting by Seurat, you know, que sera sera.

1 But it's late in the afternoon. But in any
2 event so my purpose is to sort of tidy up all
3 of these difficult pesky little questions that
4 we have almost like individual dots of pigment
5 on a page. So next slide, please. So there
6 we go.

7 (Laughter)

8 DR. WU: That's where we hope to
9 be. But -- though I'm worried that I don't
10 think we're going to get there this afternoon.
11 Next, please.

12 So here are the four questions
13 that were posed to our panel and I'm going to
14 actually only just comment on each of them.
15 First, please. Next slide.

16 So, various implications for
17 aggregating data. And I actually --
18 aggregating could be taken in two ways and as
19 we're thinking about this it's probably worth
20 thinking about on the one hand scoring,
21 generating scores, and then separately on
22 aggregating rolling up more than one score --

1 a score from more than one individual into a
2 score that is used for a performance measure.
3 And sort of maybe as we look back at the
4 report and so forth maybe it would just be
5 worth splitting it out like that because I
6 found that I was confusing myself which is not
7 that difficult really. Next slide, please.

8 A couple of issues. There can be
9 some problems with aggregating at the
10 individual level and then there can be some
11 problems with -- I'm sorry, in terms of -- I
12 realize this is actually not so much
13 aggregation but scoring so the slide's a
14 little bit mislabeled.

15 But if we look at an item that's
16 used very often and in fact some version of
17 this is I guess an NQF measure. If you take
18 a visual-analog pain scale or a 1 to 10 pain
19 scale, rate how much pain are you having, on
20 the individual level first of all there's some
21 problems because measurement tends to be very
22 coarse. Even though you might theoretically

1 have 10 or 11 or an infinite number of points
2 between you know sort of 1 and 10 or zero and
3 10 in fact a lot of people are 5, a lot of
4 people are zero, really a lot of people are
5 zero perhaps legitimately. And then there's
6 quite a few people who are 9 or 10.

7 And I saw someone the other day
8 who was sitting very comfortably in the exam
9 room chair, not crying, not grimacing, not
10 wringing her hands and tearing her hair and
11 she had indicated a pain score of 10.

12 And I said, "So are you in any
13 pain?" She said, "Oh, you know, a little
14 bit." And I said, "So, you wrote 10 down
15 here. Why did you do that?" And she said,
16 "For emphasis."

17 (Laughter)

18 DR. WU: And she did have some
19 arthritis pain, she'd been a little stiff, and
20 she wanted to make sure it got taken care of.
21 And so at the individual level people are
22 interpreting what this is for for different

1 reasons. We think of it for measurement,
2 maybe for screening and she -- for making sure
3 something got taken care of which is
4 completely legitimate and probably more
5 worthwhile than what the Joint Commission asks
6 us to do, but nonetheless.

7 At the group level those biases
8 actually probably tend to iron out. But I
9 have observed and there's some data that
10 suggests that provider panels differ with
11 regard to the patients who they attract.

12 Another example. I recently, we
13 had a very good and a very nice physician
14 leave our practice recently, Dr. Rochelle
15 Brown. Is this a HIPAA violation? Maybe not.
16 So she's a terrific physician and she left and
17 her patients loved her. And so I've inherited
18 a bunch of them. And the average pain score
19 for all of these people, what do you think the
20 median is? Ten, yes.

21 And basically she is so nice that
22 all of these people who are, you know, very,

1 who are in a lot of distress gravitated to her
2 and stayed with her. And if she were examined
3 for proportion of patients who had pain scores
4 cross-sectionally of 10 she would look
5 terrible when in fact, you know, everyone
6 really would like to have her as their doctor.
7 So, at the group level there are some other
8 things to consider.

9 When we're testing validity of
10 aggregation strategies I think we need to do
11 a few things. One is first we need to look at
12 the distribution of scores period which I
13 think has been done but we probably need to
14 look at them at several levels including at
15 the level that we're going to be aggregating.

16 If we're looking by provider if we
17 see that some people have very skewed
18 distributions of pain scores, some providers
19 have patients with a very skewed distribution
20 and others with a very normal distribution we
21 should worry about our ability to compare them
22 fairly.

1 Of course there is genuine
2 heterogeneity as we heard. And some of it is
3 heterogeneity by provider. Some patients
4 really are in a lot of pain and some people
5 less so. And we do want to be able to detect
6 that. Oh, next please. I don't mean to touch
7 these buttons.

8 So, I actually shouldn't get into
9 this very much but we know that measure of --
10 that asking people about change is unreliable,
11 that in fact measurement of individual-level
12 change you ask -- even if you measure it twice
13 and then calculate the change, since there's
14 error measured at both time points those
15 individual change scores may have a lot of
16 noise in them, especially if there are
17 different things happening to the people at
18 different time points. When you aggregate
19 change scores, if you look at average change
20 scores some of that noise gets taken out.

21 A question which I realized I
22 didn't know the answer to is is it more useful

1 for the purposes of quality -- for performance
2 measures to measure mean change or median
3 change or the percent achieving a benchmark or
4 the percent with a meaningful change of some
5 sort. It seems like that could be done in
6 some data sets, maybe even the HOS data. I'm
7 not sure but I think that I would like to know
8 the answer to that question before I start
9 deciding that my measure is going to be based
10 on for example a same/better/worse for example
11 scoring system.

12 An example from several of you
13 were involved in a Medical Outcomes Study and
14 one of the -- maybe the most impactful study
15 that included actual results from the Medical
16 Outcomes Study was John Ware's study in 1996
17 looking at the 4-year outcomes for the panel
18 of chronic disease patients. And overall
19 there was no difference between HMO and fee-
20 for-service care. However, if you looked at
21 some subgroups and you used a
22 same/better/worse scoring method then people

1 who were in fee-for-service and particularly
2 people who were more disadvantaged or older
3 did better than people in HMO. And the
4 results are probably true but the same
5 differences were not as prominent when you
6 looked at comparisons of mean scores. And
7 someone please correct me if I'm wrong. I
8 just had glanced over this paper again
9 recently.

10 And that makes me think. And
11 these data in some ways are equivalent to
12 something, to data that we might use in a PRO
13 performance measure. It made me wonder and
14 worry a little bit about if you score things
15 differently do you get different conclusions.
16 Next, please.

17 Some patients can't improve. We
18 heard a little bit about that from Floyd
19 Fowler. If you look at an ambulation measure
20 and you've got people who are paraplegic. If
21 you on the other hand look at people who don't
22 need a surgery and who get it it's possible

1 that they won't benefit.

2 (Laughter)

3 DR. WU: So first of all it made
4 me think that maybe we, in some of our
5 validation studies we need to look at
6 appropriateness too as another piece of
7 metadata so that we can weed out those people
8 who really didn't need the surgery.

9 This is a shameless plug for a
10 book that I'm not connected to but my
11 colleague just wrote, Marty Makary just wrote
12 a book called "Unaccountable." He's a surgeon
13 and he's talking about how the system is not
14 very accountable. It's coming out I think on
15 Monday.

16 And he told a great story of a
17 surgeon who -- at a terrific institution. I
18 won't, Liz, I won't mention what institution.
19 And he -- who operated on sort of a VIP and
20 who should have been a hernia. It turns out
21 it wasn't. But he said oh, we'll fix it
22 anyway. And so they fixed his non-hernia.

1 The guy had a bunch of complications. And you
2 know, he was not better and he probably could
3 not have benefitted because he didn't actually
4 have a hernia as it turned out.

5 So, in any even if some people
6 cannot improve then we need to understand the
7 heterogeneity of people who we are measuring
8 quality on. This just gets at defining your
9 measure carefully, defining the specifications
10 very carefully, are they chronic patients, are
11 they acute patients, are they people who could
12 possibly benefit. Next, please.

13 What methods of validity testing
14 would support and are there differences or
15 unique considerations. Next, please.

16 So, we were having this
17 conversation at our table and a little bit --
18 even in between this meeting and the last, and
19 we're really confronting a little bit of there
20 and back again which is basically PROs were
21 originally developed in order to be able to
22 measure the effects of health services

1 interventions at the level of Group Health
2 Cooperative of Puget Sound or the Medical
3 Outcomes Study or the RAND health insurance
4 experiments or trying to measure sort of the
5 utility of populations.

6 And we actually have quite a lot
7 of data on the validity of PRO measures
8 developed for group comparisons for these and
9 later for clinical studies. So we've got
10 actually loads of data. Maybe not enough, we
11 could always use a little bit more validation,
12 thank you, but we're sort of -- we're not in
13 terrible shape.

14 PROs are now beginning to be
15 applied quite a lot for individual patient
16 care. There really is a dearth of data at
17 this moment on the validity of measures used
18 for that purpose. We know about the greater
19 unreliability for individuals. There haven't
20 been so many validity tests for individuals.
21 We don't know if those measures are responsive
22 for individual people.

1 And so I'm actually sort of
2 diverging a little bit from Steve in saying
3 that they have been used in individuals but we
4 actually don't have enough evidence yet. So
5 now we're at the point where we're going back
6 to groups and we want to use PRO performance
7 measures -- typo here -- again for group
8 assessment.

9 And we have maybe some advantage
10 of the fact that we're looking at groups
11 again. But the data that we have developed
12 for group comparisons of services research is
13 not -- may not all be applicable because we
14 have the added complication that we're
15 defining these measures for specific
16 populations, specific contexts, to answer
17 really specific kinds of questions. Next,
18 please.

19 So, we're looking at validity of
20 PROs for group comparisons, PROs for
21 individual use which I'm not going to talk
22 about so much and PROs for quality

1 improvement. Next, please. PRO performance
2 measures.

3 It's worth -- this is a little
4 simpler than the measures that we -- than some
5 of the figures that we were provided with
6 today but I like looking -- I like this figure
7 because it's really easy to remember. And
8 this is from Ira Wilson and Paul Cleary's JAMA
9 paper, the relationship of pathophysiology to
10 symptoms, a relatively direct link. Most of
11 our treatments, the things we're trying to
12 measure the quality of are mostly aimed at
13 improving -- reducing symptoms, improving
14 pathophysiology. All of those things affect
15 physical and mental health and all of those
16 things affect quality of life, maybe social
17 functioning, maybe role functioning.

18 The problem is that as you get
19 further and further away from treatment and
20 pathophysiology there are other variables that
21 come in. There's lots of things that affect
22 your quality of life, for example. And it

1 becomes more and more difficult to demonstrate
2 that, the effect your intervention had on
3 those more distal variables. So it is worth
4 keeping this in mind. Next, please.

5 So, when we're trying to validate
6 PROs for group comparisons we're going to do
7 the usual things, content validity, construct
8 validity, responsiveness which is maybe, you
9 know, which another way of thinking of that is
10 longitudinal validity, perhaps predictive
11 validity which in my experience is very useful
12 to convince clinicians that something is --
13 that a measure is worthwhile.

14 I'm not going to talk about
15 validating PROs for individual use now but in
16 -- and this is really my last slide. In
17 validating PRO performance measures for
18 quality improvement within groups I think that
19 we're interested in construct validity but we
20 almost immediately need to think about risk
21 adjustment I think. We'd like to be able to
22 discriminate one group from another and a test

1 would be to take known groups and see if our
2 performance measures can discriminate one from
3 another at a point in time.

4 I think that's almost -- unless
5 you do great stratification or are very, very
6 careful about how you specify those groups I
7 think you're going to have to immediately get
8 into risk adjustment. And we can talk about
9 this more tomorrow.

10 Another test of validity would be
11 to look at the responsiveness of the measure
12 to an intervention of known effectiveness.
13 And I'm going to actually sort of disagree
14 with Anne just a little bit because I think
15 it's too optimistic to think that quality
16 improvement efforts at a national level are
17 going to improve quality. You know, every
18 improvement requires change but not every
19 change is an improvement. And a lot of times
20 things get worse before they get better while
21 you're sorting things out.

22 And so I think that if we have

1 interventions that we know are effective and
2 they don't have to be at a national level.
3 They could be more focused. But we then again
4 probably need to either randomize -- we either
5 need a randomized design or we need to risk-
6 adjust again in order to see if our PRO
7 performance measures are able to detect the
8 change that's caused by that intervention that
9 we know is effective.

10 But I think that those would be
11 sort of doable tests. We've got loads of
12 interventions happening. It seems like it's
13 doable.

14 We certainly need to test in
15 populations that we're interested in and the
16 narrower the better initially. And in the
17 context that we're talking about, again, the
18 better specified the better.

19 I think that's it from me. So,
20 we've got some time. Good. Thank you.

21 (Applause)

22 DR. PACE: Okay. So we have time

1 for some comments and questions from our
2 expert panel and audience. So I'll open it
3 up. Kathy?

4 OPERATOR: At this time if you
5 have a question or comment please press * then
6 the number 1 on your telephone keypad.

7 DR. LOHR: This is a comment, a
8 great panel as the ones were this morning and
9 lots more questions for us to juggle. But two
10 or three particular things. And this may be
11 for you and Barb more than for Al and Steve.

12 You mentioned clinically
13 meaningful differences. You mentioned minimal
14 detectable change or differences. And I was
15 under the impression that at least for some
16 PROs if not PROMs and whatever we know some of
17 that information already. And it's possible
18 that trying to find certain kinds of measures
19 maybe in depression where those things are
20 already kind of documented and known might be
21 a useful step. Not necessarily for your paper
22 but more generally as NQF sort of moves down

1 this path.

2 But the other question that I had
3 and I'm -- nobody ever accused me of being a
4 statistician -- is whether the minimal
5 detectable changes are not in fact driven to
6 some extent by sample sizes. And whether that
7 has to be taken into account about whether you
8 have very large numbers of patients that are
9 more or less alike, say have the same
10 condition or something, or you have only a
11 few. Or as you aggregate up to -- across
12 practitioners to healthcare systems or
13 whatever that concept and the actual measures
14 of it might change.

15 The third thing that I had
16 wondered about is your definition of ratio
17 which puzzled me because it isn't the way I
18 think about ratios. And so I was just sort of
19 calling that out.

20 The other thing that I wanted to
21 maybe pick up on with Al Wu is one of your
22 questions, Al, is that you said you weren't

1 sure about the answer is which is better,
2 whether it's mean or median change, for
3 example, or percentage meeting or exceeding a
4 threshold.

5 And you didn't mean it this way I
6 think but that was cast a bit as an either/or
7 kind of question. And in fact it's not an
8 either/or kind of question across the board.
9 It's definitely going to matter depending on
10 the purpose of the measurement and so forth.
11 And it's not that it's not a -- it's an
12 appropriate question but it's not a
13 generalizable one. And I think the purpose
14 and context for the measurement may to some
15 extent drive the answer to that particular
16 question you had.

17 DR. PACE: So Anne, do you want to
18 start and then we'll go to Al.

19 DR. DEUTSCH: So I think your
20 first question about the PROMs where there
21 actually are known clinically meaningful
22 differences, so I agree with you. I mean

1 those are going to be perhaps easier to
2 develop performance measures based on those so
3 I agree with that.

4 Second question was about sample
5 size. So yes, I would agree and I think Laura
6 touched on this, the larger your sample size
7 the more comfortable you're going to be that
8 you really are being able to distinguish
9 quality. So.

10 DR. PACE: Can I add something
11 there? Because the other thing is that just
12 because it's detectable statistically doesn't
13 mean that it would be meaningful change to a
14 patient. So I think there's some tradeoffs
15 there.

16 DR. DEUTSCH: Absolutely.

17 DR. FIHN: I just would recommend
18 Gord Guyatt's series on sort of how to
19 calculate that which I think separates out the
20 issues of statistical versus clinical, the
21 sample size issues and tries to sort of get at
22 what the underlying sort of construct of an

1 MCID is which I think still are true today.

2 I haven't read those papers for awhile but I

3 I think they're still right.

4 DR. DEUTSCH: The definition of

5 ratio, is that from NQF? I'm trying to

6 remember. I'll have to get back to you for

7 sure.

8 DR. LOHR: It's just I read it and

9 I thought, well, you know, I'm thinking about

10 odds or you know cost-effectiveness ratios and

11 that sort of thing. It isn't the way I think

12 of ratio.

13 DR. PACE: Right. What we've seen

14 in the performance measures is often different

15 units. So for example, you know, for example

16 with adverse events, you know, the number of

17 events to the aggregated time. So it's on a

18 different kind of scale but I'm sure there are

19 different ways to look at that and we can

20 certainly get your definition.

21 DR. DEUTSCH: So I think I'll pass

22 it off. Barb, did you want to add anything?

1 DR. GAGE: I would only point out
2 I realize since we got to the end of the
3 presentation that it sounded like boy, there's
4 nothing out there when in fact we know darn
5 well that -- I know we've submitted measures
6 on patient reports of pain and many of those
7 things. So the world is moving along in
8 limited ways.

9 DR. PACE: Okay, Al?

10 DR. WU: I would just say, Kathy,
11 I agree with you entirely. It's not one, the
12 other, either/or. Yet another thing to think
13 about is other things that are important about
14 what's the distribution of whatever it is
15 really in the population and how well does
16 your measure measure that. And another thing
17 is what's the functional form over time of
18 health. After surgery if you measure, you
19 know, at 1 day, 1 month, 6 months, a year
20 you'll get different answers and so that's
21 also important to know.

22 And which measure you use could --

1 one way of rolling it up could be better or
2 worse depending.

3 DR. PACE: Okay. Yes, Judy.

4 DR. HIBBARD: I appreciated the
5 comments on patient face validity and earlier
6 we talked about meaningfulness for patients.
7 And Anne pointed out the need to sort of give
8 people a context for thinking about quality
9 because we do know that patients and consumers
10 often don't have a context for thinking about
11 quality. They don't share our assumptions and
12 understanding. And so when you ask them about
13 quality to give them some context.

14 But I would go further than that
15 in thinking about querying individuals about
16 their -- the face validity or the value, the
17 meaningfulness of this in the sense that a lot
18 of times different words that you'll get a
19 different response because people don't have
20 this context and understanding. So if you
21 describe something one way you may get a very
22 different response than if you describe the

1 very same thing with different words. So,
2 thinking about how to get at face validity I
3 think we need to be aware of that.

4 DR. PACE: Okay. Would you say
5 your name.

6 MR. ROONEY: Tim Rooney from
7 Maine. I'm thinking about when do we hold
8 communities accountable, you know. Because if
9 you look at the work that RWJ in Wisconsin has
10 done on social determinants they suggest that
11 morbidity and mortality is 20 percent due to
12 clinical care, 30 percent due to health
13 behaviors. And PROMs start getting into
14 health behaviors, but that's only 50. And
15 then there's the built environment.

16 And in Maine we're doing a lot of
17 work around patient-centered medical homes,
18 community care teams, whatever. We're doing
19 some interesting work with area agencies in
20 aging where they have people on Meals on
21 Wheels who go into homes. And lo and behold
22 you talk to the people that deliver the meals

1 and they're saying well, we find people with
2 10 pill bottles living alone and they had 5
3 before the hospitalization, 5 after. They had
4 no idea which to take and they're not sure any
5 of them have worked well. Well, we're trying
6 to connect that back to the PCP or care
7 management or whatever it is.

8 And then you've got some work that
9 you look what United Way agencies at least in
10 Maine do. They do a lot of what I would call
11 healthcare type of stuff. They run a lot of
12 behavioral health stuff, they do a lot of
13 stuff.

14 I think of Steve's comment about
15 intractable depression. Well, it's
16 intractable to the traditional medical care
17 interventions but is it intractable if you
18 start to look at community interventions to
19 address that like AA programs and things like
20 that.

21 So, I'm thinking at some point is
22 our PROMs really for medical care, or are they

1 for healthcare, or are they for care. And I'd
2 love to think about because the thing that --
3 if you go to the RWJ website they have this
4 terrific video on their project match where
5 this community in Iowa or someplace like that,
6 I apologize if someone's from Iowa but it's
7 somewhere in the middle. They were the worst
8 ranked county in the state. So the whole
9 community got together and they built a
10 grocery store in an area where there wasn't
11 any food. So, that's the power of a community
12 coming to address issues that affect it. So
13 I wonder if we could think of PROMs or PROs as
14 not just a way to hold this doctor accountable
15 but to hold a community accountable in a way
16 that makes them want to do something.

17 Any perspectives on that or is
18 this too far afield for this discussion?

19 DR. PACE: Well, NQF does endorse
20 population-based measures but I think that's
21 been an interesting discussion in terms of,
22 you know, then who's being held accountable.

1 And you know, will they ignite change. But
2 we'll see if the panel wants to add anything
3 else to that.

4 DR. FIHN: You know, I'm reminded,
5 Ted, of the, you know, there was an ACC/AHA
6 performance measure regarding time to PCI.
7 And you know, the issue was what do you do
8 about transfers, you know, which was I think
9 NQF struggled with that one, the door-to-
10 balloon time one.

11 And it's sort of a micro of what
12 you said. On one hand no hospital wanted to
13 be responsible for the fact that they said
14 well, if we could do our part but the other,
15 either the sending or receiving hospital might
16 not do their part. And then the community-
17 based sort of approach would be to say that
18 doesn't matter, what really matters is does
19 the patient get the procedure in the
20 prescribed time.

21 And you know, I don't know what
22 the right answer is to that. I guess it

1 depends upon what the goal is here, who, as
2 you say, who's being held responsible. And
3 you know, what's the purpose of the
4 performance measure. You know, I think those
5 are, you know, good and very hard questions.

6 DR. PACE: Helen?

7 DR. BURSTIN: Just an interesting
8 side note to that. So actually what wound up
9 happening is we do in fact have the time-to-
10 thrombolysis measures. There's also a set of
11 measures for rural hospitals that are actually
12 the time with which they're able to package
13 somebody and transfer them rapidly for their
14 thrombolysis -- for their PCI.

15 So, it may be sort of in some ways
16 almost a balancing measure that of course your
17 end goal is to get the right therapy at the
18 right time for the right person but that not
19 everybody can play in that space. And so
20 having measures that actually fit what
21 everyone's role is may make sense.

22 DR. PACE: Ethan?

1 DR. BASCH: Yes. This is a great
2 panel and I think really brought essential
3 issues to the forefront of the discussion.

4 I'd like to say in thinking about
5 the day so far I'm actually not so worried
6 about reliability or about construct validity.
7 To me the areas, and we've talked about this
8 in the last meeting particularly, that are of
9 greatest concern are first, what's I think
10 sort of being alluded to here as face validity
11 which others of us call content validity.
12 Others call it qualitative research.

13 But you know, the piece which
14 involves going out to the patient population,
15 assuring that what you're measuring is
16 important and meaningful, number one, and
17 number two, that the -- so that's up front.
18 And then that the measures themselves are
19 understandable to the patients, right. They
20 understand what you're saying. And that the
21 terminology within the measures maps to the
22 underlying concepts of interest which one has

1 a priori identified as being the important
2 concepts, i.e., outcomes that one wants to
3 look at.

4 And to me really that's central.
5 And without that, whatever we want to call it,
6 you know, I call it content validity but
7 others have argued that they'd like to call it
8 something else. That is a fundamental initial
9 step.

10 The other piece that I think is
11 key that has been touched upon both in the
12 reliability and the validity conversations is
13 sensitivity to change over time. And that's
14 sort of been wrapped into the conversation
15 about reliability and validity but it really
16 is separate. And I think again is so
17 essential to this idea of evaluating
18 performance or quality because really what
19 we're talking about is the ability of a tool
20 to measure change within or between practices
21 over time because I suspect that's really what
22 most of these measures are going to turn out

1 looking at. There may be some threshold
2 measures but I really do think we're going to
3 be looking at change measures.

4 And without being able to detect
5 change over time then, you know, as has been
6 pointed out accountability really is sort of
7 you know irrelevant if you can't change it.
8 But you know, we're not sure is it that you
9 can't change it or is it that you can't
10 measure the change. And so I think to
11 establish up front whether your measure is
12 capable of measuring change is really
13 essential. And I bet Laurie Burke has a
14 follow-up to that.

15 DR. PACE: And I was just going to
16 say, and that is one of the things in the key
17 characteristics, the table from the first
18 paper is responsiveness to change. So I think
19 that's maybe something that will be emphasized
20 in that way. Okay, Laurie, were you going to
21 add something?

22 MS. BURKE: Oh well, I completely

1 agree, Ethan. Content validity is critical.
2 If you don't know what you're measuring then
3 how are you going to -- what good are the
4 reliability and correlations or lack thereof
5 with other measures.

6 So, and I also think that content
7 validity really alleviates a lot of the need
8 to do an abundant amount of responsiveness
9 testing because if you know what you're
10 measuring you understand how your measure
11 responds across the full range in your
12 population on that concept that you're
13 measuring then you have a better idea of what
14 change is in that continuum.

15 And we have psychometric methods,
16 a new, modern theory that can help us
17 understand that we're, you know, that what
18 gradations along a continuum of a scale mean.
19 And that we have comparable, equally spaced
20 intervals between scores. And I think that
21 that is this iterative approach to content
22 validity that holds a lot of promise right

1 now.

2 We're really able to -- we have a
3 whole lot of hope that these things can be
4 developed much more quickly and much more --
5 be much more applicable to the situation that
6 we want to put them into.

7 Now, the validity, the content
8 validity of the performance measure I think
9 has got to be fairly similar except you need
10 to know how the patients feel about that
11 performance measure in terms of how you're
12 going to calculate it.

13 But content validity isn't just
14 patient input. If it's something that
15 requires expert input of one type or another
16 also is a part of content validity.

17 DR. PACE: Okay. Are there any
18 comments or questions from the audience
19 members? Evan's got the -- and Operator, what
20 about on the phone line? Are there any people
21 in the queue for comments?

22 OPERATOR: There are no questions

1 at this time.

2 DR. PACE: Ethan?

3 DR. BASCH: Sorry, I don't want to
4 monopolize the microphone here. But you know,
5 there's something else I was thinking about
6 listening to this which is, you know, once one
7 looks at the measurement properties of the
8 PROM how much do you really have to do on the
9 -- what you're calling the PRO-PM?

10 And it really seems to me that,
11 you know, and I think you're getting to this,
12 that you know it kind of depends. It appears
13 that there are probably a lot of, you know, as
14 Laurie would say it's a review issue. I think
15 there are probably many settings in which one
16 really does not have to repeat that testing if
17 the PROM has been tested in that sort of
18 target population or context.

19 For example, I'm an oncologist.
20 There are good measures of nausea. If one is
21 interested in looking at the proportion of
22 patients who experience alleviation of their

1 nausea following a highly emetogenic
2 chemotherapy, right, and one has a measure, a
3 PROM that has been shown to be responsive to
4 change, be reliable and valid in patients
5 receiving chemotherapy there probably isn't a
6 whole lot one has to do to then consider that
7 as a performance measure.

8 DR. PACE: Okay. Jack?

9 DR. FOWLER: I guess I want to
10 argue with that a little bit. I think this is
11 the difference between effectiveness and
12 efficacy. I think the trials that we're
13 likely to have are that, you know, you give
14 somebody a drug and it'll fix whatever it's
15 aimed to fix, or you'll do surgery and you'll
16 improve something or other.

17 But if we're going to be patient
18 and holistic about this that's implying that
19 doing the intervention which will fix the
20 problem is quality care. And we've talked
21 about it's not always quality care. And I
22 think that because it's not always I think to

1 just intervene more and that that makes you a
2 better -- that's a better quality of care.

3 In fact, that's one of the reasons
4 that people are pushing for quality care
5 measurement from a patient perspective is to
6 get beyond just doing stuff to people as a
7 measure that you're doing good stuff and to
8 find out if you're really doing good for
9 people.

10 So I think the idea that you also
11 need to know what does a body -- what happens
12 to a bunch of patients who are subjected to a
13 particular provider in terms of what their
14 overall outcomes are including the things they
15 care most about which may or may not be that
16 symptom that that drug with all the side
17 effects actually fixes.

18 So I think that's why you need the
19 studies of the interventions in practice and
20 reality both the condition and also how it
21 works in practice. And overall measures of
22 how patients are doing as well as the efficacy

1 trials when you subject people with a
2 particular problem to a drug and see the
3 outcome.

4 DR. PACE: John? Could you use
5 the mike? Sorry.

6 DR. WASSON: All I wanted you to
7 do was just clarify a bit more. His comment
8 triggered you to make a general statement.
9 Could you just give us a specific? So he's
10 happy with a nausea scale of whatever and you
11 then reacted to it and said no, I'm going to
12 disagree. I'm not sure, maybe it's just me.
13 I'm dense and it's late in the day, but what
14 exactly were you saying is wrong with that?
15 Is it necessary but not sufficient, was that
16 your point?

17 DR. FOWLER: Yes. I think that
18 the idea that -- I mean, if you're really
19 focused on nausea and if it was really that
20 narrow, well even then I think. He was saying
21 that the trial that showed that the drug works
22 to fix the problem is evidence enough that you

1 -- no, I think you were. Evidence enough that
2 the intervention, you know, that the
3 intervention is a good idea.

4 DR. BASCH: I actually think we're
5 agreeing with each other. I think there are
6 two different pieces here. You know, I think
7 maybe what it sounded like I was saying is
8 that if a measure has been evaluated for its
9 properties in a highly restricted context, for
10 example, in regulatory trials it could then be
11 brought out into a CER, into a registry or
12 into a quality assessment context which isn't
13 what I'm saying.

14 I'm saying that if the measure has
15 been evaluated in a satisfactory way itself as
16 a measure then when you drop that measure into
17 a similar context you probably don't have to
18 go back and, you know, retest it. So if
19 you've gone out and looked at hard-to-reach
20 patients and different languages and all like
21 the good stuff that we care about that's
22 probably okay. We good? All right.

1 DR. PACE: Steve.

2 DR. FIHN: I was just going to
3 take -- you know, and I realize some of the
4 comments were for reaction. But you know, I
5 do think we have to take a balanced view of a
6 technical evaluation of some of the measures.
7 You know, a good example would be the CAHPS
8 satisfaction, outpatient satisfaction scores.

9 Those of you who are in the VA
10 right now know we've been for the last 2 years
11 struggling to put out patient-centered medical
12 homes in all 1,000 sites of care that we have.

13 It turns out when we started
14 looking at the CAHPS for trying to discern
15 which places were doing better than other
16 places we didn't see any differences. And we
17 went to Commonwealth and we went to NCQA and
18 they said well, we know. That instrument
19 isn't responsive. We've known that for a long
20 time and we're in the process of developing a
21 new measure. And we've got the new one now
22 rolled out which we hope will do it.

1 But you know, I think we can look
2 at these measures, they may look good, they
3 may have a lot of the testing, et cetera. And
4 when you actually put them into practice they
5 actually don't perform. And I think we should
6 make sure that actually before we do that that
7 we understand that they do perform.

8 In this case for us it's a pretty
9 high-stakes issue. We're investing \$1 billion
10 in this and we can't tell what's working. So,
11 you know, I think there's something to be
12 said.

13 I think you're right, if you just
14 focus on the technical issues of the measures
15 then we might be measuring something that we
16 don't understand or don't care about. But on
17 the other hand I think if we don't do that
18 we're, you know, liable to perhaps not be able
19 to measure things we really want to.

20 DR. PACE: Helen?

21 DR. BURSTIN: And perhaps just one
22 very concrete example that we just went

1 through in our surgery projects. There was a
2 measure put forward that looked at improvement
3 after cataract extraction within 90 days using
4 a very well-validated tool. I know Al knows
5 this work well, the VF-14.

6 No question about it, this is as
7 validated a tool as it could be. When you
8 apply it to a performance measure all the
9 issues we've been talking about today came to
10 the fore.

11 The first is what does improvement
12 mean. In those research studies any degree,
13 any sort of increase plus up was good enough.
14 What's actually a meaningful difference of
15 cataract improvement? And so, there are a
16 whole series of issues.

17 It was administered in a very
18 structured way as part of the original
19 studies. Now it's going to be submitted, you
20 know, sent to patients by mail from their
21 ophthalmologist's offices. So you can see how
22 of course the tool itself is pristine, but

1 when you put it in a performance measure in
2 the real world it gets kind of messy.

3 DR. PACE: Okay. One last
4 question? Okay.

5 DR. LOHR: It's one last question.
6 Part of your paper in the validity section
7 dealt with how to cope with patient
8 preferences. And I wanted to sort of throw
9 out an alternative universe that asks whether
10 that is an element of validity per se, or
11 whether it needs to be considered but as a
12 somewhat different or separable measurement
13 activity. Or even a set of items or some
14 other way of getting at things related to
15 patient preferences that aren't categorized
16 inside validity. And that was just, that's
17 just my --

18 DR. GAGE: Well, it's a very good
19 question because the issue comes up. If you
20 take a measure like pain, you know, one of the
21 earliest measures of the patient's perception,
22 but their threshold for when it's impairment

1 is very different from patient to patient.

2 So as you're thinking about the
3 use of the patient's information you know part
4 of what we keep struggling with, this whole
5 notion of taking a patient-reported outcome
6 and using it for the purpose of
7 accountability. Not just QI, not just
8 modifying the treatment but actually holding
9 somebody accountable is how much do you allow
10 for that more subjective nature of the
11 patient's preference and the patient's voice
12 and all the other factors that are
13 unmeasurable that might be affecting the
14 patient's response on that particular day.

15 And yes, we can risk-adjust, we
16 can stratify within different subgroups but
17 you're still, there's still that issue out
18 there. And when you talk about QI the
19 clinical communities are all for giving the
20 best care and taking into account the
21 patient's view. When you talk about
22 withholding payment or some of these other

1 accountability actions there's less consensus
2 about the importance of the patient's voice.
3 And it's really something we'd like to hear
4 from this group about because it's a difficult
5 issue.

6 DR. PACE: Okay. So we have one
7 more thing to do before you leave and that is
8 we thought we would spend this last few
9 minutes of you people -- of our expert panel
10 at their tables. And to just kind of as a
11 group, as a table group kind of identify those
12 unique considerations about PRO-based
13 performance measures in relation to NQF
14 criteria. And also thinking about the pathway
15 that we're going to look at tomorrow in terms
16 of the unique considerations of getting from
17 a PROM to a PRO-based performance measure.

18 So we're going to just stay at
19 your tables. We'll have an NQF staff person
20 at each table to take some notes. And we'll
21 just ask you to do that. And Patti is going
22 to make a few additional comments before we

1 start that. Go ahead.

2 DR. BRENNAN: Yes. And could I
3 invite all of our guests -- ladies and
4 gentlemen, I am the second eldest of 10
5 children and I know how to make a room get
6 quiet. You all have to do the dishes.

7 Could I invite our guests to
8 please come up and just join a table because
9 we're going to be spending the next 25 minutes
10 or so getting everyone's input on the notes
11 they've been jotting down all day of what has
12 to be done uniquely or with the consideration
13 of patients as a contributor to patient-
14 reported outcomes in contrast to all of the
15 other NQF work.

16 So if you'd come up and join a
17 table I'll get you started on your activity.
18 There are eight tables I believe and there's
19 plenty of seats up in the front. Don't be
20 shy. And there's going to be an NQF staff
21 member at each table to take notes. There
22 will be people coming up to join you. And our

1 experts, please be nice to the company coming
2 to join your table. Don't make faces at them.
3 Perfect. Okay, everybody has a table to sit
4 at and a chair to sit on.

5 Now, this is going to require a
6 little bit of thought which is going to mean
7 that you have to have oxygenation in your
8 brain. Most of you don't have any left up
9 there, it's been draining down all day so I'm
10 going to ask you to do one chair exercise to
11 get some oxygen back up in your brain. All
12 right? So I want you to put your right arm
13 over your head, grasp your right elbow with
14 your left hand and pull slightly and bring it
15 back down. Now, put your left arm over your
16 head, grasp your left elbow with your right
17 arm, pull slightly and bring your arm back
18 down again. That's a kind of hydraulic pump.
19 There's oxygen back in your brain now.

20 Okay, if you look on the front
21 boards in front of you -- we're not doing the
22 hokey-pokey till tomorrow. If you look on the

1 projectors in front of you you'll see that
2 there are the four major endorsement criteria
3 for NQF. Your job in the next 25 minutes is
4 just to brainstorm a little bit about do any
5 of these four require special consideration
6 for PROMs. If you want to follow along in
7 your electronic handout it's on page 43, 44
8 and 45. If you have the full packet from
9 today. And if you have a paper handout it's
10 on the same pages, they just happen to be on
11 paper. But mostly discuss these four. There
12 will be no report out. At 5 o'clock we will
13 call a quick stop and we'll see you all in the
14 morning. Thank you very much.

15 (Whereupon, the foregoing matter
16 went off the record at 4:37 p.m.)
17
18
19
20
21
22

A	
AA 341:19	access 56:5 73:7 117:20 119:22 120:1,6
AARP 1:13 4:4 7:20	accomplish 6:17 8:9 69:21
abandon 306:17	accomplished 169:21
abandoned 259:3	accomplishing 24:19
ability 137:16 165:20 174:19 191:19 241:6 255:22 261:22 289:14 297:1 321:21 346:19	account 9:13 13:17 14:1 53:18,20 62:7,16 334:7 359:20
able 13:6 65:5 80:8 86:2 87:12 91:3 120:18 130:10 158:12 160:18 169:4 175:4 176:17 178:6 179:7 180:14 186:14 193:10 194:12 199:8 207:6 213:2 219:4 229:13 242:18 244:6 255:13 268:18 269:6 279:9 304:9,13 305:4,10,19 322:5 326:21 330:21 332:7 336:8 344:12 347:4 349:2 356:18	accountability 4:5 9:18 14:10,16 20:4 22:7 63:21 128:10 146:3,7 147:19 148:8,20 149:13 152:17,20 154:6 190:17,21 190:22 204:18 275:12 284:2 285:21 288:22 347:6 359:7 360:1
absolutely 21:15 79:8 100:7 101:3 101:4 113:12 114:19 190:17 258:8 336:16	accountable 10:22 11:5,7 136:9 153:15 286:12 287:17 289:15 325:14 340:8 342:14,15,22 359:9
abstract 158:20	accounts 50:19
abundant 348:8	accumulate 192:16
academic 54:1,7	accurate 111:20 199:21 200:7,15 244:7 259:9
Academy 222:20	accurately 233:22
accept 260:17 262:10	accused 334:3
acceptability 15:15 15:21 43:10 141:1 219:3 316:17	ACC/AHA 343:5
acceptable 264:21 265:18 285:10	achieve 40:3 206:19 264:20
	achieved 100:9 102:3 290:9
	achieving 146:13 323:3
	acknowledge 208:13 209:11
	ACO 258:18
	act 73:22 74:3 152:12 229:14
	action 51:4 138:10 249:13
	actionability 129:17 130:11 132:19 135:22 138:16 139:17 141:15 144:22 148:2,3 150:2 151:15 154:2,8,13
	actionable 149:15 149:16,17,18 150:15 151:8,16 152:8 153:6,7,19 153:20 154:22 180:2,5
	actions 360:1
	activated 19:12
	active 102:4
	actively 103:18
	activities 64:2,12 66:14 67:5,22 69:3,6,10,22 75:13 76:3 77:22 88:4
	activity 68:4 89:17 212:13 358:13 361:17
	actual 27:11 28:1 36:14 110:4 137:10 141:12 198:22 227:21 303:1 323:15 334:13
	acute 42:10 134:9 212:14 278:7,17 326:11
	ADAMS 3:14 124:18 177:22 178:20 183:14 184:13 187:6 189:3,14 190:12 191:2 192:1 193:17 195:9 196:1,8 198:12
	199:3 200:21 201:18,22
	adapted 279:10
	add 29:17 70:17 153:1 186:8 258:13 336:10 337:22 343:2 347:21
	added 59:4 171:11 230:18 328:14
	addendum 145:22
	adding 90:4 291:19
	addition 11:11 15:13 18:3 220:22 237:7 306:2
	additional 70:17 128:14 132:4 137:9 218:5 360:22
	address 13:10 25:19,20 80:14 108:14 116:2 164:10 180:19 196:14 208:9 236:22 241:4 270:10 289:8 341:19 342:12
	addressed 234:6 257:6
	addressing 19:4 204:5
	adequate 78:18,19 173:13 174:14 216:5 237:17 266:22 267:2
	adequately 130:9 176:10 185:2 231:14,18 233:18 283:19
	adjourn 33:12
	adjust 60:11 62:16 220:2 332:6
	adjusted 50:18 74:12 78:13
	adjusting 78:9
	adjustment 50:8 62:1,6 68:8 71:8
	71:11 219:13,14 269:18 287:21 295:5 330:21 331:8
	administer 44:21
	administered 27:10 44:22 176:10,19 357:17
	administering 43:13 109:9 176:3
	administration 1:19 5:19 43:8 48:17 66:18 109:22 126:5 265:12 276:17 282:9
	administrative 40:22 49:19 107:11
	administrators 133:4 234:14
	admitted 48:4
	Admittedly 12:1
	ado 38:12 203:9
	adolescent 167:22
	adopt 59:7
	adoption 30:7
	advance 64:13 76:8 148:6
	advanced 233:11
	advantage 63:19 64:20 74:2,8 75:17 76:1 328:9
	advantages 101:2
	advent 224:16
	adverse 41:12 233:6 337:16
	advice 23:6 60:19 260:14
	advise 189:21
	advisers 87:3 89:20
	advisor 81:2
	Affairs 246:2
	affect 270:5,7 329:14,16,21 342:12
	affectionately

128:4	agreed 303:17	alongside 42:20	animation 39:20	applicable 328:13
Affordable 73:22	agreeing 354:5	alpha 223:20	Anne 1:18 282:6	349:5
74:3	agrees 303:5	altered 199:20	286:5 288:14	application 36:14
afield 260:20	ahead 7:13 63:10	alternative 98:1	289:2 331:14	37:2 51:21 146:7
342:18	150:9 184:15	358:9	335:17 339:7	226:15
afternoon 34:9	189:4 192:4	alternatives 86:3	anniversary 169:13	applications 51:18
202:6 317:1,10	193:18 195:14	249:2	announced 75:6	204:18 224:19,21
afterthought	235:11 271:5	altruism 161:3	226:3	225:4 284:2
176:14	272:22 274:21	Alzheimer's 153:8	annual 310:13	285:22
after-survey	361:1	Alzheimer's-type	annually 65:1	applied 52:1
162:14	aimed 329:12	153:11	annum 46:21	131:19 219:15
age 26:19 71:12	351:15	ambulation 324:19	anonymous 271:16	223:7 224:22
235:1 268:3 279:2	aims 44:11	ambulatory 43:7	ANOVA 217:2	225:15 226:16
295:4	Al 195:10,14	amenable 130:16	answer 8:17 23:19	244:17 262:16
agencies 183:21	264:13 266:11	132:6	87:13 107:7 123:5	327:15
340:19 341:9	277:4 315:20	American 191:5	192:18 199:14	applies 170:16
agenda 164:20	333:11 334:21,22	300:19,20	308:6 322:22	apply 50:8 62:21
165:2 167:2	335:18 338:9	amount 56:21	323:8 328:16	134:20 135:11
aggregate 52:20	357:4	74:13 78:19 93:2	335:1,15 343:22	136:12 140:12
117:19 118:12	Alabama-Birmin...	112:18 115:4	answered 85:12	170:14 171:3,8
194:13 211:21	3:5	121:9 212:9 247:7	answers 107:2	193:16 219:12
238:20 273:12	Albert 3:9 5:20	262:14 267:1	338:20	261:20 287:22
322:18 334:11	101:7 282:9	277:16 285:17	antianxiolytic	310:6 357:8
aggregated 11:5	Albert's 103:7	289:11 296:13	95:11	applying 287:3
203:18,19 337:17	Aldous 235:7	298:3,22 348:8	anticipated 261:4	appoint 109:18
aggregates 79:21	alerts 31:12	amounts 74:19	antidepressive	appointment
aggregating 8:21	aligned 195:3	91:12	95:10	273:17
166:13 238:18	alike 334:9	amplifying 33:15	anti-innovative	appraisal 57:7
241:13 289:10,20	allergy 45:20	AM-PAC 293:18	81:11	appreciate 170:9
294:19 317:17,18	alleviates 348:7	298:15	anxious 150:11	171:12 266:6
317:22 318:9	alleviation 350:22	analogous 210:9	anybody 10:10	appreciated 193:21
321:15	Alliance 1:14	245:5	25:2 107:15 257:6	245:2 339:4
aggregation 136:12	allocation 97:15	analogy 21:9	anyway 301:17	appreciation 224:2
136:20 186:5	allotment 112:9	225:20	325:22	approach 21:1,11
318:13 321:10	allow 59:9 84:20	analyses 84:1	apace 150:9	47:6,7 60:13
aging 340:20	91:19 93:3 113:1	107:22 295:6	apart 45:10 151:15	175:6 212:11
ago 19:2 75:8 94:18	127:21 141:4	analysis 81:17 84:7	apologetic 201:14	236:15 273:14
112:2 197:2	191:15 204:13	122:5 142:3	apologize 342:6	274:18 343:17
198:15 222:1	205:17 206:14	206:11 207:4	appear 54:8 219:4	348:21
233:6	284:13,19 359:9	258:16 273:11	appearance 222:3	approaches 37:8
agree 100:3 128:17	allowed 61:14	274:3 284:12	appears 36:8 53:19	44:9 80:1 187:22
128:17 182:1,11	100:17	Anderson 2:21	350:12	223:14 224:17,19
184:11 190:16,17	allows 56:4 62:14	and/or 144:17	Applause 124:2	232:20 251:1
207:13 259:6	96:17 161:12	283:17	168:21 201:21	289:9
260:6 266:11,15	215:18 216:1	Angeles 99:15	280:19 332:21	appropriate 28:18
335:22 336:3,5	217:18	Angina 307:9	apples 92:4,5	58:9 84:22 165:22
338:11 348:1	alluded 345:10	angioplasties 55:10	237:19	226:6 229:9

287:18 335:12	articles 199:2	169:6 269:15	automated 114:12	316:9,10,13 318:3
appropriately	aside 307:19	assistants 273:16	availability 164:1	326:20 328:5
112:11 131:20	asked 56:7 120:1	associated 60:9	165:9	337:6 341:6
183:2	147:18 149:6	286:21 296:20	available 42:5,6	354:18 362:11,15
appropriateness	156:10 162:16	297:3	50:6 102:9 119:12	362:17,19
58:4,8,14 113:2	176:15 201:15	Associates 2:2	146:11 173:7	backdrop 209:9
300:18 325:6	227:14 234:12	Association 2:8,13	avenues 314:1	background
approval 17:8	245:19 276:8	4:6 300:20	average 50:11 51:3	207:21
approved 66:9,12	289:8 301:13,19	assume 274:6	61:8 62:3 78:13	back's 252:17
66:15	302:3 313:10	assumption 304:17	118:13 122:19	bad 118:1 247:14
approximately	314:12	assumptions	180:3 185:8 212:2	247:15 252:8
71:20	asking 125:20	339:11	212:8,16,18	263:6,19
area 36:16 132:19	160:1 313:11	Assurance 2:25	252:18 289:11	badly 247:9
132:20 143:22	322:10	66:10	291:9,10,12	baked 259:21
147:1 285:1	asks 69:11,13,16	assure 18:19	320:18 322:19	balance 96:20
294:14,18 298:7	320:5 358:9	assuring 18:9	avoid 100:14	296:22 297:1
301:22 303:3,19	aspect 144:9	163:16 345:15	avoided 190:5	balanced 355:5
340:19 342:10	176:17 180:21	astronaut 226:2	aware 13:10 234:10	balancing 344:16
areas 13:21 42:21	205:8	attached 26:17	340:3	balloon 343:10
55:17 57:14 72:5	aspects 34:17,20	283:4	awareness 96:16	bands 50:7
72:6 90:10 99:20	144:15 145:13	attain 44:18	awful 49:12 51:6	BANKOWITZ
138:16 142:3	158:19 177:2	attempt 125:4	awhile 98:8 306:7	1:14
158:2 206:6	assembled 36:18	129:15 264:20	337:2	Barb 289:19
275:17 297:8	assess 10:14 42:7	attention 15:20	axis 50:17	290:16 302:21
309:18 311:12	59:12 172:20	71:6 75:10,11,13	a.m 1:9 6:2 124:16	305:6 333:11
345:7	173:17 181:15	174:14	124:17	337:22
argue 32:2 41:1	203:15 238:7	attract 320:11		Barbara 1:22 2:21
113:7 351:10	246:22 247:2	attributable 210:20	B	104:16 282:7
argued 346:7	assessed 229:15	211:1	back 6:10 8:7,22	barely 149:18
arguing 32:16	231:8 284:22	attributes 9:11	10:3 17:21 24:8	bargain 280:15
argument 122:10	assessing 36:5	attribution 275:2,5	25:17 35:5 45:21	barrier 31:11
268:22	69:20 173:9 185:2	275:11,14,20	46:11 50:14 51:1	Basch 1:15 17:14
arguments 85:4	222:16	audience 6:9 25:10	59:16 63:5 66:2	17:15 59:17,18
arm 158:8,17	assessment 37:21	76:16 117:16	75:3 76:11 84:16	103:4,5 183:16
362:12,15,17,17	57:5 59:5 103:22	125:20 178:10	88:14 92:18 99:12	199:5 345:1 350:3
arrow 229:22	105:5 144:7	187:9 190:13	99:13 104:13	354:4
art 70:14	162:21 163:21	241:5 256:20	124:17 126:14	base 237:15 312:7
arthritis 93:14 96:3	168:9 181:22	272:14 301:16	130:5 139:13	based 11:4 22:6
97:9 102:1,16	224:6,6,10 236:15	333:2 349:18	163:16 178:16	74:5,7 75:12
103:10 123:12	238:10 240:3	audits 40:20 41:3	187:7 191:3 201:2	105:3 131:15
254:4,6,7 319:19	256:14 261:21	August 6:11 129:2	202:1,1,5,7 221:7	134:20 160:8
arthroplasty 88:20	288:9,11 307:5	authors 202:15,16	233:5 234:20	167:1 175:16
92:19 93:13,15,19	328:8 354:12	202:21 204:5	241:20 250:9,11	183:4 185:22
94:10 99:22	assessments 223:17	236:12 239:15	250:16,18 252:4	205:1 206:11
100:20 106:8	224:13,20	241:9,14 242:20	253:6 255:6 281:2	227:8 228:3
article 198:15	assign 167:8	243:16 282:5	306:9 308:13	294:15 302:11,19
301:14	assigned 22:3	286:2	309:15 311:18	303:9,21 323:9

336:2 343:17	benchmark 189:4	305:2 308:21	bits 62:11	breadth 231:16
baseline 66:1,5	289:12 296:4	352:6	block 282:2	break 124:9,12
68:13 127:21	323:3	bias 60:1 61:11,14	blocks 127:6	201:2 280:20
128:5 197:18	bend 158:7	62:14	blood 144:4 206:19	breaking 34:10
212:16,20 228:6	beneficial 97:11	biased 312:5	206:20	breast 89:7
254:22 272:4	beneficiaries 64:1	biases 320:7	blue 70:4	Brennan 1:9,12 4:2
291:15,18 294:11	68:12 76:5 116:16	bidirectional	BlueCross 2:12 4:6	4:15 6:3,7 7:5
298:11	beneficiary 65:22	229:22 230:5	BlueShield 2:13	34:5,6 126:8
basic 73:15 208:16	67:1	big 16:6 20:13	4:6	155:9,10 186:2
212:12 293:17	benefit 86:13 123:4	102:2,16 103:1	board 17:7 44:19	189:5 196:20
298:15	312:21 313:5	106:13 176:5	335:8	245:3 257:4 361:2
basically 13:14	325:1 326:12	179:8 182:6	boards 362:21	brief 80:15 139:22
140:22 198:19	benefits 90:8	252:10,11 254:12	board-approved	140:5 150:8
208:15 209:19	benefitted 326:3	255:2 258:3	14:21	briefly 21:7 56:2
214:10 215:20	Berwick's 246:2	266:21 277:19	body 46:11 142:16	bring 24:7 39:20
219:19 232:14	best 6:14 23:6 42:9	bigger 118:5 258:3	144:8 157:12,14	104:7 137:7 149:8
291:17 293:20	56:11 84:9 91:21	258:4,18	352:11	159:6 167:15
294:8 296:2	91:22 117:8	billion 277:15	bonus 74:1,21 75:6	178:7 221:7 224:1
297:15 298:19	144:16 187:22	279:19 356:9	bonuses 74:7 75:1	245:21 302:13
304:2 320:21	188:6 189:9	billions 276:10	book 325:10,12	362:14,17
326:20	191:20 240:12	bills 279:17 280:16	boost 80:2	bringing 275:21
basing 207:11	245:20 264:15	bios 282:11	borders 91:20	brings 186:1
basis 51:1 68:17	359:20	birth 169:13	borne 171:22 174:5	Britain 111:4
70:5 82:1 148:11	bet 347:13	bit 15:6,17 18:17	Borun 2:18	Brits 315:12
155:15 157:15	better 8:12 32:22	19:11 39:16 40:7	BOSSLEY 3:15	broad 12:4 78:14
185:3 308:22	59:7 60:7 83:3	49:8 51:16 59:22	Boston 2:3 4:21	137:3 168:15
basket 62:3	90:1 95:5,20	64:6 67:12 68:14	38:7 79:4 203:2	260:15
batteries 45:6	97:12,21 110:10	70:21 80:6 94:20	bother 155:1	broader 24:12
battery 45:13	118:12 155:13	104:17 110:10,15	bothered 149:5	208:13 230:4
BCG 80:20 81:2	183:12,13 188:13	125:1,7,17 127:10	155:3 180:22	broadly 81:3,4
bear 122:7	194:22 195:1	132:3,16 133:22	181:16	119:4
beginning 58:13	232:19 241:10	139:12 147:19	bottles 341:2	broad-scale 315:5
82:19 179:5	246:15 249:22	157:6 192:3	bottom 224:8 232:5	broken 79:11
214:11 327:14	250:14 251:11,11	205:22 211:20	276:9,15 297:22	Brookings 1:18,22
begun 62:22	251:15,16 252:20	219:12 225:22	bottom-quality	2:20 104:16
224:22	256:15 271:11	240:19 243:11	241:11	202:16 282:7
behalf 123:21	284:7 293:1 313:8	256:22 260:3	boxes 17:18 26:5,9	broom 181:9
behavioral 341:12	324:3 326:2	263:18 278:5	171:10 265:12,16	brought 21:18 78:2
behaviors 13:19	331:20 332:16,18	280:21 287:13	boy 190:9 253:18	78:7 87:2 194:1
14:4 340:13,14	332:18 335:1	290:22 297:11	254:6 338:3	202:19 215:7
behold 340:21	339:1 348:13	313:6 316:10,11	BPH 252:6,13	252:1 312:10
belabor 200:11	352:2,2 355:15	316:20 318:14	255:6	313:17,18 345:2
believe 107:18	between-provider	319:14 324:14,18	brain 362:8,11,19	354:11
161:4 279:20	213:17	326:17,19 327:11	brainstorm 363:4	Brown 320:15
361:18	beyond 90:8 95:22	328:2 331:14	Branch 2:11	BSN 2:14
BELLOWS 1:16	132:15 134:9,12	335:6 351:10	brave 235:7	bubble 13:12
belong 149:13	240:10 259:19	353:7 362:6 363:4	bread 113:21	budget 112:14

budgets 81:9	294:22 295:9	cards 316:2	267:13 278:13	152:10 298:13
build 57:10 79:22	322:13 336:19	care 11:7 13:14	326:9,10	catheter-associat...
127:5 167:9	349:12	26:13 28:14,17	caregiver 243:6,8	32:11
223:14 252:22	calculated 50:4	31:9,11,18 40:6	caregivers 166:2	caths 315:9
building 127:1,6	216:20 218:15	40:17,19 41:10,11	166:11	cause 175:18
249:17 282:2	228:8	41:13,18 43:7	caregiver's 134:14	caused 69:21 332:8
builds 240:16	calculating 296:2	46:12 52:6 55:17	caregiver-reported	caution 276:5
built 112:11 285:12	calculation 218:12	56:16 73:22 74:3	243:13	cautionary 31:7
340:15 342:9	246:13	81:18,19,22 82:6	Carlo 217:4	154:12
bullet 208:15	calculations 111:18	82:14 98:15,17	Carolina 17:16	cautious 32:17
bunch 47:22 48:7	116:6	100:1 107:6 113:2	22:16 59:19 103:5	ceiling 291:21
151:14 172:4	call 30:10 46:16	122:22 130:20	carried 41:3,4 42:2	ceilinged 313:4
189:22 190:3	81:22 90:15 153:6	134:7,10 143:18	carry 185:11	cell 286:18 287:11
250:13 251:6	167:7,11 173:15	144:13,15,18	case 19:22 33:14	Cella 1:17 127:20
253:10 255:12	186:4 192:20	145:8 146:20	36:8 37:5 48:1,2	133:6 224:17
256:5 320:18	227:2 233:6 246:4	147:3 149:1 156:3	50:9,10,19 54:5	census 47:6
326:1 352:12	261:12 341:10	157:12 159:19	78:6 112:7 113:8	Center 1:15 2:5,21
burden 14:5	345:11,12 346:5,6	160:7,9,12 161:6	113:12,22 114:18	3:7
107:11,11 109:8	346:7 363:13	161:13,16 162:3,6	120:20 121:10	centered 279:21
109:12 110:19	called 79:15 133:8	162:18 165:6,8,9	123:10 157:22	centerpiece 280:13
133:3,3,7 154:10	169:18 175:9	166:6,7 184:19	173:4,22 201:12	centers 1:25 2:15
burdensome 147:4	307:8 325:12	198:6 212:14	207:2,9 212:1	102:2,17 301:22
Burke 4:16 126:4	caller 196:22	223:8,8 226:18	213:4 227:11	Center/VA/RAND
168:22 182:1	calling 55:21 128:3	229:17 231:10,17	242:1 253:11	2:18
184:16 192:6	177:8 334:19	232:2 234:1,5,21	263:13 264:15	central 346:4
193:6 198:2	350:9	239:16 245:5	284:15 298:3	Centre 46:13
236:21 266:5,5	calls 223:12	246:5 250:4	356:8	centuries 226:9
269:9 282:15	calm 70:3	252:20 254:1	cases 24:7 37:1	CER 104:6 354:11
347:13,22	cancer 1:15 2:21	256:9,10,15	48:5 88:9,9 89:15	certain 26:7,15,22
Burstin 3:17 13:5	55:12 88:21 89:7	257:14 258:17,17	120:9 122:12	60:2 134:7 167:4
21:4,5 23:21	89:8,12,20 261:1	273:9 278:7,11,17	123:3 221:11	175:20 197:13
344:7 356:21	261:5	279:2 283:18	244:3 256:8	248:17 253:19
bury 244:6	cancers 89:7	288:13 290:6,6,9	290:14 295:12	267:22 268:3
business 109:7	candidates 253:14	290:10,19,19	case-mix 50:8	290:10 296:3
112:7 113:8,12,22	capable 347:12	299:16 310:4	61:22 62:6 68:8	311:22 315:1
114:18 148:7	capture 56:10	311:15,16 319:20	71:8 78:10 227:4	333:18
button 19:13	134:3,9 135:5	320:3 323:20	227:7,11,15,17	certainly 117:6
buttons 322:7	137:21	327:16 340:12,18	233:3 313:10	131:9,14,18
buy-in 234:20	captured 84:4	341:6,16,22 342:1	cast 335:6	133:21 135:1
	130:8 231:21	351:20,21 352:2,4	CAT 224:17	137:4,9 139:19,19
	capturing 29:4,11	352:15 354:21	cataract 42:15	139:20 144:2,12
C	133:14,16 161:19	355:12 356:16	43:20 357:3,15	145:5,13,15
CABGs 55:9	162:12	359:20	cataracts 312:1	146:10,21 147:9
CAHPS 21:10 38:3	car 270:13	careful 175:10	categories 87:20	183:20 276:5
248:2 258:13	cardiac 311:10	177:12 267:16	88:2	277:17 283:1
271:7 355:7,14	315:9	276:20 331:6	categorized 358:15	302:4 305:16
calculate 265:15	Cardiology 300:20	carefully 259:8	category 134:18	332:14 337:20
290:3 294:20,21				

certified 66:9,12	333:14 334:14	196:2	classified 97:18	267:4,12,14,16,20
cetera 11:2 14:5	335:2 336:13	checked 172:22	classifies 298:9	268:7,11 269:5,14
32:6 50:1,1 87:8	343:1 346:13,20	265:17	clean 267:21	269:16 273:10
92:19 106:6	347:3,5,7,9,10,12	checking 265:12	clear 11:19 27:4,5	278:11 279:7
112:12 134:6	347:18 348:14	checklist 172:13	33:3,10 95:8	292:12 307:6,10
135:18 227:7	351:4	265:11	119:21 147:21	308:17 309:10
244:12 269:18	changed 44:12	chemotherapy	213:20 243:14	327:9 336:20
271:10 356:3	96:13 120:19	200:5,13 351:2,5	275:9	340:12 359:19
chain 82:6	162:22 174:2	chemotherapy-re...	clearly 36:1 38:22	clinically 159:22
chair 7:20 319:9	181:13 198:18	200:14	75:15 78:11 106:8	160:3 184:6 194:4
362:4,10	203:5 222:3	CHERYL 2:15	123:16 149:20	296:14 297:6,9
challenge 21:3	changes 50:18 56:3	child 158:15	198:10 222:18	298:10 333:12
36:15 78:22 80:3	68:11,18 70:14	children 361:5	225:17 232:7,17	335:21
80:6 104:5 113:16	71:1 72:20 97:15	Children's 2:4	235:2 263:8	clinician 10:10
113:21 117:7	103:3 120:21	Chinese 67:10	264:22 274:3	82:22 105:3 162:2
118:16 189:6	121:10 123:16	choice 44:14 52:18	Cleary's 329:8	183:7 190:21
226:4 245:11	151:4 199:18	97:19 115:19	Cleveland 2:2	194:10 195:1
challenges 36:2	200:3 218:21	119:18 212:2	clever 181:14	273:18 303:10,12
225:7 229:2	219:4 238:2	213:13,16	climate 81:11	303:14
254:15 256:5	239:14 280:15	choices 97:4	clinic 2:2 48:19	clinicians 82:19
challenging 8:4	292:2 334:5	cholesterol 270:3	162:13 167:3	84:5 91:2,10
30:12 33:10	changing 86:6	choose 91:11	261:2 273:14	95:21 98:13 114:4
297:11	219:8 227:18	188:17,19	310:17	114:17 119:7
chance 19:5 125:6	characteristic	chose 213:18	clinical 27:7 29:3	150:10,13 163:17
change 77:3,9,20	133:8 134:19	237:14 238:4,12	30:5 31:12 40:20	234:14 235:1
84:9 103:11 121:3	135:10 137:20	chosen 84:3 91:7	40:20 41:3,6 44:9	242:2,15,22
130:17 132:6	characteristics	91:11	52:5 55:2 56:6,7	257:22 263:7
151:7 173:21	4:10 36:6 124:20	chronic 68:1 71:13	57:14 58:4,20	273:3 274:8
174:3,19 182:18	125:2 126:18	72:7 310:6,15,21	59:7,11,14 68:5	330:12
182:19 184:2,5,21	127:13 129:6	311:6 323:18	83:2 84:9,10,18	clinician's 105:4
185:8,10 186:17	131:5 169:9 171:1	326:10	92:2 93:10 97:12	288:9
198:22 199:9,10	171:2,3,7 175:17	Cincinnati 2:4	98:11 103:3	clinician-based
212:3,9,12,16,18	193:12,16 214:6	circle 177:10	113:17 117:19	287:8
218:14 228:14	221:1 227:9 230:9	circumstances 9:10	118:5 119:16	clinics 103:11,13
239:10 250:3	259:20 260:8	194:17 310:10	120:4 121:21	clock 238:5
289:11 290:3,14	347:17	circumstantial	123:4 138:12	close 71:6 81:13
290:21 291:2,14	characterization	11:20	143:21 144:3,4	119:20 164:4
292:7,12,13 293:3	255:12	cited 103:1	146:20 147:7,8	closely 278:14
293:17,21 294:17	characterize 172:6	clam 181:5	149:5,7 150:20	closest 21:9
296:9,13,18	259:7 278:12,14	clarify 316:3 353:7	151:19 153:13	closing 201:5,19
298:12,14,16,17	charge 106:18	classes 153:9	157:3,11 158:8	221:6
298:20,22 299:2	222:6 229:19	classic 22:1 171:17	161:22 174:7,9,19	clothing 316:1
299:10 310:8	CHARLES 2:8	209:20	181:21 184:19	CMS 32:10 37:5,21
311:4,5 322:10,12	chart 133:6	classical 85:21 96:1	185:5 195:4 198:3	64:18 73:22 74:6
322:13,15,19,19	Chas 12:10 277:22	classically 26:12	227:8 234:16	74:10,12 75:21
323:2,3,4 331:18	278:2	classifications	236:3 248:6	79:7 116:22
331:19 332:8	check 25:21 172:15	187:2	255:11 261:14	coarse 318:22

code 254:7	combine 81:17 85:13	134:20 147:20 155:16 159:21 178:2 198:13 221:7 235:18 257:1 277:22 281:13 306:16 333:1 339:5 349:18,21 355:4 360:22	267:15 company 232:13 362:1 comparability 204:13 205:6 269:3 comparable 348:19 compare 82:5 91:3 91:21,22 92:4 101:19 104:3 113:9 200:9 268:7 268:9 269:6 274:11 304:9 305:4 321:21 compared 113:11 227:6,18 228:2,7 228:19,20 231:14 232:1 299:19 303:9,11 compares 103:12 comparing 71:1 91:13 103:18 227:13 228:15 comparison 93:3,5 230:12 comparisons 61:22 71:10 229:5 324:6 327:8 328:12,20 330:6 compelling 148:16 compensated 163:18 competent 55:11 compilation 182:12 complement 41:17 complementary 51:14 complete 41:17 47:9 49:2,2 51:13 83:17 266:16 completed 128:16 309:9 completely 39:14 89:13 100:2 119:5 320:4 347:22 completing 43:12 complex 21:16	57:19 119:3 188:15 complexity 48:1 85:8 189:20 complicated 109:22 181:17 182:15 190:7 253:7 complication 41:9 328:14 complications 45:20 326:1 compliment 107:3 component 52:16 106:14 176:9 components 211:10 211:11 217:9 composite 79:22 184:9 191:17 192:7,10,12,15,21 194:19 218:8 composites 191:14 comprehensive 44:15 47:5 56:14 comprise 45:7 53:19 comprised 46:20 compromised 174:3 compulsory 111:9 concept 10:6,15 13:15 133:14 135:2 155:18 157:1,3 159:3 167:15 168:3 172:10 174:15 192:9 193:14 203:15 223:15 226:14 235:20 334:13 348:12 concepts 7:10 28:2 36:12 129:22 157:19 159:7 160:12 166:18 172:14 222:9 244:8 345:22 346:2
coefficient 216:1	combined 79:13			
coefficients 219:18 228:9	combining 218:9			
cognitive 278:16 301:9	come 7:14 8:22 14:19 21:21 25:17 35:8 42:8 59:22 63:5 84:16 88:14 111:1,21 155:16 187:8,20 192:18 253:4 257:18 258:6 268:20 269:11 288:15 290:16 329:21 361:8,16			
cohort 26:19 60:17 66:3	comes 10:8 27:3 46:11 48:9 112:21 113:15,21 120:5 150:5 166:9 196:12 275:16 285:6 358:19	Commission 202:21 320:5 commissioned 4:21 5:17 8:19 42:3 43:2 61:2 202:15 204:4 282:5		
cohorts 86:4	comfortable 12:16 53:14 336:7	commissioners 122:13		
collaborating 99:7	comfortably 319:8	committee 2:25 24:5 66:10 206:5 216:11		
collapse 172:19 179:15	coming 54:3,7 55:3 56:19 71:7 76:21 77:16 86:7 253:6 255:19 265:9 325:14 342:12 361:22 362:1	committees 15:14 common 135:8 275:14		
colleague 125:13 325:11	comment 17:5 18:7 25:11 30:21 34:7 58:12 59:16 101:8 118:20 123:8 132:2 135:15 137:2 180:17 183:17 186:3 189:5 192:2 195:10 243:3 277:1 279:14 282:13 313:16 317:14 333:5,7 341:14 353:7	Commonwealth 355:17		
colleagues 87:6 127:20 149:5	commentary 17:6,17 25:1,18 34:12 57:21 130:6,19 131:22 133:1	communicate 240:10,12 241:4		
collect 28:19 41:16 45:15,19 53:13 56:3 68:2 109:1,6 110:11 163:14 176:12 244:6 264:19 265:7 271:9,15 272:10 305:1		communicated 115:22 240:17		
collected 40:22 49:16,19 53:9 63:1 304:3		communication 115:18 170:8 236:5 240:22		
collecting 29:8 40:6 41:20 46:22 47:21 51:12 53:4 56:9 61:1 176:18 272:2 273:5 305:3,5		communities 340:8 359:19		
collection 31:20 43:4,9,19 44:5 49:14 56:13 75:12 109:3 110:4 115:15 122:2,3 142:2 147:11 150:12 305:19		community 2:14 12:7 28:10 81:14 82:22 84:2 90:6 91:20 97:10 134:2 134:10 261:14 279:4 292:21 340:18 341:18 342:5,9,11,15 343:16		
collections 110:17		comorbidities 49:22		
collectors 272:5		comorbidity 45:16		
collects 103:10		companies 232:9		
College 300:19				
Collette 2:14 28:9 29:21				
colon 261:1,4				
color 87:19 127:3				

conceptual 156:17 156:20 157:15 196:17 215:6	confidence 78:12 216:20 249:21 296:22	154:19 155:8 175:11 177:17 194:13 198:11 213:4,9 231:3 361:12 363:5	contemplate 240:5 244:19	contracts 46:5 65:11,12,14,15 66:7,14 74:2,14 74:21
conceptualize 244:16	confident 56:17 267:7 268:13	considerations 125:22 136:4 208:2 215:6 237:1 299:18 326:15 360:12,16	content 173:21 174:2,13 175:11 230:15,16,17 231:16 330:7 345:11 346:6 348:1,6,21 349:7 349:13,16	contractual 109:4 contrary 171:16 contrast 78:3 361:14
concern 86:8 176:3 198:10 212:18 218:19 220:10 243:18 345:9	conflating 193:5 confront 195:21 confronting 326:19 confusing 119:6 318:6	considered 143:20 143:21 154:3,3 175:5,16 197:12 215:10 224:5 239:18 242:15 358:11	context 9:6 11:21 18:21 29:18 57:4 165:13 171:4,7 172:6 174:16 175:1 177:16 191:7 199:18 202:13 207:13 208:13 209:14 223:3 225:5,8 226:1 234:18 236:21 244:13 280:2 281:22 283:21 311:3 332:17 335:14 339:8,10,13,20 350:18 354:9,12 354:17	contrasts 37:7 contribute 4:18 5:10 91:16,18 106:21
concerned 44:6	congratulations 38:16	considering 15:3 240:21 300:21	contexts 104:7 328:16	contributes 97:19
concerns 176:6 179:8 218:22 273:22 308:2 312:17 315:5	connect 341:6 connected 6:13 32:1 325:10	consistency 142:16 144:8 223:13,18 227:4,11 237:17	contextual 156:18 160:15	contributing 97:11 98:15 111:8 314:21
concerted 265:7	connection 219:16 222:9	consistent 18:3 49:6 122:21 273:15 283:8,12	contingent 108:21 continue 35:6 70:12 71:4 139:15 171:13	contribution 86:17
conclude 59:9 233:9	connections 133:11 connotes 237:9 cons 249:1 consensus 7:14 16:17 24:2 127:18 300:17 360:1	consistently 204:12 240:6	continued 19:20 224:15	contributions 126:11
concluded 42:17 43:15	consequences 52:8 90:2 164:1	Consortium 90:16	continues 44:18 continuous 83:6 85:17 295:4	contributor 361:13
conclusion 182:4 267:9 268:19 299:16	consequential 156:19 163:3,12	constant 49:10	continuum 131:19 348:14,18	control 50:20 111:12 118:2 246:5 254:9 304:11
conclusions 57:11 238:19 258:7 269:20 289:13 324:15	consequently 234:11	construct 230:15 230:18 234:9 303:13,19 305:17 330:7,19 336:22 345:6	contexts 104:7 328:16	controllable 270:12
concomitant 268:1	conservatively 252:16	constructing 50:10	contingent 108:21 continue 35:6 70:12 71:4 139:15 171:13	controlled 142:20
concordant 249:10	consider 14:1 127:12 131:17 135:12 150:1 164:15 166:21 175:4 194:3,3 197:4 218:4,17 220:6,8 231:19 239:4 240:10 243:1,22 298:5 321:8 351:6	consult 232:9 consultant 79:7 80:22	continued 19:20 224:15	control-level 131:9
concrete 356:22	consideration 15:14 131:13 135:19 152:18	consultants 83:8 Consulting 38:8	continues 44:18 continuous 83:6 85:17 295:4	control 50:20 111:12 118:2 246:5 254:9 304:11
condition 10:7 67:16 109:7 133:19 253:20 334:10 352:20		consumer 11:15 12:3 33:6 37:20	contingent 108:21 continue 35:6 70:12 71:4 139:15 171:13	controversy 267:19
conditions 45:9 68:1 71:13 72:7 90:5,22 91:9 95:7 101:21 263:22		consumers 119:15 239:1 279:18 339:9	continued 19:20 224:15	converged 130:7
condition-specific 37:4 42:20 45:9 45:11 50:7 236:13		contact 102:14 contacted 33:21 contacting 102:13	continues 44:18 continuous 83:6 85:17 295:4	converging 214:13
conduct 176:2			continuum 131:19 348:14,18	conversation 16:3 17:9,20 149:8 158:21 168:20 326:17 346:14
conducted 301:18			contract 65:9,9,17 66:4,8 110:6,8 111:10	conversations 59:22 346:12
conducting 74:10 79:13			contractor 271:14	convert 118:9 convey 116:9 conveyance 200:16 conveying 117:8 convince 330:12 convinced 53:10 113:12 convincing 113:9 114:2,19 cool 250:10 Cooperative 327:2
conference 1:8 185:17				
confess 26:5				

Coordinator 2:6	121:12 122:1	267:14 268:11	customizing 136:18	176:5 185:13,22
COPD 261:3	135:9,20 141:18	281:14 282:15	cut 242:7 251:9	194:13 198:3
cope 358:7	212:7 229:6 232:4	285:14 360:14	297:6	204:3 205:14,19
core 45:13 278:20	250:12 260:10	363:2	C's 156:15	206:15,19,21,21
coronary 55:9	282:14 315:12	criterion 15:9,9,20	C-O-N-T-E-N-T-S	207:5,9,10 211:22
corporates 81:4	316:5 318:8	140:22 141:17	4:1	212:20 218:11,14
correct 62:9 79:8	course 94:9 95:6	142:7,9,10 145:4		228:6 241:7,13
203:7 283:17	100:11 125:19	145:9,18,21 146:1	D	243:20 244:7
324:7	126:16 129:22	146:16 234:9	daily 67:22 88:4	258:3,3,5 263:19
corrections 23:12	148:22 156:7	303:4 316:15	89:18 162:17	271:8,10,15 272:3
correctly 87:10	170:18 301:1	critical 9:16 71:9	dancing 99:6	272:4,5,10 274:13
229:8,11 243:16	322:1 344:16	105:6 115:3	dark 87:19	283:16 284:14,15
283:18	357:22	116:10,12 135:2,3	darn 338:4	289:10,21 293:2
correlated 109:13	covariates 227:9	136:3 138:8 148:3	Dartmouth 2:10	295:3,13,17
144:19 198:21	cover 72:6	185:1 348:1	3:3,6 273:2,4	297:18,18 302:3,6
correlation 95:2	coverage 56:14	critically 131:10	data 8:21 11:5	302:12 303:9
215:22 217:16	71:20 72:5 83:16	157:20 182:20	27:11 31:20 40:13	304:2,3,5,10
219:18 228:9	98:6 101:20	Cronbach 223:20	40:14,22 41:2,15	305:1,5,18 314:21
correlations 348:4	173:14	cross 159:15	44:10,17 45:22	317:17 320:9
cost 44:9 81:9,18	covered 55:5 83:14	crosscutting	46:22 47:3,5 49:8	323:6,6 324:11,12
107:12 108:20	138:15 246:11	136:22	49:14,16,19 50:2	327:7,10,16
109:20 113:10	covering 82:10	cross-sectionally	51:1,18,21 52:17	328:11
253:3,3 276:8,18	138:1 234:3	321:4	52:20 53:5,8 54:2	data-gathering
277:8 280:9	257:16	CRRN 1:18	56:4,5,9,10 57:1,4	113:17 114:9
costs 78:16 107:8	Co-Chair 1:13,13	crying 319:9	57:9,12 58:7,18	date 47:2
110:8,12,20 111:1	Co-Chairs 1:9	CSAC 17:7 30:13	59:9,12,21 60:13	daunting 311:21
111:13	CRAWFORD 3:18	30:19	60:22 61:3,10,16	David 1:17 2:16 4:7
cost-effective 43:17	crazy 275:9	cubist 238:13	61:18 62:10,16,21	37:11 38:13,13,16
cost-effectiveness	create 172:5	cuff 152:3	64:5 71:15 75:12	59:17 78:7 108:3
107:16,22 337:10	191:14 297:7	cultivate 167:9	75:14,22 78:8	108:13,15 114:12
count 179:13 180:4	Creating 241:1	culture 274:9	81:19 82:2 83:21	115:18 116:2
297:17,18	creative 167:19	CUNNINGHAM	84:4,17 85:10,14	117:5 119:3
counted 213:7	credible 146:9	3:19 108:10	87:9 89:13 91:13	120:16 124:6
counting 220:15	credit 252:12	curious 107:9,21	95:14 99:17 102:5	127:20,21 133:6
countries 36:21	258:19	120:17 121:1	102:8 103:10	224:17
47:13 89:12	criteria 4:13,20	curling 181:7	109:1,3,6 110:4	day 6:21 7:3,17
113:11	5:16 9:6,7,13	current 67:19	111:8,11,16,17	10:2 34:22 48:5
country 6:22 59:6	14:18 15:1,12,18	69:12 70:19 71:10	113:19 114:3,17	113:20 127:1
72:1 98:6 119:16	77:5 122:15	74:20,20 75:3	117:8,10,17,21	130:3 182:8,11
255:4	125:18 129:8	198:20,21 205:17	119:1,2 120:12	187:13 189:10,10
Counts 2:17 52:12	131:4 133:21	220:17 259:11	121:19 122:3,11	257:16,18 319:7
county 342:8	137:13 138:13	currently 21:10	130:7 139:3	338:19 345:5
couple 17:17 24:7	140:2,5,11,15	45:8 55:8 79:13	140:13 141:5,9	353:13 359:14
28:11 43:14 69:3	142:19 144:21	113:3 177:16	142:2 145:15	361:11 362:9
69:19 70:1 71:14	202:13 203:10	207:16 284:12,19	146:19,20 147:8	days 6:17 297:21
73:20 84:14	204:8 205:9,18	curriculum 165:3	147:11 150:12	297:22 298:4
103:14 112:2	206:3 207:17,22	customize 95:16	172:19 174:7	357:3

deal 61:10 257:13 275:11 306:16 311:2 312:20	242:10 244:11,14	demonstrating 4:18 5:11 184:5 229:3 237:2 281:7 299:18	describe 158:2 228:18 339:21,22	70:22 83:1 209:5
dealing 61:12 148:11 239:6 274:7,16	defined 86:21 99:2 148:3 149:11 159:12 196:16 227:1 232:6 242:21 296:17 298:17	demonstration 74:10,12 75:1,3 284:13,20 285:18 299:14	described 114:13 describing 269:4 descriptive 52:14 deserves 195:22 design 65:7 176:2 218:8 332:5	determines 69:9 157:18
dealt 358:7	defines 159:19	DENNIS 2:1	designated 10:22	determining 161:6
dearth 327:16	defining 160:2 244:21 307:6	denominator 211:17	designed 104:3 232:9,10 294:9	detract 149:7
Deb 99:14	definitely 27:17 28:7 269:19,22 275:22 335:9	denoted 166:1	designing 208:8	Deutsch 1:18 282:6 289:4 335:19 336:16 337:4,21
debate 11:16	definition 157:4 334:16 337:4,20	dense 353:13	desirable 144:11	develop 18:5 87:4 165:14,15 226:19 232:19 297:12 308:21 336:2
DEBRA 2:18	definitional 275:3	Department 4:7 37:15 40:2 46:13	desired 142:13 144:19	developed 16:14 38:9 70:8 77:4,8 170:5 207:14 261:4 326:21 327:8 328:11 349:4
decade 226:3	definitions 243:2,3 275:14	depend 11:21	despite 32:13 153:16 243:11	development 16:14 38:9 70:8 77:4,8 170:5 207:14 261:4 326:21 327:8 328:11 349:4
decades 150:22 308:14	degree 90:11 93:5 93:22 95:4 185:10 186:17 357:12	dependencies 197:8	detail 13:16 15:7 16:11 19:5 25:17 39:16 46:4 52:2 64:2 68:14 70:22 110:7 125:17 215:16 216:11 293:22	developers 284:19
decide 122:13 154:5 172:2	deliberately 189:21	dependent 110:19 110:21 214:5 260:12	detailed 73:17 116:17 127:19	developing 56:22 202:17 267:15 283:3 287:14 307:2 355:20
decided 74:6 306:17	deliberating 169:20	depending 45:3 95:16 142:20 313:4 335:9 339:2	detailing 224:18	development 24:2 55:20 70:10 77:21 92:2 94:6 170:12 175:13 225:17 242:12 245:6 300:5
deciding 323:9	delighted 222:4	depict 209:19	details 21:12 94:17 116:20,21 150:20 289:3	Developmental 2:9
decision 76:6 95:15 95:21 98:12 112:12 189:17 192:16 212:8 213:6 215:8 248:14,15,18 249:10	delineate 308:5	depicts 169:8 267:2 344:1 350:12	detect 199:8 322:5 332:7 347:4	develops 174:13
decisions 1:20 4:23 105:19 117:12 132:7 191:11,16 203:6 244:15 253:15 302:11	deliver 188:20 340:22	depression 11:8 21:20 31:14 55:18 68:6 152:11,12,13 159:4 294:7,12,13 294:15 298:8 310:12,15 311:1,5 311:6 333:19 341:15	detectable 296:18 298:18,20 299:9 307:7 333:14 334:5 336:12	devices 83:3 93:20
decision-making 59:14 129:18 134:19 135:2,8,16 136:2,11 137:2,8 138:9 187:14,18 188:4 253:12	delivered 111:5	depressed 27:9,12 298:11,13 310:19 310:22	detecting 296:18 298:18,20 299:9 307:7 333:14 334:5 336:12	devising 56:22
decline 153:10	Delphi 300:16	depth 231:16	determinant 119:17 217:11	diabetes 254:1
decomposed 210:3 210:13	dementia 153:8,8 153:11,22	deputy 37:11,14	determinants 211:9 340:10	diabetics 253:21,22
decrease 290:4	demographic 45:14 45:18	derive 40:21 312:20	determine 29:12 75:22 84:8 216:4 217:10 230:10	diagnosis 85:7 206:22
decreasing 65:14	demonstrate 39:22 47:15 153:12 184:8 313:11 330:1	derived 199:1 217:2,2 297:17	determined 15:11	diagnostic 259:9
dedicated 281:19	demonstrated 101:1 151:17 268:14			diagnostics 97:9
deeper 20:9 125:10	demonstrates 205:13 237:16 283:16 311:5			diagram 13:12 16:7,9 33:15 34:1 171:11 266:6
deeply 38:8				dialogue 20:18 87:6 102:18 137:11 157:17,17
defend 32:18				Diego 1:23 179:1,1 179:1
define 169:20				

differ 241:22 242:8 320:10	322:17,18 324:15 337:14,18,19	disadvantaged 324:2	345:3	distress 321:1
difference 7:7 46:2 103:20 105:13 166:5 188:22 195:5,6,17 229:5 254:12 288:8 296:14,18 298:17 307:7 323:19 351:11 357:14	338:20 339:18,19 339:22 340:1 354:6,20 358:12 359:1,16	disaggregated 117:21	discussions 27:16 28:8 93:4 105:1 106:7 125:9,10 128:2,6 136:6 144:1 147:6 155:19 159:20 207:19 245:15 306:21 308:13	distribute 48:18 distributed 135:17 295:18 distributing 46:7 distribution 185:14 220:5 321:12,19 321:20 338:14
differences 78:10 88:16 102:2,17 103:1 154:14 187:18 194:4,7 211:1,12 227:4 229:13,20 237:1 239:10,13 242:6 267:5,8 283:19 287:3,7 291:8 299:17 324:5 326:14 333:13,14 335:22 355:16	differential 255:20 differently 190:6 195:3 215:3 241:19 254:18 324:15	disagree 128:18 331:13 353:12	disease 81:15 82:6 85:8 88:10 91:17 91:17 96:14,16 97:1 98:14 154:10 172:8 199:11 307:3 311:10 315:8 323:18	distributions 321:18 dive 203:9 208:11 diverging 328:2 diverse 168:15 241:16 diversity 295:10 dives 125:10 divide 157:10,13 divided 160:8 297:21
different 7:11 12:19,19,20 19:11 36:20 43:5 44:7 51:3 52:22 59:6,8 71:21 74:19,19 79:21 91:4 92:14 142:22 151:1,14 152:14 160:11 166:9 167:5 174:9 181:9 184:9 187:22 188:19 192:15,17,19 194:16 197:8 217:9 223:3 227:12 228:20 237:9,21 238:1 239:3,8,12 241:19 244:4 254:2 255:21 263:10,10 270:11 278:5,6 279:10 285:3 287:13 288:21 291:11 294:21 296:1 300:8 314:15 319:22	difficult 159:1 185:20 195:21 261:18 317:3 318:7 330:1 360:4	discovered 81:16 discretion 58:21 59:11 discriminate 228:1 289:14 330:22 331:2	diseases 91:4 93:6 99:1	dividing 297:17 Division 37:20 doable 332:11,13 doc 257:14 docs 187:19 263:10 doctor 80:21 96:9 230:13 248:5,22 249:1,21 321:6 342:14 doctor's 96:10 document 156:13 documented 333:20
	difficulties 94:4 difficulty 137:13 digestible 118:11 dimensions 97:8 117:22 183:20 184:10	discuss 8:14,20 137:5 139:16 164:8 211:8 214:20 215:11 235:20 363:11	disease-based 81:18 82:11,16 disease-by-disease 82:1 disease-specific 37:3 67:16 231:20	doing 6:14 13:8 24:21 32:16 35:15 39:9,14 48:13,14 54:18 55:19 65:16 66:4 76:4 95:13 107:17 108:1 109:7 117:1,1,22 129:2 131:14 140:4 142:1 170:9 178:9 190:4 194:12 247:18 271:19 278:9 291:9 295:5,6 315:12,16 340:16 340:18 351:19
	dinner 158:21 direct 36:22 104:12 184:15 208:21 329:10	discussed 12:22 13:1 31:3 94:20 127:12 209:16 213:12 232:11 245:14 291:22	disease-by-disease 82:1 disease-specific 37:3 67:16 231:20	
	directed 107:6 120:16	discussing 13:22 32:9 156:14	dishes 361:6 disk 252:15,18 disparities 138:18 138:20 disparity 138:20 display 185:17 displayed 50:12 displaying 185:13 displays 116:15 187:2	
	direction 121:1 183:9 230:3 258:7 291:4	discussion 4:9,17 4:25 5:21 11:13 11:17 16:20 19:1 27:3,18 34:14 35:2 57:22 92:8 97:9 105:17 128:11 131:17 132:17 134:21 135:13 139:11 145:1 162:5 178:4 187:13 188:14 189:2 214:4 215:2 216:4 256:19 268:22 273:21 278:4 286:13 308:8 342:18,21	disruptive 246:4 disseminate 119:4 distal 330:3 distance 50:4 distances 187:3 distill 125:4 128:13 distilled 133:7 distinction 26:20 27:5,14 236:12,14 distinctions 141:7 242:4 distinguish 207:7 336:8	
	directionally 190:20			
	directly 10:8 28:4 director 37:12,14 37:20 38:7 155:10			
	Directors 2:9 direct-to-consum... 115:17 240:21			
	dirty 276:3 disabilities 278:16 278:16 disability 2:9 12:7 134:1 279:1 disadvantage 60:8			

352:6,7,8,22 355:15 362:21 dollars 276:11 domain 72:14 230:17 domains 52:8 72:5 72:10 229:9 dominates 89:14 Donald 246:1 door-to 343:9 dots 317:4 double-blind 85:22 doubt 198:7 downhearted 70:4 Dr 6:3 7:5 17:14 19:9,16 21:4 22:12,15 23:18,21 25:13 26:2 27:2 30:22 33:13 34:5 35:7,12 38:15,21 39:3 57:17 59:15 59:17 62:18 63:11 76:12,22 77:7 78:1 79:3,19 80:10,13,17 98:20 99:9,14 100:6 101:6,10,13,16,22 103:4 104:10,15 105:8,16,21 107:3 108:6,8,13,15 111:2,3 114:22 115:9 116:1,3 117:5 118:18,19 118:21,22 120:14 120:15 121:5 123:7,9,21 124:5 124:6,18 140:3 147:15 155:9 177:22 178:20,22 180:16 182:21 183:14,16 184:13 186:2 187:6 189:3 189:5,14,19 190:12 191:2,4 192:1,14 193:17 195:9,15 196:1,8 196:13,20 198:12	198:14 199:3,5 200:21 201:18,22 202:6 208:4 221:16,19 235:10 235:16 236:9,11 246:8,10 251:22 256:17 257:4 258:1,12 259:1,2 261:10 262:8,21 263:12,17 264:6 264:13,14 265:21 265:22 266:2,3 268:22 269:1,8,12 270:2 271:5,6 272:13,22 274:1 274:20,22 275:15 276:2,21 277:4,6 277:21 278:2 279:13 280:17,20 281:4 286:4 289:4 290:22 301:15 306:10,12 307:22 315:19,21 317:8 319:18 320:14 325:3 332:22 333:7 335:17,19 336:10,16,17 337:4,8,13,21 338:1,9,10 339:3 339:4 340:4 342:19 343:4 344:6,7,22 345:1 347:15 349:17 350:2,3 351:8,9 353:4,6,17 354:4 355:1,2 356:20,21 358:3,5,18 360:6 361:2 draining 362:9 draw 241:6 drawing 242:3 264:12 dreaming 304:4 drill 73:16 116:17 117:2 314:6 drive 22:6 83:6 90:7 92:1 280:5	280:14 335:15 driven 334:5 drives 275:8 driving 55:1 99:19 drop 354:16 dropping 219:19 219:22 DrPH 2:1 drug 71:20 72:1,4 89:20 126:4 197:14 351:14 352:16 353:2,21 drugs 57:7 89:20 95:11 98:1 153:16 267:15 315:1 DSc 2:10 Dubow 1:9,13 4:4 7:20 8:1 13:4 18:22 22:10,14 23:16 24:11 25:9 30:9 33:1 ducked 251:2 due 78:20 299:1 340:11,12 duplication 135:22 duration 93:18 dwell 92:6 dynamics 231:12 231:17 D.C 1:9	<hr/> early 84:15 88:21 89:2 96:4 100:15 100:17 101:2 105:11 121:16 122:4 131:12 155:19 175:6,12 225:17 226:4 ease 139:2,4 easier 93:6 297:7 336:1 easily 57:15 91:13 easy 91:2,9 110:2 195:18 213:19 251:7 329:7 economies 277:18 economy 122:8 editorializing 212:9 edits 129:15 education 71:12 Ed.D 2:8 effect 197:10 199:6 214:8 259:15 268:14 292:5 309:14 330:2 effective 40:19 96:18 263:15 280:12 309:12 332:1,9 effectively 45:6 49:9 51:10 62:2 effectiveness 40:16 41:2 53:1 54:9,16 56:16 103:21 151:12 154:15 309:5 331:12 351:11 effects 197:11 268:13 291:22 326:22 352:17 efficacy 52:21 151:11 154:14 351:12 352:22 efficiencies 280:5 283:4 efficient 98:15 146:14 171:18	282:17 effort 90:13,18 91:15 92:9 108:2 119:4 150:12 265:7 efforts 36:20 111:22 115:19 170:9 232:9 331:16 eight 68:16,19 70:4 361:18 either 37:3 45:2 87:11 104:3 122:21 123:19 149:11 152:3 205:19 206:15 207:17 213:19 263:21 283:16 284:13 290:9 291:13 292:10 332:4,4 343:15 either/or 335:6,8 338:12 elbow 362:13,16 elderly 82:13 eldest 361:4 ELEANOR 2:13 elective 42:10 43:6 55:5 86:10 315:9 electronic 46:9 49:17 50:3 56:10 114:11 141:5 147:9 204:3 363:7 elegantly 127:19 element 101:4 205:20 206:15 207:10 284:14 358:10 elements 55:13 139:4 146:18 205:14 283:17 eligibility 314:22 eligible 47:8 251:3 Elizabeth 2:7 4:14 37:18 embedding 53:15 122:1
---	---	---	---	--

emetogenic 351:1	167:5 168:2	EQ 182:21	17:11,15 59:18	everybody's 13:7
emotional 69:20	engaged 164:12	equal 73:2 186:8	103:4 183:14	257:10
emphasis 75:7,16	engagement 84:5	equally 43:18	199:3 244:20	everyday 155:14
145:2 222:15	136:3 137:4,4,7	72:21 73:2 348:19	344:22 348:1	165:4
231:6 319:16	145:12 156:13	equation 210:2,8	350:2	everyone's 141:22
emphasize 30:14	engaging 157:16,17	equivalent 277:16	Ethan's 104:18	344:21 361:10
67:14 134:2	164:21	324:11	Euclidian 187:3	everything's 239:8
142:18	England 37:16	equivalents 205:6	EUGENE 3:19	evidence 57:10
emphasized 347:19	109:2 165:10	EQ-5 45:7	Euro 112:3,14	130:20 131:10,13
empirical 143:1	English 67:9	EQ-5D 45:7 92:20	Europeans 250:22	131:18 142:7,9,12
206:10 284:12	enhance 236:2	103:14 118:9,9,15	Euros 277:10	142:15,17 143:1,2
employers 279:17	enjoyed 47:18 79:5	183:7,8 184:8,9	evaluate 14:19 71:5	144:9,14,14,18
enable 193:3	enlightening 132:2	error 175:9 176:2	120:18 149:22	145:6 149:12
enabled 92:4 97:3	enrolled 314:18	209:6 210:5,6,14	206:5	154:8 214:21
encounter 161:22	enrollees 63:19	210:15 211:14	evaluated 15:14	241:6 262:19
162:15	65:10,18,19,20	212:20 214:17	121:2 235:4 354:8	274:15 283:8,11
encourage 116:14	66:2	228:20 245:16,21	354:15	283:12 328:4
167:14	ensure 60:22 66:16	247:7 291:17,18	evaluating 208:6	353:22 354:1
ended 290:10	ensuring 106:3	299:1 322:14	211:4 225:9	evidence-based
endogeneity 220:16	163:8 286:15	errors 120:13	233:11 237:2	57:3 142:11 145:7
endorse 7:16 9:4	enterprise 245:8	291:20	273:12 274:5	evolution 19:21
11:10 20:1 140:9	enthusiasm 179:6	especially 35:21	282:20 299:19	269:4
141:20,21 281:15	enthusiastic 150:11	208:22 322:16	346:17	evolved 44:3,16
342:19	entire 8:10 82:6	essential 106:3	evaluation 9:7,13	83:5
endorsed 9:17	109:19 126:22	282:2 345:2	34:17 125:14	exactly 31:1 353:14
14:14 20:11 21:18	entirely 338:11	346:17 347:13	209:12 225:1	exam 319:8
285:20 293:13	entirety 210:18,21	essentially 265:13	236:16 252:3	examine 216:18
295:22	entities 227:5,12	establish 241:12	268:5 355:6	examined 131:20
endorsement 4:13	228:1,4,5,19	347:11	evaluations 272:11	321:2
4:19 5:14 14:20	231:13 232:1	established 163:4	Evan 3:22 187:8	examining 216:19
19:21 20:15 24:20	233:18 289:15	225:13,18 226:11	272:15	example 10:16
30:11 125:18	entity 10:22 11:5	297:5	Evan's 349:19	21:17 26:11 29:7
129:8 140:1 150:1	136:9 203:20	estimate 78:12	evenly 135:17	54:6 70:14 102:20
202:20 212:6	231:22	215:20 217:17	event 59:12 230:11	123:18 144:3
214:22 216:9	entrance 285:15	estimates 214:16	317:2	150:16 151:13
285:15 363:2	entry 267:13	217:21 220:3	events 105:11	153:5 158:14
endorses 14:8,9,10	268:11	241:17	337:16,17	172:1,12 174:20
204:14	environment	estimation 215:18	eventually 65:15	179:14 182:21
endorsing 10:18	149:10 340:15	216:1	everybody 8:2	183:6 184:7,19
20:21 203:21	epidemiologist	et 11:1 14:5 32:6	16:11 17:15 35:13	185:12,15 206:17
283:22	87:11	50:1,1 87:8 92:19	47:7 147:16	212:11 213:1
endpoint 267:12	episode 13:14	106:6 112:11	152:13 169:22	230:13 233:2
ends 75:3	49:20 134:9	134:6 135:17	172:22 253:22	241:8 242:7 243:4
end-stage 261:3	episodes 14:1,2	227:7 244:12	257:5 276:9	243:5,19 250:9
enemy 32:19,20	310:3	269:18 271:10	278:17 289:5	260:21 262:11
energy 69:16	episodic 310:3	356:3	304:3 313:7	265:10 289:10
engage 156:11	311:7	Ethan 1:15 17:10	344:19 362:3	290:4,11 294:6

296:21 297:19	expected 62:8 71:1	explicitly 104:2	FACS 55:13	174:21 233:11
298:14 301:8	227:2,3,10,22	122:14	fact 19:2 22:6 24:1	260:3,19 342:18
303:7,13 310:11	228:14 238:2	explore 236:1	32:13 81:17 93:17	345:5
320:12 323:10,10	278:18 279:5	explored 242:9	112:19 153:16	farfetched 99:10
323:12 329:22	296:6,8 299:6	exposed 272:7	160:1 163:11,22	farther 36:7
335:3 337:15,15	expense 114:4	extend 6:12 55:7	176:11 186:19	fashion 186:8
350:19 354:10	311:20	89:22	196:15 221:22	fast 16:3 22:17
355:7 356:22	expensive 97:22	extent 18:16 40:7	227:14,16,17	faster 92:3
examples 98:10	experience 40:9,14	62:17 69:1,9	228:16 231:5	fatigue 200:3
101:18,18 102:21	69:15 73:7 77:6	91:21 115:2	232:12,16 242:16	favorable 233:4
103:1 132:9 177:5	78:4 87:7 108:5	120:18 121:1	253:6 263:9,11	favorite 155:2
212:7 213:14	108:20 144:12,18	186:10 228:12,18	274:5 307:19	260:21
263:8 288:14	145:8,13 155:16	240:5 303:5 334:6	312:12,16 318:16	FDA 4:16 264:8
293:11,14 298:6	156:6 157:8	335:15	319:3 321:5	266:6
302:14 309:7,21	158:11 160:5,7,9	external 178:10	322:11 328:10	feasibility 15:16
exceed 296:4,17	160:9 161:8 163:8	270:17 271:14	334:5 335:7 338:4	36:9 107:8 146:16
exceeded 228:13,16	165:4 167:14	extra 80:6	343:13 344:9	146:19
exceeding 335:3	171:20 174:6	extraction 357:3	352:3	feasible 122:5
excellent 124:1	186:12,19 199:19	extraordinarily	factor 122:6	146:22 147:10
172:16	200:14,18 202:17	83:10 100:21	factors 78:20	fee 323:19
exceptions 82:12	225:19 228:13	extreme 309:11	278:22 359:12	feed 139:12 163:16
251:13	235:5 248:7 271:7	extremely 150:10	failed 228:14,17	272:10
excited 35:20 179:4	330:11 350:22		failure 106:9	feedback 22:20
258:10	experienced 139:21	F	fair 93:1 110:8	23:11 24:13,14,17
exciting 36:18	161:4 249:5	F 217:3	136:11 262:14	29:10 96:12
57:20 58:3 83:10	experiences 14:2	fabric 53:12	fairly 84:15 102:4	128:13 139:8
92:9 98:10 244:18	50:20 72:8 124:11	fabulous 301:14	163:18 224:1	feel 56:17 149:5,6
exclude 65:12	158:3 167:20	face 131:15 234:8	225:5 321:22	178:15 194:22
267:17,21 268:1,2	experimental 176:1	284:20 285:1,4	349:9	195:1 200:5,8,16
excluded 279:11	experimented	300:1,1,11,16,22	faithfully 239:12	201:15 300:7,10
exclusive 131:6	271:8	305:2,15 306:4	239:13	349:10
excruciating 16:11	experiments 327:4	311:15 339:5,16	falling 110:13	feeling 199:16,17
excuse 212:12	expert 17:5 34:12	340:2 345:10	141:16	199:22 272:7
220:7 221:9	70:9,15 125:15	Facebook 168:11	falls 109:10 297:4	feels 121:17 196:18
exercise 161:2	127:11 128:21	faces 6:9 24:12	familiar 6:9 50:16	fee-for-service
224:11 242:14	131:14 143:2	362:2	53:15 110:13	324:1
362:10	256:20 282:8,10	facilitate 134:18	298:21	Feinberg 1:17
exhilarating	301:2,5,9 333:2	135:7	Families 2:23	fellow 198:14
308:11	349:15 360:9	facilitating 44:13	family 243:7	felt 70:3,4 128:3
existence 40:11	experts 70:9 87:3	129:18	family-centered	131:3 136:10
existing 109:16	279:20 285:2,3	facilities 209:1	273:9	138:15,19
expand 275:10	301:2,3 362:1	219:22 304:6,11	famous 316:21	fewer 113:20 114:5
expect 51:4 197:18	explain 52:17 65:2	305:7	fantastic 39:4,18	fictitious 293:2
285:13 305:19	200:16	facility 141:14	101:16	fidelity 243:9
expectation 197:16	explained 216:10	292:22	far 13:18 20:20	field 4:5 79:1 89:7
expectations	explaining 187:19	facing 167:22	94:6 105:10,12	186:14 190:18
228:16	explicit 166:20	FACP 1:14 2:12	114:17 120:4	222:10 255:18

261:17 288:15	60:1 61:5 62:15	floodgates 190:11	forever 85:22	75:4 78:21 85:3
fielding 139:2,5	66:20 67:2 74:11	floor 1:8 291:21	forget 195:12	87:20 164:19
fifth 42:15 173:1	82:8 88:19 90:19	292:5	forgot 101:13	174:20 188:5
figure 102:19	93:12 105:8 112:2	floored 313:3	179:18	266:12 317:12
223:11 229:18	116:2 118:6	flow 54:2	form 49:16 68:16	363:2,5,11
232:6 268:16	121:22 124:21	Floyd 324:18	205:10 338:17	fourth 172:22
329:6	125:1,8 132:19	focus 63:22 65:3	formal 300:17	174:11 287:10
figured 18:10	154:12 156:16	70:2 81:9 82:17	format 219:20	Fowler 1:20 4:23
181:7,8	157:20 159:9,15	129:22 142:10,21	formed 90:15	154:17 203:4
figures 329:5	164:5 165:1	147:22 154:12	former 30:19	221:21 246:10
Fihn 1:19 5:18	169:11,11 171:18	202:8 223:12	232:12	251:22 258:12
30:22 33:1 120:15	172:1 177:1,22	262:13 281:18	forms 149:12 166:9	263:17 268:22
121:6 227:14	178:5 182:4 196:7	283:9 301:8,18	forth 22:18,22 83:4	269:1 271:6
282:8 306:12	196:11 202:9	313:12 356:14	83:20 107:19	312:10 324:19
307:22 336:17	204:10 208:15	focused 41:7,11	110:18 118:3	351:9 353:17
343:4 355:2	210:2 221:22	183:19,21 304:7	135:5,12 152:7	fraction 276:16
fill 19:3 126:8	223:7 236:11	332:3 353:19	181:20 223:6	frame 200:17
254:21	248:20 264:17	focuses 68:10 141:2	225:11 307:5	301:17 315:2
filling 162:14 182:9	266:13 282:22	146:3	318:4 335:10	framed 246:22
fills 96:8	283:6 286:20	focusing 123:2	fortunate 37:10	framework 53:17
filter 80:2	289:7 299:12	156:4,21 176:7	198:2,5	148:8,20 149:14
final 44:2 56:12	307:14 316:8	177:18	Forum 1:1,8 7:16	308:22 309:1,2
93:7 96:2 122:18	317:15 318:20	folks 179:2 248:1	39:6 164:9	Francisco 261:3
122:18	321:11 325:3	278:10	Forum's 6:4	Frank 1:21 4:22
finally 9:15 16:2,4	335:20 345:9	follow 184:12	forward 21:18,21	115:9,10 203:3
38:5 86:14 97:13	347:17 357:11	246:10 276:2	23:20 24:1 92:2	235:16 236:11
114:8 167:11	firstly 39:5	291:15 302:21	104:14 142:4	258:1 264:6
169:21 177:3	fit 109:16 237:20	363:6	164:19 177:7	266:16
finance 114:2	239:21 292:10	following 66:17	222:13 223:10	frequency 150:18
financially 163:19	344:20	89:17 176:22	226:20 280:14	frequently 69:15
find 37:13 84:19	fits 188:17 238:14	351:1	308:19 316:10,12	70:3
85:19 95:4 114:20	five 42:21 71:17	follow-up 59:15	316:13 357:2	Friday 94:19
151:10 160:12	72:2,16 74:5	65:2 66:3,5 67:3	for-service 323:20	front 11:19 73:15
161:1 168:5	169:2 172:13	68:13 104:17	found 28:21 67:4	80:11 121:2 169:3
173:19 176:13	177:21 184:9	115:13 212:17,21	81:11 83:10 93:19	223:7 234:21
218:1 229:13	fivefold 112:9	228:6 272:3	95:9 198:16	273:17 345:17
251:11 260:11	fives 270:16	291:19 294:13	233:21 278:19	347:11 361:19
306:15 333:18	fix 253:2 325:21	347:14	282:16 303:15	362:20,21 363:1
341:1 352:8	351:14,15,19	food 126:4 342:11	309:14 318:6	fruit 237:21 261:13
finding 18:1 159:15	353:22	force 167:8 206:1	foundation 1:21	frustrating 308:12
findings 56:19	fixed 270:13	206:13	4:24 203:6 205:10	fudged 276:9
fine 80:12 118:13	296:12 325:22	fore 357:10	283:13	full 115:16 123:4
finished 31:8	fixes 352:17	forefront 345:3	foundational 7:10	348:11 363:8
firmly 122:2 136:2	flat 99:20	foregoing 124:15	237:13 283:10	fully 96:6
first 6:11 8:6,7,11	flawed 32:13 43:22	202:3 281:1	founded 88:20	function 21:19
20:7 27:21 28:3	flex 158:17	363:15	four 39:21 42:12	94:11 106:11
37:11 39:18 43:15	flexibly 187:4	foreign 108:9,9	46:20 55:5 74:22	230:14 290:18

functional 14:3 28:16 71:13 76:9 99:3 103:15 106:21 132:10 153:21 181:12 290:5 292:15 297:8 303:13 304:8 338:17	gaming 232:5,17 232:20 313:19 314:3 Ganey 2:1 Ganiats 1:23 178:22,22 182:21 270:2 gap 28:14 141:19 gather 63:17 85:9 111:16 114:17 gathered 90:21 gatherers 116:19 gathering 113:19 114:3 286:20 gem 76:13 gender 71:12 GENE 2:10 general 2:7 4:14 20:15 37:6 47:21 48:4 51:19 55:14 58:17 60:3 64:13 88:5 91:18 92:17 99:11 122:8 126:3 127:17 142:22 159:22 160:4 192:9 193:13,14 199:19 255:7 353:8	genetics 85:13 genomics 85:12,14 gentlemen 361:4 genuine 84:4 255:14 322:1 geographies 91:5 93:6 getting 36:11 54:21 57:1 98:22 107:12 121:18 122:2 151:22 183:12,13 241:20 250:1 258:3 269:22 308:16 316:14 340:13 350:11 358:14 360:16 361:10 gift 48:17 give 23:11 27:4 29:22 36:19 39:7 45:22 62:2 66:6 68:14 101:17 102:20 139:22 150:16 153:5 168:14 180:4 201:5 212:10 216:21 217:16 230:7 252:7,12 258:19 260:17 288:15 293:3 339:7,13 351:13 353:9 given 23:2 66:4 132:9 181:11 217:9 221:2 223:5 243:5 273:20 307:15 gives 15:17 56:15 154:1 giving 21:12 22:19 23:5 29:10 51:14 67:12 140:4 231:6 359:19 glad 17:18 264:6 glanced 324:8 glib 276:18 GLM 217:2	globally 89:11 go 8:7 13:16 15:6 15:11 16:9 20:21 28:4 33:5,8 34:22 35:11 39:16,17 41:7,22 44:20 46:17 49:2,15 63:3,10 66:1 68:19 71:16 72:13 75:3 76:6 80:4 104:13 108:18 109:21 110:7 116:19 117:12,13 125:16 127:6,8 130:3 132:20 134:17 138:10 139:8 140:8,13 184:15 188:8,12 188:13 189:4,21 189:21 190:13,20 191:3 192:4 193:18 195:14 204:6 210:7 215:15 217:12 222:21 229:18 230:2 232:14 235:16 242:5 249:8 250:14 252:19 259:19 260:4,19 265:19 270:13 271:5 272:22 274:20 282:18 284:16 286:2 289:3 309:15 317:6 335:18 339:14 340:21 342:3 354:18 361:1 goal 22:4 63:16 145:11 226:4 235:22 264:2 344:1,17 goals 145:14 226:20 248:19 312:13 goes 28:18 51:6 66:20 72:17 176:9	187:13 206:20 233:5 234:20 240:17 281:9 going 7:6,19,20 8:4 8:13,22 9:3,15,22 13:15 14:22 15:22 16:3,13 17:3,7,21 18:22 19:20,22 20:1,6,6,17 21:2 21:16 25:16 29:16 29:22 30:12,13 31:1 33:2,7,21 34:2,9 35:14 37:22 39:19 61:4 62:20 63:12 64:1 64:6,19 68:19 70:16 71:6,14 73:19 79:1 80:5,8 94:17 108:21 121:11 122:12,22 124:9,19,21 125:6 125:15,16,19 126:6,8,12,14,17 127:10 129:4,11 129:20 132:13,20 134:17 135:10 139:16,17,22 140:13,14,19,20 142:3 148:6 155:15 156:4 167:11,14 171:8 171:19 172:2,3 175:21 177:7,13 178:3,14 180:1,3 182:3,22 183:1,9 183:16 187:15,20 187:21 190:13 191:2 194:16 195:11,19 196:1 198:19 200:22 201:1,9 202:8,11 205:3,5 206:7 208:1,5 209:6 210:7 214:15,20 215:10 218:20 222:13 223:10 232:17 246:13
G				
Gage 1:22 104:15 104:16 105:16 282:7 286:4 338:1 358:18 gain 50:18 78:13 164:14 186:16,17 292:4 299:6,7 gained 302:4 Galveston 2:12 game 276:10 gamed 313:21 game-able 270:12 271:2	generally 41:6 61:4 96:22 141:20 224:7 242:22 333:22 generate 51:8 74:15 158:12 generated 146:20 158:3 159:13 169:17 179:20 generates 182:10 generating 175:7 317:21 generic 42:19 55:21 231:19 236:13			

250:14,18,20	202:6 207:6 211:4	297:16 327:18	guess 123:6 151:6	344:9
252:17 254:17	216:13 225:21	greatest 31:10	160:1 262:11,13	happens 32:7
256:3 257:8,10,13	246:12 248:15	36:15 254:15	302:20 318:17	104:22 198:7
259:13 260:13	250:3 253:16	345:9	343:22 351:9	199:6 287:1
261:14,16 266:9	256:7 261:10	green 19:14,17	guessing 271:17	352:11
267:17,21 268:1,2	264:12,20 267:7	26:9 87:19 257:2	guests 361:3,7	happy 6:9 39:16
268:16,19 270:7,8	271:8 290:15	Greg 2:12 4:6 19:7	guidance 23:6 70:8	92:7 181:5 353:10
270:14 275:22	292:22 297:9	19:7,18 26:4 35:7	144:13 206:4,13	hard 16:8 33:9
280:2,14 281:5,12	305:6,8 309:19	35:11 76:11	284:10	113:8 116:16
283:2 286:4,8	310:2 311:8	104:15 259:1	guide 37:9	138:2 153:12
295:19 306:7,15	320:13 332:20	Greg's 21:8	guidelines 84:10	180:1 190:2
306:19 307:1	344:5 348:3	grew 26:6	guideposts 128:8	220:14 241:4
308:4 311:17	350:20 352:7,8	grimacing 319:9	guy 189:8 326:1	253:18 256:3
312:8 313:2,12	354:3,21,22 355:7	grocery 342:10	Guyatt's 336:18	293:9 344:5
316:9,9 317:10,13	356:2 357:13	groin 42:14 48:11	guys 99:16 252:13	harder 184:7
321:15 323:9	358:18	49:4	252:14	297:11
328:5,21 330:6,14	goodness 239:21	ground 153:4		hard-to-reach
331:7,13,17 335:9	GOODRICH 1:25	group 16:17 35:2	H	60:14 354:19
336:1,7 345:14	Gord 336:18	87:2 98:2 138:19	hair 35:18,19	harm 153:3 190:4
346:22 347:2,15	government 82:20	169:19 172:8,8	319:10	harming 155:6
347:20 348:3	111:22 112:4,8,13	190:22 253:16	half 34:15 88:1	harmonization
349:12 351:17	governments 81:3	274:9,11 285:2,3	hallway 160:8	169:19 275:17
353:11 355:2	gradations 348:18	320:7 321:7 327:1	hand 32:4 109:21	Harvard 222:1
357:19 360:15,18	grading 144:7	327:8 328:7,12,20	109:21 227:21	hate 252:22
360:21 361:9,20	graduating 172:13	330:6,22 360:4,11	230:9 233:13	Haven 2:23
362:5,6,10	granddaughter	360:11	317:20 324:21	head 99:6 362:13
gold 303:6	35:18	grouped 87:20	343:12 356:17	362:16
Goldstein 4:8	granular 273:21	grouping 170:4	362:14	headlines 150:5
37:19 63:4,11	graph 47:17 49:8	172:4	handing 271:10	health 1:19,24 2:4
77:7 116:3	50:12 87:19	groupings 242:10	handle 61:15 62:14	2:19,23 3:9 4:7,22
good 6:3 8:1 17:15	graphically 96:11	groups 12:19 29:10	198:1	5:18 10:7 13:19
19:17 22:8 23:5	grasp 362:13,16	34:10 60:17	handout 128:4	37:5,6,15,22 40:2
24:20,21,21 27:2	gravitated 321:1	167:15 198:6,7	145:22 363:7,9	40:5 45:22 46:12
31:21 32:19,20,22	great 8:3 23:21	200:10 242:4,8	handouts 127:3	46:14 50:18 55:17
35:12 38:14,19	24:9 25:17 34:13	263:10 267:6	129:14 282:11	63:13,18,22 64:13
40:5,8 44:8,10	35:14 42:1 111:4	268:3 270:9	hands 158:16 201:4	64:20 65:4,6
45:12 57:18 60:19	122:22 128:2,13	279:17 298:10	316:1 319:10	67:21 68:11,18
78:5 79:20 83:1	139:9 178:20	301:8,19 314:10	hang 136:20	69:2,5,12,18 71:2
84:19 101:20	179:18 189:2	328:6,10 330:18	happen 16:15 92:3	71:19 72:1,4,8
102:14 104:10	196:21 201:4,5	331:1,6	123:2 255:6	73:9 74:1 76:9,18
120:8 121:7 128:5	203:7 224:18	grow 6:17	288:17 363:10	78:13 90:16 94:7
140:3 148:15	236:11 289:4,6	growing 47:3 111:7	happened 181:11	95:6 99:7 100:3
152:4 154:5	306:9,16 312:20	112:15	291:13	112:19 116:4,7
159:11 162:18	325:16 331:5	grown 84:14	happening 86:8	142:5,10,14 143:4
163:8,17 170:11	333:8 345:1	growth 85:18	100:5 105:11	143:7,7,14,15,17
171:22 174:8	greater 19:5 56:4	GU 311:9	114:13,15 235:2	143:20 144:11
181:12 195:17	117:20 186:4	guaranteed 189:11	322:17 332:12	145:2,6,11,14

155:13 156:6	hearing 115:20	38:14 59:17,17	288:18	HOS 63:14 64:4,7
157:4,8,8 158:13	168:13 202:14	76:22 77:1 79:3,4	HIPAA 320:15	64:15,17 66:8
161:3 164:2	245:6 308:12,20	103:4 155:9	hips 311:9 312:1	67:11,18 68:9
198:17,20,21	heart 300:20 307:3	196:13 257:4	historical 197:11	70:7,22 71:11,15
203:3 222:1,20	315:8	273:1 274:22	222:11	71:16,18,21 72:18
228:14 232:10,15	heavily 81:21 89:3	279:15	historically 40:8	75:12,22 79:7
233:19 246:2	heavy 89:16	Hibbard 2:1 76:22	47:18 226:8	323:6
263:1 282:9	HEDIS 68:2	77:1 301:15 339:4	history 6:22 40:6	hospital 2:5,8 4:14
326:22 327:1,3	HEIDI 3:15	hidden 76:13	42:1 127:11	11:1 45:21 48:3,6
329:15 338:18	height 68:5	111:14	HIT 2:6	49:22 50:10 52:4
340:12,14 341:12	held 153:15 342:22	hierarchical 173:8	Hitchcock 3:6	60:2 92:17 119:20
healthcare 1:14	344:2	215:17 216:10	hits 151:13 233:17	126:3 134:12
2:17 10:21,22	Helen 3:17 13:2,5	217:15 219:15,16	hitting 243:11	141:13 241:10
28:16 40:13 81:2	21:5 143:5 344:6	223:22	HMO 323:19 324:3	343:12,15
81:10 83:9,9 86:5	356:20	high 41:9 47:18	hokey-pokey	hospitalization
87:1 106:15 111:5	Hello 99:14 108:7	48:10 54:17 55:15	362:22	341:3
113:3,10 141:13	115:9	76:1 83:22 98:6	hold 128:8 196:6	hospitals 43:5
142:4,21 143:10	help 6:17 23:14	106:6 120:1	340:7 342:14,15	48:13 52:12 102:8
143:12 144:10	46:7 95:15 98:14	145:10 146:13	holding 53:18	225:10 241:11
146:14 148:4,5	117:11 119:8	179:6 213:20	105:2,18 158:16	293:7 344:11
150:7 157:5	130:10 148:10	264:5 292:6,8	286:11 287:16	hour 34:15
170:17 174:10	153:10 154:18	311:10	288:6 359:8	HRQOL 224:13
203:20 225:1,9	162:17 167:19,20	higher 60:2,9,10	holds 348:22	229:14
226:19 227:7	189:8 194:10	93:22 198:21	holiday 129:1	huge 56:21 57:8
235:9 245:20	195:1 214:21	217:22 252:21	holistic 97:1 351:18	121:9 176:2
257:7 334:12	240:9 255:2	284:6 297:20	home 11:1 119:20	259:13
341:11 342:1	257:12 280:5	highest 67:6 116:8	213:1 279:1	Humana 275:1
HealthDesign 4:15	301:16 348:16	127:13	homes 340:17,21	humbly 128:12
155:12,17	helped 126:10	highlight 140:15	355:12	hundred 78:21
healthy 72:7	helpful 128:7 169:3	179:7 293:14	homogeneity	307:10
health-related 14:4	258:20	294:7 298:7 301:3	274:10	hurried 32:8,10
134:5 169:18,20	helping 120:7	301:11 304:21	homogenous	hurt 252:17
170:1,2	130:1 146:13	highlights 103:19	229:12	Huxley 235:7
hear 8:11 17:13	242:9 244:11,12	highly 84:6 87:3	honed 104:6	hydraulic 362:18
38:19,21 39:1	244:13,15	109:13 150:15	honest 109:12	hypertension 207:1
147:16,17 221:19	helps 108:4	151:8,16 152:8	121:8	hypothesis 242:5
222:21 248:12	hernia 42:14 45:10	154:21 351:1	hope 8:11 12:16	248:10
289:5 300:7 360:3	48:11 49:4 325:20	354:9	13:5 33:13 35:13	
heard 12:9 32:18	326:4	high-level 129:22	38:12 76:15 93:2	I
102:22 108:16	herniated 252:15	high-quality 81:18	107:1 130:8 154:7	ice 181:8
139:13 145:12	heterogeneity	high-resource	168:19 198:5	ICHOM 90:17
159:20 160:17	174:22 266:14	145:16	270:8 317:8 349:3	idea 24:22 30:12
161:14 162:5	322:2,3 326:7	high-stakes 356:9	355:22	144:22 155:20
165:10 166:14	heterogenous	hinges 114:7	hopefully 27:4	156:1 158:16
176:6 270:4 287:5	239:8 295:12,14	hip 42:12 88:19	65:15	180:8 195:16
311:9 322:2	hey 101:6 270:14	93:13,15,19 94:10	Hopkins 3:9 5:20	245:14 258:2
324:18	hi 17:14 28:9 29:15	100:20 106:5,7	251:17 282:10	260:17 263:1

303:22 312:5 341:4 346:17 348:13 352:10 353:18 354:3 ideal 305:13 306:6 ideas 158:4 ideation 172:12,14 172:21 173:2,5 identifiable 31:17 56:5 identification 251:3 254:14 255:2 256:12 identified 31:11 34:20 126:18 296:15 346:1 identify 8:19 13:6 18:13 45:10 76:20 91:21,22 157:7 174:21 175:2 217:20 253:8,13 253:22 255:10,22 256:8 266:21 360:11 identifying 28:12 127:14 206:22 250:19 253:19,21 269:1 283:19 ignite 343:1 ignore 49:6 116:21 ignored 186:13 illness 267:22 268:2 illnesses 145:17 310:6 illustrate 13:15 36:3 86:19 88:13 illustrates 87:17 92:12 illustration 11:6 illustrations 13:20 image 237:14,20 238:4 imagine 197:9 immature 30:3,16 immediate 96:12 immediately 167:8	330:20 331:7 impact 61:15 84:2 84:17 122:7,8 133:18,19 139:5 145:10 153:17 213:15,17 231:8 231:17 242:6 255:16 impacted 175:10 229:17 impactful 323:14 impacts 63:2 impaired 94:12 impairment 358:22 implant 93:22 94:15 implement 138:12 150:6 176:18 216:14 280:4 implementability 138:22 139:6 169:7,8 171:14 implementable 137:17 146:15 implementablene... 129:19 137:14 139:20 implementation 31:22 74:11 138:7 305:10 315:6 implemented 64:18 73:22 110:4,20 147:12 204:12 implementing 28:21 63:16 74:4 110:22 120:19 150:6 315:8 implications 133:5 211:21 236:14 289:9 317:16 implicitly 122:13 implying 351:18 importance 15:8 36:2,4 73:3 106:13 141:17 142:8 145:5 182:2 201:9 204:17	208:21 221:8 360:2 important 15:11 16:12 18:2,14 19:6 24:14 27:15 28:15 29:19,22 30:2 34:3,21 39:13 41:15 61:21 66:13 84:8 85:16 86:2,11,17 90:6 100:3 103:9 106:17 115:1 118:4 119:11,21 120:4 126:16 130:2,5,18 131:10 131:16 133:17 134:15 137:6 138:6,19 145:13 148:9,13,17 149:10,21 150:3 151:14 152:7,16 154:19 156:9 157:20 160:22 164:1,15 165:7 166:12 170:6 171:5 176:16 177:6 179:12 180:9,17 181:20 182:20 184:17 193:22 194:2,4,7 195:5,17 197:22 201:8,16 211:10 217:11 224:5,20 225:6 227:19 231:3 232:19 234:15 235:4 236:12 238:22,22 239:15 241:3,16 242:16 243:8 256:1,6 262:4 269:19,22 270:18 272:5 274:2,3 276:7 278:8,11,13 279:8 297:2 298:5 300:3,9,10 302:16 304:21 305:16 306:4 307:7 309:8	313:18 338:13,21 345:16 346:1 importantly 130:12 134:13 139:1 161:14 impression 333:15 improve 11:9 65:5 75:18 94:7 102:19 148:6 149:4 181:5 183:8 214:13 223:10 226:18 232:10,16 236:2 245:13 246:5 289:12 324:17 326:6 331:17 351:16 improved 77:18 130:21 181:19 266:18 improvement 2:17 9:18 14:12,15 21:19 22:7 31:18 63:21 64:11 74:16 74:17 75:7,15 76:3,17 83:7,9 95:6 99:18,19,20 104:8 130:15 141:20 146:4,11 148:14 152:6 153:13 204:16 219:2 284:1 286:13 290:5,18 291:4,6 292:16 304:6,12,14,16,18 313:12,14 329:1 330:18 331:16,18 331:19 357:2,11 357:15 improvements 252:11 improving 28:17 63:22 94:4 98:11 98:16 142:4 159:5 159:5 162:10,10 218:5 219:7 234:4 329:13,13 incentive 100:13	incentives 194:21 194:22 253:1 incent 152:22 incident 311:1,5 include 31:12 131:22 133:17 134:15 158:14 161:11 215:8 223:17 240:21 264:20 included 51:7 65:19 68:21 71:18 72:18 117:4 214:7 215:1 294:10 301:5 323:15 includes 55:8 67:20 67:20,22 68:1,3,4 71:11 100:11 223:12 234:8 274:17 including 21:18 36:21 56:9 99:1 125:20 151:2 223:21 245:22 300:16 321:14 352:14 inclusion 165:22 166:1 245:12 inconsequential 277:20 incorporate 288:3 incorporated 77:21 increase 77:18 192:22 218:10 285:13 357:13 increased 97:7 179:6 increases 96:16 218:13 increasing 54:13 85:10 91:21 168:5 186:8 218:17 increasingly 83:6 100:8 incredibly 188:14 incumbent 163:13 indecision 135:4
---	--	--	---	--

index 50:6 118:10 118:15 209:19 210:7,17 211:6 216:2 316:2	164:3 291:2	informed 1:20 4:23 117:12 132:7 187:14,17 188:4 203:6 248:17 301:13	institution 1:18,23 2:20 101:19 109:14 163:19 279:4 282:7 325:17,18	interclass 215:22
indexes 214:10	individual-level 4:11 322:11	inherited 320:17	institutions 60:7 166:16,17	interest 17:22 18:21 24:16 47:10 62:19 84:13 152:1 168:12,13 215:15 241:8,15 273:8 345:22
indicate 69:17 130:20 194:19	infancy 233:15	inhibitors 123:14	instruction 19:17 176:8	interested 14:3 27:19 40:1 44:13 83:8 115:20 141:11 150:13 152:2 254:19 261:15 330:19 332:15 350:21
indicated 319:11	infections 45:20 100:14	initial 17:19 70:10 77:21 215:19 221:7 285:15 346:8	instructions 176:14 219:9	interesting 19:22 20:18 21:2,9 37:13 53:21 54:3 54:20 58:1 88:22 89:6 95:1 148:16 223:5 243:22 258:9 260:2 283:1 308:10 312:9 314:2 340:19 342:21 344:7
indicates 294:12	inferences 241:6 284:3	initially 246:22 261:17 295:8 332:16	instructive 264:9	instructor 221:22
indicating 51:2 69:15 210:18,20	infinite 319:1	initiated 90:13 290:11	instrument 10:13 10:17 28:19 70:20 126:19 140:11,18 141:10 172:11 173:4 175:11,13 175:19 176:4,9 182:7 185:2,4 203:14 205:3 223:1 279:9 281:20,22 286:19 287:2 292:3 293:18 355:18	instrument 10:13 10:17 28:19 70:20 126:19 140:11,18 141:10 172:11 173:4 175:11,13 175:19 176:4,9 182:7 185:2,4 203:14 205:3 223:1 279:9 281:20,22 286:19 287:2 292:3 293:18 355:18
indication 94:9 166:15,19	influence 93:10 97:2,3 143:13 174:17 233:2 278:22 279:5 312:14	initiate 52:11 53:8 82:21 169:18	instruments 43:21 92:14 93:1 203:18 222:17 223:5 226:13 278:19 289:19	interface 229:21
indications 86:9	influenced 123:10	inner 177:10	insensitive 292:3	interferes 69:9
indicator 159:2 227:22 306:1	influences 89:17	innovation 90:7 94:5	insert 138:18	intermediate 73:5 142:13 143:21 144:2
indicators 5:12 40:21 41:6 78:5 138:20,21 160:11 278:20	inform 59:13 138:9 230:11	innovations 89:21	inside 157:13,13 358:16	internal 223:18 237:17
indirect 294:17	information 15:18 28:19 40:6,9 41:16,21 43:20 44:6,8,10,15 45:15,15,18,19 46:12 47:1,21 49:12 50:14 51:12 51:15,22 53:5,6 53:13 63:1,19,20 66:6 67:13 68:4 73:15,17 76:5,8 107:10,13 110:12 115:3 116:11,12 116:18,19 118:10 119:5,22 120:2 123:15 125:4 131:9 144:17 146:2 147:10 161:19 188:18 194:15 216:13 239:1,2,7 255:21 259:9 270:21 290:2 292:20 293:8 302:1 303:11 305:4 333:17 359:3	inpatient 293:19 297:21	insurers 232:10,15	international 88:8 90:16
individual 11:15 46:2 72:12,14,15 156:1,2 158:4,5 159:3,18 160:10 160:13,16 162:12 162:20 163:7 165:18,20 166:7 184:10,20,21 185:3 186:15,18 194:10 237:16 238:17 239:19 291:8 314:11,14 317:4 318:1,10,20 319:21 322:15 327:15,22 328:21 330:15	input 70:10 128:15 161:5 182:10 238:9 242:3 349:14,15 361:10	innovations 89:21	integrated 64:8 96:7 114:11	internationally 88:14
individualized 86:15	insight 56:15 132:4 195:10 302:4	insights 36:19 135:6	integrity 106:16	internet 6:14 80:7 276:15
individuals 12:20 48:3 71:2 160:5 161:4,10 164:2 165:5 168:7 312:19 327:19,20 328:3 339:15	instance 62:15 86:10 90:7 92:16 118:6 311:15	insights 36:19 135:6	intellectual 278:15 279:1	interpret 119:3 162:17 185:22 186:16 302:3
individual's 156:3 158:11 161:16	instances 284:8	insights 36:19 135:6	intended 39:7 64:4 146:6 174:16,17 176:11,20 182:14	interpretation 10:9 119:9
	institute 1:22 2:10 2:16 4:23 90:15 115:11 203:4 273:3 280:2	insights 36:19 135:6	intensity 193:15	interpreted 84:8 87:10 164:18
	Institutes 2:19 191:5	insights 36:19 135:6	intent 91:6,15	interpreting 319:22
		insights 36:19 135:6	interaction 248:16	intersection 140:17
		insights 36:19 135:6	interacts 249:12	
		insights 36:19 135:6	interchangeable 12:5	

intersections 133:2 140:1	282:4	222:12 227:17 234:17 239:16 240:8 243:10 246:18 306:4 313:9,19 343:7 350:14 356:9 358:19 359:17 360:5	311:11 312:10 351:8	147:15,20,20 208:4 286:9 289:19 305:6 306:9
intersects 156:5	introduced 225:3 259:14	issues 4:21 5:17 8:15,20 21:21 39:12 41:5 63:8 100:2 136:12 137:11,22 138:7 151:14 156:11 190:8 208:2,10 209:14 225:18 230:22 234:6 235:13 241:3 276:4 286:6,21 287:21 288:5 291:1 293:15 294:1 308:4 310:7 312:11 313:17,18 318:8 336:20,21 342:12 345:3 356:14 357:9,16	Jack's 155:2 276:3 JAMA 329:8 James 274:22,22 Jennifer 126:5 168:19 Jessica 3:21 236:9 jigsaw 39:21 JIM 1:16 job 23:5 224:18 363:3 John 3:3 33:11 34:6,20 226:3 276:1 311:19 323:16 353:4 Johns 3:9 5:20 282:10 John's 33:2 join 126:7 361:8,16 361:22 362:2 joining 124:7 126:3 joint 106:5 320:5 joints 103:13,14 179:14 jot 35:1 jotting 361:11 journalists 120:11 Joyce 1:9,13 4:4 7:20,22 31:2 32:2 126:15 Joyce's 21:4 judgment 305:8 JUDITH 2:1 Judy 76:19,22 78:1 301:15 339:3 juggle 333:9	Karen's 125:15 139:21 Karolinska 90:15 KATE 1:25 Kathy 2:6 22:11,15 23:22 26:1,2 333:3 338:10 KATZAN 2:2 Kazis 2:3 4:21 79:3 79:4 198:14 203:1 221:19 261:10 262:21 274:1 313:17 keep 27:15 108:19 115:1 140:8 166:12 169:14 170:18 171:13 246:18 249:22 250:18 253:6 316:9 359:4 keeping 127:7 134:11 288:1,4 330:4 keeps 308:15 Keller 191:4,4 192:14 Kennedy 226:3 KENNETH 2:10 kept 138:17 Kettering 1:15 KEVIN 2:5 key 4:10,21 5:17 21:12 28:17 48:8 78:2 114:6,9 117:15 124:19 130:12 132:18 139:14 142:6 151:9 169:9 170:22 171:14 193:11,15 206:9 240:7 266:9 284:2 309:6 346:11 347:16
intervals 216:20 348:20	introduction 80:15 introductory 7:21 202:12			
intervene 151:1 352:1	invasive 151:5 invested 81:21 83:21 89:2 277:9			
intervened 251:5 251:10	investing 356:9 investment 108:1 112:22 280:6			
intervention 45:4 56:1 59:10 97:20 132:10 148:5,19 153:18 250:17 304:15 309:5,13 330:2 331:12 332:8 351:19 354:2,3	invite 361:3,7 invited 80:19 inviting 39:5 involve 248:1,3 involved 38:8 79:6 102:8 111:13 156:3 164:16 244:10,21 245:1 261:15 300:4,5 302:18 323:13			
interventional 252:9	involvement 166:22 236:1			
interventions 42:11 46:20 47:8 49:21 52:22 55:5 122:9 148:4 149:2 151:20 152:5,9 160:21 199:11 231:7,11 232:2 251:14 252:10 253:1,2 309:17 310:1 327:1 332:1 332:12 341:17,18 352:19	involves 233:17 248:16 345:14 involving 242:11 245:15 Iowa 342:5,6 IP 137:21 iPad 56:9 Ira 329:8 IRENE 2:2 iron 110:14 320:8 irrelevant 183:3 347:7 irrespective 122:11 IRT 224:17 Isaac 226:8 ischemic 307:3 ISOQOL 222:19 issue 22:2 61:9 78:2 105:6 108:14 136:20 148:2 182:16 196:14 212:8 213:10 217:8 220:13	item 10:13 67:21 173:16 318:15 items 68:6 70:17 173:6 175:18 182:16 237:18 358:13 iterate 264:11 iterative 174:12 175:6 348:21 it'll 27:17 351:14 i.e 346:2		
interview 96:20				
interviewer 244:5				
interviews 301:9				
inter-individual 239:9,10				
inter-interviewer 243:17,21				
Inter-unit 217:1				
intractable 311:6 341:15,16,17				
intra-class 217:16 219:18 228:9				
introduce 56:8 124:22 125:12 175:21 202:11 244:2 281:12				
		J	K	
		Jack 1:20 4:23 132:12 154:17 155:2 203:4,7 221:16,21,22 222:2 235:15 246:9 259:6 262:12 263:16 271:5 276:6	Kaiser 1:16 KALAHN 2:22 KALDENBERG 2:1 Karen 3:14,20 13:1 13:1 15:7 25:12 35:5 125:13 133:20 140:2	

keypad 25:7 178:19 196:6 272:21 333:6	56:21 61:17 76:15 77:18 79:22 81:7 85:6 89:9,15 91:8 94:10 96:22 98:21 100:17 102:5,21 105:13 109:6,17 112:1,18,22 113:13 115:6,18 115:18 118:1 119:1 120:10 121:10,14 123:11 128:8,17 130:9 136:14 137:1,15 137:19 141:22 149:4,4 161:20 165:5 166:4 171:5 173:8 179:3,11 183:22 184:13 187:18,21 188:4,7 188:10,16 189:16 192:18 193:2 197:22 199:7,14 200:1,2 213:11 223:20 233:8 235:1 237:15,22 249:9 250:6,7,7 253:1 254:7 255:16 256:6 257:18 258:17 262:11,18 263:4 264:10 265:10 267:18 268:21 269:6,17 270:3,5 270:22 274:5 277:11 281:17 282:15 284:6 285:8,16 287:22 288:19 291:11,22 292:21 293:4,9 295:2,2 296:6,15 300:1 301:15 302:5 304:4,11 305:7 307:20,22 309:4,19,21 310:18 311:2,10 311:18 312:16 313:2,3,6,8	314:10 315:4,5 316:1,9,12,22 319:2,13 320:22 321:5 322:9,22 323:7 326:2 327:18,21 330:9 331:17 332:1,9 333:16 337:9,10 337:15,16 338:4,5 338:19,21 339:9 340:8 342:22 343:1,4,5,7,8,21 343:21 344:3,4,5 345:13 346:6 347:5,7,8 348:2,9 348:17 349:10 350:4,6,11,12,13 351:13 352:11 354:2,6,18 355:3 355:4,7,10,18 356:1,11,18 357:4 357:20 358:20 359:3 361:5 knowing 163:5 271:18 knowledge 97:2 103:16 123:10 288:13 known 46:11 149:2 168:12 181:18 331:1,12 333:20 335:21 355:19 knows 76:20 357:4 KOTAGAL 2:4 <hr/> L <hr/> lab 144:5 labeling 259:11 lack 58:7 265:2 310:8 348:4 ladies 361:3 laid 155:19 276:4 landscape 53:6 language 12:12 157:18 159:17 210:11 languages 354:20	lapses 12:15 large 31:8 43:5 46:19 47:3 49:15 73:10 89:8 91:12 176:4 218:1 334:8 largely 155:22 209:5 311:8 larger 74:16 93:4 161:2,12 170:3 220:7 315:16 336:6 LARSEN 2:5 Larsson 4:9 38:6 80:10,17,20 100:6 101:10,22 105:8 105:21 108:15 111:3 118:19,22 123:9 124:5 lastly 214:16 219:11 late 317:1 353:13 Laughter 13:3 99:8 101:9,12,15 251:21 266:4 307:21 317:7 319:17 325:2 launch 226:2 launched 90:19 laundry 276:3 Laura 2:20 202:22 208:1 223:15 228:11 256:18 291:16 293:16 336:5 Laurie 4:16 126:4 139:18 179:11 184:12,15 192:5 236:20 266:2,5 269:16 282:15 347:13,20 350:14 law 74:21 75:4 lead 97:21 130:14 238:18 283:22 leader 13:4,5 94:20 leading 54:21 91:8 97:15 103:2 leads 98:10 102:18	158:12 learn 110:14 160:18 300:7 305:16 learned 7:3 32:12 138:7 190:2 learning 103:2 117:16 118:4,7 279:11 leave 154:16 215:10 320:14 360:7 led 81:11 84:7,18 93:21 95:5 96:22 123:16 left 59:10 179:16 261:17 320:16 362:8,14,15,16 legacy 224:4 225:2 legal 106:12 107:1 legitimate 155:4 320:4 legitimately 319:5 length 89:22 100:20 Lessons 4:5 letter 66:19 letting 32:18 let's 41:11 57:7 109:13 152:10 190:9 204:6 260:18 303:14 314:12 level 52:4,19 56:5 133:9 136:18 156:17,18,19,20 163:12 164:13 203:17 205:19 206:15 207:16,17 210:11,14,15 211:15,16 214:1 215:9 216:10 218:10 257:21 259:22 260:1,4 262:16 273:11 274:4 279:1 287:2 288:7,21 289:21
--	---	--	---	---

290:3,8 294:20	349:20	318:14 319:13,19	134:7 278:4	117:18 121:19
295:17 300:12	lines 32:6 223:7	324:14,18 326:17	look 13:18,19 15:18	129:7 131:11
305:11 306:5	234:21 240:9	326:19 327:11	16:18 42:4 43:9,9	142:14,15 153:20
314:6,14,20	link 249:11 329:10	328:2 329:3	46:1 52:5,6,15	154:17 163:4
318:10,20 319:21	linkage 309:4,16	331:14 351:10	61:7,19 62:3,8	176:12 185:6,7,13
320:7 321:7,15	linkages 309:19	362:6 363:4	70:12,13 72:12,13	187:3 198:15
327:1 331:16	linked 31:16 49:18	live 157:12 178:11	78:10 84:15 88:15	207:3 218:16
332:2	105:9,13 131:3	197:16 252:13	91:19 99:17 100:4	220:13 221:17
levels 106:10	144:11 155:22	living 68:1 155:14	107:16 109:12	235:11 251:16
225:10 306:6	157:3	168:1 341:2	113:1 117:21	263:5 267:11
321:14	links 142:12	Liz 4:8 37:18 38:1	121:9 122:16	269:20 283:6
leverage 127:13	lip 231:6	63:4,9 76:20 77:2	123:20 129:13	290:2 295:13,17
Lew 313:17	list 42:12 166:16	79:4,8 108:14	136:15 138:10,14	300:15 302:6,10
Lewis 2:3 4:21 79:3	179:9 215:13	111:2 115:20	145:15 146:12,18	321:16 323:17
198:13 203:1	250:5 256:11	116:1 124:7 126:2	149:22 167:18	328:10,19 329:6
221:17 235:10	284:4	139:16 147:14	172:21 185:21	347:1,3 350:21
liable 356:18	listen 124:8 157:7	189:14 249:17	186:22 195:7	355:14
life 28:17 88:4,7	159:9	252:1 309:1,18	205:12,12 212:16	looks 17:21 103:11
89:18,22 94:12	listening 125:21	325:18	217:18 229:19	103:13 293:1
95:19 133:20	157:16 159:15	Liz's 63:6	232:15 250:2,3	294:13 350:7
134:5 151:12	168:18 245:3	lo 340:21	267:13 268:4	loop 63:5
155:5 158:18	350:6	loads 50:9 327:10	282:21 290:7,15	Lori 1:21 4:22
162:17 163:1	listing 275:3	332:11	293:4 296:22	115:9 203:3
169:19,21 170:1,3	literacy 189:7	local 52:4	302:5 304:13	235:15 266:15
188:1 329:16,22	literature 57:3	locally 35:15 81:16	315:10 318:3,15	Los 99:15
lifestyle 13:19	211:3 216:18	locations 157:11	321:4,11,14	lose 171:9 275:11
151:4	311:4	lodged 122:2	322:19 324:19,21	losing 108:8
lift 158:15	literatures 167:19	logistical 311:19	325:5 331:11	loss 164:14 243:9
light 19:12,14,17	litigation 106:14	logistics 46:7	337:19 340:9	lost 7:2 105:14
110:2 220:21	little 15:6,17 18:17	Lohr 2:6 22:12,15	341:9,18 346:3	lot 7:6 9:21 11:17
liked 309:2	19:2,11 39:20	22:16 23:18 26:2	356:1,2 360:15	15:19 18:8 33:22
likely-to-happen	64:6 65:3 66:6	26:2 107:3 333:7	362:20,22	37:19 47:10 49:12
189:12	67:12 68:14 70:21	337:8 358:5	looked 61:14 77:9	51:6 55:6 65:11
limit 50:21 124:13	76:13 80:6 99:9	long 13:13 26:21	89:11 92:15 96:1	67:4 70:9 75:7,10
limitations 69:17	104:17 127:10	40:17 48:14 49:21	132:22 195:22	75:13,14,16 76:7
71:13 290:20	132:3 147:19	80:11 89:10 94:15	206:2 290:17	76:14 77:12,14
limited 57:3 91:8	157:6 190:5 192:3	124:8 248:4 254:8	293:3 323:20	78:2,5,22 83:20
311:22 338:8	205:21 213:22	256:11 258:15	324:6 354:19	84:2,13 100:1
limits 50:20 69:2,5	219:12 226:22	263:15 296:20	357:2	114:16 116:14,20
78:12	243:11 256:22	355:19	looking 41:5,8	117:1 118:8,16
LINDA 3:6	258:18 260:3	longer 92:6 93:21	42:21 44:5 54:5,9	121:18 137:21
line 16:21 22:13	263:18 277:18	315:14	55:4,7,16 58:15	138:2 139:3
23:14 38:20 49:7	278:5 280:21	longitudinal	59:4 60:21 61:21	140:12 162:5
99:20 122:10	287:13 288:18	330:10	70:16 77:12,16,19	176:5 182:16
125:21 196:3,10	290:22 297:10	longstanding 57:19	80:12 81:12,15	186:6 190:15
224:9 226:20	311:1 316:2,10,11	191:22 310:6	90:3 94:16 99:22	191:1 193:22
264:12 276:9	316:20 317:3	long-term 89:18	100:8 113:3	195:19 209:14

210:6 215:15	magnitude 211:11	mandated 31:13	meals 340:20,22	145:3,9,20 155:18
216:13 246:11	211:13 228:4	310:12	mean 11:20 12:18	156:5,15,16,17,19
248:13 250:6	291:3	mandates 31:5,20	16:12 24:13,15	159:7 162:11
251:13 258:22	mail 48:21 66:20	mandatory 52:16	27:19 54:5 58:16	163:3 164:21
265:4 276:4 278:5	66:22 67:8 270:14	109:3	62:19 107:17	191:9,10 209:15
279:16 280:10	357:20	manner 97:7	113:16 122:19	244:21,22 339:6
281:9 286:10,12	mailings 67:2	map 138:2 159:1	170:1,3 180:6	339:17
286:17 289:17	main 51:12 117:16	mapping 159:16	183:17 185:11	meaningless
290:17 293:7	236:6	maps 186:11	199:5 220:3,4	118:15 259:12
295:7,21 299:4,7	Maine 2:17 187:12	345:21	221:5 241:9	means 7:18 19:12
300:5 302:4,7	190:14 279:16,19	MARCEL 2:19	247:14 258:12	19:14 78:17 81:17
305:9,14,17	340:7,16 341:10	marching 150:9	266:21 268:21	83:14 165:18
307:12 308:2	mainstay 235:9	marginally 280:11	270:13,20 284:7	179:9,17 196:22
310:5 313:20	maintain 65:5	mark 230:1 243:11	292:17 293:5	239:20 241:14
315:5 319:3,3,4	170:7	270:16	294:22 295:9,9,18	250:4 262:3 264:2
321:1 322:4,15	maintaining	marker 24:21	314:8 322:6 323:2	285:19 292:13
327:6,15 331:19	254:10	162:20	324:6 335:2,5,22	293:10
339:17 340:16	maintains 240:16	market 32:8,10	336:13 348:18	meant 293:6
341:10,11,12	major 38:3 141:16	marking 173:11	353:18 357:12	measure 8:22
348:7,22 349:3	174:20 363:2	Markov 223:22	362:6	10:12,14,20 11:4
350:13 351:6	majority 41:12	228:9	meaning 142:11	15:8,10,21 17:20
356:3	83:12 84:11 111:5	Marty 325:11	157:19 158:9	18:18 20:15,22
lots 31:5 55:18	Makary 325:11	MARY 2:23	170:7 185:11	26:7,17 27:5,7
104:1 107:20	making 23:10	masked 291:8	186:1	28:1 29:13 30:2,4
133:2 142:22	29:17 83:21 93:5	Massachusetts 2:7	meaningful 18:1,5	31:6 32:13 33:20
151:22 152:14	102:5 106:18	4:14 126:3 226:5	18:14,20 63:18	42:19,22 45:11
177:4 213:11	117:8 119:8,11	Mastanduno 273:1	118:10 119:9	50:7 52:4 58:6
265:3 329:21	164:5 168:11	273:2	155:22 156:1,2,7	65:4 68:21 72:15
333:9	182:8,16 209:12	master 8:2	159:16,17 160:13	72:17 73:1,1
love 24:5 132:16	250:5 253:14	match 86:3 173:10	160:16,17 161:1	91:17 101:5 116:9
189:19 305:11	264:3 299:15	239:18 342:4	161:10,19,22	120:5 123:19
342:2	320:2	matches 248:18	165:7 167:21	126:20 138:3
loved 320:17	male 187:15	material 307:13	172:6,10 184:3,6	140:9,14 141:1,5
low 31:10 92:17	man 16:5,14	materials 16:5	184:10 191:12	141:12,17,21
213:19 250:9,11	226:12	300:14	229:5,13 242:4	142:8,10 145:5,6
292:3	manage 98:14	mathematical	256:14 292:12	148:7,9,10,12
lower 48:12 49:4	managed 113:5	189:7	296:14 297:6,10	151:7,8 152:12,16
60:3,4,5,16 61:8	254:12	matter 124:15	298:10 323:4	152:17,20,21
150:17 218:3	management 57:5	193:8,12 202:3	333:13 335:21	153:20 154:5
284:7 291:15	80:22 83:7 96:14	238:8 250:13	336:13 345:16	155:21,21 159:22
low-lying 261:12	109:14 189:1,2	261:8 264:11	357:14	160:1 166:18
lunch 200:22 201:2	341:7	281:1 335:9	meaningfully	171:2,4,6 172:2,3
201:22 202:7	manager 109:18	343:18 363:15	162:21 167:16	172:7,11,16
<hr/>	managers 117:18	matters 12:13	meaningfulness	173:19 174:4,13
M	managing 38:6	165:17,17 343:18	19:1 129:17 131:4	174:15,15,18
MA 2:25	72:7 254:8,21	MBA 1:14 3:4,6,15	132:21 133:2,12	175:5,7 177:9
Madison 4:15	mandate 222:18	MCID 337:1	138:17 139:18	180:10,11,13,15

181:13 184:18 193:15 194:6 195:18 197:5 201:13,17 202:9 203:14,19 204:10 205:4,14,16,20 206:2,12,16,18 207:3,16 208:9,20 209:4 210:2,11,22 211:5,9,18 212:1 212:4,10,13,15,19 212:22 214:4,7,15 215:9,14 216:5,6 216:22 218:12,15 218:16,20 219:1 221:12 223:16 224:3,7,8,13 228:12 233:14,18 236:7 237:3,7,10 239:11 240:13,14 240:20 241:17,18 242:1,12 243:6 244:22 247:2,2,3 250:21 251:8,9,15 252:16 259:22 260:8 261:1,5,6 264:10,16,19 265:20 266:1,15 267:12 268:4,9 269:21 275:17 281:18 282:3 283:7,9,11,16,17 284:5,14,16,19,21 285:5,20 286:22 287:1,18 288:4,7 292:15 293:21 294:2,10,17 299:15 300:4,11 303:5,15,21 306:5 307:8,18 309:9,16 318:2,17 322:9,12 323:2,9 324:13,19 326:9,22 327:4 329:12 330:13 331:11 338:16,16 338:18,22 343:6 344:4,16 346:20	347:10,11 348:10 349:8,11 351:2,7 352:7 354:8,14,16 354:16 355:21 356:19 357:2,8 358:1,20 360:17 measured 11:8 91:4 144:10,15 157:20 185:18 207:8 212:13 229:16 230:17,19 231:1,13,18 234:3 293:17 298:15 322:14 measurement 2:14 4:12 18:9 20:8,22 21:13 26:18 28:10 30:6 36:13 58:2 71:22 76:10 77:17 124:21 126:1 142:21 143:9 163:10 164:10 170:11,16 171:22 174:8 177:11,19 179:9 191:10 192:9 193:11 195:20 201:10 209:5 210:5,6,14 210:15 211:14 212:20 224:21 225:4,13,16 226:22 228:20 229:2 230:8 231:3 231:9,15 236:4 242:14 244:17 245:8,9,16,17,21 247:8 249:7 256:2 260:1 267:3 269:10 275:6 280:3,4,14 282:1 287:12 299:1 309:5 313:20 316:17 318:21 320:1 322:11 335:10,14 350:7 352:5 358:12 measurements	90:17 92:20 94:13 94:13 229:4 measures 9:3,6,9 9:12 14:8,14,19 15:4,13 20:5,10 21:6 22:1,5 24:13 24:15,18 26:13,13 28:3,5,22 29:1,8 30:5 31:6 32:8 33:17 34:19 36:3 36:4,6,10,12,13 36:14 37:4,15 38:10 40:2 41:14 42:6 43:4,10 45:6 45:22 50:5 52:9 53:20 55:11 68:2 68:3,10,17 70:6 71:21 72:13,14,21 73:7,8,10 75:19 77:3,5 78:4,16 79:1,21 82:3 84:3 88:2,6,7 90:21 91:1,11 92:4 102:22 103:14 104:20 116:5,8 117:3,4 127:16 135:7 138:21 140:16 146:6,10 146:12 148:15 149:16,16,17,18 149:22 150:14 151:20 152:4 156:22 159:14 160:3 161:9 162:7 163:15 164:8,17 166:20 167:5 169:10 170:16,21 171:15 186:22 190:1,3 197:4,19 201:13 202:10,18 202:19 203:22 204:15,20 205:1 205:18 206:6 207:11 208:7 209:1 215:3 216:8 218:6,9 221:14 222:16 224:4	225:2,5,8 229:16 231:19 233:10 234:2,8 235:6,8 236:2,18 239:5 241:1,2,13 247:20 247:22 248:2 268:15 271:4 276:1 278:7,10 280:4 281:16 282:20 283:3,22 285:7 286:10,14 287:8,15 290:1 293:12 295:22 296:1 297:7,13 299:20 302:19,22 305:20 307:17 308:17 310:8 311:9 314:7,10,13 315:8 316:16 323:2 327:7,17,21 328:7,15 329:2,4 330:17 331:2 332:7 333:18 334:13 336:2 337:14 338:5 342:20 344:10,11 344:20 345:18,21 346:22 347:2,3 348:5 350:20 352:21 355:6 356:2,14 358:21 360:13 measuring 29:6 40:18 91:10 132:5 173:19 184:1,20 185:1 194:11 228:22 229:8 230:20 233:18 247:9 249:14 253:3,4 255:17 266:19,20 267:5,8 269:7 288:20 326:7 345:15 347:12 348:2,10 348:13 356:15 meaty 55:2 mechanical 94:14	mechanism 59:2 mechanisms 31:17 media 120:9 168:6 168:10 median 294:22 295:9,18 320:20 323:2 335:2 Medicaid 1:25 2:15 medical 1:20 2:5,11 3:3,7 4:23 80:21 83:2 84:2 91:20 93:20 114:11 188:22 203:6 253:11,20 256:15 273:16 275:6 323:13,15 327:2 340:17 341:16,22 355:11 Medicare 1:25 2:15 63:13,17,19 64:1 64:19 65:8,11 68:11 74:2,7 75:16 76:1,4,14 116:15 medication 159:4 medications 151:4 153:1,9 medicine 1:17 85:11 86:16 88:17 95:7 119:19 120:6 120:11 263:7 medium 249:6 289:11 meet 13:7 61:7 138:4 228:14 296:7,17 305:20 meeting 6:16 8:8 8:10,13 39:6 80:19 96:20 170:10 171:11 172:10 222:21 232:7 238:15 326:18 335:3 345:8 meetings 35:20 52:6 223:2 meets 296:12
---	---	---	---	--

Melanie 273:2	methodologies 63:8 70:13 87:13 186:5 276:14	288:1,4 330:4	216:10 227:10	35:12 36:18 37:10 38:14,19 140:3 179:3 225:21 227:15 232:12 240:1,18 249:18 272:1 276:7 277:7 281:9 282:16 287:19 288:5 291:17 294:3 315:21 333:8 363:14
member 66:21 187:9 361:21	methodologist 125:14	mindful 197:13,13 243:9	modeling 217:15 219:16,17 228:10	Mort 2:7 4:14 126:2 147:15 180:16 189:19 249:17 252:1 309:1
members 64:21 65:6 72:8 111:16 282:8 349:19	methodologists 186:13	minds 122:3	models 44:9 87:8 223:22	mortality 41:8 340:11
member's 30:20 228:13	methodology 43:8 67:6 71:9 209:13 269:5	mine 183:5	moderate 152:11 213:3,7 290:12 294:4 302:2	Moseley 2:8 278:2 278:3
Memorial 1:15	methods 4:18 5:10 18:9 56:8 57:1 198:1 208:6 214:20 215:4,14 223:21 232:19 269:17 299:13 300:13 301:7 326:13 348:15	minimal 195:4,6 296:18 298:18,20 298:22 299:9 307:6 333:13 334:4	moderating 178:15	motivate 114:2,3
mental 55:17 68:11 68:18 71:2 79:11 79:14 95:2 99:6 100:3 329:15	metric 79:14 185:9 225:12 230:7,12 231:12 233:13 234:15 235:3 262:5 298:1	minimally 151:5	moderator 35:8	motivated 130:14
mention 79:18 140:20 141:8 206:7,9 262:21 325:18	metrics 52:14 223:13 226:14,17 231:20 232:18 233:1,12 262:1	minimize 244:2 259:13 268:12	modern 348:16	motivations 314:22 315:2
mentioned 14:18 143:5 145:7 146:5 177:4 207:5 217:15 218:7 219:17 276:6 277:8 282:15 286:9 289:20 290:21 291:16 293:16 294:3 296:10 298:9 309:22 333:12,13	MGH 251:18	minimized 175:12	modification 128:18	move 14:5 24:1 53:3 90:12 99:13 104:14 114:20 118:14 134:9 152:10 155:5 163:2 183:10 185:5 235:6 308:17,18
mentors 155:2	MHS 1:25	minimum 243:20 285:17 310:13	moment 6:20 7:1,4 24:16 55:20 65:3 67:14 117:17 161:18,21 162:19 208:12 327:17	moved 73:4 294:14
merit 42:18 43:16 44:19 53:11	Michael 90:14	Minnesota 2:14 28:10	Monday 325:15	movement 275:18
merits 42:7	micro 343:11	minus 227:21 291:5,10	money 74:13 82:5 112:18 114:20	moves 226:20 333:22
message 34:7 48:8 110:1 138:6	microphone 19:14 187:8 272:15 350:4	minute 9:1 200:21	monitor 6:15 76:4 254:5	moving 22:18 36:11 107:14 128:9 164:19 289:20 338:7
messy 358:2	microphones 19:10 178:12	minutes 25:13 39:11 57:15 71:15 73:20 124:13 197:2 280:22 360:9 361:9 363:3	monopolize 350:4	MPA 1:22
met 1:8 94:19	middle 17:2 153:4 342:7	misclassification 209:7 221:13	monotonically 186:7	MPH 1:19 2:10,12 2:16,17,18,19,22 3:9,17
metadata 265:5,8 325:7	mid-course 23:11	misleading 241:15 241:18	Monte 217:3	MSc 1:15
method 53:18 110:1 285:10 300:18 323:22	mike 147:16 353:5	missing 59:21 60:13,15 61:10,16 139:3 176:5 232:8 243:10	month 338:19	MSN 3:15
methodologic 273:21 294:1 308:3,22	million 112:3,14,15 277:10,14 311:16	mission 281:15	monthly 111:14 45:3 48:21 162:15 198:19 252:16 294:8 298:8,12 338:19	
methodological 8:14 43:19 80:1 234:5	mind 27:15 113:15 115:2 122:7 127:8 134:11 140:8 170:18 171:13	mix 62:7 67:5 120:20 121:11 123:10 227:12 233:4	months 23:3,3 45:3 45:3 48:21 162:15 198:19 252:16 294:8 298:8,12 338:19	
		mixed 237:19	monumental 169:15	
		mobility 212:12,17 293:17 298:15	mood 270:4	
		mobilization 101:2	Moon 226:2,12	
		mobilizing 100:15	Morale 31:10	
		mode 67:5	morbidity 340:11	
		model 68:8 215:17	morning 6:3 7:6 8:2,9 17:15 32:9	

MT 3:14	143:8 169:15	264:11 301:12	nine 72:5,10	14:10,18,20 15:14
multiple 143:13	233:2 359:10	305:1,9,18 308:16	noise 80:2 195:20	19:21 21:6 24:12
192:12 200:4	nausea 200:3	321:10,11,13	209:5 210:13,13	24:16 30:13 34:17
205:4 218:22	350:20 351:1	324:22 325:5,8	210:20 215:18	35:3 125:15,17
305:3	353:10,19	326:6 330:20	223:14 228:21	128:12 129:7
multiply 276:12	NCQA 29:16	332:4,5,5,14	322:16,20	133:21 140:1,8
277:11	355:17	339:7 340:3 348:7	non 175:14	145:4 170:9
multi-disorder	nearly 48:13 226:3	349:9 352:11,18	non-clinicians	189:21 202:12,19
82:14	neat 246:10	needed 58:21 170:3	240:15	203:10,21 204:8
multi-years 155:12	necessarily 20:14	181:6 235:6,14	non-hernia 325:22	204:14 205:17
MUP 1:13	23:18 51:21 89:21	237:7 306:2	non-PROM 302:22	206:3 207:22
mushed 27:1	180:20 189:11	needs 13:7 22:2	non-random	210:12 216:9
must-pass 15:9	212:5 245:11	24:17 30:18 51:7	175:22	223:12 259:19
316:15	263:6 295:10	131:19 135:3	non-traditional	260:3,14 261:9
mutability 309:16	300:2 312:20	164:3 173:13	167:12	270:18 275:16
mutually 129:10	333:21	174:1 177:1	Nordic 86:7	281:14 282:19
131:5,6	necessary 33:4	209:13 230:17,19	normal 69:10	283:5,21 284:10
M.D 1:14,15,19,23	110:16 208:17	234:3,13 239:11	321:20	285:15 293:13
1:25 2:2,4,5,7,12	216:6 268:17	264:5 358:11	normally 94:11	295:22 300:13
2:18,19,23 3:3,9	286:15 353:15	negative 120:22	295:18	318:17 333:22
3:17	need 7:1 9:2,4,8,12	neither 160:3	Norman 209:21	337:5 342:19
	9:14 11:18 12:11	NELSON 2:10	North 17:16 22:16	343:9 360:13,19
	12:20 13:22 14:13	ness 137:17	59:18 103:5	361:15,20 363:3
	15:1 20:20 23:19	net 231:21	Northwestern 1:17	NQF-endorsed
	23:19 28:3,22	never 257:14 261:4	Norwegian 92:18	146:6
	30:6,16 32:1	264:10 266:16	note 31:7 67:8	nuance 132:16
name 13:2 52:11	34:13,18 84:19	new 2:23 56:8	88:22 201:11	nuances 21:13
193:10 203:5	85:9,12,19 86:16	70:13 79:12 86:6	278:8 344:8	number 6:12 18:15
221:18 340:5	114:19 119:7	146:2 225:3 235:7	notes 35:1 154:13	25:6 29:16,19
narrative 52:14	125:22 132:7	254:10 314:1	360:20 361:10,21	42:10 49:15 60:10
narrow 278:7	135:7,18 136:18	348:16 355:21,21	nother 310:7	65:12,13 72:16
279:7 353:20	139:2 145:1 157:6	newer 276:13	notice 229:22	89:8 138:11
narrower 332:16	157:6 159:8	newly 106:5	250:22 271:22	178:18 179:13
NASDDDS 278:3	160:10 165:1,2	news 197:14	noticed 53:2	180:4 196:5,16
national 1:1,8 2:5,8	166:21 167:9	Newton 226:9	notion 30:15	222:14,18 234:5
2:19,22,25 6:4	168:5 172:5 173:6	NHS 44:8 47:8	130:12 242:20	272:20 274:7,17
7:15 40:5,10 51:3	173:7,21 175:2	53:18 109:2,7	255:9 258:9 264:7	277:19 294:20
52:19 56:14 62:2	177:11 178:15	309:20	314:5 359:5	297:19,21,22
66:9 86:20 118:13	186:22 191:11	NHS-funded 109:5	not-for-profit	298:3 319:1 333:6
145:11,14 155:11	194:5 197:4,11,19	nice 24:7 59:19	90:18	337:16 345:16,17
164:9,20 165:2,4	204:18 205:2,5	103:5 104:9,19	November 22:20	numbers 145:16
165:12 166:16	208:14 212:1	115:5 162:7 186:2	90:19	279:12 311:12
167:2 278:20	231:19 234:6	288:18 320:13,21	nowadays 80:22	334:8
296:6 304:2,5	237:15,22 239:2	362:1	89:9	numerator 82:4
331:16 332:2	243:8 244:4,5	nicely 228:11	NQF 3:12 4:13,19	211:12 213:7
nations 119:15	248:15 253:13	nifty 251:12	5:14 9:4,6,17	numeric 10:20
naturally 134:21	259:7 262:7	night 38:17	11:17 13:13 14:7	72:16
nature 39:10 47:5				
49:20 104:22				
108:21 110:21				

numerically 95:8	odds 189:18 337:10	48:16 75:2 136:1	optimizing 115:14	Ottenbacher 2:10
numero 259:17	OECD 113:11	238:20 281:21	option 290:1	290:22
nurse 257:14 274:8	offer 71:19 72:4	350:6	296:11,19 297:14	ought 32:17 42:22
nurses 273:15	offered 52:7 128:7	oncologist 200:2	options 85:18	43:17
nursing 11:1 213:1	office 2:5 38:7	350:19	105:20 188:20,21	outcome 9:5 10:5
nutshell 40:4	96:10 155:11	ones 19:11 82:8	289:22	15:3 22:1 26:13
Nuttall 4:7 37:11	offices 160:8 271:9	88:19 92:13	order 25:5 90:6	26:17,21 28:1,5
38:14,18 39:1,4	357:21	149:19 190:16	95:22 105:19	29:1 33:16 34:19
58:16 60:18 108:3	official 46:16 85:4	205:4 251:4 272:1	114:21 119:6	37:5,15,22 38:10
108:7,12,17 117:6	off-the 42:6	333:8	139:16 173:8	40:1 41:13,14
121:7 124:3	oftentimes 119:2	one-off 53:9	178:17 196:4	42:5,19 46:1
NW 1:9	179:14	one-offs 280:11	205:2 208:9	51:22 52:9 53:19
	oh 16:20 17:11,14	one-steps 248:21	218:10 239:2	54:15 63:13 68:10
O	22:15 101:13	online 35:10 98:12	244:6 250:16	73:1,9 82:3 95:12
objective 8:14	172:18 198:13	124:8 276:22	264:20 267:7	95:18,22 97:21
objectives 8:8	201:4 305:6	onset 254:11	272:19 273:12	116:5,9 121:3
44:12	319:13 322:6	open 27:17 76:11	274:4 304:22	142:11,13,14
obscure 175:19	325:21 347:22	98:18 99:11	305:10 326:21	143:4,14,17 144:3
observation 19:19	okay 8:12,12 9:18	104:11 178:3	332:6	145:6 148:7
25:11 30:10	11:10 13:11 16:1	190:10 256:19	Oregon 2:1 77:1	155:20,21 157:1,2
123:13 162:1	16:22 19:16 25:9	333:2	organization 11:7	159:13 161:9
303:10,12,15	25:11 35:7 38:19	opening 7:8 242:13	46:11,14 86:20,21	163:15 164:7
observational	39:2,4 57:17	operated 106:5	190:22 203:5	167:4 169:14
85:15 185:6 198:9	59:15 63:9 80:16	325:19	223:9 231:4	180:9,15 181:1
273:4	80:18 108:13	operator 25:4,5	286:16 287:16	194:15 201:10
observations 17:10	116:1 124:18	178:6,17 196:2,4	organizational	203:15 222:16
22:11 25:1,15	139:9 147:13,16	196:11 272:16,19	202:18 287:2	231:12 240:20
28:11 94:22 98:21	147:17 177:21	276:21 277:2	288:7 308:18	243:14 247:12
123:11 259:5	191:2 195:9 196:1	333:4 349:19,22	organizations 46:6	249:13 250:2
observe 163:14	202:6 203:7	ophthalmologist's	64:20 78:9 117:18	256:10 270:5
314:2	207:19,20 221:16	357:21	204:13 222:19,20	279:7 288:9,11
observed 71:1	235:10,15 236:11	opinion 30:20	225:11 231:1	293:12 296:21
320:9	256:17 259:1	131:15 143:2	279:18 286:11	298:5 303:17
obtained 239:7	274:20 276:21	180:7,12 224:9	organize 91:1	353:3 359:5
Obtaining 241:16	277:4,21 279:13	225:16	organized 273:17	outcomes 1:3,21
obviously 24:16	280:17 281:4,16	opportunity 141:19	orient 19:9	4:22 6:5 8:18
39:14 61:6 85:13	289:6 306:9	217:18 313:13	orientation 302:8	13:17 18:1,13,19
106:13 135:12	314:14 332:22	315:18	original 314:16	26:8,22 27:20
243:13 261:6	338:9 339:3 340:4	oppose 58:18,22	357:18	30:2,8,14,18 38:2
269:14 281:21	347:20 349:17	opposed 57:6	originally 42:15	44:10 50:3,11
305:13 307:12	351:8 354:22	129:20 166:12	326:21	51:15 52:4 53:17
occasionally 314:5	358:3,4 360:6	273:5 313:14	orthopedic 29:8	54:22 60:6,11
occur 165:11 292:2	362:3,20	opposite 101:3	88:18 89:1 99:6	64:14 70:18,22
occurred 105:2	Okun 193:19,20	optimal 266:17	152:1	73:5,6 76:10 78:3
165:13	older 168:1 324:2	optimistic 331:15	orthopedics 47:17	78:8 81:19 82:2
occurring 231:13	onboard 150:11	optimize 94:3	49:1	82:13,17 83:1
October 22:20	once 18:10 45:1	95:22	OTR 2:10	90:1,17 91:19

96:1 97:12,14,14 98:16 99:4 100:9 105:4,5,10 107:19 113:5,10 115:6,10 116:4 119:17 120:4 132:5 143:7 143:8,15,20,21 144:11,19 145:2 159:8 163:22 165:3 170:15 179:4 188:1 192:17 196:19 203:4 227:5 228:7 229:15,16 231:8 231:18 232:3 233:5,22 244:11 250:20 251:9 253:8 263:13 264:4 271:1 273:6 288:10 291:11 295:13 323:13,16 323:17 327:3 346:2 352:14 361:14	oversee 109:18 oversight 64:12 66:15 118:5 oversimplification 257:7 overuse 85:1 overview 4:13,19 5:14 39:8,11 57:18 64:17 98:4 139:22 140:5 150:8 oxygen 362:11,19 oxygenation 362:7 o'clock 363:12 O-F 4:1	317:5 363:7 pages 293:8 363:10 paid 75:9,11 100:11 112:4,19 195:2 pain 52:9 68:6 69:9 92:18 94:11 118:1 118:2 132:9 158:7 193:15 213:3,8 250:9,11,16 252:5 252:5 254:5 255:6 290:4,13 294:4 297:20 302:2 304:9 318:18,18 318:19 319:11,13 319:19 320:18 321:3,18 322:4 338:6 358:20	141:7 192:4 235:11 260:14 269:13 301:2,5 308:1 320:10 paper 4:21 5:17 8:16,17 17:4 22:22 54:8,18 127:19 128:1 169:5 202:15 204:4 208:3 215:2 216:11,16 217:5 237:12 243:5 246:12 260:9,22 282:5 286:20 300:21 324:8 329:9 333:21 347:18 358:6 363:9,11	partially 97:18 participate 64:22 161:2,12 participating 150:14 178:7 300:6 participation 6:16 47:19 55:16 60:22 61:3,9 168:4 178:13 particular 9:9 10:4 12:8,19 41:5 51:17 52:7,15 61:16 82:5 88:10 92:11 129:6 133:3 143:14 144:5,9 146:1 151:13 162:9 171:4 184:5 199:19 212:6,10 213:10 216:22 221:21 222:22 260:11 274:12 284:17 285:4 295:20 298:7 333:10 335:15 352:13 353:2 359:14
outliers 102:12 outline 235:18 outlines 300:21 outlook 199:20 outpatient 293:19 355:8 output 51:8 outputs 136:8 outset 37:17 44:4 outside 147:3 151:17 157:14 174:9 272:2,5 274:12 outsourcing 110:6 overall 69:12 72:3 73:16 113:22 116:7,20 199:6 231:21 280:3,3 323:18 352:14,21 overarching 41:19 overlap 140:12 216:19 306:16 overlaps 307:13	<hr/> P <hr/> Pace 3:20 15:7 19:9 25:13 27:2 35:7 124:6 125:14 140:3 202:6 221:16 235:10 236:9 246:8 256:17 259:1 263:12 264:13 265:21 266:2 269:8,12 271:5 272:13,22 274:20 275:15 276:21 277:4,21 279:13 280:17,20 281:4 306:10 315:19 332:22 335:17 336:10 337:13 338:9 339:3 340:4 342:19 344:6,22 347:15 349:17 350:2 351:8 353:4 355:1 356:20 358:3 360:6 package 120:7 344:12 packet 363:8 page 46:18 87:17 87:17 88:12,12 90:9,12 96:2 173:11 203:13	painting 316:22 pair 45:22 paired 45:8 palm 316:6 panel 17:5 19:3 20:7 22:19 25:14 34:12 36:17 70:9 70:15 124:14,19 124:22 125:13,16 126:6 127:12 128:21 130:1 138:8 187:12 192:2 193:21 196:14,18 202:9 202:11 203:1 215:10 221:20 222:4,6 256:18,20 257:2,6 260:2 270:19 273:7,9 280:18 281:6,12 281:18 282:4,8,11 285:19 317:13 323:17 333:2,8 343:2 345:2 360:9 panelists 35:10 126:9 180:8 201:20 260:10 panels 7:11,12 20:19 140:21	papers 54:3 337:2 paradox 312:12 parameter 48:22 48:22 parameters 20:8 paramount 204:17 234:17 256:13 paraplegic 324:20 parcel 53:6 parse 265:8 part 24:9 32:3,3 34:11 41:13 46:13 53:5,12 59:21 71:21 73:21 74:3 84:12 101:4 105:14 106:9 111:10,11 121:2 136:3 137:11 147:5 182:7 186:21 187:14 188:3 189:6,16 199:11 213:22 215:1 238:12 242:11 259:10 276:3 281:8,8 343:14,16 349:16 357:18 358:6 359:3 partial 40:7 41:2	particularly 54:5 60:14,16 61:7 101:21 118:1 128:9,22 130:18 131:11 195:2 220:12 309:2,20 324:1 345:8 partly 258:15 partner 80:20 Partners 150:7 Partnership 2:23 parts 59:6 175:20 210:3 pass 337:21 passionately 107:18 path 334:1 pathophysiology 329:9,14,20 pathway 9:16,16

16:6,14,14,18	251:2 254:13	244:20 245:1,4,15	patient-defined	212:1
25:16 27:18 28:5	255:2 256:12	245:19 247:8	158:1,10,19	Pawlson 2:12 4:6
33:4 37:9 127:1	258:4,11 263:21	249:19 250:16,20	179:19	19:16,18 35:8,12
138:10 264:9	264:4 273:8 278:9	251:2 253:8	patient-driven	38:15,21 39:3
360:14	288:12,17 290:8	254:21 255:11,19	276:14	57:17 59:15 62:18
patient 1:3 10:8,11	298:4 312:11,15	257:8 271:16	patient-focused	76:12 78:1 79:19
10:15 11:15 13:16	314:6,19 327:15	272:6 273:10	160:4	80:13 98:20 99:9
14:2 29:4 40:14	336:14 338:6	290:12 291:13	patient-generated	104:10 108:6,8,13
44:14 45:16,18	339:5 343:19	292:6,9 294:4,10	158:1	111:2 114:22
46:3 47:19 50:1,3	345:14 349:14	294:14 295:11	patient-important	116:1 117:5
50:19 52:9,18,22	351:17 352:5	296:3,7,10,12,16	195:6	118:18,21 120:14
54:15,22 56:5	358:7,15 359:1,1	297:19 298:10,16	patient-level	121:5 123:7,21
60:14 61:16 62:7	361:13	299:5 301:4,4,10	209:20 259:14	259:2 262:8
72:9 73:6 78:4	patients 11:7 18:6	301:12,19 302:2	patient-reported	pay 75:13 279:17
83:13 85:8 86:3,4	27:8,9,12 29:6,11	302:17 303:1	6:5 8:18 9:5 10:5	payer 114:1
88:4 89:14 94:1,8	33:18 40:10 43:11	310:17 313:1	15:3 26:17 34:18	payers 82:20 86:20
95:3,10,17 96:8	44:22 46:21 55:15	314:4,12,20	37:14 38:2,10	paying 15:19 71:6
96:12,15,18,19	60:5 62:3 82:14	320:11,17 321:3	40:1 41:14 42:5	75:10 280:16
98:2 99:1,2,3	82:14 84:21 85:18	321:19 322:3	42:19 53:19 70:18	payment 4:5 32:14
100:15 101:4	86:13 88:3 89:9	323:18 324:17	76:9 78:3 107:19	74:1 104:20
105:3 106:2,4,6,9	90:2,8 97:17	326:10,11 334:8	148:6 155:20	359:22
115:4 130:22	98:14 100:21	339:6,9 345:19	156:22 159:8,13	payments 75:6
131:1 137:3,4,7	107:12 113:20	349:10 350:22	161:9 163:15,21	pay-for 64:9 73:20
144:16 145:12,12	114:5 117:9,11,22	351:4 352:12,22	164:7 170:4,15	pay-for-perform...
154:21 155:6	118:6,11 119:6,13	354:20 357:20	179:4 190:8	209:3
156:2,5 158:2	119:17,21 120:20	361:13	194:15 196:19	PCI 343:6 344:14
159:3,12 162:9	123:17 130:13	PatientsLikeMe	201:10 222:15	PCP 341:6
163:6,7,7,10	132:6 135:16	193:20	240:20 247:1	peaceful 70:3
165:3,16,17 166:2	144:16 148:10,17	patient's 10:7,9	270:5 271:1 273:6	pears 237:18
166:3,8 167:20	149:1 153:2,11,18	40:9 56:16 97:2	279:6 287:9,11	peer 106:17
168:2,3 169:13	153:21 154:19	133:18 136:16	293:12 303:11,16	peers 84:6 102:11
170:19 172:8	156:11 157:7,12	148:12 151:3	359:5	peer-reviewed 54:8
173:9 174:22	157:16 159:6	159:17 167:13,14	patient-scored	people 6:13 12:2,3
175:3 179:19,20	161:11 164:12,16	168:13 181:15	180:11,14	12:20 17:12 27:21
180:6,12,21,22	164:21 166:22	183:8 184:21	Patricia 1:9,12 4:2	32:18 33:20,22
181:3 183:11,11	167:6,7,16,17	200:3 239:22	pattern 123:17	48:6,19 53:14
184:3,11,21	172:14 184:7	242:18 288:3,10	patterns 232:21	60:10 67:7 76:14
185:21 191:12	188:7 194:8,17	288:22 358:21	258:6	107:20 110:9,13
194:6,21 195:16	200:13 201:17	359:3,11,11,14,21	Patti 4:15 6:7 8:1	117:2 118:16
199:16,17,17	206:18,22 213:2	360:2	12:22 19:2 34:5	121:19 157:17
200:12,19 201:11	213:20 214:7	patient-centered	126:8 133:10	161:1 177:10,12
203:16,17 210:14	220:17,20 234:13	1:21 4:22 115:10	139:18 155:9	178:7 179:10
213:6 220:15	234:20 238:9,17	203:3 245:10	179:17 184:14	182:9 185:7,19
230:21 233:4	238:21 239:19	280:7 340:17	189:4 201:7 245:3	188:20,22 189:1,8
236:1 237:5 239:3	240:6,14 242:3,9	355:11	257:2 360:21	190:19 192:20
240:2 242:8 243:4	242:12,17,21	patient-centered...	Paul 329:8	195:11 199:15
245:6,13 249:12	243:3 244:4,10,13	235:21 246:3	pause 6:22 208:12	200:17 207:4

239:7,8,9 246:11	302:1 310:16	221:12,14 225:3	14:2 161:20 162:1	PHQ 11:8
246:15 248:22	323:3,4 340:11,12	225:13,15 226:21	166:10 168:1,2	PHQ-9 10:16 27:10
250:13 251:9,14	percentage 11:6	229:1,10 233:10	195:19 196:9	27:11 294:11,15
251:17,18,19	27:8,9,12 29:10	233:14 234:4,7	197:5 254:11	phrase 157:22
252:4,4,8,10	118:14 206:18	235:6,8 236:4,7	257:16 279:3	177:20
253:14,16,19	335:3	236:18 237:3,7,10	344:18 360:19	phrased 219:9
254:6 256:1,9,16	percentages 74:13	239:4 240:3,14	personal 186:11	phrases 275:4
257:17 258:14,22	percents 296:2	241:21 242:12,13	personalized 85:11	Phyllis 2:25 29:15
260:6 263:14	perception 12:10	244:17 245:9,16	personally 9:21	201:5,18
266:14 267:18	88:5 220:19	247:3 255:17	186:1 300:3,10	physical 65:6 68:4
269:14 272:2,16	358:21	259:22 268:15	306:3 312:4	68:10,18 69:1,3,5
278:15,21 279:10	perfect 32:19,21	269:10,21 271:3	persons 130:13	71:2 79:11,14
280:7,16 292:4,20	249:6 362:3	272:11 280:13	145:16 156:3	106:11,20 224:14
294:11 295:8	perfectly 155:4	281:16,18 282:1,3	person's 156:6	329:15
296:16 298:11	PERFETTO 2:13	283:22 284:5,14	person-centric	physically 48:18
301:12 302:1,5,7	perform 69:6 356:5	284:16,21 285:5,7	131:1	physician 11:2
305:1 309:11	356:7	285:20 286:10,22	person-reported	96:17 97:10
311:16,18 312:17	performance 4:11	287:7,12 288:4,20	155:21	105:21 106:22
313:13,14 319:3,4	8:22 10:20 11:4	289:14 295:21	perspective 58:3	153:14 220:13
319:4,6,21 320:19	14:8 20:22 21:6	297:12 299:15,20	63:4 99:1 128:19	227:6 233:3,19
320:22 321:17	22:5 26:7,18	300:11 302:19	129:9 133:18	248:17 249:12
322:4,10,17	34:19 36:13 37:21	303:9 306:1,5	148:1,12 168:20	274:11 275:8
323:22 324:2,3,20	38:10 42:8 44:7	307:18 313:20	222:12 230:5	320:13,16
324:21 325:7	45:12 52:5,13	316:16 318:2	236:6 238:11,16	physicians 276:12
326:5,7,11 327:22	57:5 64:10 69:7	323:1 324:13	240:8 241:20	288:19
339:8,19 340:20	70:1 73:21 75:18	328:6 329:1	242:19 245:13	physician's 271:9
340:22 341:1	75:19,22 76:17	330:17 331:2	281:15 282:20	physician-driven
349:20 352:4,6,9	103:21 104:3,8,20	332:7 336:2	313:5 352:5	263:20
353:1 360:9	124:21 126:1,20	337:14 343:6	perspectives	physics 226:7,11
361:22	127:16 135:7	344:4 346:18	134:14,15 161:18	Ph.D 1:16,17,18,20
people's 122:3	140:9,14,16 141:5	349:8,11 351:7	239:12 342:17	1:21,22 2:1,6,10
199:9 214:12	141:12,19,21	357:8 358:1	pesky 317:3	2:13,16,20,21,22
300:8	143:9 160:19	360:13,17	Pfizer 2:13	3:4,14,20
pepper 24:5	164:8,10 170:21	performances	pharma 90:6	pick 167:4 292:22
perceive 166:6	179:8 180:10,11	105:14	pharmaceutical	334:21
perceived 10:15	189:11,13 194:20	performing 76:2	97:20	picked 119:15
91:7 203:16	202:8,10,18,19	performs 241:19	phase 100:12	237:20 254:5
percent 47:20	203:19,22 204:3,6	303:21	264:17	picking 54:4 251:4
48:14 49:1,4	204:15 205:1,4,18	period 44:1,16	phases 175:12	309:22
50:21,21 60:21	205:20 206:6,16	48:15 49:10,15	PhD 1:12	picture 41:18 51:14
61:3 78:11 82:15	206:17 207:3,11	65:2 66:1 68:12	phenomenal 99:16	68:20 181:22
83:13 87:22	207:16 208:7,20	100:5,8,9 123:1	phenomenon 313:7	piece 42:3 54:20
128:21 213:2	208:22 209:4	130:22 157:14	phenotypic 85:9,14	60:19 117:15
250:11 279:20	210:10,22 211:5,9	218:18 321:12	phone 6:13 17:13	121:4 123:15
289:11 290:12	211:18,22 212:4	periodically 285:6	25:3 108:11	209:10 246:2
294:3,22 296:1,7	214:4,13 215:13	Permanente 1:16	195:12,13 256:21	260:8 302:11
296:12,16 298:16	218:6,9,12,20	person 11:15 12:2	272:17 349:20	309:6 325:6

345:13 346:10	playing 190:15	181:20 195:15	218:3 241:15	262:9,18 264:7
pieces 39:21 116:12	255:18	199:22 200:6	260:12,16 261:6	post-op 29:9 50:5
354:6	please 8:7 9:19	206:14 212:21	268:10,18 269:2	50:19 59:4
pigment 317:4	10:18 13:11 14:6	215:16 225:15	277:14 287:19	post-operative
pill 341:2	16:1 17:13 19:8	227:19 232:8	295:12,15 310:22	45:17 48:19 49:3
pilot 43:3	35:1 126:13 127:9	234:19 236:20	312:7 338:15	post-operatively
piloting 55:10	140:6 178:20	237:11 238:6	345:14 348:12	45:2
pipeline 55:6	196:6 209:17	241:14 242:11	350:18	potential 61:10
pitting 273:13	211:7 215:12	243:7,14,16	populations 37:3	123:3 208:8,9
PITZEN 2:14 28:9	219:13 273:20	247:22 252:1	60:15 61:17 83:17	303:7,18
place 29:2 31:19	289:16 299:10,21	274:2 275:13	176:4 185:7 197:6	potentially 114:5
46:6 49:21 100:19	316:7,18 317:5,11	276:3 290:10	197:7 229:10,12	153:3 188:9,11
100:19 114:20	317:15 318:7	304:21 305:15	234:2 241:19	215:5 217:20
135:3 143:8 174:1	322:6 324:7,16	307:11 328:5	242:2 259:7	POWELL 2:15
226:8 229:2 310:2	326:12,15 328:18	331:3 338:1	260:18 261:20	power 245:21
312:7	329:1 330:4 333:5	341:21 353:16	278:12,14 314:16	246:5 342:11
placed 97:16 231:7	361:8 362:1	pointed 131:8	327:5 328:16	PowerPoints 78:8
places 100:22	pleased 126:2	260:10 309:18	332:15	practical 34:4
254:3 304:14	128:20 181:10	311:11,19 339:7	population-based	260:14 306:22
305:5 355:15,16	271:18	347:6	67:15 342:20	practice 27:7 29:3
plagues 275:20	pleasure 124:4	pointing 193:4	Porter 90:14	36:15 84:9,18
plan 11:1 37:21	221:20	262:12	portray 200:12	91:22 92:1,2
63:21 64:12 65:4	plenty 361:19	points 35:19 43:14	portrayal 199:21	93:10 98:11 103:3
71:17 72:1,1,8,19	plop 177:15	45:1 85:3 86:19	200:7	109:16 121:21
72:22 73:14,16	plot 50:13	121:12 160:11	pose 307:14	138:12 147:7,8
74:8 75:9 76:6	plug 325:9	164:5,20 165:19	posed 308:16	151:18 153:10,14
116:7 146:9 156:8	plus 50:20 210:13	169:2 177:21	317:13	158:9 163:16,18
225:11	291:6,9 357:13	194:1 201:8	poses 259:18	225:10 254:17
planning 172:7	PMs 24:3	218:11,14 230:21	position 58:17,20	255:7 257:21
plans 64:20 71:19	point 21:8 23:7	232:4 242:7 297:6	305:8	269:14 273:10,19
72:4 74:1 75:6,8,9	28:20 29:17,21	300:8 319:1	positive 120:22	274:4,7,12,16,18
75:17 76:1,2,4	33:14 40:19 41:5	322:14,18	291:5 310:14	320:14 352:19,21
77:13,19 79:10,17	43:11 44:2 46:10	policies 104:21	312:22	356:4
227:7 228:3,15	51:19 53:1,22	165:20 209:3	possibilities 240:22	practices 103:18
232:10,15 233:4	54:4,15,19 55:22	pond 35:15	258:11	104:4 220:13
233:19	56:16 61:5 79:20	poor 102:13 145:18	possible 114:10	227:6 228:2
plan-to-plan 71:10	83:15 86:14	221:3,11 284:7	191:22 233:1	230:14 233:3,19
platforms 112:11	104:10,18 106:17	popularity 54:13	245:20 269:9	253:11,18 255:12
play 85:15 106:3	113:4 114:1,22	population 17:22	288:20 294:12	255:22 257:10
115:22 119:10	118:4,8,14 122:18	18:2,15,21 20:5	324:22 333:17	275:9 346:20
181:7 189:17	151:9 153:15	20:12 28:13 29:5	possibly 138:4	practicing 273:18
197:17 276:10	154:7,16 157:5	37:7 55:14 83:14	326:12	practitioner 257:15
344:19	159:10 166:21	136:9 173:14	post 48:21 95:12	practitioners 257:9
played 20:19	168:9 169:11	175:3,16,17,21	212:13	257:9 274:8
player 38:3	170:18,22 171:14	180:2 183:4	postcard 66:21	334:12
players 86:6	171:16 174:11	185:15,19,21	post-acute 100:1	pragmatically
197:15	176:22 180:18	186:12 189:7	post-marketing	127:5

pre 50:18	79:5 103:6 104:9	prior 31:20 72:20	251:22 253:7	236:19
precise 191:13	104:19 114:13	95:11 96:9 100:10	254:16,16 255:13	produce 71:22 72:2
205:10,16 230:7	179:5,17 277:7	138:8 220:19	255:14 256:12	producing 46:8
precisely 46:5	338:3	priori 346:1	258:22 259:17,19	71:9 205:15
110:11 204:11,20	presentations	priorities 86:22	266:21 329:18	product 49:14
precision 191:10	104:12 107:5	145:14	351:20 353:2,22	productive 97:22
223:16 224:3	115:12 124:1	prioritize 244:14	problems 41:14	professional
233:20	306:14	priority 145:11	43:19 69:20 80:7	106:16 157:4
precondition	presented 173:7	264:5	253:2 257:19	158:9
208:17	269:1 272:1	pristine 357:22	318:9,11,21	professionally
predict 250:2	292:20 309:3	private 111:9,12	procedural 310:1	159:1,11,12
predicting 227:5	presenting 219:21	privatization 86:8	procedure 58:8,21	professional's
predictive 330:10	president 21:5	111:7	188:9 263:9	40:13,18
predominantly	Presidents 216:12	pro 10:6,12,15	265:12 343:19	profile 45:7 95:17
51:21 270:20	presiding 1:10	20:21 24:2 133:13	procedures 48:5	95:17 118:9
preference 143:6	press 2:1 19:13	133:14,16,16	58:6,15 83:2 84:9	192:13 239:22
151:3 155:1 180:2	25:6 178:18 196:5	138:11 160:15	120:21 262:13,15	profusely 170:13
243:4 359:11	272:20 333:5	169:10 171:2,3,6	264:18,19 311:22	program 35:6
preferences 136:16	pressed 113:18	173:19 174:12	312:19 315:1	37:17 38:9 39:8
181:15 183:5	pressure 32:5	175:5 202:10	process 7:14 14:20	42:2 44:19 46:19
240:1,2,7 263:22	106:17 144:5	236:17 237:3,6,10	17:3 22:1 24:9,20	47:11 51:9 53:9
264:4 288:13	206:19,20	237:16 238:16	26:7,12,18,20	55:7 57:2,19
358:8,15	presumptions	239:4 245:7	27:5,6,7 28:3 29:1	63:17 64:7,8,10
preferential 233:7	186:6	265:20,20,22	30:11 31:6,19	64:12 65:11 76:14
preferred 298:2	pretty 56:15 78:5	324:12 327:7	32:4 34:17 38:4	117:7,10 155:11
pregnancy 167:22	78:14,17 186:18	328:6 329:1	38:13 46:10 62:1	165:12 226:1
preliminary 79:15	224:11 233:14	330:17 332:6	72:22 73:8 109:19	Programme 37:12
Premier 1:14	250:10 252:11	probably 15:19	110:12 135:3	programs 40:11
preoperative 45:14	253:15 271:8	16:6 32:10,12	142:13 144:6	128:10 293:20
48:16 58:19 60:21	272:5 295:11	57:15 108:21	146:1,21 147:3	341:19
109:9	311:8 356:8	115:7 118:13	154:5 159:14	progress 23:10
preoperatively	prevalence 310:15	121:12 144:22	166:14 168:16	146:13
45:1 95:3	prevalent 310:22	153:7 185:16	180:10,13 186:20	progressing 162:4
prep 126:9	previous 161:15	250:12 252:17	190:3 201:9,12,14	project 4:15 24:2
prepared 306:13	292:1 308:1	256:7 272:12	247:22 248:16,21	79:7 155:11,13,17
315:22	pre-notification	283:3 301:4	261:15 300:17	304:16 342:4
prescribed 264:18	66:19	302:14 304:20	355:20	projectors 363:1
343:20	pre-op 49:2 50:5	306:6 312:2	processes 27:1 30:3	projects 292:19
prescription	pre-surgical 95:17	317:19 320:4,8	30:4,7,16,17	304:7,12 357:1
123:17 197:14	primarily 83:19	321:13 324:4	143:13,18 223:10	PROM 8:21 9:16
prescriptive 18:17	117:11 119:18	326:2 332:4	225:9 229:17	10:12 11:4 26:16
present 1:11 9:10	primary 31:9 34:19	350:13,15 351:5	231:10,17 232:2	27:6,11 55:21
184:18 185:17	51:20 254:1	354:17,22	233:22 263:15	87:20,22 88:2
225:6 234:13	257:14 311:14,16	problem 31:15	processing 110:5	92:20 93:16
313:22	prime 127:15	181:4 182:6	process-generic	123:19 126:19
presentation 57:22	primer 139:12	187:16 249:7	236:20	127:7 130:14
59:19 63:6 64:3	principles 174:8	250:10,19 251:3	process-specific	138:4,11 140:17

141:10 151:7	340:13 341:22	238:9 283:9,19	provider-specific	publish 50:22
156:21 157:15	342:13 363:6	329:5	78:6,20 239:16	117:13
162:2 181:4	PROM-based	provider 44:14	provides 67:17	published 78:9
203:13,17 205:3	97:14	52:17 61:22 62:2	100:12 157:19	94:18 198:15
207:9 211:15,22	PROM-type 166:3	78:9 105:2 109:10	230:8	199:1 260:22
219:8 237:8	pronouncing	160:20 210:15	providing 44:14	publishing 46:15
281:19,20,21	137:14	211:14,16,17	109:5 143:10	pudding 226:10
284:17,17 289:10	proof 226:10,14	214:1 215:21	163:9 178:1	Puget 327:2
304:3,5 306:3	proper 11:14 87:5	216:2,21 217:8,10	182:10 203:20	pull 73:14 362:14
307:3 350:8,17	properly 87:9	217:17,19 218:10	220:18	362:17
351:3 360:17	101:5 166:1	220:2,11,18 221:1	proximity 119:20	pulled 92:13 208:3
prominent 116:5,6	properties 15:21	221:12 225:10	proxy 243:6,12	pump 362:18
324:5	18:10 127:18	230:21 239:17,21	PRO-based 11:3	purports 224:8
PROMIS 224:16	140:20 141:1	240:6 258:17	126:1,20 360:12	purpose 20:11
225:2	193:11 350:7	259:15 273:13	360:17	229:11 268:6
promise 348:22	354:9	286:16 287:17	PRO-PM 7:16 9:17	317:2 327:18
promote 30:7	property 42:8	289:21 290:2	11:3,9 36:11	335:10,13 344:3
86:22	proponent 38:2	294:20 295:17,20	126:21 127:7	359:6
promoting 273:8	proportion 185:8	309:13 320:10	140:10 214:22	purposes 14:13
PROMs 7:7 14:9	218:2 321:3	321:16 322:3	215:3 303:8 350:9	15:2 72:10 83:19
21:1 22:6 27:22	350:21	352:13	PRO-PMs 4:5,18	170:8 226:21
29:18 36:22 37:12	proposing 18:18	providers 31:9	5:11 7:8 11:12	229:1,9 233:5
52:15 56:13 59:1	proprietary 232:8	48:17 50:15 51:1	14:9,10 20:2	234:4 323:1
82:3 84:12,13,16	pros 4:11 7:8 11:12	51:4 55:11 60:20	21:17 281:7	push 142:4
84:19 85:5 86:11	104:2 137:5 157:2	61:6 100:10	299:19	pushback 171:19
87:1,5,18 88:15	159:13 179:12	109:15 111:9,12	psychological	pushing 85:5
89:3,10 90:5,12	236:2,3,14 249:2	130:13 132:6	224:15	134:11 352:4
92:12 93:9 94:17	326:20 327:14	152:22 160:20	psychometric 42:8	put 23:20 31:19
94:19 95:20 96:4	328:20,20,22	163:9 207:5,7	127:18 140:20	34:2 39:6 57:9
96:7,21 97:18	330:6,15 333:16	209:2,7 210:19,22	236:15,16 348:15	60:20 75:8 100:18
98:7 101:19 102:3	342:13	211:2,12 214:6,11	psychometrically	110:15 122:14
102:15 113:1,9	prospective 85:21	214:12,17 217:22	237:5 239:5	135:5,12 142:1
115:15,16,22	prostate 187:16	218:2 219:3 220:5	psychometrics	147:22 152:21
120:19 123:16	protect 272:6	220:6,8 221:2,4	171:17 208:16	169:3 192:7
124:20 127:14	protocol 66:17	234:21 247:12	PTSD 310:12	202:13 203:12
134:20 136:13	protocols 93:16	251:12 252:12	public 4:5,22 14:11	226:12 236:9
143:19 147:6	271:20	272:8,11 274:17	17:5 29:13 63:21	281:14 293:8
150:6 156:12	proven 149:11	284:4 286:11	64:5,7,8 71:16	300:14 316:4
160:15 161:10,16	provide 52:13,13	299:7 305:3	72:9,20 74:9	349:6 355:11
162:7 163:3,11,22	66:15 70:5,21	313:11 314:4,17	102:5 116:10	356:4 357:2 358:1
164:6,7,22 166:17	72:15 98:4 162:16	321:18	119:2 120:7 203:2	362:12,15
167:1,17 168:8,13	214:21 231:15	provider's 148:1	209:2 214:11	putting 29:2 42:18
205:1 207:11	233:3 261:22	160:18	219:5,20 221:13	194:17
223:12 280:2	262:5,5	provider-based	222:1 302:17	puzzle 39:21
297:5 302:19	provided 70:10	181:21	303:1	puzzled 334:17
312:14 313:22	128:15 129:14	provider-level	publicly 102:9	pyramid 223:11
333:16 335:20	133:1 222:11	208:7 211:22	111:5,6 220:1	P-R-O-C-E-E-D-...

6:1
p.m 202:4,5 281:2
 281:3 363:16

Q

QI 359:7,18
qualified 84:6 87:3
 246:15
qualitative 133:1
 301:7 345:12
quality 1:1,8 2:17
 2:25 5:12 6:4
 7:16 9:18 10:21
 14:11,15 28:16,17
 30:5 39:6 41:11
 41:17 51:13,15
 52:12 53:20 58:6
 58:9 63:20 64:11
 66:10 73:22 74:6
 74:16,17,21 75:1
 75:5,7,15,19 76:3
 83:22 88:6 94:12
 94:13 95:19 98:17
 103:10 109:14
 111:12 120:2
 122:22 134:5
 142:16 144:8
 145:18 146:14
 148:14 155:5
 161:6 163:9,17
 164:9 166:6
 169:19,21 170:1,2
 188:1 204:16
 205:18 218:21
 219:2 220:17,19
 220:20 221:9
 223:10 226:18
 229:17 234:4
 238:8 239:17
 240:13,13 241:5
 241:11 246:6
 247:20 248:14
 253:12 258:7
 265:22 283:18,20
 284:4,5,7,8 285:6
 286:13,15 287:15
 288:7 289:13

297:7,12 299:16
 299:20 301:17,20
 304:6,12,15,15
 305:9 306:2 323:1
 326:8 328:22
 329:12,16,22
 330:18 331:15,17
 336:9 339:8,11,13
 346:18 351:20,21
 352:2,4 354:12

quantification
 10:21

quantified 210:16
 258:2

quantity 142:15
 144:8

quarrel 263:14

quarter 218:17

quarterly 51:1

quarters 18:4
 218:18

que 316:22

querying 339:15

question 18:7 19:6
 22:4,8,12 23:13
 23:16,22 24:4,12
 25:6 26:3 27:2
 33:2 45:4 54:18
 58:11 59:20,21
 60:1 62:19 69:8
 69:11,13,16 77:2
 88:11 93:8 103:7
 103:9 105:15,17
 107:2,5 108:20
 115:13,14 120:1
 120:15 121:8
 173:12 178:18
 183:1,2 186:10
 193:18 195:17,21
 196:3,5,7,9,11,21
 201:1,3 207:14
 211:19 227:15
 230:1 236:22
 237:4 246:21
 259:5 261:8,11
 263:4,17 272:14
 272:18,20 273:7

275:1 276:8 277:1
 299:13,17 305:22
 307:15 308:7,15
 314:11 322:21
 323:8 333:5 334:2
 335:7,8,12,16,20
 336:4 357:6 358:4
 358:5,19

questionnaire 45:2
 48:2,20 49:3
 55:13,22 65:8
 109:9 223:1
 270:15 307:9

questionnaires
 44:21 45:5 46:8
 47:9 48:18 223:6
 254:22 271:10

questions 8:18
 16:20 17:10 22:10
 25:8,20 39:15
 60:19 63:6,7
 67:12,13,18,20,22
 68:7,22 69:4,19
 70:2 75:14 76:11
 76:19,21 87:13
 92:10 96:9 98:19
 99:10,12,18
 104:13 107:15
 115:8 178:4,9
 219:9 229:6 249:6
 256:22 257:1
 277:3,22 289:7
 299:3,11 317:3,12
 328:17 333:1,9
 334:22 344:5
 349:18,22

queue 349:21

queued 195:11

queuing 178:8

quick 17:17 39:11
 59:20 98:21 123:8
 139:7 363:13

quickly 46:18
 49:13 64:10 68:19
 140:19 219:5
 349:4

quiet 361:6

quit 177:6

quite 8:4 31:10
 38:22 47:10 49:12
 55:6 56:2,20
 81:13 83:16 88:21
 89:2,2,16 95:8
 96:4 98:8 100:17
 111:7 112:17
 125:1 132:8
 136:11 158:22
 195:3 302:8 319:6
 327:6,15

R

radical 246:3

radically 90:1

RADLEY 2:16

raise 258:2 263:4

raised 62:20 97:1
 133:9 135:14
 139:1 239:15
 246:21 264:7
 273:22

raising 132:14
 274:2

ran 43:3

RAND 67:21 99:15
 216:15 327:3

random 60:13
 65:20 175:8,15
 214:17

randomization
 198:5

randomize 332:4

randomized 131:9
 142:20 332:5

randomly 119:15
 269:15

range 43:4 46:6
 47:12 51:17 52:2
 53:16 56:1 78:21
 131:13 154:2
 185:20 210:17
 224:13,22 259:10
 348:11

ranges 52:3

rank 209:1

ranked 342:8

ranking 209:7

rapid 74:16

rapidly 86:6 111:7
 344:13

rare 213:21

rarely 176:15

rate 47:16,18 48:21
 54:17 55:16 56:18
 60:17 61:9 67:6
 69:12,14 93:21
 116:8 128:20
 153:10 318:19

rated 71:20

rates 41:9 48:10,12
 60:3,4,8

rating 71:18 72:2,3
 72:16,19,22 73:16
 74:5,8 115:21
 116:7,12,20
 181:12 232:16

ratings 74:15,20
 75:9 232:11
 239:20 271:11

ratio 191:15 193:1
 209:22 210:12
 295:1 297:15
 298:2 334:16
 337:5,12

rationale 41:20
 51:11 143:16

rationing 59:1

ratios 334:18
 337:10

RCT 149:12 151:17

RCTs 151:10

reach 16:17 194:9
 194:10 261:18
 289:12 296:3,4

reaching 106:10,21

react 180:8

reacted 353:11

reaction 24:8 165:5
 355:4

reactions 168:6

reactor 130:1
 192:2

reactors 178:1	153:12 154:9,18	302:22	reconvening 23:3	refreshment
read 16:8 169:4	158:22 164:6	reasonable 115:4	record 40:18 50:1,3	280:21
337:2,8	170:6,8 171:5,12	258:6 260:17	114:11 124:16,17	regard 115:19
reading 173:10	171:22 175:3	reasonably 114:15	202:4,5 261:21	136:4 320:11
ready 16:19 25:22	176:16,22 177:5	120:10 151:11	281:2,3 363:16	regarding 105:2
127:14 196:9	177:12,18 178:1	reasons 29:20	recorded 49:22	204:9 275:19
256:21 306:7	180:17 181:5	47:22 48:7 51:12	recorder 35:2	343:6
real 27:4 33:19	183:18 184:17	58:9 149:19	records 46:9 49:17	regards 126:1
78:22 80:3 151:12	190:9 193:7,21,22	159:11 183:18	50:17	208:2
199:13 226:17	194:5,7 201:8	272:9 276:5 310:2	recovery 100:5,12	Register 103:10
251:22 259:18	202:8 215:2	320:1 352:3	recruitment 244:12	registered 93:18
261:7 267:19,19	223:19 224:8	recall 11:14 124:22	red 17:18 19:12	registries 81:12,15
280:15 288:16	225:16 234:17	136:5 162:16	26:4 171:10	82:7,10,13,15,18
292:2,7 312:6	237:4 245:2	recap 4:10 124:19	redline 129:15	82:21 83:13 84:1
358:2	249:20 252:2	125:7	redlines 129:21	84:11,15 85:15
realistically 305:15	253:9 256:1,3,10	receive 73:6,7,8,10	134:3	86:1 87:4,16,22
reality 352:20	256:11 259:7	116:8 141:14	reduce 247:14	88:1,15,18,21
realize 85:8 181:18	264:5 266:9	278:17	263:2	89:2,12 90:4,21
318:12 338:2	271:13 274:3	received 17:5	reduced 214:2,15	91:7 92:15,22
355:3	285:11,14 287:9	129:14 130:6	297:3	93:11,12 98:5,7
realized 169:22	288:2 289:22	162:18 165:6	reducing 114:5	100:19 101:1
322:21	291:8,12 292:9,13	166:7	329:13	102:4,7 103:17,20
really 11:21 18:12	292:17 293:5,6,9	receives 279:3	redundancy 135:22	104:1 105:18
19:6 20:1,4,20	295:14,19 297:9	receiving 73:11	redundant 147:21	106:1 111:8 112:4
21:8 23:13 24:14	300:3 301:7,16	278:10 343:15	refer 10:3 11:14	112:6,10
24:20 28:15,22	302:5,6,8 303:15	351:5	203:13 217:5	registry 85:6 88:11
30:6,14 31:16	304:13,16,22	recipient 166:6	reference 242:20	88:20 92:16,18,19
32:2 33:18 36:10	305:7,9,10 308:7	recognition 12:4	referenced 241:21	93:15 94:20 96:3
36:18 37:17 39:8	309:14 311:4	recognize 12:18	246:1	96:6,7,11,21
39:22 41:17 43:18	313:9,12 318:7	30:6 156:8 159:9	references 217:5	100:16 102:1,16
44:4 49:13 54:19	319:4 321:6 322:4	245:18 278:11	referral 59:7	105:10 106:8
55:1 74:15 75:20	325:8 326:19	recognized 115:16	122:14	123:12 354:11
76:2 77:8,16	327:16 328:17	262:1	referrals 152:15	regrets 126:7
89:16 90:3 93:10	329:7 330:16	recognizing 33:9	153:1	Regrettably 126:5
100:3 103:8,17,19	336:8 338:15	166:8	referred 63:14	regulatory 104:22
104:6 107:16	341:22 343:18	recommend 164:9	215:19 216:16	171:21 183:21
115:1,3 116:10,16	345:2 346:4,15,18	336:17	referring 140:10	264:9 354:10
116:18 117:3	346:21 347:2,6,12	recommendation	refers 298:22	rehab 106:19
118:3 121:17	348:7 349:2 350:8	245:18 261:11	refine 130:4 139:15	288:15 290:16
123:4 124:1 125:8	350:10,16 352:8	recommendations	refinement 129:5	292:22 293:7
126:10 127:20	353:18,19 356:19	42:9,22 262:3	134:4 230:19	rehabilitation
128:2,5,7 129:4	360:3	recommended	reflect 183:5	100:2 292:14
129:21 136:12	realm 58:7	300:15	233:22 260:2	293:20
142:3 143:6,15	reason 41:19 143:4	recommending	reflected 231:11,22	reimbursement
144:6 146:3,7,12	143:10,11 148:21	7:15	232:3 299:8	100:7 105:9,13
146:15 148:7	176:5,7 223:4	reconvene 124:13	reflects 283:18	reinforce 291:1
149:13 150:4	230:6 269:4	280:22	refocus 286:8	reinforced 131:21

reinforces 245:7	205:9,11,13 206:3	244:22 255:10	reported 1:3 13:17	138:3,5
reinforcing 129:11	206:10 207:22	256:8	96:19 105:4	requires 239:17
131:7	208:6,10,14,16,20	rely 269:17	164:18 169:14	331:18 349:15
reintroduce 17:12	209:19,22 210:6	remains 186:13	182:12 220:1	requiring 260:4
relate 144:21 145:8	210:10,16 211:5,6	226:15	248:7 278:10	research 1:22 4:23
193:12	211:10 212:4	remark 201:5	309:10 361:14	42:4,17 54:2,7,14
related 4:13 8:15	213:5 214:1,5,9	remarks 7:21	reporters 238:22	54:20 64:14 76:18
46:14 68:22 69:4	214:10,14,20	164:4 201:19	243:8	82:18 83:19
70:17 141:18	215:9,14,20 216:2	202:12 306:13	reporting 4:5 14:11	103:21 115:11
145:10 164:20	216:19,22 217:1	remember 6:21 7:2	29:14 50:14 60:10	117:2 148:13
175:1 186:7 191:6	217:10,17,20,21	9:2 11:12 12:11	62:16 63:22 64:5	149:10 186:4
203:10 204:9	218:3 219:7,12,14	14:12 187:16	64:7,8 71:16 72:9	191:5 203:4
229:6 234:7	221:3,9,10,11	204:14 217:9	72:20 74:9 142:2	244:10,13 273:5
262:22 263:21	222:8,17,22	277:13 329:7	158:6 209:2	278:20 292:18
264:3 307:3	223:18 224:2	337:6	214:11 219:5,20	301:21 328:12
358:14	227:1,3,3,10,16	remind 10:2 15:5	221:13 249:5	345:12 357:12
relatedly 238:6	227:20 228:17	19:10 133:10	297:20	researchers 76:7
relates 125:18	229:1,20 230:3,6	reminded 32:7	reports 52:13	242:5,15,22
145:4,19 146:15	230:22 233:11,12	343:4	106:4 165:10	resemble 316:5
188:10 196:19	235:18,21 236:7	reminder 10:19	170:20 338:6	residential 279:2
204:22 235:19,21	237:3,6,8,13,17	14:7 66:21	repositories 83:16	residual 227:2,20
relation 360:13	238:1,8 240:4,13	reminders 31:12	represent 172:9,18	310:21
relationship 129:7	241:17 242:1,7	14:7 66:21	173:4,15 182:5,17	residuals 228:12,18
143:17 191:18	243:19,21 245:22	reminds 78:15	295:10,19 310:21	resilient 197:20
208:21 217:19	246:18 247:1,6,14	remiss 243:6	representation	resolves 250:11
221:8 222:7	247:15,15 248:8	remission 27:13	127:2	resource 52:1
225:12 235:13	254:16 255:14	294:7 298:8	representative 33:6	78:16 97:15
247:11 265:16	257:20 259:20	rendered 223:8	61:1	resources 97:16
266:7 281:11	260:7,11 261:7	repair 42:14 152:3	representatives	142:2
329:9	262:19 264:16,21	repeat 105:15	47:12	respect 184:22
relative 42:7 44:7	264:21 265:2,15	282:19 350:16	represented 89:4	222:10
52:5,21 54:9,11	265:18 266:8,17	repeatable 205:14	168:19 231:14	respected 161:5
105:4	267:1,7 268:8,17	repeated 173:22	represents 36:20	165:21
relatively 39:11	270:7,12,17	310:8	182:6,13,13,18	respond 21:7 67:2
41:2 57:2 130:21	281:11 282:18,22	replacement 41:15	192:10 193:9	67:7 120:17 183:1
329:10	285:19 287:4	42:13,13 54:11,12	299:2	184:14 273:20
relax 157:6	289:18 291:15	152:4	reproduced 47:14	278:18
relevant 147:7	307:4 345:6	replicate 45:17	require 33:18	responded 67:1
230:20	346:12,15 348:4	reply 192:2	142:19 206:10	respondents 69:11
reliability 4:18	reliable 61:4 63:18	report 10:6 11:19	207:15 260:15	69:14,16,21
7:12 8:15,20	206:21 207:1,12	15:8 17:7 56:4	283:14 362:5	130:22 133:4
15:22 18:12 20:8	216:6 224:5,9	141:17 142:8	363:5	134:22 135:9,20
78:19 83:15	239:11 244:7	145:5 158:5,12	required 64:21	136:1 138:1
125:11 141:2,8,11	251:8 256:14	206:8 216:15	110:14 238:19,21	respondent's 69:2
171:18 173:18,22	264:10 268:6	228:11 237:5	requirement 109:4	69:4,10
174:18 202:10,21	351:4	239:4,13 243:12	215:8	responders 185:9
203:10 204:2,9	reliably 243:11	271:17 318:4	requirements	responding 279:6
		363:12		

responds 348:11	retest 307:4 354:18	258:8 263:12	Rooney 2:17	192:6 261:2
response 10:9	return 47:16 108:1	265:21 266:2	187:11,11 189:15	sat 249:16
34:11 48:21 56:18	112:21 280:5	269:2,2,8,12	190:14 279:15,15	satisfaction 88:6
60:1,3,4,5,7,9,16	returned 47:2	272:12 273:11	340:6,6	93:22 106:4,10
61:11,14 62:11,13	revascularization	277:4,21 279:13	rotator 152:3	270:15,21,22
67:6 128:20 158:6	55:9	281:6 286:4	roughly 87:21	355:8,8
158:13,13 173:11	revealed 232:21	306:10 337:3,13	102:6	satisfactory 354:15
183:15 184:15	revenues 114:6	343:22 344:17,18	round 22:22 41:18	satisfied 181:1
185:15,20 193:7	reversal 316:3	344:18 345:19	51:13	savings 113:6
196:15,18,21	reverse 314:8	348:22 351:2	rounds 200:4	saw 133:1,11 319:7
198:6,16 199:4,5	review 17:3,6 20:19	354:22 355:10	routine 40:14 57:5	saying 20:1 51:11
199:10,12 200:18	64:10 176:16	356:13 362:12,12	routinely 40:21	118:12 128:16
277:6 278:22	198:4 258:5	362:13,16	49:19 53:5	152:15 221:17
339:19,22 359:14	350:14	rightly 241:14	row 287:6	248:3 309:1 328:2
responses 173:6	reviewing 174:6	right-hand 13:20	RTI 2:6 22:16	341:1 345:20
238:18 315:3	revising 146:1	49:7	202:15,22 282:6	353:14,20 354:7
responsibility	revision 54:17	rigid 231:10	rubber 233:16	354:13,14
46:15 105:22	revisions 70:19	rigorous 97:6	rules 275:19	says 10:11 16:11
106:12	71:8	ripped 150:5	run 177:14 341:11	79:8 199:16
responsible 105:3	reward 76:1	risk 62:1 269:17	running 121:15	scale 10:13 56:14
107:1 343:13	re-contacting	287:21 295:5	300:6	115:21 126:20
344:2	33:17	297:3 298:4	rural 344:11	140:18 141:10
responsive 123:14	re-framing 236:1	330:20 331:8	rushing 280:8	150:21 203:14
160:20 327:21	re-screened 310:18	332:5	RWJ 340:9 342:3	277:15,18 292:6,7
351:3 355:19	RG 100:18	risk-adjust 359:15		292:9 318:18,19
responsiveness	rheumatoid 93:14	RN 1:18 2:14,17,21	S	337:18 348:18
148:4 164:3 307:6	96:3 97:8 102:1	road 20:20 23:4,15	saddling 136:10	353:10
330:8 331:11	102:15 103:9	187:21 233:17	safer 120:7	scales 68:16,20
347:18 348:8	123:12	ROB 3:4	safety 72:9	70:5
rest 15:12 256:19	rich 125:5 128:11	robust 56:20	sake 21:4	scaling 150:22
restricted 354:9	188:14	Rochelle 320:14	salaries 111:14	scanning 46:8
result 51:5 79:17	RICHARD 1:14	Rogers 313:7	salary 112:19	scary 311:14
268:20	richness 63:1	role 85:16 102:4	Saliba 2:18 99:14	ScD 2:3
resulting 84:7	right 8:5,6,12	106:3 119:11	99:15	scenario 151:19
229:4	11:10 13:18 17:2	148:9,13 240:2	SALIVE 2:19	264:15
results 37:1 46:15	18:20 21:15 24:8	302:16 316:3	Sally 193:19 197:2	schematic 127:2
84:1 91:22 96:10	27:2 33:22 52:19	329:17 344:21	same/better/worse	scheme 43:16
97:13 102:14	73:5 74:18 75:11	roll 57:13 72:10	323:10,22	school 1:17 2:3 3:3
176:12 184:18	75:16 77:11,15	136:8 314:14,15	sample 20:13 30:1	4:21 203:2 222:1
185:18 205:15	80:9 87:16,19	rolled 43:17 265:6	65:21 66:21 67:18	295:2
215:20 218:16	99:13 100:7	355:22	71:3 78:18 211:17	science 64:13 76:8
219:21 232:22	113:14 154:17	rolling 308:2	216:5 219:22	170:12 228:22
233:21 238:3	170:12 182:17	317:22 339:1	228:5 239:20	233:10
265:3 268:7	199:22 200:2	room 1:8 178:3	334:6 336:4,6,21	scientific 15:15,20
273:12 285:10	203:8 215:11	191:1 243:1 248:5	sampling 65:8	36:5 81:14 120:10
323:15 324:4	221:17 235:16,17	248:11 250:8	San 1:23 178:22	140:22 225:14
resume 201:2	250:16 256:4	319:9 361:5	179:1,1 191:4	308:22 316:17

scientifically 81:1 97:6	324:6 348:20 355:8	71:7 78:17 79:1 80:8 87:21 92:15 92:22 96:13 101:22 102:10,10 106:8 113:19 117:3 119:18 125:16 141:16 144:7 146:8 147:10 166:9 167:18 176:15 178:16 187:7 188:2 201:4 202:1 210:9,19,21 211:15 221:11 229:3 230:5 234:22 235:1 240:11 242:17 248:5 253:17 257:6,14,15,16 260:6 265:15 272:13 275:18 283:10 284:4,11 292:4 304:18 311:3 313:1,6 314:20 321:17 331:1 332:6 343:2 353:2 355:16 357:21 363:1,13	segue 34:7 186:2 select 22:5 160:19 166:17,18 168:3 171:6 selected 159:12 202:16 269:15 309:10 selecting 4:10 124:20 161:10 164:22 167:1 168:12 169:10 selection 156:12 164:16 167:16 168:8,16 233:7 242:13 312:11,15 selects 28:18 self 162:20 258:2 self-defeating 31:19 self-report 213:3 semantic 191:9 semi-structured 301:8 send 126:7 sending 343:15 senior 21:5 38:6 109:18 301:22 sensations 158:3 sense 23:2 33:7 46:1 59:14 62:10 107:1 120:12 144:4 173:9 191:13 238:7 313:10 339:17 344:21 sensibilities 13:9 sensibility 234:11 234:16 sensitive 12:8,12,21 77:9 138:21 197:20 218:21 230:12 292:8 sensitivities 13:9 sensitivity 77:3,20 174:3 346:13 sent 48:20 55:14 125:3 127:2	128:15 357:20 separable 358:12 separate 92:8 158:2 166:12 240:4 346:16 separately 317:21 separates 336:19 SEPTEMBER 1:6 sera 316:22,22 series 68:7 301:6 336:18 357:16 serious 121:20 172:14 209:8 251:10 seriously 32:13 231:4 serves 65:10,17 service 40:5 134:8 143:11,12 231:6 services 1:25 2:9,15 76:18 109:5 156:7 164:2 165:6 203:20 220:18 263:2 326:22 328:12 serving 98:12 session 7:9 33:12 34:13 35:9,21 125:13 126:11 140:4 204:2 sessions 209:16 set 39:13 40:8 47:3 47:5 53:12 63:9 82:21 84:12 86:19 90:10 91:8 96:8 106:11 107:15 117:9 122:11 123:5 152:18 154:4 164:13 165:20 166:19 168:15 194:9 214:6,10 243:20 256:16 299:11 310:7 344:10 358:13 sets 62:21 167:9 323:6
score 11:8 50:19 141:6,13 172:5,9 172:17,19 173:1 179:13,15 180:5 180:21 182:2,3,4 182:10,13,18,18 183:3,4,7,8,12 184:2,5,9 185:12 186:11 188:10,13 189:9 191:17,18 192:8,10 193:8,8 193:13 194:19 198:22 204:4,6 205:16,20 206:16 207:3 210:7 212:17 214:14,22 237:7 252:21 254:1 255:6,7 265:14 269:21 283:17 284:15,17 290:3 291:2 292:13 293:3 294:11,13,15 297:15,20 303:9 306:1 317:22 318:1,2 319:11 320:18 324:14	scoring 196:17 317:20 318:13 323:11,22 Scotsman's 38:16 scratch 62:22 screen 16:7 screening 31:13 58:19 59:1 261:1 310:12 320:2 screens 56:10 screenshot 73:13 scribble 316:6 scribbled 169:4 scribbles 315:22 script 243:20 244:4 244:6 se 358:10 search 91:3 season 270:3 seats 127:4 281:5 361:19 Seattle 307:9 second 6:5 15:20 22:22,22 26:4 28:20 45:1 60:12 61:20 66:22 99:5 160:14 161:21 162:6 170:22 259:18 260:4 265:1 287:6 296:11 298:14 299:16 316:21 336:4 361:4 secondly 37:18 62:15 85:17 156:17 165:16 secretarial 273:16 section 208:5 217:7 241:13 358:6 see 6:9 13:21 16:5 17:1,18 22:21 23:4,9 25:22 35:18 43:7 49:9 51:20,22 54:1 57:10 59:3 62:8	71:7 78:17 79:1 80:8 87:21 92:15 92:22 96:13 101:22 102:10,10 106:8 113:19 117:3 119:18 125:16 141:16 144:7 146:8 147:10 166:9 167:18 176:15 178:16 187:7 188:2 201:4 202:1 210:9,19,21 211:15 221:11 229:3 230:5 234:22 235:1 240:11 242:17 248:5 253:17 257:6,14,15,16 260:6 265:15 272:13 275:18 283:10 284:4,11 292:4 304:18 311:3 313:1,6 314:20 321:17 331:1 332:6 343:2 353:2 355:16 357:21 363:1,13 seeing 26:22 70:16 75:17 77:17 79:10 79:16 98:9 100:1 114:5 122:12 183:6 187:17 271:3,17 314:17 seek 24:19 seeking 11:10 87:4 143:11 seen 21:17 53:8,12 54:8 75:5 86:11 86:16 88:13 89:11 95:7 96:11,19 97:10 99:19 102:2 106:18,22 111:15 111:19 122:19 313:19 337:13 segments 85:9 86:4 88:16		
scored 179:21 180:3,13 scores 50:5 59:7 62:4 103:11 118:9 118:10,12 122:20 173:3 179:12 183:10 187:1,4 188:6 192:12 199:9 203:17 209:4 220:2 240:6 244:22 252:8 284:5,6,7 291:14 291:16 299:15 309:11 317:21 321:3,12,18 322:15,19,20				

setting 4:2 104:8 159:7 167:2 171:21 174:10,19 185:6 198:9,10 236:19,19 273:4 279:7	show 16:6 93:8 101:5 191:17 263:19 showed 266:7 353:21 showing 47:17 shown 54:14 84:17 97:21 153:17 209:18 351:3 shows 13:13 28:6 47:1 52:18,18 73:13 74:19 78:11 90:10 shrinkage 241:9,20 shrinking 220:3,8 shrunk 221:5 shy 361:20 sick 257:17 sickest 60:5 side 13:20 46:7 49:7 55:1 109:21 214:8 276:19 278:4 344:8 352:16 sight 171:10 signal 79:16 80:3 207:6 215:18 223:14 228:1,4 231:22 272:17 signal-to-noise 191:15 193:1 207:4 signal-to-signal 210:12 significant 21:22 46:19 56:3 95:5 significantly 95:20 156:4 silence 7:4 similar 21:11 54:16 111:4 193:2 214:14 220:9 240:7 242:21 263:13 296:9 308:12 315:11 349:9 354:17 similarity 242:21	243:2 similarly 234:13 241:18 simple 114:10 simpler 329:4 simply 15:17 135:5 167:7 197:21 227:1 simulation 217:4 Singapore 92:17 single 10:13 182:22 183:2 191:11,19 191:19 192:18 193:15 single-item 203:14 Sir 226:8 sit 362:3,4 sites 355:12 sitting 162:13 167:17 319:8 situation 111:3 166:4 184:20 253:20 279:2 314:9 349:5 situations 245:12 249:19 263:7 six 26:10 sixties 226:4 size 20:13 30:1 43:22 211:16 216:5 217:8,10,19 220:9,11,15 228:5 268:14,18 336:5,6 336:21 sizes 78:18 220:1,6 334:6 skeptic 263:5 skeptical 107:20 263:4 skewed 321:17,19 skill 167:9 skip 90:9 slamming 261:1 sleep 23:19 slide 8:7 9:19 10:4 10:18 13:11 14:6 15:17 16:1 39:18	39:22 41:22 44:21 47:14 48:9,15 49:10,11 51:9 53:1 54:3 55:2 56:12 63:15 67:17 68:9 70:7 71:17 73:12,21 74:18 75:20 80:14,15 82:9 85:3 86:18 89:5 92:11 126:13 127:9 129:12 132:21 139:9 140:6,18 141:14 143:3 145:2,20 146:14,17 168:22 169:1 203:11 204:7 205:21 207:19 208:10 209:17 211:7 214:2,18 215:11 217:13,22 219:13 236:8 281:16 282:12 284:9 289:5,15 290:13 293:10 294:17 295:20 297:13 298:5 299:10,21 303:2,18 305:21 306:8 317:5,15 318:7 330:16 slides 39:7 80:8,12 80:18 93:7 147:14 161:15 214:19 215:19 306:13 315:22 316:4,5 slide's 318:13 slightly 48:12 49:4 203:5 362:14,17 slippage 86:9 Sloan 1:15 slow 114:15 153:10 slowly 189:21 small 34:10 35:2 42:10 65:11,13,13 112:1,18 167:3 199:6 219:22 267:5	smaller 43:6 214:16 221:2,4 smart 84:20 Smith 2:20 202:22 208:1,4 smokers 123:13 social 46:12 69:17 161:2,13 168:6,10 329:16 340:10 socialized 197:12 societal 114:1 societies 82:20 119:10 216:12 society 165:9 sociodemographic 68:7 sociodemographi... 227:8 socioeconomic 71:12 softer 55:1 softly 10:14 solve 257:19 solves 258:22 somebody 18:18 25:2,10 92:10 254:8 274:12 300:4 344:13 351:14 359:9 somebody's 296:22 someday 187:16 someone's 342:6 someplace 342:5 somewhat 57:19 186:13 245:5 260:12 358:12 son 158:16 sophisticated 224:1 302:9 sorry 22:15 101:13 105:14,16 157:2 221:17 257:3,4 265:22 318:11 350:3 353:5 sort 19:19,21 23:2 23:5,12 24:5 39:13 41:10 42:6
---	---	---	---	--

49:20 53:20 54:6 58:10,18 59:1 62:2 63:7 76:13 107:14,22 121:3 122:6 192:13 208:13,15 220:14 221:7 250:8 251:8 254:10,21 258:15 259:17,21 260:13 262:9,12,17 263:4 264:15 265:18 268:19 306:17,20 306:21 307:14 308:11,16,21 309:15 310:5,21 311:6 312:4,6,8 313:1,7,10 314:8 315:10 316:9,15 316:21 317:2 318:3 319:2 323:5 325:19 327:4,12 328:1 331:13 332:11 333:22 334:18 336:18,21 336:22 337:11 339:7 343:11,17 344:15 345:10 346:14 347:6 350:17 357:13 358:8	speak 17:11 24:11 139:17 147:18 166:2,3 222:7 315:7 speaker 191:6 202:20 speakers 25:22 107:4 108:9 306:15 speaking 12:6 197:2 speaks 133:20 165:18 303:20 special 6:12,21 143:8 237:4 363:5 specialist 82:19 119:10 specializations 157:11 specialty 59:8 specialty-focused 160:3 specific 8:16 9:11 20:5,11,12 22:3 37:2 39:15 51:16 52:8 88:10 111:21 141:7 159:1 183:19,19 193:14 231:10 241:22 282:14 328:15,16 328:17 353:9 specifically 8:19 10:1 19:4 34:16 63:8 69:18 70:2 76:19 98:4 99:10 102:21 136:21 141:2 164:11 204:5 206:2 235:12 261:20 specification 283:7 specifications 110:15 205:10 326:9 specifics 20:13 specified 204:11,21 206:12 264:22 283:11 332:18	specify 18:13 205:2 331:6 spectrum 150:1 spend 18:8 48:3 71:14 113:19 119:7 125:7 129:5 174:14 219:11 279:19 360:8 spending 77:12,15 149:3 361:9 spent 82:5 125:1 277:17 289:17 spine 92:16 splitting 318:5 spoke 94:19 132:12 302:7 spoken 47:11 sports 181:8 197:15 spot 243:12 spouse 166:5 springboard 125:9 spur 130:17 squeezing 240:19 stab 108:4 staff 3:12 23:17 43:12 111:15 112:5 113:17 125:3 128:12 273:17 360:19 361:20 staffed 112:10 stage 4:2 36:11 313:8 stages 131:12 175:6 254:3 297:10 staggering 113:13 stamping 264:1 stand 137:10 178:15 245:17 312:20 313:5 standard 45:7 50:13 66:17 244:1 269:11 271:13 303:6 standardization 91:16,18 93:5	136:19 204:19 275:7 standardize 136:8 136:17 standardized 88:8 188:18 275:19 standards 305:20 stands 178:12 star 71:17 72:2,16 74:5,14,20 232:16 stars 74:22 75:2,4 232:11 start 28:14 33:16 38:13 57:21 80:1 81:12 91:10,13 127:15 150:4 176:3 178:8,14 194:14 252:3 257:1 258:4 261:13 262:17 282:17 286:5 287:3 288:21 290:6,19 291:9 299:22 310:2 311:17,22 315:11 323:8 335:18 340:13 341:18 361:1 started 35:11 51:10 53:4,7 57:2 81:14 82:7 93:16 94:16 96:4 108:15 126:12 169:9 211:19 281:5 312:3,22 313:2 315:16 355:13 361:17 starting 8:7 17:20 17:22 54:1 56:8 57:10,13 58:3 157:5 200:13 209:20 starts 66:19 79:22 204:19 state 2:9 28:22 70:14 76:8 172:6 342:8	statement 136:20 137:10 353:8 statements 128:14 129:16,16 130:4 139:15 states 36:21 105:7 144:13 225:6 static 214:9 statistical 191:13 216:12 225:14 308:3 336:20 statistically 51:2 336:12 statistician 87:12 334:4 statistics 46:16 294:21 status 10:7 14:3 28:16 37:6 63:18 68:18 69:12 71:12 95:3 97:7 99:3 103:15 132:10 153:21 158:14 255:1 290:5 292:15 297:8 303:14 304:9 stay 100:20 124:8 257:10 360:18 stayed 321:2 staying 72:7 steering 206:5 Stefan 4:9 38:6 63:5 80:5,20 99:11 101:6 103:4 104:22 108:14 111:2 120:16 123:7 124:6 step 27:21,22 33:4 34:4 137:5 157:21 244:1 248:8 249:9 300:3,9 316:13 333:21 346:9 STEPHAN 1:19 steps 49:15 246:19 246:20 247:5,18 247:21 248:2,6 249:4,15 300:21
--	--	---	---	---

300:22 316:12,13	stringent 122:14	284:20	278:4 283:9	100:14 151:5
Steve 5:18 33:1,15	strong 38:1 44:18	submitted 338:5	299:14 326:14	189:1 251:1
118:18 120:14	81:9 85:5 95:2	357:19	supported 112:5	262:13,15 309:22
121:5 227:14	100:12 133:11	subsequent 216:3	135:1 136:2	surprising 89:1
306:10 315:19,21	152:5,9 237:15	subsequently	supporting 87:15	surprisingly
328:2 333:11	278:22	165:21	supports 134:8	150:12 221:2
355:1	strongest 300:2	sub-criteria 141:18	143:16	surrogates 165:22
Steven 282:8	struck 81:6	145:10	supposed 8:17	166:10
Steve's 341:14	structure 142:12	success 233:17	22:19 26:10	surveillance 262:9
stiff 319:19	144:6	261:13 263:11	257:11	262:18 264:8
stimulus 158:11	structured 36:22	successful 29:5	sure 6:15 13:7	survey 31:8 37:5
stitched 50:2	357:18	57:12	14:13 17:14 29:3	38:1,4 40:11
Stockholm 38:7	structures 143:18	succinctly 133:7	33:7 50:15 58:16	55:15 63:13,14,17
80:21 105:12	struggle 77:10	sufficient 30:1	60:18 80:16 81:8	64:16,18,22 65:1
165:11	struggled 343:9	208:17 233:20	82:2 83:21 84:22	65:4,7,16,19 66:3
stop 33:22 57:15	struggling 355:11	353:15	86:12 87:5 95:18	66:5,5,7,8,11,11
98:3,18 159:10	359:4	sufficiently 45:12	106:18 108:17	66:13,14,18,20,22
177:8,8,20 363:13	students 232:12	112:10 136:7	111:20 112:9	67:5,9,11,15,18
store 342:10	studied 234:3	229:12	114:9 116:3	67:19,21 68:2,9
stories 261:13	studies 54:5 64:15	suggest 121:10	118:21 119:8	70:7,11,13,16
263:11	85:22 151:11	274:14,16 340:10	123:22 139:10	116:4 119:14
story 181:3 306:22	199:7 325:5 327:9	suggested 61:2	170:17 171:19	125:3 128:16,19
307:1,2 325:16	352:19 357:12,19	206:14 211:3	178:10 182:8,17	130:7 139:13
strange 240:9	study 55:12 112:3	suggesting 73:2	184:2,12 186:18	278:19 300:17
strategic 86:22	250:16 273:5	262:9	188:17,21 190:12	surveyed 65:22
strategies 208:8	323:13,14,16,16	suggestion 23:22	191:21 193:6	surveying 311:17
215:16 216:7,17	327:3	24:10	264:3 270:15	surveys 21:10 88:3
217:4,14 218:5	stuff 16:13 20:14	suggestions 209:12	272:3 287:18	survival 89:13 90:8
246:14 321:10	117:19 137:15	suggests 201:12	302:10 319:20	93:21 94:15
strategy 147:11	341:11,12,13	320:10	320:2 323:7 335:1	survive 89:9
212:6 218:8,13,19	352:6,7 354:21	suicide 172:12,21	337:7,18 341:4	survives 89:15
219:6 241:10	styles 279:11	173:1,5	347:8 353:12	survivorship 55:12
283:1	stymied 58:5	suitable 14:15	356:6	Susan 196:12
stratification	subcategories	suited 151:21	surface 62:22	suspect 62:20
269:18 331:5	97:17	sum 214:3 257:22	surge 85:5	121:16 346:21
stratify 148:10	subcriteria 204:9	summarize 56:13	surgeon 325:12,17	sustain 163:19,20
152:7 359:16	subgroups 323:21	summarized 86:19	surgeons 95:15	Swede 81:13
stratifying 220:7	359:16	summarizing 49:12	152:1	Sweden 38:5,11
straw 16:5,14	subject 11:16	summary 68:17	surgery 42:14,15	81:16 82:7 86:7
streamline 138:14	198:17 209:22	70:6 75:21 189:19	43:21 47:21 48:5	86:21 88:19 90:11
streamlined 110:17	210:4 353:1	summative 186:22	85:1 86:10 95:4	96:6 98:5 111:4
Street 1:9	subjected 309:11	SUMMERS 2:21	95:11,12 100:13	114:14 119:1
Streiner 209:21	352:12	support 44:18	151:5,6 252:18,19	272:4 277:8,13
strength 154:13	subjective 97:8	95:15,21 96:15	288:18 324:22	Swedes 254:20
stretch 225:22	199:21 359:10	98:12 111:22	325:8 338:18	315:13
strict 190:16	subjects 244:10	134:10 214:22	351:15 357:1	Swedish 85:6 87:1
striking 81:7 98:22	submit 111:11,16	243:21 250:17	surgical 93:20 94:6	92:16 101:8,11

103:9	T	205:21 208:5	target 18:14 106:10	208:1
Swespine 92:16	table 19:12 35:3	217:7 229:21	106:22 167:21	teed 187:9
switch 73:19 80:18	46:22 128:4	240:1 246:13,15	173:14 194:18,19	telephone 2:15,22
82:8	149:21 154:9,10	248:1,3 249:1,2	218:2 230:10	25:7 67:3,8
swollen 103:13	167:18 237:14	286:6 287:10	232:7 243:12	178:19 196:6
symptom 14:4	257:2 259:3	293:22 294:18	261:19 350:18	272:21 333:6
154:21 155:3,6	326:17 347:17	301:1 302:15	targeted 159:22	tell 19:7 52:20
191:12,19 252:21	360:11,20 361:8	303:3 328:21	229:11 235:12	107:10 109:15,17
253:20 352:16	361:17,21 362:2,3	330:14 331:8	targeting 173:20	121:16 162:8
symptomatic	tables 360:10,19	340:22 359:18,21	targets 194:8	181:22 278:1
313:15	361:18	talked 136:6	task 6:18 167:8	291:12 293:7
symptoms 14:4	tack 306:18	137:21,22 179:11	206:1,13	356:10
68:5 88:5 99:2	tailored 34:18	179:18 205:7	tasks 6:20 7:13	telling 61:18
134:6 150:18	take 6:20 7:9,21	207:10 223:15,19	111:15	182:19 198:19
151:6 154:20	15:7 25:20 27:19	244:9 269:16	taught 295:3	tells 62:13 159:3
183:19 200:6,14	50:9 51:4 62:6,16	270:16 271:20	Tavernier 196:12	temptation 314:6
200:18 201:16	63:7 85:22 99:17	281:10 285:11,18	196:13	Ten 320:20
251:15 252:13	102:4 104:5 115:7	286:20 287:19	taxicab 31:4	tend 41:4 48:5
253:4 255:3	124:9,12 125:9,22	297:14 310:5	TAYLOR-CLA...	221:2 282:21
329:10,13	131:12 135:3,18	312:17 314:4	2:22	291:14 320:8
synopsis 139:7	152:17 155:7	339:6 345:7	teaching 171:17	tender 103:13
synthesis 129:9	174:1 177:13	351:20	team 87:15 106:2	tends 48:4 318:21
system 1:24 2:24	180:2 185:4	talking 11:22 15:22	106:19,19 111:16	tennis 197:17
3:10 31:5,9 32:14	191:17 196:9	18:8 20:4,10	113:2 127:22	tenor 158:20
71:18,19 72:19,20	250:9 251:1 252:9	33:16,17 34:16	129:10 133:7	tense 158:21,22
72:22 73:10 74:1	256:9,22 280:20	63:12 64:6 71:15	258:17 273:10	tension 159:21
74:4,6,9 86:5	281:5 287:1	73:18 126:17	teams 56:6,7 99:7	191:8,22
100:18 106:15	318:17 331:1	140:16,21 143:1	106:20 117:19	TEPs 300:6,6
108:22 110:21	341:4 355:3,5	143:19 147:2	118:5 340:18	term 109:4,6
112:20 113:4	358:20 360:20	155:15 157:15	tearing 319:10	169:13 170:4,5,7
116:5,13 162:8	361:21	167:2,3 170:13	tease 151:15	296:21 298:21
226:19 239:22	taken 9:12 13:17	171:1,21 177:8	technical 70:8,15	termed 239:21
257:7 258:19	13:22 53:22 65:21	180:20 191:7	226:22 355:6	265:5
279:22 280:3,4,6	94:5 95:10 96:5	192:6,8,11 193:13	356:14	terminology 9:20
312:18 315:11	112:13 198:11	194:14 211:20	technically 238:14	10:1 12:9 53:14
323:11 325:13	209:13 223:3	213:14 239:19	technique 94:6	126:15 177:7,19
systematic 91:1	231:4 317:18	240:18 249:18	241:21	345:21
144:7 175:14	319:20 320:3	255:15 276:11,15	techniques 93:20	terms 9:1,22 11:11
systematically	322:20 334:7	278:6 286:10	104:6 184:4	11:20 12:4,18
60:15 241:7 258:5	takes 109:16 198:6	287:20 288:2,10	228:10	28:12 32:11 33:19
284:22 300:15	288:20	288:22 289:18	technology 35:13	36:2,9 37:2 40:16
systems 31:17,22	talk 9:1 16:21 19:5	293:15 299:22	Ted 1:23 2:17 23:7	42:1 44:2,17
107:12 130:13	20:7 22:8 37:22	304:8 307:16	178:21,22 187:6	46:18 50:4 54:16
258:21 314:3,17	73:20 92:9 93:12	325:13 332:17	187:10,10,11	64:17 65:7 66:18
314:21 315:15,16	147:1 156:10	346:19 357:9	190:12 270:1	69:7,22 76:16,18
334:12	160:14 195:8	talks 138:11 179:7	279:15 343:5	79:20 83:1,15
	197:3 204:3	taps 303:12	tee 132:13 178:5	90:1 95:18 98:6

99:3 106:12 108:5 109:8 110:7 115:17 117:7 121:16 122:8 126:15 130:2 141:15 143:9 160:5 165:7 171:15 173:2 177:6 185:8,22 191:9 193:11 194:11 203:21 204:8 215:4 216:14 219:2,3 223:8,9 227:1 228:15 229:14 236:21 239:18 242:6 245:3 248:3 255:2 260:7 268:14 269:1,19 269:22 275:18 276:17 281:15 282:16 283:5 284:10 285:1 286:17 288:6 291:3 295:14 300:14 301:19,20 302:9 308:3 309:4 309:16 312:11 314:3 318:11 342:21 349:11 352:13 360:15	350:17 testimony 39:19 testing 116:15 139:5 141:4 173:22 174:12 197:10 205:13,19 206:2,15 207:15 214:21 215:14 216:14 260:4,9,15 262:11,16 268:8 282:16,18,18 283:3,14,15 284:11 285:9,14 285:17 299:12,13 300:11 301:7,9 302:18 303:1,8 304:22 305:14 321:9 326:13 348:9 350:16 356:3 tests 227:3 327:20 332:11 test-retest 223:18 238:1 Texas 2:11 Texas-MD 2:21 THA 94:18 thank 7:5,22 25:9 34:6 38:18 39:5 57:17 62:18 63:11 80:4,18 98:20 104:9,15 115:11 118:18 123:22 124:3,5,7,10 126:9 127:21 128:21 129:2 132:14 137:18 147:15 168:17 178:1 179:2 187:5 187:10 191:3 192:1 193:19 195:9 196:8 198:12 199:3 201:18,19,20 202:1 208:4 221:14 235:10,13 246:8 256:17	275:21 280:17 286:3,7 315:19 327:12 332:20 363:14 thanks 8:1 19:15 29:14 30:22 76:12 108:2 117:5 140:2 155:1 193:3 235:9 235:17 246:7 256:16 289:4 315:17 theme 130:11,18 135:8 235:20 238:11 316:11 themes 130:7 132:18 139:14 236:6 theoretical 304:1 306:21 theoretically 318:22 theory 217:3 303:21 348:16 therapeutic 90:10 309:17 therapists 288:19 therapy 106:20 310:19 344:17 thereof 310:9 348:4 thesis 94:18 they'd 45:21 346:7 thing 18:7 23:12,14 39:13 41:10 61:20 67:14 71:4 77:10 87:16 99:21 130:16 137:6 148:15 152:20 173:20 179:18 181:8 182:5,13,19 184:22 185:2 193:10 205:11 248:21 249:7 250:9 254:14 255:8 258:13 262:22 263:6 265:1,19 283:7 284:18 310:4	334:15,20 336:11 337:11 338:12,16 340:1 342:2 360:7 things 32:5 35:15 40:20 41:7,8 52:3 53:16 55:1,19 68:21 72:6 81:6 112:22 123:5 131:15,16 134:5 135:18 136:16 137:21,22 139:4 140:12 144:20 147:9 149:3,6,9 152:14 155:10 158:6,8 170:19,20 172:4 173:15 177:4 182:17 186:9 189:3 190:15 192:7,15 193:1 194:3 197:13 206:9 207:18 222:13 223:17 224:1 237:19 242:14,17 246:11 248:15 249:4,16 250:6,7 251:12 253:13,17 254:11 255:1 265:3,4 276:19 280:11 282:14 290:15 311:14 312:9,21 313:21 315:17 316:6,20 321:8,11 322:17 324:14 329:11,14 329:16,21 330:7 331:20,21 333:10 333:19 338:7,13 341:19 347:16 349:3 352:14 356:19 358:14 think 8:4 9:5,8 10:2 11:18 12:3,11,16 12:17 15:1,5,19 16:15,19 17:4,19 18:2 19:6,19 20:5 20:17 21:1,8,9,20	21:22 22:3,4,8 23:7,21,22 24:4,6 24:21 26:12 28:15 29:16 30:11,17,18 31:15 32:1,3,16 33:4 35:22 36:7 36:15,17 37:19 39:10,12 40:4,8 40:12,17 43:15 44:3,11 46:19 47:4,4 48:8 50:16 51:19 53:3,7,11 53:21 54:12,14,19 56:13 57:1,8,12 57:14,18,20 58:5 58:10,17,17 59:2 60:18 61:12,20 62:11,18,21 63:2 76:10 77:10 78:1 78:7,22 79:19 80:3 89:19 90:4 98:9 99:16,21 100:4,16,21 101:16,22 102:6 103:8,19 104:4,11 108:16,20 109:13 110:1,6,8,19,20 110:22 114:6,8,18 115:1,4,7 117:6,9 117:15 118:3,7,11 118:17 119:4,5,10 120:6,15,21 121:8 121:11,14,21 122:6,15,18 123:5 123:14,18 126:22 127:6,15,17 128:6 128:9,22 129:6,8 130:10,17 131:17 132:2,15 133:9,13 133:15,20 134:1,4 134:7,13,22 136:14 137:6,20 139:2,3 143:7,22 144:21 145:3 146:21,22 147:5 147:13,19 148:2 148:14,18 149:19
---	---	--	---	---

149:21 151:13,18 154:1 155:7 160:2 160:10 161:17 162:11 163:6 164:11 165:15 167:17 168:1,9 169:7 171:6,9 173:2 174:7 176:20 177:5,17 177:19 179:16,20 179:22 180:17,18 181:14 182:6 183:17 184:16,17 186:21 187:4,4 189:15,20 190:9 191:1,7 192:3,14 192:20 193:22 194:14 195:2,7,22 196:20 197:22 199:1,12,18 201:1 205:9 207:12 208:14,19 212:2 215:6 222:2,12 223:3 225:7 227:19 230:1,2,5 233:7,9 234:6,10 234:16 235:4 236:6,17,17 237:11 238:14,15 240:8 243:14 244:16,18 245:4 245:11 246:6,14 246:21 247:14,17 247:19 248:15 249:13,20,21 254:13,17,20 255:13 256:2,11 256:11 257:12,20 258:12,16 259:2,8 259:12,16,18 260:3,5 261:8,11 262:4 263:3,14,19 264:3,8 266:8,12 266:20 270:19,20 272:1,2,4 274:1 276:13,19 277:5 278:8 279:8 280:7	280:9,15 283:1 285:10 286:1,17 287:15,20 290:21 295:7,8 296:10 297:7,11 300:3,9 301:16 302:14,16 304:20,21 305:13 305:14,17 306:3,5 306:8,14 307:22 308:6,10,13,20 309:3,6,17,21 311:12,20 312:12 312:13,17,21 313:16,17,19,22 314:13,13 315:4,7 315:11,15 316:13 317:10 320:1,19 321:10,13 323:7 324:10 325:4,14 330:18,20,21 331:4,7,14,15,22 332:10,19 334:18 335:6,13,19 336:5 336:14,19 337:1,3 337:11,21 338:12 340:3 341:14 342:2,13,20 343:8 344:4 345:2,9 346:10,16 347:2 347:10,18 348:6 348:20 349:8 350:11,14 351:10 351:12,22,22 352:10,18 353:17 353:20 354:1,4,5 354:6 355:5 356:1 356:5,11,13,17 thinking 9:14 18:4 23:6 27:20 104:18 104:19 161:11 187:13 192:11 194:6 197:1 209:21 210:10 246:18 265:19 270:2 285:16 286:14 287:14 316:3,7 317:19,20	330:9 337:9 339:8 339:10,15 340:2,7 341:21 345:4 350:5 359:2 360:14 thinks 288:17 third 156:18 160:2 161:14 166:14 171:16 296:19 316:21 334:15 Thirdly 86:5 thoroughly 82:1 thought 23:2 87:8 107:4 117:10 130:4 135:21 169:2 177:1 201:7 225:20 226:5 246:17 249:17 251:6 290:15 301:20 306:20 309:12 312:10 337:9 360:8 362:6 thoughts 35:4 264:17 thought-provoking 178:2 threat 209:8 243:17 threats 270:17 302:15 three 35:10 36:20 45:9 62:21 75:2 78:21 107:4 140:21 156:15,15 166:9 179:7,10 188:5 248:14 271:22 305:6 307:10 308:14 310:17 333:10 threshold 211:4 212:3,22 213:5,13 213:16,18 217:21 232:7 290:8 294:5 294:8,16 296:8,20 297:2,3 299:4,9 335:4 347:1 358:22	thresholds 164:13 297:6,10 thrombolysis 344:10,14 throw 189:22 358:8 throwing 190:3 tidy 316:19 317:2 tied 32:14 tight 309:4 till 19:13 362:22 Tim 340:6 time 12:9 13:13 16:10,21 18:8 22:13 23:14 25:5 25:7 26:21 29:9 32:6 35:2 40:12 41:5 43:22 44:1,3 44:12,16,22 47:20 48:3,6,15 49:10 53:2 65:14 69:7 69:22 77:12,15 83:20 89:10 94:15 96:14,17 98:16 100:18 103:12 109:17 110:9,22 112:1,19,19 113:18,19 114:16 119:8 121:15 122:16 123:1 124:11 125:2,7 126:19 127:15 128:7 129:1,5,21 130:21 131:18 136:6 139:15 149:3 150:8 153:15 165:19,21 168:7,9,18 178:17 180:1 186:9,15 196:4 197:5,6,7 197:20 199:8,9,10 199:22 200:6,17 201:3 206:14 215:15 218:14,17 219:12 223:7 226:20 235:22 238:2,2,3,6 244:9 245:14 246:1	248:10 253:19 254:9 258:15 259:11 263:20 272:19 277:2 282:6 285:12,13 289:18 290:9,10 290:18,22 298:3 310:8,16 315:7 322:14,18 331:3 332:20,22 333:4 337:17 338:17 343:6,10,20 344:12,18 346:13 346:21 347:5 350:1 355:20 timely 165:14 times 167:6 247:15 290:17 331:19 339:18 time-to 344:9 timing 238:9 TINETTI 2:23 title 80:15 TNF-alpha 123:14 today 6:10,20 7:11 13:22 22:9 34:22 63:12 64:11 82:9 100:7 102:9 126:7 129:4 137:11 155:15 159:21 160:17 164:6 165:11 170:14 176:6 178:11 209:16 211:20 218:7 221:20 222:6 245:17 255:16 270:4 287:10 310:5 329:6 337:1 357:9 363:9 told 325:16 tolerable 164:14 tolerance 154:22 Tom 274:22 tomorrow 25:17 281:8 287:20 302:14 331:9
---	---	---	---	---

360:15 362:22 tongue-twister 137:18 tons 263:19 tool 10:16 18:10 58:19 83:6,11 84:12 86:2,11,17 95:21 96:15 98:13 98:13 119:7 122:4 127:5 278:13 346:19 357:4,7,22 tools 14:9 18:5 88:8 88:8 261:21 top 17:18 26:5 86:22 171:10 231:2 241:10 topic 72:5,6 92:8 169:6,8 171:20 245:17 304:7 topical 138:16 topics 244:14 top-down 258:10 Torda 2:25 29:15 29:15 201:7 total 54:11 210:1 totally 279:21 touch 56:9 110:2 126:14 133:22 213:11 322:6 touched 132:3 336:6 346:11 town 167:4 to-you 189:13 track 22:17 40:17 169:14 253:9 261:21 tract 150:18 tractable 311:13 312:2 traction 121:19 tradeoffs 336:14 tradition 238:13 traditional 82:3 275:6 287:14 341:16 traditionally 280:10 314:9	trained 81:1 training 80:21 176:8,13 trajectory 199:12 transcend 160:11 transfer 344:13 transfers 41:9 343:8 transformation 83:8 224:16 translates 151:11 translating 95:14 transmit 239:12 transparency 93:3 146:4 treat 84:21 86:12 89:9 152:13,22,22 153:1 154:11 252:3,15 treated 72:21 215:3 treating 106:2 115:3 255:18 258:21 treatment 55:17 85:1,7,18 86:3 95:16 97:3 98:1 105:20 132:11 133:19 156:8 188:6,19,21 267:6 267:10 329:19 359:8 treatments 89:16 310:20 329:11 treats 249:22 trial 55:8 174:7,9 185:5 198:3 267:13,14,17 268:7,9,11 269:5 309:10 353:21 trials 142:20 153:13 267:4,20 269:16 307:10 351:12 353:1 354:10 tricky 43:18 tried 107:16 128:13 134:2	tries 13:14 183:7 336:21 triggered 353:8 tripping 9:21 trivial 109:15 trouble 9:21 250:5 253:21 true 80:10 128:8 174:22 210:4 211:1,11 239:14 266:14 299:2 324:4 337:1 truly 228:19 229:16 241:2,18 trust 4:18 5:10 236:5 238:16,18 238:20,21 239:2 240:16 241:2,12 307:16,17,19 trustable 186:19 trusts 60:2 trustworthiness 245:8 trustworthy 241:1 try 10:2 13:10 39:22 56:11 95:15 118:9 121:12 124:12 152:14 153:1 172:20 179:14 180:1 trying 40:3 58:6 74:15 85:20 108:22 116:9 127:4 137:20 150:5 154:4 155:5 155:13 167:4,15 173:3,10 189:8 216:4 259:16 266:15 288:6 292:22 327:4 329:11 330:5 333:18 337:5 341:5 355:14 TUESDAY 1:6 turkey 189:10 turn 7:19 35:5 76:10 86:1 123:13	147:14 253:17 286:1,5 289:2 306:9 346:22 turned 247:8 251:18,18 326:4 turning 46:9 94:5 118:14 turns 95:20 119:16 271:12 325:20 355:13 tweaked 15:2 77:18 twice 322:12 Twitter 168:10 two 14:12 28:6 37:8 44:22 59:20 61:12 62:11 67:2 68:10 68:17,22 70:6 73:9 78:18,21 82:12 93:7,12 98:21 112:16 113:20 115:7 153:8 156:11 158:2 161:17 164:5 166:15 187:19 192:4,14 210:3 215:16 216:7,9 217:14 218:9,18 222:9 235:11 246:11,19 246:19 247:5,6,21 248:2,6,9 258:20 259:5 263:10,15 264:17 281:8 289:22 291:11 305:5 307:10 308:13 310:17 316:12,13 317:18 333:9 345:17 354:6 two-level 215:17 type 128:10 164:2 212:19 227:16 236:16 240:4 279:2 297:17 341:11 349:15 types 9:9,12 13:21 44:7 68:21 87:18	154:2 174:21 209:2 243:1 276:1 278:19 279:10 typical 123:19 189:12 typically 102:12,18 typing 137:15 typo 328:7 T-A-B-L-E 4:1 <hr/> U <hr/> UCLA 2:18 99:15 UCLA/RAND 300:18 UK 4:8 114:14 ultimately 9:3 14:14 16:16 17:6 27:19 33:5 93:4 226:17 UMA 2:4 unable 94:11 Unaccountable 325:12 UNC 251:19 unclear 292:11 uncommon 89:10 undergoing 120:20 undergone 224:15 underlying 157:1 186:20 219:7 336:22 345:22 underpinnings 62:5 understand 12:14 16:12 24:17 35:9 61:18 80:5 85:7 85:13 87:14 120:11 148:11 155:13 157:9 162:22 167:20 176:17 177:13 182:22 185:14,20 189:8 190:10 232:20 248:4 269:10 326:6 345:20 348:10,17 356:7,16
---	--	---	---	--

understandable 175:20 345:19
understanding 7:7
 12:17 13:8 31:21
 31:21 85:19
 167:13 180:22
 194:7 195:4
 196:21 230:8
 262:6 266:9
 339:12,20
understood 30:19
 101:11 110:10,11
 262:1
underway 55:9
unfortunately 51:5
unicompartmental
 54:10
unicondylar 54:10
 54:13,17
unions 279:18
unique 9:10,11
 56:15 83:16 88:9
 237:1 299:17
 326:15 360:12,16
uniquely 361:12
unit 50:11,20 65:8
 110:8,12 258:16
 273:11 274:2,16
 298:18
United 36:21 225:6
 341:9
units 43:5,7 44:8
 291:5,5 292:16
 296:15 337:15
universally 135:11
universe 275:10
 358:9
University 1:12,17
 1:23 2:1,3,11,21
 3:4 4:2,15,21 6:8
 17:16 59:18 77:1
 79:4 103:5 203:2
unmeasurable
 359:13
uno 259:17
unpredictable
 255:5

unreliability
 247:13 256:2
 327:19
unreliable 322:10
unwanted 244:3
un-patient 279:21
up-shift 313:1
urgency 33:8
 150:18
urinary 150:17
urologist 150:17
urologists 188:5
usability 15:16
 36:10 107:8
 145:19 219:1
use 4:11 9:17 10:14
 12:1,8 14:10
 15:16 18:11 20:15
 22:3 29:13 30:6
 36:21 38:9 39:21
 51:18 52:20 56:1
 57:4,6 58:22
 59:11 63:20 66:11
 66:14 71:15 74:9
 76:5,17 77:6
 78:16 80:14 82:4
 84:12 87:1,22
 88:1 90:12 93:1
 97:22 99:17 104:2
 104:20 106:1
 115:14 116:20
 117:8 124:20
 125:8 126:16
 145:17,19 146:6,8
 146:10 157:22
 162:20 163:11
 168:6 170:20
 171:3,15 172:7
 174:16 175:1
 177:7,15,16 181:9
 191:8 219:1
 220:22 224:12
 225:4,22 226:16
 236:3,21 238:17
 259:11 262:11
 267:2,12 268:6,18
 268:19 271:7

280:14 295:3,4
 307:8 308:18
 309:1 312:18
 324:12 327:11
 328:6,21 330:15
 338:22 353:4
 359:3
useful 119:7,12
 132:8 162:8,19
 163:11 166:4
 167:21 170:20
 177:18 216:3
 234:16 236:17
 306:22 322:22
 330:11 333:21
usefulness 161:15
 234:12
users 130:12
uses 37:6 44:17
 57:9 64:4 75:21
 221:14 312:13
usual 69:6 330:7
usually 192:20
 240:10,11
utility 79:14 327:5
UTIs 32:11
U.S 100:22 106:13
 113:3,10 277:15

V

VA 99:15 121:6
 260:22 261:2
 310:13 311:15
 355:9
vacations 129:3
valid 63:18 71:10
 122:3 207:12
 224:10 264:10
 267:9 282:2 284:3
 303:16 351:4
validate 330:5
validated 91:12
 159:2 177:9,15
 357:7
validating 330:15
 330:17
validation 32:4

87:8,14 177:13
 325:5 327:11
validity 5:11 7:12
 8:15,21 16:1
 18:11 83:19 84:6
 125:11 131:15
 141:3,9,12 173:16
 174:12,14 175:7
 176:21,22 182:7
 204:2 206:4,10
 208:18,22 209:8
 209:15 221:10
 222:8,17,22 224:6
 225:15,18 226:15
 229:3,20 230:3,9
 230:15,16,22
 233:13,16 234:7,8
 234:9,9 235:5,12
 243:10,18 254:16
 255:16 257:21
 259:21 260:7
 261:7 262:20
 266:8,16,22 268:8
 269:13,20 281:7
 281:10,11,21
 282:17,22 283:6
 283:13,14,15
 284:11,13,20
 285:1,4,11,18
 286:7 287:4
 289:13,18 299:12
 299:13,14,19
 300:1,1,11,16,22
 301:6 302:15,18
 303:4,20 304:22
 305:2,2,11,14,15
 305:18 306:1,2,4
 307:5 321:9
 326:13 327:7,17
 327:20 328:19
 330:7,8,10,11,19
 331:10 339:5,16
 340:2 345:6,10,11
 346:6,12,15 348:1
 348:7,22 349:7,8
 349:13,16 358:6
 358:10,16

validly 175:3
valuable 29:13
value 27:11 59:4
 113:5 115:16,17
 117:3 131:2 144:5
 149:7 206:21
 211:13 220:4,4
 236:3 240:19
 284:17 294:5,9
 296:7,8,20 297:16
 339:16
valued 144:15
 163:7
values 203:17
 221:5 227:21,22
 248:19
value-based 81:22
vantage 225:14
variability 79:9
 174:21 197:3,6
 210:1,1,4,4
 213:15,17,22
 232:3 233:21
 243:17 263:1,3,5
 263:18 264:2
 265:3,9 266:13
 268:12 299:5
 311:11
variable 239:9
 241:22 295:5
variables 71:11
 120:3 240:7 241:8
 279:5 329:20
 330:3
variance 78:6,19
 259:13 262:14
variation 77:13,14
 77:19 78:17 93:2
 175:8,15,22
 210:19,21 211:14
 235:19,19 244:2,3
 259:14 270:6
 273:19 275:7
varicose 42:13 48:2
 48:11 49:5 60:17
 61:8
varies 241:7 270:3

variety 57:8 279:4	261:17	21:7 22:5 23:10	93:7 98:3 107:3	181:9,15 182:14
various 42:21	viewpoint 40:10	25:18 28:7,14	129:21 137:7	183:11 186:3
104:7 165:19	288:12	29:3 32:21,22	139:9,12 141:8	190:2 192:13
278:14,18 289:9	viewpoints 168:15	33:3,5,8 34:6	156:14 170:17	196:22 203:18
300:13 317:16	violation 13:8	58:12 59:2 63:9	179:2 184:14	209:21 210:9
vary 167:1 175:3	320:15	67:14 68:14 71:7	186:3 201:11	219:9 220:14
194:16 291:3	VIP 325:19	89:19 91:9,10	206:4 208:12	240:15 241:3
vein 42:13 49:5	virtually 178:8	99:21 100:4 116:1	213:10 221:6	244:16 245:20
60:17	visibly 96:11	117:19 119:18	248:11 249:3	248:17 249:11,21
veins 48:2,11 61:8	vision 99:6	120:5 125:12	258:1 291:1	251:10 252:20
vendor 66:11,12	visit 96:18 162:13	126:9 134:7,8	293:13 294:6,18	260:1,19 263:10
276:10	254:2	135:16 136:15	296:21 298:6	271:2,12,15 272:6
vendors 66:8,15,16	visiting 96:9	138:14 142:1,18	302:10 319:20	290:15 294:9
276:7	visual 21:19 216:21	144:6 146:8,12	334:20 343:12	296:5 303:18
vernacular 12:15	236:8	147:10,21,22	353:6 358:8	304:1,17 312:2
versa 284:8	visual-analog	149:9 152:21	wanting 138:17	314:15 330:9
version 67:19	318:18	153:15 155:5	wants 25:2,10,15	334:17 335:5
127:3 318:16	vocabulary 8:3	158:18 160:14	72:12 276:22	337:11 339:1,21
versus 26:8 27:10	12:12	161:17 162:10	343:2 346:2	341:9 342:14,15
103:21 140:10	voice 130:9 165:16	163:2 164:4 175:4	Ware's 323:16	347:20 354:15
186:12 194:18	165:17 166:9	178:5,6,9 183:22	wash 270:8	357:18 358:14
196:17 233:6	167:13 168:14	184:1 186:15	Washington 1:9	ways 28:6 58:2
281:19 284:7	245:6 287:11	187:21 188:1,3,4	wasn't 17:19 26:6	61:12 85:19 86:12
336:20	288:3 289:1	188:7,10,16,17	26:15,22 58:8	115:15 151:1
veteran 35:17	359:11 360:2	189:5,16 190:20	136:11 225:21	167:5,12 168:2,6
Veterans 1:19 5:18	volume 50:17	192:15,16,22	325:21 342:10	175:2 180:18
67:21 282:9	56:18 220:11,15	193:1 194:8,18	Wasson 3:3 33:13	185:13 196:16
vetted 14:21	220:16,17,22	195:12 200:10,10	276:2 311:19	241:16 242:8
VF-14 357:5	volumes 47:1	200:11,12 209:11	353:6	257:20 271:21
vice 21:5 284:8	voluntary 47:7	218:4 220:22	waste 279:21	296:2 300:15
victory 38:17	volunteered 19:2	244:8 247:21	312:18	308:11 313:21
video 342:4	VR 79:11,15	251:7 252:7,7,19	watchful 151:2	315:3 317:18
videotapes 187:17	vulnerable 212:19	253:9,16 260:6	wavy 240:9	324:11 337:19
view 40:13,19	214:17 221:3	264:1 267:2	way 11:14 12:6	338:8 344:15
43:11 53:1,22		268:12 272:17	13:6,6 15:2 20:9	weak 153:7,18,19
54:15,19 56:17	W	278:1 283:7,15	21:22 30:17 31:4	weakly 153:6,19
57:12 83:15 85:10	wait 173:17 248:4	285:9 287:17	34:7 36:22 38:15	weakness 285:1
89:19 97:1 105:22	waiting 151:2	299:22 301:3,11	50:13 52:15 56:3	weaknesses 79:9
106:17 113:4	162:13 248:5,10	306:11 307:19	58:3 59:3 84:3	wealth 40:12 64:14
114:1 131:2	248:10	311:3 312:7 322:5	87:6 90:7 91:1,19	web 293:8
154:20 200:3	walk 158:15 306:19	328:6 335:17	97:11 99:12,13	WEBER 3:21
222:16 233:16	307:1	337:22 342:16	110:3 118:22	website 73:13
234:15 235:3	walked 308:1 309:6	346:5 349:6 350:3	119:12 120:8	117:13 342:3
242:18 285:3	walls 134:12	351:9 356:19	121:20 157:7	websites 72:12
300:8 355:5	want 6:11,20 8:9	362:12 363:6	160:2 162:21	web-based 114:12
359:21	9:3,15 10:3 16:4	wanted 23:20 28:11	164:17 168:11,14	WEECH-MALD...
viewed 119:19	16:21 18:11,17	28:20 79:17 88:13	176:11,19 181:2,7	3:4

weed 325:7	9:15,22 11:21	304:8 305:4 306:6	wide 11:16 78:17	55:6 56:21 61:2
week 27:3,16 32:12	12:15 14:22 15:22	307:16 311:17	220:5 241:5	61:13 62:12 69:6
70:15 172:11	16:3,19 17:2,21	314:8,12 315:7	273:19 275:7	69:22 79:12,16
weeks 250:12	20:6 25:16 27:19	316:14 317:10,19	279:4	109:11 117:1
weigh 25:3 212:7	29:8 32:7,9 34:9	321:9,15,16	widely 14:21	118:8 121:9
weight 68:5 73:6,8	36:7 37:10 39:14	326:19 327:12,12	168:11 262:20	127:22 155:14
73:9,10,11	40:1,3 54:1 55:19	328:5,5,10,14,19	wider 56:1 76:15	158:15 164:6
weighted 73:1	55:21 56:19 57:9	329:11 330:5,6,19	widespread 305:18	190:8,19 219:6
weighting 182:16	57:13 60:21,22	332:15,17 340:16	WILKINSON 3:6	234:20 239:11
welcome 4:2 6:4,10	61:21 64:9 71:6	340:18 341:5	WILLIAMSON	245:13 246:20
6:12 124:8 132:3	77:10,12,15 79:1	346:19 347:2,8	3:22	251:20 252:15
134:3,21 178:13	79:10 80:11,16	348:17 349:2	willing 33:20	253:11 256:7
202:7	89:16 90:2 98:9	351:12,17 354:4	252:14	260:18 274:19
well-being 69:14	98:22 107:17	355:20 356:9,18	Wilson 329:8	279:16 295:7
well-defined	108:8 116:9	360:15,18 361:9	window 218:14	304:16 307:15,20
204:11 268:5	121:18 123:2	362:21	Wisconsin 4:15	314:10,11,13
well-equipped	124:9 125:6,19	we've 19:17 21:13	340:9	340:9,17,19 341:8
87:15	126:14,17 127:1,4	21:16 23:4 28:21	Wisconsin-Madi...	357:5 361:15
well-validated	127:7 128:3,19	36:17 40:8,12,17	1:13 4:3 6:8	worked 81:1,4
357:4	129:4 130:22	44:12 46:21 47:2	withholding 359:22	341:5
went 124:16,16	131:11,14 132:20	47:13,20 54:7	within-provider	working 7:12 24:18
202:4,4 265:13	139:16 140:10,16	55:4 56:18 60:20	213:15	149:3 153:2
281:2,2 301:22	140:20 141:10	61:2 62:22 75:5	wobbly 49:7	246:20 248:13
307:4,11 355:17	142:14,15 143:19	78:4 81:10 87:20	woke 257:5	253:10 273:3
355:17 356:22	145:22 147:1	88:13 89:11,11	Women 2:23	356:10
363:16	150:5 156:20	90:11,20 92:15	wonder 18:16	works 62:6 232:13
weren't 75:10	157:14 161:18	94:5 95:6 110:16	101:17 265:1,4,5	241:10 267:10
334:22	164:8 167:2,3	111:19 116:4	309:15 324:13	352:21 353:21
we'll 6:14 7:8,10,15	170:13 171:1,21	121:8 130:8	342:13	workshop 1:4,8 6:6
8:3 9:14 10:2	173:3 177:18	145:12 146:5	wondered 334:16	6:11 11:13 16:4
12:17 15:6,19	178:9 180:1 184:1	150:21 156:10	wondering 23:1	16:18 125:1,8
19:4 25:21 28:7	185:6,7,12 190:13	176:6 190:2	77:4 180:7 194:2	127:11 128:1
35:1,7,11 63:7	190:14 191:2,7	191:16 207:10	196:14 270:19	143:6 170:14
75:3 99:11 104:11	193:13 196:8	244:1 247:10	wonk's 58:2	205:7 224:18
104:13,14 124:12	198:2,5 200:21	248:13 253:10	word 9:20 10:14	281:20 289:17
124:13 133:22	201:1 202:7 207:3	277:5 280:10	33:11,14 113:14	292:1 307:14
139:14 140:7	230:10 239:6,19	281:10 286:9,12	113:14 275:2	308:9
141:6 143:22	243:14 250:20	290:17 308:12	302:17	workshops 7:11
147:1,14 192:3	257:8,13 258:8	310:11 311:16	words 12:11 130:2	166:15
202:1 207:18	259:13,16 267:8	313:19 314:9	156:16 260:5	world 33:19 88:16
256:21 269:12	267:11 269:7	316:2 327:9	262:10 339:18	90:22 91:3 150:17
276:16 280:20,22	270:14 271:2	332:11,20 337:13	340:1	157:10,13 213:2
281:8 282:6 286:2	276:11,18 280:1	338:5 345:7	wordsmithing	224:4,21 225:3
325:21 335:18	281:5 282:20	351:20 355:10,19	137:9	226:17 235:8
343:2 360:19,20	283:21 287:10,20	355:21 357:9	work 16:13,17 31:4	267:19,19 290:16
363:13	288:2,10 289:20	Wheels 340:21	35:14 39:8,19	292:14 313:20
we're 8:13,22 9:3	295:13,16 302:17	white 35:18,19	42:9 43:3,8 51:6	338:7 358:2

worlds 191:21	Yale 2:23	319:2 333:6	276:4 286:17,18	4 87:17 128:4
worried 317:9	year 29:9,12 66:4	338:19,19	291:6 355:10	4-year 323:17
345:5	70:12 71:5,7	1,000 119:15	2-year 65:2 68:12	4:30 34:9
worry 198:8 253:5	72:19,21 73:4	355:12	100:8,9 165:12	4:37 363:16
271:16 321:21	75:9 77:16 90:13	1,200 65:18,20	2.0 67:11	40-60 87:21
324:14	90:20 112:14,15	1.3 277:11	2.7 118:14	43 363:7
worse 60:10 95:12	169:12,16 198:18	1.5 73:8	2:50 281:2	44 363:7
118:12 183:7	218:18 278:21	1:29 202:5	20 112:14 277:9	45 363:8
250:1 252:17	338:19	1:30 201:3 202:1	308:7 340:11	<hr/>
256:15 331:20	years 53:4,11,22	10 94:2 124:13	20,000 278:21	5
339:2	64:19 66:1 74:11	291:5,5,9,10	20-plus 310:16	5 88:12 138:11
worst 60:6 342:7	75:8 77:6 79:8	292:16 296:15	20-year-old 307:2	265:13 319:3
worth 132:5 188:11	81:10,21 84:14	318:18 319:1,2,3	200 309:13	341:2,3 363:12
246:6 265:19	93:18 94:2,18	319:6,11,14 321:4	2001 169:12,16	5D 182:22
317:19 318:5	112:2 121:18	341:2 361:4	2002 93:16 94:16	5-year 165:12
329:3 330:3	122:1,20 165:14	10-unit 296:17	2004 42:4	50 71:21 340:14
worthwhile 320:5	198:15 222:1,11	100 48:14 82:9	2005-2007 43:3	500 64:21 65:10,18
330:13	222:14,19 226:9	83:12	2009 46:22 121:15	55 90:21
worthy 241:2	233:5 263:2	1030 1:8	246:2	<hr/>
wouldn't 58:22	274:14 308:7	104 4:9	2010 206:1	6
114:1 181:11	310:13 315:13	11 1:6 55:11 319:1	2012 1:6	6 4:3 23:3 45:3
299:8	355:10	11-year 169:12	202 4:20	48:21 112:3
wound 344:8	year-to-year 74:17	11:13 124:16	221 4:22	162:14 252:16
wrap 277:5	yeses 180:4	11:25 124:14	229 5:16	294:8 298:8,12
wrapped 346:14	<hr/>	11:28 124:17	235 4:23	311:16 338:19
wrestle 256:3	Z	12 67:21 79:11	246 4:24	64 67:11,20 103:10
wrestled 250:8	zero 210:17,18	162:15 198:18	25 222:11 361:9	65 112:5
wrestling 258:14	291:10 297:16	12:45 201:2 202:4	363:3	<hr/>
wringing 319:10	319:2,4,5	14 186:17	25-30 279:20	7
written 130:19	<hr/>	140 4:13	250,000 46:21	7 90:12 186:16
wrong 41:7 183:9	\$	140/90 206:19	257 4:25	70 102:7 128:20
221:18 257:18	\$1 277:15 356:9	147 4:14	283 5:17	75 49:3 83:13
324:7 353:14	\$1.5 277:15	15 39:10 57:15	<hr/>	<hr/>
wrote 301:15	\$7 279:19	280:22	3	8
319:14 325:11,11	<hr/>	15th 1:8	3 45:2 53:4,11 73:6	8 4:4 162:15
Wu 3:9 5:20 101:6	#	155 4:15	73:11 74:11 81:21	80 4:9 47:19 60:21
101:7,13,16	#2 1:4	16 79:15 90:22	121:18 122:20	61:2 250:11
195:15 264:14	<hr/>	186:17	3:08 281:3	85 49:1
265:22 266:3	0	168 4:16	30 112:15 277:10	<hr/>
277:6 282:10	0.7 211:6 217:22	178 4:17	340:12	9
315:21 317:8	218:4	1979 88:20	30,000 315:9	9 11:9 23:3 119:14
319:18 325:3	<hr/>	1996 96:4 323:16	306 5:19	186:16 277:14
334:21 338:10	1	1998 64:18	315 5:20	319:6
<hr/>	1 25:6 29:9,12 73:9	<hr/>	333 5:21	9th 1:8
X	178:18 196:5	2	36 4:6	9:00 1:9 6:2
x 50:17	210:17,20 223:11	2 6:16 66:1 94:18	38 4:8	90 47:19 197:16
<hr/>	238:2 265:12	162:14 238:3	<hr/>	357:3
Y	272:20 318:18	<hr/>	4	95 50:21 82:15
<hr/>				

C E R T I F I C A T E

This is to certify that the foregoing transcript

In the matter of: Patient Reported Outcomes Workshop 2

Before: NQF

Date: 09-11-12

Place: Washington, DC

was duly recorded and accurately transcribed under my direction; further, that said transcript is a true and accurate record of the proceedings.

Neal R Gross

Court Reporter

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

NATIONAL QUALITY FORUM
+ + + + +
PATIENT-REPORTED OUTCOMES
WORKSHOP #2
+ + + + +
WEDNESDAY
SEPTEMBER 12, 2012

The Workshop met at the National Quality Forum, 9th Floor Conference Room, 1030 15th Street, N.W., Washington, D.C., at 8:30 a.m., Patricia Brennan and Joyce Dubow, Co-Chairs, presiding.

PRESENT:

- PATRICIA BRENNAN, PhD, University of Wisconsin-Madison, Co-Chair
JOYCE DUBOW, AARP, MUP, Co-Chair
RICHARD BANKOWITZ, MD, MBA, FACP, Premier Healthcare Alliance
ETHAN BASCH, MD, MSc, Memorial Sloan-Kettering Cancer Center
JIM BELLOWS, PhD, Kaiser Permanente
- DAVID CELLA, PhD, Northwestern University Feinberg School of Medicine
ANNE DEUTSCH, PhD, RN, CRRN, Brookings Institution
STEPHAN FIHN, MD, MPH, Veterans Health Administration
JACK FOWLER, PhD, Informed Medical Decisions Foundation
- LORI FRANK, PhD, Patient-Centered Outcomes Research Institute
BARBARA GAGE, PhD, MPA, Brookings Institution
TED GANIATS, MD, University of San Diego Health System
KATE GOODRICH, MD, MHS, Centers for Medicare & Medicaid Services
JUDITH HIBBARD, DrPH, University of Oregon

DENNIS KALDENBERG, PhD, Press Ganey Associates
IRENE KATZAN, MD, MS, Cleveland Clinic
LEWIS KAZIS, ScD, Boston University School of
Health
UMA KOTAGAL, MD, Cincinnati Children's
Hospital Medical Center
KEVIN LARSEN, MD, Office of the National
Coordinator for HIT
KATHY LOHR, PhD, RTI
ELIZABETH MORT, MD, Massachusetts General
Hospital
CHARLES MOSELEY, EdD, National Association of
State Directors of Developmental
Disability Services
EUGENE NELSON, DSc, MPH, The Dartmouth
Institute
KENNETH OTTENBACHER, PhD, OTR, The University
of Texas Medical Branch at Galveston
GREG PAWLSON, MD, MPH, FACP, BlueCross
BlueShield Association
ELEANOR PERFETTO, PhD, Pfizer
COLLETTE PITZEN, RN, BSN, Minnesota Community
Measurement
CHERYL POWELL, Centers for Medicare & Medicaid
Services (via telephone)
DAVID RADLEY, PhD, MPH, Institute for
Healthcare Improvement

TED ROONEY, RN, MPH, Maine Quality Counts
DEBRA SALIBA, MD, MPH, UCLA Borun
Center/VA/RAND
MARCEL SALIVE, MD, MPH, National Institutes of
Health
LAURA SMITH, PhD, Brookings Institution
BARBARA SUMMERS, PhD, RN, University of Texas-
MD Anderson Cancer Center (via
telephone)
KALAHN TAYLOR-CLARK, PhD, MPH, National
Partnership for Women & Families
MARY TINETTI, MD, Yale New Haven Health System
PHYLLIS TORDA, MA, National Committee for
Quality Assurance

JOHN WASSON, MD, Dartmouth Medical School
ROB WEECH-MALDONADO, PhD, MBA, University of
Alabama-Birmingham

LINDA WILKINSON, MBA, Dartmouth Hitchcock

Medical Center

ALBERT WU, MD, MPH, Johns Hopkins Health

System

NQF STAFF:

KAREN ADAMS, PhD, MT

HELEN BURSTIN, MD, MPH

SHEILA CRAWFORD

EUGENE CUNNINGHAM, MS

KAREN PACE, PhD

JESSICA WEBER

EVAN WILLIAMSON

T-A-B-L-E O-F C-O-N-T-E-N-T-S

INTRODUCTION TO DAY 2
 Joyce Dubow 6

METHODS THAT CONTRIBUTE TO TRUST -
 ADDRESSING THREATS TO VALIDITY

Overview of NQF Endorsement
 Criteria on Threats to Validity of
 Conclusions about Quality and
 Differentiation between PRO & PRO-PM
 Karen Pace. 25

Commissioned Paper Authors Tee-Up
 Key Issues and Best Practices or
 Strengths/Weaknesses of Approaches
 to Aggregating Individual-Level PRO
 data and specifying PRO-PMs
 Reactor Panel:
 Anne Deutsch. 33
 Kenneth Ottenbacher 48
 Robert Weech-Maldonado. 63

Expert Panel and Audience Engagement. 73

IDENTIFICATION OF UNIQUE CONSIDERATION
 RELATED TO NQF ENDORSEMENT OF PRO-PMs 99

REVISIT PATHWAY FROM INDIVIDUAL-LEVEL
 PRO TO NQF-ENDORSED PRO-PM
 Ethan Basch 104
 Jim Bellows 110
 Eleanor Perfetto. 125

Expert Panel and Audience Engagement. 133
 Closing Remarks and Next Steps
 Patti Brennan 183

FUTURE DIRECTIONS

Moderator: Patti Brennan 186
 Expert Panel and audience Engagement. 191
 Wrap-up and adjourn 238

1 P-R-O-C-E-E-D-I-N-G-S

2 (8:30 a.m.)

3 DR. PACE: Okay, good morning
4 everyone. Thank you for getting with us
5 bright and early. And Joyce Dubow is going to
6 come to the front. I heard that yesterday
7 some people were having trouble hearing us.
8 So please waive your hand if we aren't
9 speaking into the microphone so we can try and
10 make an adjustment. And I am going to turn
11 this over to Joyce for some introductory
12 remarks and then we will go to our first
13 panel.

14 MS. DUBOW: Thank you, Karen and
15 good morning everybody. You know I want to
16 thank everybody for your participation
17 yesterday -- is this loud enough -- because
18 this is a big hunk of time from, I know, every
19 busy schedules. And I thought the
20 conversation yesterday was very, very helpful.
21 I know it is going to be helpful to the staff
22 and to the committees that get formed when

1 everybody has to get down into the business of
2 finding measures on patient-reported outcomes.
3 So I think the work that you all are doing
4 here is really, really important and I want to
5 say thank you and I want to thank the staff.
6 They again did a remarkable job and I am about
7 to go through some slides that Karen and Karen
8 created. They are just amazing. So thank
9 you, both, and to Helen, of course.

10 Well I know they did it but you
11 know it is always good to have a spine that
12 sort of keeps everything straight.

13 So if we could have the first
14 slide, we are going to spend about ten minutes
15 -- and Gene, thank you, too. I just eyeballed
16 him.

17 We are going to spend about ten
18 minutes or so just reviewing some of the
19 highlights of yesterday's work and these are
20 what occurred to us as being very significant
21 but I am going to ask you to think about
22 whether there is anything we ought to be

1 adding to this list.

2 So thinking about the main issues
3 that we discussed, the overarching
4 considerations, one of the first issues that
5 jumps out is the need to assess meaningfulness
6 and how to demonstrate evidence that
7 stakeholders think the PROM is meaningful. We
8 talked about the importance of getting
9 consumers involved in this. And the brilliant
10 Patti Brennan helped us think about this in
11 terms of the three C's. Patti's presentation
12 in my view was masterful yesterday. I think
13 everybody else did, too. And if I mangle
14 this, Patti will clarify.

15 She identified three C's, the
16 conceptual which helps us identify the PRO by
17 engaging people in a dialogue to hear from
18 them what matters to them to define the
19 concepts. So that helps us identify which PRO
20 to think about.

21 The next phase would be the
22 contextual, how the information is captured.

1 This, the contextual takes into account not
2 only patients, which is -- who are people or
3 individuals, remember I am using shorthand
4 here, but for clinicians as well. For them to
5 consider how they capture and use the
6 information as well. That would be the PROM.

7 And finally, to think about this
8 in the contextual sense -- in the
9 consequential sense -- oh. Well, here, we
10 have some illustrations of the contextual.
11 How people will participate in the large
12 social enterprise in using this information.
13 For example, if an individual using the
14 information selects a provider or to
15 understand the information with respect to
16 one's individual health situation and then
17 finally to consider the consequential. What
18 happens when the information is used? This is
19 the PRO-PM, to assure that good quality is
20 available and to understand its impact on the
21 availability of services.

22 I think I mangled that Patti. Do

1 you want to do anything to clarify a little
2 bit?

3 DR. BRENNAN: I think you
4 translated me lovely and thank you.

5 The one thing I would say first of
6 all is these are concepts that are evolving.
7 So these are not written in stone and there is
8 no citation for this. What was important for
9 me to do is to stress that we begin first with
10 what matters to the patient before we can
11 event define a PRO, we have to figure out what
12 really matters. Second, we have to think
13 about both the capture and use of information
14 relative to an individual, patient, or patient
15 clinician engagement. And third, we have to
16 think about the impact on practice and policy.

17 So that is really how I see them.
18 And I think you did a nice job laying those
19 out. Thank you.

20 MS. DUBOW: But each one of these
21 things speaks to which level we are talking
22 about, either the PRO, the PROM, or the PRO-

1 PM. Could we have the next slide, please?

2 So for additional considerations
3 that we mentioned, there was a lot of emphasis
4 on actionability. And again in the same
5 panel, Liz helped us understand that we would
6 think about the spectrum of actionability
7 because actionability is a criterion, an
8 attribute that we talked about last time as
9 well as yesterday. This is an ongoing theme
10 that we have acknowledged to be very
11 important.

12 A hot, something, a PROM that will
13 be highly actionable, will be subject to
14 intervention and it is suitable and able to be
15 demonstrated outside of a clinical trial so
16 that it can be actually implemented in
17 practice. Something that is highly actionable
18 will have high credibility in the clinical
19 community, of course, and it will have an
20 impact on patients as well.

21 If it is moderate, someplace in-
22 between, those that have low actionability

1 probably should be off the table because they
2 will not necessarily be useful to patients.
3 You know, it may not reflect symptoms that
4 matter to patients, for example. And if we
5 cannot demonstrate this type of actionability
6 to clinicians, it won't be particularly
7 credible either.

8 So this spectrum is very important
9 and when we start thinking about PROMs to
10 select, we ought to be going to the low
11 hanging fruit, which would be those that are
12 highly actionable.

13 Next slide, please. I'm sorry.
14 It's so hard for me to understand that I can't
15 be heard. My children would never agree with
16 that. Closer? I'm breathing into it. We are
17 going to need to -- okay.

18 So then we talked also about the
19 business case, the ROI. And you know, this is
20 a very pragmatic consideration and we had a
21 couple of people talking about this.

22 We heard from Larsson, Dr. Larsson

1 in Sweden, that they use their registries to
2 do CER and to demonstrate appropriateness.
3 There are opportunity costs. There are
4 benefits to using this stuff and we know that.
5 But there are also costs to it. The cost of
6 administration, the vendor-driven
7 administration expense. The cost of CAHPs for
8 example. Liz didn't talk -- Liz Goldstein
9 didn't talk about the cost of fielding the HOS
10 but obviously there is a cost to that.

11 And John Wasson talked about the
12 issue around getting consent from patients.
13 So we need to take these issues into account.

14 But it was interesting to hear Dr.
15 Larsson talking about the ability to make
16 assessments of appropriateness of care using
17 their registries. Of course, they have a
18 completely different system. The idea of
19 having 64 relatively compatible registries in
20 this country is mind-boggling but it certainly
21 is a system that would lend itself to some
22 economies.

1 We heard talk about phased
2 implementation to link the systems and
3 mechanisms for care improvement before we rush
4 to market. I think Steve talked about this a
5 lot and others did, too that we want to
6 express a sense of urgency, at the same time
7 recognizing that we may have to think about
8 processes that relate to the outcomes that we
9 want to achieve.

10 And we talked about looking at the
11 impact of implementation of measures by doing
12 some kind of post-market surveillance of these
13 new measures. But you know I think that we
14 also acknowledge that we need to do that
15 generally with all measures, but in particular
16 learning from implementation of these patient-
17 reported outcome measures will be very
18 important.

19 Next slide, please. So we heard a
20 few of our colleagues talk about the iterative
21 nature of reliability and validity and the
22 suggestion from Laurie that the validity

1 testing actually take place first, you know,
2 to get the concept down before going on to the
3 reliability but that this was an iterative
4 process. I can't remember whose slide it was
5 who showed the -- Lewis' slide for me was
6 really very helpful to see that iterative
7 process. He showed it with arrows.

8 We talked, again, we kept
9 emphasizing the importance of engaging
10 patients and determining the face and content
11 validity. I think that got mentioned a lot.
12 Identifying the patient populations whose
13 outcome you want to track. I think Jack gave
14 us important insights here. And that if you
15 only measure those who get the intervention,
16 you could be penalizing those clinicians and
17 those patients -- well probably the clinicians
18 who are engaging not in the intervention but
19 in watchful waiting.

20 And Jack I don't recall that you
21 actually had good solutions for how we do
22 this. Okay, well we will need to think about

1 it.

2 Unfortunately, Jack, the mike
3 wasn't on but Jack was talking about having
4 records so that we could identify these
5 patients just the way they do in Sweden. But
6 this is going to be a challenge, I think, for
7 us.

8 Is there a next slide? I can't
9 remember. That's it.

10 So could we have a quick
11 conversation about things that we neglected to
12 put here on these slides just to remind us or
13 any other observations?

14 There is somebody from -- could
15 you use a mike, please?

16 MS. OKUN: The two characteristics
17 of importance to the patient and
18 actionability. What if something is important
19 to the patient but not actionable? And for
20 example, fatigue. For a long time no
21 treatments for fatigue. Fatigue due to cancer
22 treatment, very important to the patient. If

1 it is not measured, then it is not -- it
2 doesn't become a focus and ultimately treated.

3 MS. DUBOW: Yes. You know, thank
4 you for that. You know, we also had our last
5 half hour where we had an opportunity to look
6 at the NQF evaluation criteria to see whether
7 we had any ideas about whether or not they had
8 to be tweaked. I know I was in a conversation
9 at our table where we didn't get past the
10 importance criterion. And I haven't seen the
11 notes from the other tables but we had a kind
12 of lively conversation about the need to
13 consider the audiences when thinking about
14 importance, including figuring out how to
15 engage consumers in the process of making a
16 determination about importance.

17 Ethan?

18 DR. BASCH: You know, I think it
19 is a great question. I think certainly there
20 are contexts in which there are non-actionable
21 pieces of information about the patient
22 experience that may be valuable for patients

1 to understand but may not necessarily be
2 appropriate for this kind of use.

3 But to directly address the
4 question, there actually are some contexts in
5 which fatigue or tiredness would be
6 appropriate to measure. For example, for one
7 you brought up the cancer example, one could
8 look at inappropriate use of chemotherapy in
9 patients who are too fatigued to baseline.
10 And that would be one potential example.
11 Another would be there are certain kinds of
12 cancer where patient's fatigue does actually
13 improve with active treatment. So I think
14 that those are two potential examples.

15 MS. DUBOW: I thought the point
16 here was things that were clearly not
17 actionable --

18 DR. BASCH: Example.

19 MS. DUBOW: -- but still important
20 to patients. And I think --

21 DR. BASCH: Absolutely.

22 MS. DUBOW: -- that is really

1 important.

2 DR. BASCH: Right. You are
3 absolutely right.

4 MS. DUBOW: Because there may be
5 some things that are not actionable.

6 Phyllis?

7 MS. TORDA: Good morning. In
8 going through the small group exercise, I
9 actually was struck by how often I could think
10 of an issue that applied actually both to the
11 reported outcome measures and other measures
12 as well.

13 So in some cases, things like
14 these measures are more similar to other
15 measures than different. In other cases, it
16 seems like maybe there is an issue that is
17 really magnified for these kinds of measures
18 and then there may be some ways in which they
19 are very specifically different.

20 But I think it behooves us to make
21 those distinctions.

22 MS. DUBOW: Yes but you know -- I

1 think that is important. But I think Helen
2 and Karen and Karen, I think Karen Pace
3 actually said that it might be an opportunity
4 to tweak the criteria so that we could broaden
5 the applicability to embrace these measures as
6 well.

7 MS. TORDA: Yes, I think a lot of
8 the issues that we discussed could have broad
9 application to considering measures in
10 general.

11 MS. DUBOW: Right. Gene?

12 DR. NELSON: I think Patti Brennan
13 mentioned patient-defined outcomes and
14 patient-generated outcomes. And this idea
15 about me as an individual patient, I may have
16 certain health goals and certain health
17 outcomes in mind that are very important for
18 me. I want to go to sit in the bleachers at
19 the Red Sox game. That is what I am hoping to
20 do with my grandson. And then we have very
21 important general measures of health status
22 that most people would wish were good;

1 physical health, mental health, well function,
2 et cetera. So there is this tension between
3 individualized outcomes of importance and
4 general outcomes of importance and how we try
5 to understand that and make this operational
6 in the real world, the general measures as
7 well as individualized measures. I think that
8 is one of the like motifs that we keep hearing
9 and thinking about.

10 MS. DUBOW: Thank you. Ted, did
11 you want to make a comment?

12 DR. GANIATS: Ted Ganiats from San
13 Diego. And just two comments related to the
14 actionability issue. I mean first of all in
15 my mind --

16 I'm still Ted. Two comments on
17 the actionability. One of them is the cost of
18 doing this is so great that we have to be
19 careful about it being actionable. I mean,
20 just because it is important, the resources it
21 requires to gather and try to act on the
22 information is so great we want to be careful.

1 But more important, I think it is important
2 for us not to be comprehensive. If I am
3 thinking of heart failure or diabetes and all
4 the guidelines and all the things that I could
5 measure to make sure that good care is being
6 provided, but we only have a couple of quality
7 indicators and I think that the same thing has
8 to hold here, that even though patient-
9 reported outcomes are, in my mind, the most
10 important outcomes, we don't want to be
11 comprehensive. So we don't want to list all
12 actionable ones. We don't want to make sure
13 that we do everything because we are going to
14 be spending too much time measuring and not
15 enough time providing the care. So these
16 should be indicators, not comprehensive.

17 MS. DUBOW: I'm going to give
18 David Cella the last word and then we are
19 going to have to go to our next panel.

20 DR. CELLA: Good morning. I'm
21 Dave Cella from Northwestern and I was at some
22 of yesterday but not all of it. So I

1 apologize for not being double-booked.

2 Most of you know, maybe all of you
3 know, that there is a teacher's strike going
4 on in Chicago. And the holdup on the strike
5 isn't actually money, at least pay raises.
6 That part is settled. The holdup is that
7 teachers don't want to be evaluated based on
8 standard scores. And there is a parallel here
9 that I think relates to providers who I think,
10 not all providers, but many are probably
11 afraid of being evaluated based on standard
12 scores or PRO scores. And so I really
13 strongly endorse the issue of the spectrum of
14 actionability and I was here when Liz pushed
15 that and I was persuaded by that that it is
16 important to be careful about setting up
17 expectations that something can be improved
18 when there isn't a whole lot of control in the
19 hands of the provider, similar to the teachers
20 that are complaining that they shouldn't be
21 judged by the quality of their work by the
22 standard scores and yet if the district wants

1 federal funds, it has to apply that directive.

2 So I guess I would like to push
3 this group to answer the question where do you
4 want to jump in on assessing meaningfulness on
5 the conceptual issues? Because we could dance
6 around those issues and talk about those
7 issues and convince ourselves that PROs are
8 not perfect or they are not quite right for
9 this setting and, therefore, we had better
10 hold back or we could decide to jump in and do
11 it cautiously but to jump in.

12 And you know, not hearing all the
13 discussion yesterday, I may be off target but
14 I hope to see a continued commitment to start
15 somewhere, start with high actionable areas
16 and jump in with measures that you know are
17 important to people, perhaps not proven to
18 everyone's satisfaction with that particular
19 group of patients in that particular setting.
20 Because we could go down that road and reject
21 everything every time if we go too far down
22 that road.

1 MS. DUBOW: Well before we
2 adjourn, I will just inject a personal
3 opinion. And that is that the horse is out of
4 the barn and that we are moving down this road
5 and we want to do the best possible work we
6 can that is fair and that gives us valid and
7 reliable information to inform decisions that
8 reflect patient input. So with that, I think
9 we should let the day begin.

10 DR. PACE: So if we could have our
11 panel come forward, we will get started.

12 Okay, so we are moving on to
13 validity part 2 and I am going to introduce
14 the panel and then I will do a little overview
15 of NQF evaluation criteria that relate to this
16 area.

17 So for this panel we have Anne
18 Deutsch from RTI, who is one of our commission
19 paper authors. Next we have Ken Ottenbacher
20 and Ken will also be addressing some of these
21 thorny issues about validity. I'm sorry.
22 Let' me find my place. Ken is with the

1 University of Texas Medical Branch at
2 Galveston. And then we have Rob Weech-
3 Maldonado from the University of Alabama at
4 Birmingham who also will be addressing these
5 issues.

6 So I am going to start with just a
7 little bit about NQF criteria that relate to
8 this and we are calling this validity part 2
9 because yesterday we talked about validity in
10 general and about the actual performance score
11 that will be used to make some inferences
12 about quality. And today what we want to talk
13 about additional aspects of validity but these
14 are things that can kind of threaten validity
15 or throw a ringer into what we are trying to
16 do. So next slide, please.

17 So again, just to orient
18 ourselves, NQF is not endorsing the individual
19 PROM but I think we have all agreed that the
20 PROM needs to be valid for the context and the
21 target population it is being used in. That
22 is definitely going to be a foundation to have

1 a valid performance measure. But we are
2 talking about using those patient or
3 individual PROM scores or values and trying to
4 use that for a particular healthcare provider,
5 whether it is a hospital, a physician
6 practice, accountable care entity so that we
7 would have a score on that accountable care
8 entity in terms of how they are performing.

9 Okay, next slide.

10 So we have talked about some of
11 these threats to validity and certainly we
12 have talked about conceptual, which can occur
13 at either level of the PROM or the performance
14 measure. We have talked about the
15 relationship of reliability to validity. But
16 some of the other specific things that we get
17 into this section are very much part of how
18 the performance measure will be defined. So
19 what patients end up being excluded from the
20 performance measure and is that appropriate?

21 So just again, outside of the PRO-
22 PM, NQF often sees performance measures that

1 come in with very broad general exclusions.
2 And the question comes up are too many people
3 being excluded that you are really not knowing
4 what to make of the actual performance
5 measure.

6 Certainly we have talked about
7 differences in patient mix for outcome
8 measures that need to be adjusted for because
9 patients are not randomly assigned to
10 healthcare providers. And if we are going to
11 use this to make inferences about quality, we
12 need to account for those difference in
13 patient mix that come up.

14 Measure scores that are generated
15 with multiple data sources or methods. So if
16 we are going to say that you can use two
17 different PROM instruments for the same
18 performance measure, do we have evidence that
19 they are really equivalent and comparable so
20 that again we can use these in an
21 accountability framework.

22 And then certainly systematic

1 missing or incorrect data affect validity.

2 And we know that with these types of surveys,
3 we have talked about response bias, et cetera.
4 So all of these things, even though we have a
5 good idea about the performance measure, when
6 we actually go to implement this in the real
7 world, in real clinical situations, we have to
8 at least consider these and ask for some
9 assurances that these have been addressed.

10 Next slide. So an NQF has some
11 very specific criteria about each of these.
12 So we have very specific criteria about
13 exclusions. That first of all they should be
14 supported by the clinical evidence. So you
15 don't want to exclude patients unless -- if
16 the clinical evidence indicates that a certain
17 patient subgroup should be excluded, then that
18 obviously should be done. But and this is one
19 that I think we will have to grapple with
20 here. It is one that comes up a lot is
21 patient preference. And you know, some people
22 see that as kind of a catchall, a quick way to

1 check a box to exclude patients from a
2 measure. Oh, the patient doesn't want it.
3 Others mentioned that the provider
4 intervention can actually affect patient
5 decisions. And we have had lots of those
6 discussions here about how much time you spend
7 with the patient, how much they are informed.
8 And so high exclusions because the patients
9 are rejecting something may also indicate a
10 quality problem.

11 So you know, this is a delicate
12 balance here and I think where we are right
13 now with NQF criteria is that if patient
14 preference is specified as an exclusion, that
15 we have to have some way of making that
16 transparent, so that everyone is aware of
17 differences across providers about patient
18 preference but I am sure we can have some more
19 discussion about that.

20 Next slide. So this next one is
21 specifically about outcome measures that we
22 need to have an evidence-based risk-adjustment

1 strategy. This should be based on patient
2 factors that influence the measured outcome
3 but not factors related to disparities in care
4 or the quality of care. That is what we are
5 trying to make -- see differences in.

6 These should be present at the
7 start of care, not things that develop in the
8 middle of the care process. And we want risk
9 models that demonstrate adequate
10 discrimination and calibration. You know,
11 sometimes we see risk adjustment handled
12 through risk stratification versus a
13 statistical risk model. Sometimes we see
14 measures that are not risk -- outcome measures
15 that are not risk-adjusted but again there
16 would have to be adequate rationale and data
17 to support that no risk adjustment is
18 necessary.

19 In terms of risk factors, I think
20 one that has come up frequently in our
21 discussions about PROM or PRO-PM is patient
22 baseline scores in terms of is that a risk

1 factor that should be considered.

2 Okay, next slide. Okay, another
3 one is that computed measure scores
4 demonstrate that methods for scoring and
5 analysis allow for identification of
6 statistically significant and practically or
7 clinically meaningful differences in
8 performance.

9 So generally again, NQF is
10 endorsing performance measures for not only
11 improvement but also for accountability
12 applications. So if a performance measure
13 really can't discriminate good and poor
14 quality, and again, this relates to validity,
15 then maybe it is not an accountability
16 measure. However, the exception to that could
17 be that we may have all decided yes, there is
18 not very much discrimination and it is because
19 in general we are doing a really poor job
20 across multiple providers of a particular area
21 of interest.

22 And then the last one in this area

1 is again about the multiple data sources or
2 methods. That if a measure is going to be
3 specified, that you can use multiple PROM
4 instruments, then what is the demonstration
5 that you would get comparable scores?

6 And I believe that is the last one
7 or one more? Okay. All right, so from there,
8 I am going to turn it over to Anne and then we
9 will get our panel and your comments and
10 questions. Thanks.

11 DR. DEUTSCH: Great. Can everyone
12 hear me, including the back? Okay, great.

13 All right, so I will just wait for
14 this slide to come up here. Great, thank you.
15 So next slide.

16 So one of the first questions that
17 we are going to address as part of this whole
18 threats to validity section is are there any
19 differences or unique considerations for risk
20 adjustment for a PRO-PM as compared to other
21 quality outcome performance measures? Next
22 slide please.

1 So the short answer, I think, is
2 no. I don't think there are differences.
3 Certainly patient factors are important and
4 those should be based on evidence that those
5 could affect outcome. Evidence can certainly
6 include peer reviewed research, clinical
7 expert opinion. I would also say just in line
8 with my presentation yesterday, that informed
9 patients could certainly provide some very
10 valuable insight into potential covariates
11 also. And I am not sure to what extent that
12 has been done with other performance measures
13 but it certain applied to other non-PRO
14 performance measures also.

15 The covariates would be very
16 different, based on the different PRO
17 concepts. And in the paper we give a couple
18 of examples. And actually I would like to
19 highlight the area that I work on is
20 functional status. And functional status can
21 be clinician observation as well as patient
22 self-report and I would say the risk factors

1 or covariates you would consider for either
2 self-report functional status or the clinician
3 observation would probably be the same. So in
4 this case, I don't think there is really
5 differences between the PRO versus the other
6 kinds of performance measures. Next slide.

7 So in terms of examples, patient
8 demographic factors that are often adjusted
9 for are age. One of the areas of controversy
10 and we talk about this in the paper related to
11 race, ethnicity, and limited English language
12 proficiency. And that is a controversial area
13 and perhaps we can get into a conversation
14 about that as part of the panel discussion but
15 I would say the issues that are a concern for
16 other measures are equally a concern here.

17 The different SES, race/ethnicity variables
18 may be associated with outcomes but it may be
19 related to disparities and so in general those
20 are not adjusted for in performance measures.

21 Patient clinical factors that are
22 present at the start of care would also be

1 important, obviously, and typical factors
2 included are things like diagnosis, severity
3 of illness, comorbidities, and baseline
4 scores.

5 When we put the outline together
6 for this, it was a suggestion from somebody on
7 the expert panel to include psychological
8 factors like adherence, motivation,
9 understanding, engagement, and readiness for
10 change. Certainly those may be important for
11 patient-reported outcomes performance measures
12 but I want to highlight that if those are
13 being included, then it probably would mean
14 some additional data collection. So in
15 addition to the PRO outcome, there may be some
16 additional data that would need to be
17 collected on these things and patients or
18 persons may have questions about why this
19 information is being collected. But
20 typically, this is not information that is
21 available in a medical record already. So it
22 might be something that in addition needs to

1 be collected.

2 And I would also say that
3 motivation is certainly something that we have
4 talked about when we have been working on this
5 measure for functional status because
6 certainly patients who are more motivated
7 might actually do better but therapists who
8 are very good might actually motivate patients
9 a little bit more. And so you don't want to
10 remove that effect that a clinician may be
11 really good at motivating their patients. And
12 so their patients actually get better and we
13 want to give them credit for that as part of
14 their care. Next slide, please.

15 So as Karen mentioned, there is
16 various ways to adjust for these covariates.
17 So a very simple way is to stratify by risk
18 groups. And out of the current performance
19 measures that our patient-reported outcomes
20 endorse by NQF, I don't think any of them
21 actually do that at this point. Certainly
22 others do but in general, you would be able to

1 stratify based on kind of one factor or a
2 factor that can be split into two or three
3 groups.

4 DR. PACE: Wait one second.
5 Helen?

6 DR. DEUTSCH: Oh, and the
7 cataract. Thank you Helen. Sorry.

8 Regression modeling is another
9 alternative and then a third option would be
10 that you both stratify and then use regression
11 modeling with your strata.

12 There is definitely some
13 controversy in terms of regression modeling
14 and so there is quite a debate about whether
15 we are using these hierarchical generalized
16 linear models is better than using fixed-
17 effect regression models. And in the paper we
18 do talk about the paper that recently came out
19 that was commissioned by the Committee of
20 Presidents of Statistical Societies called
21 statistical issues in addressing hospital
22 performance. So if anybody is really

1 interested in this topic, they should
2 definitely see that paper. Next slide.

3 So one of the issues that we
4 talked about is incomplete or missing data,
5 the next topic. So the question is what are
6 the implications of exclusions,
7 incomplete/missing data, and response rate
8 bias on validity of the performance measure
9 and the testing needed to assess impact on
10 validity?

11 And I mentioned yesterday that I
12 had a project where we actually presented some
13 fictitious quality data to some people in
14 senior centers and asked them which facility
15 is doing better. And I just want to bring up
16 one example that is pertinent related to
17 missing data.

18 So one of the measures that we
19 tested on -- asked people about was percent of
20 patients with moderate to severe pain. And
21 one of the seniors that I interviewed said
22 that she would pick the place that had the

1 higher percentage of patients with moderate to
2 severe pain. And so I asked why. We asked
3 why, regardless of their answer. And she said
4 well I think probably they probably asked a
5 lot more people. I think the places that had
6 lower percentages, they probably didn't ask
7 everybody. So I want to go to the place where
8 they really care about it and that would be
9 the place with the higher percentage. So I
10 thought that was kind of an interesting answer
11 and probably correct. All right, next slide.

12 So there is kind of two categories
13 in my mind in terms of why there is missing
14 data. So for measures that have self-
15 administration, people may just decide they
16 don't want to respond. For interviewer-
17 administered measures, basically the clinician
18 didn't ask the question. So that is -- you
19 know, it was just not done but there is not
20 necessarily a reason behind it other than it
21 just wasn't done.

22 There are obviously more

1 challenging issues where the person is unable
2 to respond, due to cognitive limitations,
3 young age, language barriers, other things
4 like that. Next slide.

5 So I guess one of my thoughts is
6 that as part of the testing of performance
7 measures when they are being put forward to
8 NQF, during the testing that is done, pilot
9 testing or whatever it is being called, the
10 response rate for the proposed PRO-PM should
11 be reported as part of the testing results.
12 I think that is important because oftentimes
13 the testing is kind of an almost ideal
14 circumstance. And so if you start
15 implementing things in real life, you are
16 probably going to have a lower response rate.
17 So it would be obviously very helpful to know
18 if there is a low response rate in the first
19 place, in practice you might actually even
20 expect a lower percentage. So I think that is
21 available information.

22 The PRO-PM description should

1 describe the mode of administration. And this
2 just, one example, one of the measures that is
3 currently endorsed, a lot of the testing was
4 done as a research project and research
5 assistants, research project managers were out
6 collecting the data, interviewing patients.
7 But in terms of the implementation, it had
8 been implemented basically with patient self-
9 report. And so the staff working in the
10 clinic have been the ones who had to decide
11 were there cognitive limitations for the
12 patients who couldn't be interviewed or trying
13 to get patients to fill out the form. So the
14 response rate can really vary. And so I think
15 knowing what the expected mode of
16 administration is is important both for the
17 testing and the implementation. And
18 obviously, they should be consistent as much
19 as possible.

20 For the PRO-PM description, it
21 should address the use of proxy responses and
22 methods of data collection. So I think in

1 general that is not something that explicitly
2 is asked for at this point but I think going
3 forward that would be really helpful to have
4 that information.

5 Some of the measures I think
6 explicitly address missing data issues and
7 others don't. So I think that would also be
8 very helpful as part of the review.

9 So one of the examples I just
10 wanted to highlight as part of this
11 administration issue is the percent of
12 residents with moderate to severe pain, which
13 is the performance measure that I mentioned a
14 few times yesterday. So those data actually
15 are collected based on an interview from the
16 Minimum Data Set. So for those of you who are
17 not familiar with the Minimum Data Set, it is
18 a mandated instrument for skilled nursing --
19 well nursing homes. So skilled nursing
20 facilities and nursing facilities. And
21 it has resulted in relatively low missing
22 rates because it is actually part of this

1 mandated assessment tool.

2 I think the other thing I like
3 about that instrument is that the actual
4 script is written on the instrument. And so
5 clinicians really know what they are supposed
6 to ask. So Deb Saliba, who is in the back,
7 developed the MDS-3 and so she might be able
8 to give us some comments about that
9 performance measure later when we have the
10 discussion. Next.

11 So another issue is the use of
12 proxies. So the question we were posed, what
13 are the implications of using proxies on the
14 validity of the performance measure and the
15 testing needed to assess impact on validity.
16 Next slide.

17 So in order for the use of proxy
18 responses within a performance measure to be
19 pooled with the other data, it would be
20 important for obviously the proxy responses to
21 be reasonably accurate.

22 Proxies have demonstrated

1 acceptable reliability for some PROs, like
2 functional status where there is actually an
3 observation of the person but proxy responses
4 may be a little bit more challenging to
5 include for the more subjective patient-
6 reported outcome concepts like pain, nausea,
7 depression symptoms. It is just really hard
8 to be able to know what somebody is feeling in
9 those areas accurately. But certainly
10 functional status could be included. Next
11 slide.

12 Proxy responses are reasonable to
13 consider for child health measures where
14 parents are proxies and the research has shown
15 small differences in patient-child -- parent-
16 child reports. Use of proxies may minimize
17 missing data but it may introduce errors,
18 obviously if they are not compatible or not
19 easily crosswalked. So it could definitely be
20 a threat to validity. Next slide.

21 Another question is what are the
22 implications for specifying more than on PROM,

1 so more than one instrument or scale in a
2 performance measure and the testing needed to
3 assess impact on validity. Next slide.

4 So the use of different PROMs to
5 measure the same construct could certainly be
6 done. Research demonstrating the agreement of
7 the assignment to clinically important groups.
8 So for example, if the depression measure was
9 being used, it would be important to know that
10 the sensitivity specificity of the two
11 measures were very similar so they could be
12 crosswalked. So it is not, I think, -- let's
13 see. Some of the work on -- well that is
14 actually another topic.

15 But anyway, there would need to be
16 agreement in the way that it is being
17 classified. If assignment into clinically
18 meaningful groups is not well aligned, this
19 may introduce systematic errors for the
20 instruments that are selected. Next slide.

21 So the example I want to use here
22 is the percent of residents with moderate to

1 severe pain, which I mentioned before. And
2 within this measure on the MDS, there is
3 actually two different options for the data
4 collection of pain. One is the numeric rating
5 scale, which goes from zero to a hundred and
6 then the verbal descriptor pain scale which
7 allows the patient to describe pain as mild,
8 moderate, severe, very severe or horrible. So
9 within that performance measure, the
10 clinicians and patients have the option of
11 completing one or the other. And within the
12 performance measures, those are basically,
13 they were crosswalked and, again, Deb Saliba
14 can probably address this during the
15 discussion.

16 But just as an example, for people
17 with severe pain, that is basically linked up
18 to the ten and the very severe and horrible.
19 So there has been research to basically link
20 up and crosswalk those two categories. And so
21 they are included in the currently endorsed
22 performance measure.

1 I know Rob is going to talk a
2 little bit more about that. So I will let him
3 go on to that a little bit more.

4 I think that is the end. Right?
5 Yes, okay. Thank you.

6 DR. PACE: Ken?

7 DR. OTTENBACHER: Okay, well good
8 morning everyone. Can you hear me okay? I
9 want to make sure everyone can hear before I
10 get started.

11 I would like to thank the NQF and
12 the conference organizers for the opportunity
13 to participate in the workshop and also
14 acknowledge Anne and her colleagues at RTI for
15 the intellectual work in doing a very
16 comprehensive job in their paper on a
17 difficult, complex topic.

18 My task today is to comment on
19 issues associated with a litany of PRO
20 performance measures. Specifically, I have
21 been asked to address the following questions.

22 Are there differences or unique

1 considerations for risk adjustment of PRO
2 performance measures and what are the
3 complications of exclusions, incomplete and
4 missing data and response rate bias on
5 validity of PRO performance measures?

6 I will make a few general comments
7 about validity and then address the two
8 questions. Defining the context is an
9 important first step in examining both
10 reliability and validity, as we have heard
11 from the previous speakers. Context is
12 particularly important in considering PRO
13 performance measures. The approach, the
14 methods, even the conceptual frameworks may
15 differ from one context to another.

16 One important challenge in
17 determining the context for validity is
18 variation in language. The terminology
19 regarding validity can be confusing, even
20 contradictory. Similar concepts can be
21 defined using different words and, at times,
22 the same words or terms are interpreted in

1 different ways by individuals from diverse
2 disciplines.

3 The terms used to classify types
4 of measurement validity include content, face,
5 criterion, concurrent, predictive,
6 discriminant, convergent and construct
7 validity. The NQF Measurement Testing Task
8 Force Report uses another term to describe
9 validity, the correctness of measurement.
10 Correctness is a term used by Dr. Deutsch and
11 her colleagues. In the NQF context, validity
12 of a performance measure refers to the
13 correctness of conclusions about the quality
14 of the facility provider that can be made
15 based on the performance score. That is, a
16 better score reflects higher quality.

17 This definition of correctness is
18 linked to other more commonly used terms such
19 as criterion and construct validity. And
20 these are described by Dr. Deutsch and her
21 colleagues. The use of the term correctness
22 illustrates the importance of clearly-defined

1 and operationalized language in the context of
2 performance measures, which Dr. Deutsch and
3 her colleagues do very nicely.

4 In dealing with conceptual issues
5 such as validity, it is essential that the
6 context and relevant definitions be made
7 clear. If they are not, we may find ourselves
8 in a situation similar to Alice in her famous
9 conversation with Humpty Dumpty. "'When I use
10 a word,' Humpty Dumpty said, in rather a
11 scornful tone, 'it means just what I choose it
12 to mean -- nothing more, nothing less.' 'The
13 question is,' said Alice, 'whether you can
14 make words mean so many different things.'
15 'The question is,' said Humpty Dumpty, 'which
16 is to be master p that is all.'"

17 NQF has been a very good master in
18 defining our terms for us related to PRO
19 performance measures. If we are not careful
20 in our definitions of validity and related
21 terms, we will find ourselves in a Wonderland
22 and, like Alice, we will be hopelessly lost in

1 a rabbit hole of our own construction. This
2 is particularly true in dealing with unique
3 challenges of risk adjustment in PRO
4 performance measures.

5 One of the key lessons learned
6 during the development of quality indicators
7 and performance metrics through the 1990s is
8 that appropriate risk adjustment must be
9 content-specific.

10 Lisa Iezzoni who has written
11 extensively on this topic argues that creating
12 appropriate risk-adjustment strategies
13 requires answering four questions. Risk for
14 what outcome, over what time frame, for what
15 population, and for what purpose.

16 A fundamental distinction
17 regarding the purpose of risk adjustment is
18 between risk adjustment at the individual
19 patient level versus the facility provider
20 level. Risk adjustment at the patient level
21 is designed to better target interventions and
22 resources to individual patients. In

1 contrast, risk adjustment at the facility
2 provider level is used to develop quality
3 metrics for public reporting, understanding
4 financial incentives, and to provide
5 benchmarks for performance comparisons.

6 Dr. Deutsch and her colleagues
7 provide an excellent overview of the important
8 issues relevant to risk adjustment for PRO
9 performance measures. These include selecting
10 factors for risk adjustment, data collection
11 sources and modes, and the technical methods
12 of generating risk adjustment models.

13 Selecting factors for risk
14 adjustment presents some interesting
15 challenges. In creating models for a PRO
16 performance measure, typically factors are
17 selected using previous literature,
18 theoretical models, clinical expertise, and
19 pilot research or other analyses showing
20 statistically significant relationships
21 between potential covariates and the outcome
22 measure.

1 Dr. Deutsch and her colleagues
2 note that patient factors used in risk
3 adjustment modeling can be categorized into
4 patient demographic factors and patient
5 clinical factors present at the start of care.
6 They state that informed patients could
7 provide very valuable insights into potential
8 covariates.

9 Along this line, Iezzoni suggests
10 asking clinical experts or panels of
11 practicing clinicians to participate in the
12 risk-adjustment model building process. She
13 states involving clinicians in developing risk
14 adjusters helps achieve essential clinical
15 credibility. The same argument could be made
16 for soliciting input from knowledgeable
17 patients and consumers in selecting factors to
18 include in risk adjustment models.

19 Soliciting patient input to help
20 identify factors for risk adjustment is
21 consistent with the patient-centered approach
22 to quality assessment. A challenge facing the

1 NQF and other healthcare organizations and
2 providers is how to facilitate the evolution
3 of patient-reported outcomes to include
4 patient-centered outcomes. The Affordable
5 Care Act and the creation of PCORI have
6 highlighted the role of stakeholders, not just
7 in the assessment of outcomes, but as partners
8 in the decision-making process regarding the
9 content of what should be assessed.

10 Examples of strategies to actively
11 include patient input are emerging in several
12 areas of medical care. For example, the work
13 on activity limitation staging by Steinman and
14 colleagues that assigns consumer values to
15 functional daily living skills across
16 different impairment groups and settings
17 illustrates a systematic approach to
18 incorporating stakeholder input into complex
19 healthcare processes.

20 In the widely referenced text Risk
21 Adjustment for Measuring Healthcare Outcomes,
22 Iezzoni and colleagues list eight dimensions

1 of validity that should be considered when
2 evaluating risk adjusted measures. They
3 include face validity, content validity,
4 construct validity, convergent validity,
5 discriminate validity, criterion validity,
6 predictive validity, and attributional
7 validity.

8 Attributional validity refers to
9 the degree to which a change in outcomes can
10 be attributed to the care being evaluated.
11 Iezzoni notes that in the context of using
12 risk-adjusted measures to motivate practice
13 changes or to monitor provider performance,
14 attributional validity is the key dimension.

15 There are many issues that must be
16 addressed in achieving attributional validity
17 in selecting factors for risk adjustment. For
18 example, whether to include patient
19 characteristics such as race, ethnicity or
20 socioeconomic variables associated with
21 disparities. Do we really want to adjust or
22 control factors that may potentially mask

1 disparities in care?

2 Another complex issue in
3 establishing attributional validity is how to
4 deal with missing data. Missing data is a
5 common problem in clinical research. The
6 impact and approach to dealing with missing
7 data once again is dependent on the context.
8 The question of how to address missing data is
9 one that a priori has no correct response.

10 There are multiple approaches to
11 addressing missing data from relatively
12 simple, such as substitution of the most
13 common missing value, to complex imputation
14 procedures. Each approach has advantages and
15 disadvantages. For example, substitution of
16 common or expected values referred to a single
17 imputation might appear to be a weak strategy;
18 however research on risk adjustment using the
19 APACHE and ICU studies suggest that single
20 imputation can be a useful method. The
21 assumption made with the APACHE is that
22 unmeasured parameters are likely to be normal

1 common values.

2 Using substitution of common
3 values to manage missing data would probably
4 not be satisfactory in other clinical context.
5 The approach to dealing with missing data has
6 important implications for creating risk
7 adjustment models. For example, the amount of
8 information available will depend on how
9 missing data are managed. Some statistical
10 software programs drop an entire case or
11 patient record if any values are missing,
12 referred to as list-wise deletion. This means
13 that many cases could be eliminated during
14 statistical modeling and data sets with a
15 large number of variables.

16 Risk adjustment models using a
17 list-wise approach to managing missing data
18 may produce different results than a risk-
19 adjustment model using pair-wise deletion of
20 missing data. Pair-wise deletion only removes
21 a specific missing value from the analysis,
22 not the entire case.

1 Over the past several years, a
2 number of sophisticated statistical methods
3 for imputing missing values have been
4 developed. The robustness and limitations of
5 the newer imputation strategies are not
6 completely understood. It is important that
7 the methods used to manage missing data be
8 clearly described and justified, since how
9 missing data are handled will influence the
10 final model.

11 For PRO performance measures, an
12 important potential missing data issue is non-
13 response rates to surveys or health questions
14 or questionnaires. And extensive research
15 literatures exists regarding non-response
16 rates and a wide range of potential methods to
17 improve rates are available.

18 The approach to addressing non-
19 response bias will depend on the outcome of
20 the performance area or the performance area
21 being examined, the setting, the population,
22 and a number of other patient factors.

1 Deutsch and colleagues acknowledge
2 the problem of missing data as a threat to
3 validity. They discussed the issue of non-
4 response bias in assessing PRO performance
5 measurement and suggest that an important
6 first step is to adopt consistent definitions
7 and methods for calculating response rates,
8 cooperation rates, refusal rates and contact
9 rates based on recommendations from the
10 American Association for Public Opinion
11 Research.

12 I would like to include with a
13 final comment regarding risk adjustment and
14 missing data and that is a comment for
15 transparency. Valid PRO performance measures
16 based on risk adjusted models must be
17 replicable. Replication requires
18 transparency.

19 In this widely cited, public
20 knowledge the British philosopher of science
21 John Ziman states "the ability to reproduce
22 observations and replicate experimental

1 findings is at the very heart of the
2 scientific method."

3 When performance measures are
4 either mandated or de facto required, policy
5 makers, professional organizations in the
6 scientific community should work to ensure
7 that details of the methods are available to
8 the public or subject to external evaluation.
9 One way to examine the validity of risk
10 adjusted methods would be to compare different
11 models by applying the same data set.
12 Proprietary organizations, health information
13 vendors, and others have developed and
14 promoted risk adjustment methodologies for a
15 range of purposes. They would argue that
16 putting their models in the public domain
17 would harm the ability to market their
18 product. That concern has merit. Carefully
19 designed policies are needed to balance
20 private sector interests with public needs.
21 Iezzoni and others have suggested the
22 establishment of an external, independent, and

1 objective body that would operate an
2 accreditation process and develop standards of
3 evaluation to ensure that risk adjustment
4 methods meet established, explicit criteria of
5 clinical validity and scientific soundness.
6 This is not a solution but it is a potential
7 step to a solution. Such a task is outside
8 the purview of the NQF. But the NQF and other
9 agencies involved in quality measure could
10 certainly contribute to ensuring the future
11 transparency of risk-adjusted methods
12 associated with PRO performance measures.

13 In his book *The Man with a*
14 *Thousand Faces*, one of my favorite authors,
15 Joseph Campbell, explores the role of myth and
16 legend in the development of culture. He
17 makes the observation that as an individual or
18 a society, we can only have those adventures
19 in life that we are ready for.

20 Based on the discussion at the
21 past two NQF meetings, it is obvious that we
22 are ready for the adventure of figuring out

1 how to use patient-reported outcomes to
2 improve the quality of the healthcare that we
3 all receive. Thank you.

4 DR. PACE: Okay, Rob?

5 DR. WEECH-MALDONADO: Yes, hi,
6 everyone. Rob Weech-Maldonado at the
7 University of Alabama at Birmingham. I also
8 would like to thank the NQF for the invitation
9 and also congratulate Anne Deutsch and their
10 colleagues for an excellent paper.

11 I have been asked to address two
12 particular issues in the paper; one of them
13 dealing with proxy use and the other in terms
14 of having multiple PROMs in developing
15 performance measures.

16 Most of my comments will probably
17 be centered more on CAHPS, since that is where
18 a lot of my experience, since that is where a
19 lot of my experience has been. Next slide,
20 please.

21 Just to remind you, you know in
22 terms of the use of proxies, very important

1 especially in addressing the reports of
2 vulnerable populations, at least on the
3 research that has been done with Medicare and
4 patient surveys of Medicare beneficiaries,
5 they tend, those that use proxy, they tend to
6 have lower education, more likely to minority,
7 and have poor physical health and slightly
8 worse mental health.

9 So definitely, they have a very
10 important role in patient surveys or patient
11 reports. However, we also know on the other
12 hand that they do have an effect on survey
13 outcomes. And this may be because a proxy has
14 different cognitive perceptual strategies in
15 addressing the questions. There may be
16 issues, I think this was brought yesterday,
17 that the person serving as a proxy may be of
18 a different age category than the intended
19 respondent. So there is definitely
20 differences.

21 Now one good thing about the
22 studies that have been done is that the proxy

1 effect tend to be smaller when you have more
2 objective reporting items versus global
3 ratings. For example, in CAHPS we have the
4 ratings that ask the patient or the person to
5 rate their healthcare, rate their physician in
6 a zero to ten scale. So those tend to be
7 "more subjective."

8 Then you have the more objective
9 that would ask for specific experience. For
10 example, how often was it difficult for them
11 to get an appointment in a reasonable manner.
12 How often do they have to wait beyond 50
13 minutes beyond the appointment time? How
14 often did the physician explain things in a
15 way that was easy to understand? So those we
16 tend to call them reports of care. They tend
17 to be more objective versus, again, kind of
18 the more global ratings. Next slide, please.

19 Research also finds, especially in
20 the CAHPS literature that it also depends is
21 the proxy actually responding for the person
22 or is the person or the proxy assisting?

1 Perhaps the intended person may only need
2 assistance in reading, completing the
3 questions, but they still have an active role
4 in completing the survey. And actually the
5 CAHPS have tried to capture that data and
6 distinguish between whether they are proxy
7 respondent versus assisting and actually has
8 found that those that are proxy respondents
9 have even less positive evaluations than those
10 that provide assistance. So that may be
11 important in distinguishing that.

12 The other thing is that it also
13 depends on who the proxy is, the relationship
14 of the proxy to the intended person. Spouses
15 and those that live with the person tend to
16 provide responses that are closer to those of
17 the intended respondent and that may make
18 sense because this person may have more of a
19 day-to-day interaction with the person and
20 know exactly how they interact also with the
21 healthcare system versus non-spouse proxy that
22 tend to be less positive than the intended

1 person. Next slide.

2 So some of the ideas in terms of
3 addressing proxy effects. You know, in CAHPS
4 we do use case-mix adjustment to adjust when
5 it is, say respondent, a proxy respondent.
6 Beyond there is only very few variables that
7 are used in case-mix adjustment, age, gender,
8 education, and this is also one, especially
9 the Medicare surveys. The other alternative
10 is kind of called propensity score matching.
11 It is a little bit more complex but the idea
12 is that there is selection bias in terms of
13 the people that actually use a proxy. So that
14 would be a better way of actually
15 differentiating or getting a better sense
16 about how different the assessment of proxies
17 are versus the intended person.

18 The other key thing is that we may
19 want to emphasize more objective reports. I
20 think Anne alluded to that in terms of some of
21 the measures that she was talking about,
22 especially when you are serving the population

1 that you may expect to have a high proportion
2 of proxies, perhaps administering more by
3 survey by phone, even in person.

4 Also paying particular attention
5 to the health literacy. You know, sometimes
6 people just have problems understanding the
7 measures and so that is always something that
8 we tried to emphasize in CAHPS. And you may
9 even want to consider alternative measures to
10 capture the proxy perspective. And an example
11 is CAHPS with their family member survey for
12 the nursing homes, where they have the one for
13 the resident and then they have a parallel one
14 for the family member. And they tend to ask
15 very similar questions but then you get those
16 two different perspectives. Next slide.

17 Now we get into the whole issue of
18 multiple PROMs and how to deal with them.
19 Anne did an excellent summary already. I just
20 want to reiterate a couple of things here. We
21 are talking about when you have basically
22 substantive prompts. And a great example is

1 where you have two screening tools for
2 depression; PHQ-9 and BSI, the brief symptom
3 inventory or index, one of the two. And so
4 you have those two alternatives and they have
5 been found equally valid, reliable. So which
6 one do you use or you may have some people
7 using one versus the other. So that is what
8 this is trying to address.

9 And so Anne alluded to how the MDS
10 3.0 team, Deb Saliba, will be able to provide
11 more information on this, how they dealt with
12 one particular area in terms of pain, the
13 intensity of pain. So in the current MDS
14 survey, they tried to provide alternatives.
15 So some people may be better able to answer on
16 a zero to ten scale while others it may be
17 easier to provide more of a verbal description
18 of pain. And I was asking her this morning,
19 I was thinking that maybe those with more
20 cognitive impairment may lean more towards the
21 verbal versus the zero to ten that requires
22 perhaps greater cognitive skill but that was

1 not the case. Apparently they function fully
2 well regardless of cognitive function.

3 Can I go to the next slide and
4 then come back to this one? I just wanted to
5 provide you -- so I was looking at -- this is
6 really not my area. But in terms of pain
7 management or pain intensity of pain, so this
8 is yet another scale, the Wong-Baker faces.
9 And as you can see, there is the English
10 version and the Spanish version. Two
11 interesting things about this one, that the
12 Spanish is not just a translation into
13 Spanish, they also use different faces. And
14 apparently this was trying to capture not only
15 the linguistic adaptation but also cultural
16 adaptation that a level of pain in one
17 language may have a different connotation in
18 terms of the face that you see and how you
19 relate to that type of pain.

20 So that is something I guess I was
21 trying to bring also again that cultural
22 linguistic differences that may sometimes may

1 have to be capturing these measures, as well
2 as -- so we have these alternative measures
3 that we could use and Deb was telling me that
4 this one was problematic because we have the
5 Spanish and English but it didn't necessarily
6 translate as well into other languages or
7 other cultures. So they stick more with the
8 numeric and the verbal.

9 But assuming that we have again
10 these different measures, going back to the
11 previous slide, please, basically you would
12 use some type of IRT methodology to create a
13 crosswalk between the two or more scales that
14 you have and developing what is the right
15 threshold in one scale versus the other. So
16 perhaps ten being extreme pain and what would
17 that represent in the other scale, you know,
18 severe/horrible. So that would require that
19 crosswalk so that we can actually then have
20 comparable measures. Next slide.

21 And this is the last slide.

22 Another way that I guess I was thinking about

1 the multiple PROMs is that you could actually
2 create a composite score with some type of
3 performance measures. And the one that came
4 to mind as overall health status, you have the
5 physical and mental health scores but you may
6 want to combine those two into one overall
7 score. So then you have to think about the
8 weights that you provide to each of the
9 different scales.

10 You know, the first thing that you
11 would probably think about is using equal
12 weights but that may not always be desirable.
13 And this is where you may want to capture the
14 values preferences of those using the
15 measures, depending of patient versus
16 providers. You may want to use regression-
17 based weighting if you have like a gold
18 standard that you can -- that some of the
19 scales predict better, that gold standard.
20 And one interesting thing about combining
21 measures is that if there is some of them that
22 have a greater standard deviation, they will

1 have a greater influence in the performance
2 measure.

3 So you have to think about a way
4 of standardizing those scores or having a
5 weight that would be more for reciprocal of
6 the standard deviation of that domain.

7 I just wanted to kind of bring the
8 two options that may be possible when
9 combining the multiple PROMs. Thank you very
10 much.

11 DR. PACE: All right. Thank you
12 again to another excellent panel. So we will
13 stop here and open it up for questions and
14 comments from our expert panel and audience.
15 And Operator, you can queue up anyone on the
16 phone line also at this point.

17 OPERATOR: At this time, I would
18 like to remind everyone in order to ask a
19 question, press * then the number one on your
20 telephone keypad.

21 R. PACE: Okay, so why don't we --
22 we have a lot of food for thought here. Deb

1 Saliba, do you want to?

2 DR. SALIBA: Thank you. So a lot
3 of mention was made today of the minimum data
4 set, work that we did. Let me start by saying
5 this is one of 450 items on the instrument.
6 So minimum is a bit of a misnomer.

7 But to start with this item, it is
8 sort of a case study in patient-reported
9 outcomes. And I think we started with the
10 fact that in focus groups, patients and
11 families told us that pain was a very
12 important construct to them. When we talk to
13 ombudsmen that hear complaints in nursing
14 homes, this is a big source of contention with
15 families and residents in nursing homes. So
16 it really started from the fact that patients
17 and families feel that this is a very
18 important area.

19 But pain is multidimensional. I
20 mean you have heard today just about the
21 severity items and we tested other items as
22 well to go into the minimum data set. It had

1 already been identified as a fifth vital sign
2 in a lot of healthcare systems, not just in
3 nursing homes, but also in hospitals. In the
4 veteran's administration, our entire
5 healthcare facility is a fifth vital sign and
6 everyone has asked about it or supposedly
7 asked about it.

8 The challenge is that it was being
9 asked in different ways in different
10 organizations across different providers.

11 There was a lot of variability in how it was
12 being asked, as well as whether or not it was
13 being asked systematically. Some nurses will
14 just look at the patient and say I can tell
15 and fill out the item. So we had to face that
16 challenge as we were thinking about putting
17 that into an instrument.

18 And we had the problem, as Anne
19 mentioned earlier, of detection bias because
20 those facilities that were systematically
21 screening better for pain tended to have
22 higher pain reports than those facilities that

1 are being less systematic in how they were
2 looking for pain.

3 And then we also found that when
4 they were having to report it in the old
5 minimum data set, they were using various
6 scales and it didn't crosswalk into the scale
7 that they were being asked to report. So it
8 was very problematic for them as well because
9 they were having to translate it and didn't
10 really have the instruments for translation.
11 So even those facilities that were doing it
12 well.

13 So we looked across the
14 instruments that were out there and saw that
15 the two that were the most common and seemed
16 to have the least operational problems with
17 the zero to ten scale, and when we say zero to
18 ten scale, we are really talking about the
19 visual analogue scale, where you actually show
20 the scale anchored verbally at zero, anchored
21 at ten, and you ask the items as -- you show
22 the scale at the same time that you are asking

1 the items. And the verbal descriptor scale.

2 And there was a lot of debate in
3 the pain community. There are multiple scales
4 that various providers advocate, often the
5 ones that they developed. So we sort of tried
6 to work through that with stakeholders and
7 worked through that with the pain community as
8 well.

9 Cognitive came up today. And we
10 started, to be honest, with the assumption
11 that there was an absolute cognitive cut point
12 below which people could not answer these
13 items. And we were told again by stakeholders
14 that that was wrong, that we couldn't do that
15 for multiple reasons, that people could self-
16 report their symptoms, even with some
17 cognitive impairment and also that it would
18 send a signal of disenfranchisement of an
19 entire segment of the population that was not
20 appropriate.

21 So we said okay, well this is
22 empirical. We can test that, as opposed to

1 going in with assumptions. So we actually
2 tested everyone who was capable of responding
3 and looked at response rates, consistency. We
4 also went in and looked at reliability of
5 responses, asking daily for five days every
6 morning with one interviewer and then going
7 back at the end of the third day and back at
8 the end of the fifth day and looking at recall
9 ability and saw that residents were, even
10 people with moderate cognitive impairment,
11 were able to recall moderate to severe pain
12 that had occurred in the prior period.

13 So we were surprised by these
14 findings. They were right. We were wrong.
15 And it wasn't the first time in the study that
16 that happened.

17 So then we tested it. A lot of
18 the people in the pain community felt the
19 verbal descriptor scale was better for persons
20 with cognitive impairment. Again when we
21 tested in a sample of 3,000 nursing home
22 residents with nursing home staff asking the

1 items, there was no systematic difference in
2 whether cognitive impairment were able to
3 answer zero to ten versus the verbal
4 descriptor scale.

5 So we ended up sort of at a
6 quandary because a lot of people were using
7 verbal descriptor, a lot of people were using
8 zero to ten, and we didn't want, as much as
9 possible, we didn't want to change people that
10 were already doing something that was
11 appropriate just for ease of use.

12 And as one of the stakeholders
13 said to us when we sort of when to them and
14 said please make a choice. They said, you
15 know, you are at RAND. Can't you figure this
16 out?

17 So we used item response methods
18 to -- item response theory methods to
19 crosswalk the two instruments and found that
20 we were able to crosswalk the zero to ten
21 visual analogue scale to the verbal descriptor
22 scale for this population when staff were

1 asking.

2 So it is sort of a case study in
3 how we ended up with a severity measure in the
4 minimum data set that includes both types.
5 Was it, you know, has it been embraced
6 necessarily? Nursing home staff aren't
7 particularly -- were not initially
8 enthusiastic about asking patient reported
9 items. So I ultimately had to take off my
10 researcher hat as a UCLA person and put on my
11 trainer hat and work with staff to help them
12 understand that you can talk to your residents
13 and you can get this information from them.

14 So it is really a multi-step
15 process to look at how just this one item out
16 of 450 ends up being part of a standardized
17 instrument. And you have to look at it -- we
18 have to look at it as measurement people all
19 the way from identifying the importance,
20 testing its performance in a very specific
21 population, and then how it is actually doing
22 to be used by the providers when they have it.

1 So it has been referred to a great
2 deal today. I mean when you just see it as
3 first and you think, God they are doing it
4 with cognitively impaired people and what are
5 they thinking. But we really went through an
6 empirical systematic process to decide on that
7 item.

8 DR. PACE: Okay, thank you. Gene?

9 DR. NELSON: The discussion about
10 risk adjustment factors and demographic or
11 clinical and psychosocial, a tricky area of
12 course, but one thing that created red flags
13 for me was what was labeled as psychosocial
14 but then the examples were more things having
15 to do with activation or engagement or
16 motivation, which are often mutable, as you
17 said, by the care before or after and so
18 sometimes if viewed as at least a proximate
19 outcome for good outcomes, health engagement
20 being generally valued by consumers or
21 patients.

22 So my sense is this is not a good

1 thing to consider for risk adjustment. Others
2 might wish to comment on this; John Wasson or
3 Judith Hibbard, or others that are actually
4 experts in risk adjustment methods.

5 DR. PACE: Lewis?

6 DR. KAZIS: Can you hear me?

7 DR. PACE: Yes.

8 DR. KAZIS: I had a couple of
9 points. The first was, in terms of the --

10 DR. PACE: Now we are kind of
11 losing you.

12 DR. KAZIS: Can you hear me now?

13 DR. PACE: Yes.

14 DR. KAZIS: On the issue of
15 imputation of missing values, we have gone
16 through some extensive work for CMS related to
17 the HOS study, which you heard about
18 yesterday, and this includes the modified
19 regression estimator which in effect would
20 allow us, based upon our outcomes, using in
21 the past SF-36 and now the BR-12, we are able
22 to capture 90 percent of the missing values on

1 the basis of this particular approach, which
2 was developed by Bill Rogers and is available
3 in the public domain and we have extensive
4 documentation and reports that have been done
5 that are available on the HOS website with
6 publications that we have subsequently shared
7 -- basically that have been published. So
8 that is available and this approach tends to
9 be quite useful, does not require high
10 computer power, and might in fact be an
11 approach that folks want to consider, whatever
12 the outcomes, that are used that are patient-
13 centered.

14 The separate point is in terms of
15 the risk adjusters. We have used what is
16 called a cascading approach where we have
17 developed a number of different models, with
18 a minimal set of variables that might be
19 required. So one starts with all of the risk
20 adjusters that are in your model and then you
21 cascade across different models until you get
22 to a minimal set of variables that would be

1 required in your risk adjustment. So you
2 could literally start off with, for example,
3 12 variables that become your risk adjusters,
4 and then in the minimal data set, it would be
5 as few as say three. That would still allow
6 us to risk adjust adequately for a particular
7 case.

8 So those algorithms have been
9 worked out and are also available through this
10 HOS website.

11 The last point has to do with in
12 the report there was a mention made in the
13 paper that we have all reviewed of an initial
14 covariate adjustment using the baseline value
15 of your outcome. And this is quite
16 controversial. And in fact there is a
17 correlated error problem that unless the
18 design of the study is randomized, a
19 randomized clinical trial design, if you are
20 dealing with an observational naturalistic
21 data set, it can become quite problematic with
22 that initial covariate adjustment. And I

1 think that that needs to be considered.

2 DR. PACE: Okay, thank you.

3 Collette.

4 MS. PITZEN: This is Collette from
5 Minnesota Community measurement. I had a
6 couple comments. One was on the whole idea of
7 missing data. And I wanted to make the point
8 that, and I will use the PHQ-9, our favorite
9 tool, as an example. We don't have much of a
10 problem with patients not completing that
11 simple instrument. So less of an issue of the
12 actual missing items within that tool. But a
13 bigger threat to the validity of this measure
14 is the longitudinal measure over time and the
15 ability to connect with those patients at the
16 measurement points in care.

17 For example, our current follow-up
18 rate with these patients at six months is
19 about 25 percent and we keep working on that
20 to make it better but that is the reality of
21 implementing these tools in clinical practice.

22 The second point that I just

1 wanted to add on to Lewis's risk adjustment.
2 When we are developing new measures, we are
3 working with our expert measure development
4 workgroups. And again, we are picking
5 variables based on evidence and literature and
6 expert opinion that the group thinks would be
7 important variables for risk adjustment and
8 then we start collecting that data and running
9 those variables through the models to see
10 which, indeed are good risk adjustment
11 variables.

12 Thanks.

13 DR. PACE: Okay. Ethan.

14 DR. BASCH: Thanks, just a couple
15 of comments. This was a great panel. I have
16 three comments.

17 The first, regarding bias. You
18 know, I do agree with the comments about
19 response bias or what you called detection
20 bias. I think it is really an essential
21 adjustment that needs to be made in this kind
22 of work and one that the NHS PROMs initiative

1 has a fair amount of experience with and I
2 mentioned that before.

3 And I think this really touches on
4 the issue of optimizing response rates for
5 minimizing missing data. And in work that we
6 have done in cancer populations, we have found
7 that the principle reason for missingness of
8 data in nonclinical trial populations is that
9 people were too busy or forgot. And then when
10 patients become very ill, they are unable to
11 complete, unable or unwilling to complete.
12 Although, patients have to really be quite ill
13 not to complete. In general, we found within
14 a month of death in cancer populations.

15 What we found in general is that
16 there are strategies that can optimize missing
17 data, which obviously is preferable to using
18 imputation in post-production. One way to
19 optimize response rates is by making
20 completion of questionnaires a standard part
21 of operations, rather than sort of a voluntary
22 or a carve out in a sub-population. We found

1 that response rates are boosted about 30
2 percent when it becomes mandatory. And I
3 think that is probably reflected in both the
4 Swedish and the English experiences.

5 The other strategy is using backup
6 data collection methods. In particular if
7 there is a mailed questionnaire, an electronic
8 questionnaire to have actually have a human
9 person call people who don't complete their
10 questionnaires and that boosts response rates
11 by about ten percent.

12 And in general what we found is
13 that it really only takes one call. And after
14 the first time people feel, oh you know,
15 somebody is watching, so I had better complete
16 my questionnaires in the future or I am going
17 to be bugged about it, which is sort of
18 interesting.

19 Regarding proxy, I actually had a
20 question for Rob, which is whether one would
21 advocate for proxy reporting as a substitution
22 at a point where there is lost data or if you

1 advocate for longitudinal collection of both,
2 you know, patient and proxy reports, that you
3 can impute based on the trajectory when you
4 have a population at risk, because that would
5 substantially increase the burden, although my
6 understanding -- it is not my area -- is that
7 imputation is improved when you actually have
8 the trajectory of the proxy reports.

9 My other question for Rob about
10 multiple PROMs is about multiplicity problems,
11 which we think about in the registration
12 context all the time but that we really didn't
13 touch on here.

14 DR. PACE: Rob, do you want to
15 respond to that?

16 DR. WEECH-MALDONADO: Yes. Well
17 basically for the first question that Ethan
18 asked about if I am understanding Ethan, you
19 are saying whether it is recommended more for
20 at the first point or as well as over time.
21 Because if you use it over time, then you may
22 have also kind of perceptions right in the

1 follow-up surveys and all that.

2 I think to the extent that you are
3 able to somehow take that into the adjustment,
4 you know, the case mix, it should be okay,
5 especially if you are thinking about, you
6 know, when we are thinking more about
7 performance measures. You know, as long as
8 you are able to case-mix that over time, I
9 think it would be definitely preferable to
10 have that proxy in the follow-up, rather than
11 having missing data.

12 So if it definitely improves your
13 response rate over time, it definitely would
14 be preferable.

15 But in terms of the CAHPS surveys,
16 they do discourage proxy use. They are really
17 more limited to the high-risk populations like
18 Medicare in populations like that. So it is
19 not universally recommended but when you have
20 again an at-risk population. I don't know if
21 that answers your question but yes, it
22 definitely would depend on the population.

1 DR. BASCH: And the other was
2 multiplicity issue.

3 DR. WEECH-MALDONADO: The
4 multiplicity of --

5 DR. BASCH: If there are multiple
6 PROMs.

7 DR. WEECH-MALDONADO: If there are
8 multiple PROMs and --

9 DR. BASCH: That are being used to
10 individually score.

11 DR. WEECH-MALDONADO: Oh, that are
12 individually scored, yes. Yes, so that is
13 where figuring out the right combination of
14 those PROMs, in terms of the weights that you
15 provide, it is where it gets to be critical
16 and that would have to be subject to
17 appropriate testing to determine what those
18 weights would be in order to aggregate them,
19 ultimately. Because you want to aggregate
20 them, depending on what the performance
21 measure, the idea would be to be able to
22 aggregate them.

1 The first case was more about
2 using one or the other, which is it is a
3 little bit easier but if you are actually
4 going to create a composite of them, then the
5 main issue is how to address the waiting that
6 you are going to be doing.

7 DR. PACE: Before we take any more
8 in the room, Operator, are there any questions
9 from those on the phone?

10 OPERATOR: At this time, there are
11 no questions.

12 DR. PACE: Okay and what about in
13 our audience? Evan will you -- and we are
14 just about out -- we are a little bit over
15 time but we will take a few more questions.

16 MS. MASTANDUNO: Melanie
17 Mastanduno, Dartmouth Institute.

18 I just want to add to what Ethan
19 was saying. While I do not have the
20 statistical basis for this statement, when
21 providers -- a boost in response rate will
22 also come when providers and patients are

1 talking about the results of their survey and
2 if the provider goes as far as to say this is
3 important because I now understand you better.
4 Thank you for filling out this survey. And we
5 do see that across 14 different specialties
6 where Dartmouth is collecting these data now.

7 DR. PACE: Okay. Evan, behind
8 you.

9 DR. ROSS: Hi, I'm Clarke Ross.
10 I'm a new member of the MAP Workgroup on
11 Persons Duly Eligible for Medicare and
12 Medicaid and I represent the Consortium for
13 Citizens with Disabilities, which is a
14 national coalition a cross-disability
15 organization which has most of these
16 organizations as one of those members.

17 And I raised this issue at the
18 July meeting. I wanted to just get on the
19 radar a supplemental approach to documenting
20 the consumer person, sometimes called patient,
21 experience with the system. And this is
22 approach that is used in four states and it

1 has been used in two of those states for over
2 a decade, paid for by health plans mandated by
3 state Medicaid programs for persons with
4 mental illness. And these are third-party
5 independent consumer- and family-operated
6 monitoring teams and their whole approach is
7 to interview consumers and their families
8 where they are, not on the site of delivery
9 but where they are; where they live, where
10 they participate in the community, where they
11 work sometimes.

12 And so what I am asking is that
13 the National Quality Forum recognize and
14 acknowledge that there are supplemental
15 methods used around the country to supplement
16 the core of what you have been talking about.
17 And again, these are paid for by state
18 Medicaid organizations. In Massachusetts, the
19 managed mental health company is mandated out
20 of its contract with the state to locate and
21 finance an independent consumer and family
22 monitoring team. These are not ombudsman

1 programs. These are monitors. That is their
2 sole purpose.

3 And so I just wanted to, as you
4 focused on where these things are delivered
5 and who does it and how to measure it, all
6 fundamental questions, there are alternative -
7 - not alternative -- supplemental efforts
8 going on and I think it is important for the
9 quality forum merely to recognize that there
10 are some of these supplemental strategies
11 going on, used today to ensure accountability
12 of health plans to their enrollees. Thank
13 you.

14 DR. PACE: Okay, thank you. Can
15 we do one more question or one more comment?

16 Kathy.

17 DR. LOHR: Two quick questions,
18 don't necessarily need an answer or
19 discussion. On the concerns about proxies, we
20 have heard lots of really interesting options
21 but the point that I didn't hear is whether we
22 know much about whether there are systematic

1 directionality issues that can be dealt with
2 or is that just in its infancy in terms of
3 understanding which kinds of proxies will
4 overestimate or underestimate and whether that
5 can be taken into account.

6 On the multiple PROMs, I think
7 that is a very complicated issue for NQF and
8 for Anne and everybody to deal with in the
9 paper. But on one particular thing, I
10 wondered about whether we need to know more
11 about the -- and this was from Roberto's
12 slides -- the pluses and minuses of doing
13 composite scores. Because that just seems to
14 me to make life even more difficult and
15 whether that is a direction for NQF to go in
16 moving on towards performance measures and so
17 forth. Is that sort of a bridge too far to
18 try to do that, rather than just keep it more
19 simple with individual measures and cope with
20 all the measurement problems there?

21 DR. PACE: You're right.

22 Composite measures have a whole other set of

1 methodological issues and we do have composite
2 performance measures, some, but it does
3 increase complexity and it may not be the
4 place to start. But again, I think it is
5 something to consider in terms of addressing
6 these issues.

7 Okay, we are going to take the
8 next 20 or 25 minutes until break time to
9 again, at our tables -- yes, and Patti you
10 want to -- okay. So we will ask the people in
11 the back to come up front. Again, as we did
12 yesterday evening. And you can go to the
13 table -- I guess if you want to rejoin the
14 group you were with, that might be useful.

15 We are going to kind of continue
16 on -- and Jessica you may want to put up that
17 slide again -- to look at the NQF criteria and
18 are there unique considerations when NQF
19 starts looking at these PRO-PMs in terms of
20 our criteria.

21 We have talked about and you have
22 seen that our criteria map to a lot of the

1 issues we have talked about but we want to
2 really have you pull out any unique
3 considerations where we may need to tweak or
4 think about unique ways of applying these
5 criteria. And this will also apply to our
6 next panel after the break where we will be
7 talking about the pathway from PRO to an
8 endorsed measure where we also kind of
9 identify the NQF criteria along the way.

10 So we will continue with that.

11 And Patti, do you want to add anything?

12 Yes, the audience in the back,
13 please feel free to come up and join a table,
14 even if you weren't at a table last night. We
15 welcome your participation.

16 And we will go until 10:30 and
17 then we will take a break and then resume.

18 (Whereupon, the foregoing
19 proceeding went off the record at
20 10:09 a.m. and went back on the
21 record at 10:52 a.m.)

22 DR. ADAMS: Okay, may I ask

1 everyone to rejoin their table? And if we
2 could queue up the slides.

3 So for this panel, we are going to
4 try to tie it all together. And so not only
5 will it incorporate our thinking from
6 yesterday and today, but really it takes us
7 back even to the first workshop, where we
8 started to look at characteristics for PROMs
9 and what would make them most ready for
10 primetime for performance measurement. And we
11 had all agreed that we thought that a visual
12 or a flow would be helpful, not only to inform
13 the field but I think to kind of collect our
14 thinking.

15 So this panel today is going to,
16 based on the input that we received at the
17 first workshop as well as today and with our
18 expert panel and our panel prep, so lots of
19 thinking went into this flow diagram. And of
20 course we are going to be further refining it
21 based on your feedback. But we are going to
22 try to tie it all together right now and we

1 would like your input in that regard.

2 In regards to our reactors, we
3 have Ethan Basch with us, thank you. And he
4 is going to cover what we are calling steps
5 one through four on the diagram, which where
6 we are going to kind of think about more how
7 we would frame this up-front with the
8 conceptual basis.

9 We have Jim Bellows and he is
10 going to walk us through the process
11 performance measure steps. And Eleanor
12 Perfetto and particularly with experience with
13 Pfizer around the outcomes element of this.

14 But I am just going to kind of
15 give us a high-level overview before we take
16 a dive into that.

17 I am really excited about but
18 anxious to get your input on this flow because
19 I think it will be very useful, not only for
20 a performance measure committee that is going
21 to be looking at endorsement. But I think as
22 we start to play this out with the field and

1 we talked about yesterday perhaps, you know,
2 would we have a few use cases? Would we put
3 a few things through this to kind of test what
4 we have been saying? And I thought that is
5 really brilliant advice. So not to put a lot
6 of pressure on our pathway panel but I just
7 think that I really appreciate the effort that
8 has gone into putting this now into a diagram,
9 which in some ways you could get overwhelmed
10 with all the things we discussed but in other
11 ways, we are starting to see a path along this
12 journey. So I am really taking a glass half
13 full versus half empty because sometimes the
14 methodological considerations can seem a bit
15 daunting.

16 Okay. So if we look at this
17 pathway, I mentioned the first part, which is
18 going to be the conceptual considerations and
19 I think that this, when we talked about what
20 Joyce had recapped this morning, it relates
21 back to meaningfulness. And certainly we want
22 to identify PRO-based performance measurements

1 that are meaningful and important up-front to
2 patients and their families and caregivers,
3 and to all end users.

4 And I wanted to thank Ethan
5 because when we did our prep call, you really
6 -- you know, we dived right into the process
7 and you really offered us the opportunity to
8 step back and say hey, let's think about what
9 some of the prequel or preamble to this. So
10 I did want to acknowledge that.

11 And if we could have the next
12 slide. Now on this slide we have lots of
13 discussion around implementation or state of
14 readiness and should we first think about how
15 this applied into practice and should we go a
16 process measure route. We weren't advocating
17 for maybe just checking a box, but would we
18 look at this from the process and what we have
19 learned, I think particularly when we talked
20 about actionability and how this would
21 influence.

22 And Jim, I am going to call that

1 the Jim Bellows box. I know I did that on our
2 call. But number five, particularly from the
3 first workshop, particularly struck -- and we
4 got that from our different levels of high
5 medium and low from Liz Mort yesterday around
6 actionability and the process there.

7 And then we get to the next slide,
8 which is what we are always aiming for,
9 ultimately is around the outcomes. And I
10 think that Steve Fihn, I know he is not with
11 us today, but he spoke that maybe there are
12 some lower hanging fruit. Maybe there are
13 some are ready for outcomes if we think about
14 things like HIP where got these urology
15 example yesterday. Maybe we can pass go and
16 go to outcomes. But ultimately that would be
17 where we want to be.

18 So with that bit of an overview,
19 so we are trying to put together that picture
20 of the pathway and we are going to break down
21 each individual part and our reactors are
22 going to solicit your feedback there.

1 So I'm going to turn it over to
2 you, Ethan. Thank you -- yes.

3 Oh yes, thank you, Karen.

4 So in your package you received
5 this. We also put these on the table. Here
6 is the color diagrammatic what we are going to
7 be talking about. We also, as a supplement,
8 put the NQF criteria and how this maps to it,
9 and also some of the characteristics we talked
10 about yesterday. So this is kind of your
11 cheat sheet, so to speak, as we go through
12 this. Thank you, Karen.

13 Ethan?

14 DR. BASCH: Great, thanks. So
15 before we start, I think we have a special
16 slide to put up. Do you guys have that?

17 (Pause.)

18 DR. BASCH: Do the presentation
19 first and then the special slide. Okay,
20 that's fine.

21 So if you all have the -- I'm
22 going to borrow this -- the diagram from your

1 packet, each of us is going to go to --
2 thanks, Vanna.

3 (Laughter.)

4 DR. BASCH: So each of us is going
5 to go through several of the steps. So I was
6 asked to go through the first four steps.

7 So as you can see, these initial
8 four steps really are what Karen called the
9 prequel. So first identifying outcomes that
10 are important and meaningful to the target
11 population; determining of patient reporting
12 of the outcome of interest is appropriate;
13 identifying existing measures to evaluate the
14 outcome of interest; and then number four,
15 applying characteristics identified at the
16 last workshop and in this workshop. A lot of
17 them in the technical paper that was
18 developed. And this includes looking at
19 measurement properties. And I am just going
20 to march through these. Could I have the next
21 slide.

22 So if one thinks about this, I

1 have tried to emphasize the importance of
2 patient engagement or consumer engagement,
3 person engagement and I would argue that
4 patient engagement begins with box number one.
5 This is really the first time point at which
6 one touches the population of interest.
7 Because without doing probably a qualitative
8 and quantitative research -- you can go to the
9 next slide.

10 So without doing qualitative and
11 quantitative work, which may involve surveys,
12 focus groups, key informant interviews or
13 longitudinal observational research or cross
14 sectional research, it is very difficult to
15 know if those outcomes of interest are
16 actually important in the target population.
17 Go to the next slide.

18 Now I would argue that box number
19 four is a potential second time point for
20 patient engagement. And you know in
21 evaluating the characteristics of a PROM, this
22 would usually begin with a literature review,

1 a landscape overview. One could take a look
2 at the measurement properties, whether the
3 measure has been evaluated in the comparable
4 population. But as was pointed out yesterday,
5 very likely a second step of patient
6 engagement would occur here. So you can go to
7 the next slide.

8 And this would involve qualitative
9 work to establish what I call content
10 validity. Other people call it face validity
11 or other kinds of -- you know, patient
12 understanding in the target group of what is
13 being measured. And this would include a
14 diversity of patients within the target
15 population, to make sure that people who may
16 not have been a part of patient interaction
17 during development of the tool are now a part
18 of it. This may include patients whose
19 literacy is different from the initial
20 population, their performance status is
21 different. Their linguistic orientation is
22 different, cultural orientation and so on.

1 You can go to the next slide.

2 So I thought I would try to make
3 this real with a hypothetical example. So
4 looking at men with prostate cancer one can
5 think about two different populations; say a
6 post-prostatectomy population. Let's say
7 hypothetically we went out to a group of men
8 who had just had their prostates removed and
9 asked them about what was most important to
10 them. This is all hypothetical because I
11 haven't done this. Right? So I'm just saying
12 if we went out and talked to patients based on
13 actually existing literature, these are the
14 two most important domains to patients,
15 although admittedly the target population may
16 differ, urinary symptoms and sexual function.
17 If you look at a metastatic population,
18 actually pain and tiredness or what we
19 classically have called fatigue are the most
20 important domains. You can go to the next
21 slide.

22 So now we have identified the

1 outcomes of interest. You know, we conclude
2 that probably patient self-report is the most
3 appropriate approach. That is number two.

4 So number three, we want to
5 identify PROMs. We go out. We review the
6 literature for post-prostatectomy. We think
7 about the IPSS. And for number two, pain and
8 tiredness, we think maybe we will use some
9 PROMIS items.

10 So now we get to number four,
11 which is we want to evaluate the measurement
12 properties as applicable to our target
13 population. You can go to the next slide.

14 And so we do our literature
15 review. We find both were developed with
16 patient input. Both have been evaluated in
17 similar populations, looking at construct
18 validity, reliability, sensitivity to change
19 and so on. And we ask ourselves a question,
20 do we now need to conduct additional
21 qualitative research. I'll stop there.

22 And now we have a special slide.

1 No, we don't? Okay.

2 (Pause.)

3 DR. BASCH: What do you guys
4 think, are we going to get it? You don't
5 think so. Okay, well we were going to have a
6 birthday cake on the slide because Laurie
7 Burke whispered in my ear that somebody has a
8 special day today. It's Eleanor's birthday.

9 (Applause.)

10 DR. BASCH: So we are all going to
11 sing.

12 (Singing of "Happy Birthday.")

13 (Applause.)

14 DR. ADAMS: Not all methodologists
15 are serious. Right?

16 So Jim, we will pass that on to
17 you now.

18 DR. BELLOWS: Okay. So first of
19 all, thank you so much for naming a box after
20 me, box 5. I am sure there is people in this
21 distinguished room that have items and scales
22 and instruments named after them, which I will

1 never have, but at least for one day I will be
2 happy to have a box.

3 So and I want to come to a couple
4 of things. One of the questions is, does it
5 make sense to start with process measures
6 first before we go on to outcome measures? Or
7 I think the way the question is really written
8 is should process measures proceed. And my
9 answer to that is going to be with respect to
10 an experience we are having inside Kaiser
11 Permanente with the PHQ-9. Both the process
12 measure, namely did you do a baseline testing
13 and did you a follow-up at approximately six
14 months, and the outcome measure of whether you
15 treated to remission.

16 And so my answer to should the
17 process measure proceed the outcome measure is
18 no. It is could proceed. And it is based on
19 it is informed by our experience.

20 In treatment of depression, it
21 really could involve the entire system. We
22 are not talking one specialty. We are talking

1 about everybody in primary care, presumably
2 many specialties. So for us in Kaiser
3 Permanente, that means getting 15,000
4 physicians to change their behavior and to
5 change the data stream that they are tying
6 into, and changing the behavior of 15,000
7 physicians in any direction is a gigantic
8 change management challenge. And I guess one
9 thing that I have learned about change
10 management is that there isn't a simple
11 formula.

12 And within our Kaiser Permanente
13 regions, different ones have made different
14 choices. There are some who have elected to
15 implement -- we have made it clear across the
16 system that our intent by the end of 2013 is
17 to be driving performance on both measures,
18 both the process of did you do initial and
19 follow-up testing and on the outcome are we
20 treating people to remission. But our
21 individual regions, roughly states, have taken
22 different pathways and some have elected, as

1 a matter of their change management, to focus
2 on the process measure first, and some are
3 focusing on both. And it really represents
4 different hypotheses about how individuals
5 change. So asking people to do the process
6 measure first really reflects a belief in the
7 sustainability of provider-driven change.

8 Namely, if you give a bunch of
9 physicians the right information about whether
10 their patients are actually getting better by
11 requiring them to do the initial and follow-up
12 testing, then smart and well-meaning people
13 will begin to ask a bunch of questions like
14 hey, are we doing the right thing? What is it
15 we are actually doing? What did I do for that
16 patient? And to set in motion a change of
17 improvement activities driven from the ground
18 up by providers.

19 There is, of course, another
20 theory and hypothesis that accountability is
21 required and that putting in not only the
22 performance -- not only the process measure

1 but the outcome measure is actually going to
2 drive people to final results. I suspect many
3 people in this room are familiar with the
4 paper by Brent James and Molly Coye and others
5 about two pathways to improvement and
6 accountability and local process improvement
7 and their mutual reinforcement. And
8 ultimately I think we have to get to both but
9 to me it would make sense for NQF, as these
10 things come along, to offer both a process and
11 an outcome measure for people to be able to
12 make that choice about how their change
13 management will proceed.

14 There is a question about whether
15 the boxes are in the right order. And
16 certainly the 6, 7, 8, 9 boxes make lots of
17 sense to me in their placement with respect to
18 other boxes. I would like to suggest that
19 there might be two other boxes that might
20 either or semi -- well, one might be part of
21 a box and another is another box somewhere
22 else that might be missing.

1 One is that box five basically
2 asks us to use the measure in clinical
3 practice or, as Ethan put it so well, pilot
4 it. And this is pilot it in representative
5 practice. Obviously, many of these measures
6 have been piloted. That is where the
7 information about reliability and validity
8 comes from. This is about piloting it in a
9 representative setting to find out stuff about
10 the actionability, about the meaningfulness of
11 patients and clinicians and really,
12 ultimately, about the value of the measures.
13 Is asking this work the perturbation of the
14 system it causes?

15 And a box that I think is missing,
16 which is specify how you think this measure is
17 going to be used. And we have talked about
18 this in a number of settings. I think
19 sometimes it has come under the label of
20 fitness for purpose. And five is really about
21 piloting fitness for purpose but a person
22 can't pilot fitness for purpose without a

1 specification of what the purpose is. Is this
2 a measure that we think is going to be
3 introduced into clinical practice, namely,
4 asked in the exam room or in a clinical
5 workflow versus a measure that is being used
6 like in a Swedish example where people are
7 getting queried at home as a part of a
8 national system? They have really different
9 implications. So it seems to me that a person
10 couldn't do box 5 of piloting and testing for
11 not only implementability but actionability
12 and all those other good things in a
13 representative without really specifying what
14 that representative setting is and how we
15 envision that the measure will be used.

16 And I guess I think what I need to
17 do is call attention to my own belief and bias
18 that these measures, as they come through NQF
19 will have to be quite a bit more specific
20 about what is the setting and make
21 distinctions between measures that are going
22 to be used in a clinical workflow versus those

1 that are going to be used in other kinds of
2 contexts.

3 Is that little bell my time bell?

4 No? Okay.

5 And the other box that I think
6 might be absent from this diagram is one that
7 has come up a couple of times, which is the
8 post-market surveillance box. And how is it
9 that once new measures are out of the gate we
10 know when they are existing real life whether
11 they are working or not.

12 And I don't know that any of us
13 really know what the post-market surveillance
14 could look like. I imagine from the NQF
15 perspective it has something to do with what
16 comes up with measurement, measure maintenance
17 because there is a process where how measures
18 are actually functioning in the real world
19 could exist.

20 What I do know is that when I go
21 to my car dealership and they give me their
22 thing about how I have to check box five or

1 their kid left to drop out of college and all
2 that stuff, I dearly wish that whoever created
3 that measure was doing their own post-market
4 surveillance in that somebody who is not part
5 of that process was asking me occasionally is
6 that thing working. And I would be able to
7 tell them, no. Your measure has been
8 corrupted. It is full of garbage people are
9 distorting it. And the fact that it has been
10 turned from what was probably a really great,
11 wonderful, well-intentioned improvement
12 measure has been bastardized in the process of
13 turning it into an accountability measure. I
14 really wish somebody was checking up on that.

15 So, I guess my recommendation to
16 NQF is that the measure maintenance process
17 includes not only stuff about what have we
18 learned additionally about validity or
19 reliability and about harmonization, but
20 really goes out and collects data about how
21 this is being used in practice and is it
22 creating unintended consequences and so forth,

1 but to put some rigor into that part of the
2 process.

3 There is also a question about
4 whether the criteria are right. So the
5 criteria, that is the stuff on this
6 accompanying second page that Karen just
7 called our attention to. And I think with
8 respect to the process measures, many of the
9 criteria seem exactly right and are really
10 terrific.

11 There is perhaps a little bit more
12 of an emphasis on how the data are collected
13 and collecting the outcome data as well as the
14 process data that I am not sure quite belongs
15 there. But also I would like to just suggest
16 a couple of other possible criteria that might
17 go in here.

18 One has to do with systemness.
19 and there is a way in which PHQ-9 process
20 measure, for example, asks for what proportion
21 of patients we have collected, the baseline
22 and follow-up PHQ-9. There is a whole bunch

1 of other stuff that is implied and really
2 important about how we are actually embedding
3 that into a system, how we are embedding that
4 into a clinical workflow in returning the
5 information back to physicians at the right
6 time and place and how we are embedding that
7 into a performance improvement system to learn
8 from and improve on that measure over time,
9 all of which is outside of the answer to the
10 measure itself.

11 So I would love to see some
12 component, if we are going to have process
13 measures, not only about the performance on
14 the actual measures, as specified, which is,
15 of course, important, but the sort of
16 reporting out on the context and what is the
17 system in which that information is being used
18 and reported.

19 So there is almost a level about
20 disclosing as another kind of metadata, how is
21 this being used. It is a really important
22 accompaniment about what the actual rate is

1 and I think we haven't often paid much
2 attention to that in our external reporting.

3 And then a second aspect that I
4 would love to see and I know it is part of the
5 NQF process about harmonization. So first of
6 all, bless NQF for the additional work it has
7 done on harmonization. I know this is coming
8 up in many contexts. But I believe in this
9 PRO context, it is especially important for us
10 to get harmonization right so that we don't
11 get a bunch of measures that have come in
12 especially from the research environment and
13 from a bunch of disparate and wonderful
14 measure developers who have each taken their
15 own approaches but where collectively we could
16 have a lot of noise and a lot of different
17 kinds of scales and different kinds of look
18 and feel. I don't think that is the process
19 we want. I think we want something that, over
20 time, looks more like a design process and
21 looks more like repeated use of the same
22 response scales and looks more like the same

1 kind of lead-in in introduction or the same
2 number of items, so patients know what to
3 expect and they don't say yes, thinking that
4 they are going to get four items and instead
5 they get 60 or whatever. So some kind of
6 uniform look and feel. And I think the way
7 that might come in is in the harmonization
8 process where if someone wants to introduce a
9 new measure that is measuring the same concept
10 but has a different kind of a scale or a
11 different number of items, that there be a
12 really, really high bar about what is going to
13 be allowed, just to avoid that possibility we
14 have talked about of having a bunch of noise
15 in the system.

16 And I think I will leave it at
17 that. There is many other aspects that I
18 think if we pay attention, not only to the
19 individual measures but to the system this is
20 going into. Actually I am tempted to go one
21 step further.

22 There is many ways in which we are

1 at risk of talking to ourselves here in this
2 room. We have got a bunch of measurement
3 experts and measurement nerds and we know a
4 bunch about how to use item response theory to
5 do crosswalks between measures and all that
6 stuff, which is all stupendous but we also
7 know from the world of improvement and
8 improvement science that having multiple ways
9 of doing things makes improvement really,
10 really, really hard. So just to take a screwy
11 little example, we know there is many ways of
12 measuring weight and they are all perfectly
13 cross-walkable. We know exactly how to relate
14 pounds to kilograms to stones and however many
15 other things are used in other parts of the
16 world. But in many parts of improvement and
17 maybe nowhere better than anesthesiology,
18 people have taught us the importance of using
19 the same measures all the time so a person
20 doesn't have to translate. So we don't have
21 to give people the additional cognitive burden
22 of understanding how this kind of pressure

1 measurement relates to that kind of pressure
2 measurement.

3 So I would suggest that in
4 addition to, if we want to consider multiple
5 measures, in addition to saying whether we, as
6 measurement nerds, can crosswalk them and
7 relate them that we also subject this to
8 empirical testing with real providers. And if
9 you put real providers in an environmental
10 with multiple measures that overlap, whether
11 you give them a crosswalking opportunity or
12 not, whether they really understand when there
13 is multiple different measures, whether they
14 really are actionable or whether they create
15 confusion.

16 And you mentioned the word
17 multiplicity and I think you were using it in
18 the measurement sense, Ethan, but I think
19 there is also the multiplicity problem in the
20 cognitive burden sense for providers. If
21 there is multiple different instruments going
22 on, can people really understand it and act on

1 it in the same way as if we had a more
2 coherent and simpler, cleaner system?

3 DR. PERFETTO: Thanks. After the
4 last meeting, I walked up to Karen and I gave
5 her this diagram that I had been drawing in
6 the back of the room. And she looked at me
7 like I can't read this. And I mean, this has
8 come such a long way from a scribble. And I
9 am pointing that out because I am going to
10 make some suggestions and I don't really have
11 answers for some of the questions that I am
12 going to raise. But I figure if she could do
13 this with the doodle, then she can resolve any
14 of these things that I am going to raise. So
15 thank you, Karen, because I am very visual and
16 I have to have pictures to look at.

17 On the orange part of the outcome
18 performance measure part, I want to get back
19 to the point, some of the points that Patti
20 made. And they are going to overlap a little
21 bit with what Jim was talking about.

22 The first part is on contextual.

1 And we have had a lot of discussion over the
2 last couple of days about context of use. And
3 so I think what happens is when we get to the
4 precise specification, when we get to that
5 specifications document, I think one of the
6 things that we might need to see is some more
7 detail in what the specifications document
8 will have to have in it, in order to be able
9 to capture context of use in the way that we
10 have been talking about it because I think we
11 are going to need a little bit more on the
12 setting, a little bit more on the patient
13 population, all the kinds of things that you
14 were talking about in that testing phase.
15 When we start to operationalize, we have got
16 to make sure that the population is the right
17 one and the specifications can get at that.

18 So the one example that I can
19 think of where in a process sense where this
20 isn't quite as detailed is a measure that
21 exists now where if you are a patient who is
22 over the age of 65 and you are hospitalized

1 for any reason, you are supposed to be asked
2 whether or not you had a pneumonia vaccination
3 in your lifetime and if your answer is no,
4 you are supposed to get a pneumonia
5 vaccination. So the specifications there are
6 pretty straightforward and pretty simple.

7 But if you are getting to the
8 point where you are going to be asking
9 hospitalized patients a PRO that has to do
10 with their pain or their function, then the
11 specifications document is probably going to
12 have to be more detailed than you might think
13 about for something that is a process measure.

14 And the next step is in the
15 conceptual aspect that Patti was talking
16 about. And when I was thinking about this, I
17 was thinking about in the area of what is
18 important to measure and report. And I think
19 this actually comes out in a couple of ways.
20 And it is getting to that. What is really the
21 rationale for why we wanted to measure this
22 particular thing and thinking about that early

1 on, and trying to figure out if when we are
2 describing in this endorsement process what
3 our rationale was for why we think we need to
4 do this and why it was selected. That we
5 start to think through just kind of what
6 Laurie and I might talk about in terms of the
7 benefit risk sense, what are we going to get
8 out of this that makes it worth doing that
9 helps us answer the question that we started
10 off to answer or try to resolve the problem
11 that we started off trying to resolve.

12 And that made me think, along with
13 some discussions that we had at our table,
14 that maybe we had something that was missing
15 on the diagram. Right up front where we have
16 kind of gone to this outcomes that are
17 important and meaningful to the target
18 population. But we didn't really start off by
19 specifying what the problem was that we were
20 trying to solve. What is the quality or
21 accountability problem that we are targeting?
22 And then get to that point of what is

1 important to patients and can those things
2 help us solve this problem in terms of the
3 quality issue or the accountability issue that
4 we are trying to gather the data to resolve.

5 And that if we can do that and
6 articulate that clearly as part of this
7 importance of the measure and the rationale
8 why we decided to go this route, then we
9 actually solve that problem of having that
10 blank up-front because then we can make sure
11 that these two things are connected when this
12 information is being put together.

13 I think that also has a spillover
14 on the consequential that Patti was talking
15 about. And it also overlaps with some of the
16 things that Jim was talking about in terms of
17 what is our post-marketing surveillance. We
18 kind of have another missing box at the bottom
19 for that post-marketing surveillance
20 consequential piece. And that ties into this
21 issue of what is the problem we are trying to
22 resolve. If we want to have a feedback

1 mechanism where what we have done at the end
2 starts to feed back into the process, then we
3 could feed back into well are we running into
4 some methodological issues? Maybe we are
5 running into a logistical problem in terms of
6 implementing or a validity problem. That
7 would feed back into different parts of that
8 methodological piece. But I think what we
9 really want to know in terms of that missing
10 box is if we have implemented this, has it
11 really helped us solve what this problem was
12 up in the front that we defined, the quality
13 problem or the accountability problem.

14 So I think that helps us by
15 connecting those two pieces, the up-front
16 piece and that downstream piece and having
17 that feedback mechanism be able to go through
18 and in that feedback loop that can be
19 strengthened.

20 One of the things that Laurie is
21 famous for saying is we are not going to just
22 measure for measurement sake and use these

1 PROs for measurement sake. And so I think
2 what I am saying is this probably applies to
3 not just these PRO outcome measures but it
4 probably jumps forward more because this can
5 be burdensome. It can be costly. It can
6 cause confusion when there are lots of
7 different measures. And so it is probably one
8 that needs to be thought through more clearly
9 in this instance because of the complexity of
10 going about gathering this data and making the
11 choices that we would want to make when we are
12 gathering these data.

13 So those are the three pieces that
14 I thought tied in well with where Patti was
15 going but kind of help round out this picture
16 of being able to say we have got a diagram
17 that not just walks us through endorsement but
18 gets us through in trying to resolve the issue
19 of when we have got this endorsed measure,
20 what is the problem it is helping us solve and
21 is it really doing that if we start to use it.

22 DR. ADAMS: First I would like to

1 thank our reactor panel for lots of thought-
2 provoking questions. I think Eleanor, you
3 went back to the beginning, as Ethan reminded
4 u, and it is like defining the problem. What
5 is the magnitude of the quality issue. And
6 then Jim, lots of practical guidance to NQF
7 but I think to the field, too, around measure
8 and measure use and context and how look at
9 that.

10 And I think twice we heard about
11 the importance of this surveillance or the
12 feedback loop and how I know we have a
13 regulatory incentive, particularly with the
14 FDA. And Laurie, you shared some of those
15 insights, too, around we do this in that realm
16 but we don't routinely do what I would call
17 surveillance of measures and use. I mean
18 certainly there are mechanisms but I think we
19 are hearing for a stronger call for that
20 feedback loop and that rapid kind of cycle
21 learning.

22 So lots of great take-aways. I

1 want to open it up for questions to the group.
2 I am going to ask the operator to please queue
3 up those joining us virtually. And certainly
4 our audience participants, please join us.

5 So I might start -- oh, I see.
6 Lori, would you like to? Okay, great. Thank
7 you. And then I will work my way around.

8 DR. FRANK: Hi, thanks. And
9 thanks to the whole panel. That was
10 excellent.

11 My question is for Ethan. I
12 appreciated how you brought patient engagement
13 in and showed the specific points of contact.
14 Who gets to determine if the patient report of
15 the outcome is appropriate? And should
16 patients be involved at step number two on
17 that part of the flow chart?

18 DR. BASCH: You mean who
19 determines if the patient is in the best
20 position to report on a particular outcome?

21 DR. FRANK: So step number two is
22 --

1 DR. BASCH: Yes, determine if the
2 patient report of the outcome is appropriate.
3 I don't know. What do you think?

4 (Laughter.)

5 DR. FRANK: I think that could
6 present an opportunity for patient engagement
7 as well. But it is a really important
8 question about the pathway. Who gets to
9 decide before we go on to the next step in the
10 flow chart? Right now the way it is framed,
11 it seems like it is limited and that there is
12 not consumer and patient involvement.

13 DR. ADAMS: Lori, do you recommend
14 -- I know from the first workshop you
15 identified certain touch points. You looked
16 to the PCORI model of where there would be
17 touch points for research and you identified
18 some touch points. And I think certainly
19 number one was in that touch point. So as we
20 think of this pathway as Ethan, I think you
21 did on your slides, you started to identify
22 touch points for the patient or person. So

1 maybe we should be more specific about that.

2 DR. BASCH: I would actually make
3 a comment, too.

4 So one initiative I have been
5 involved with is the PRO CTC, which is the
6 NCI's initiative to create a patient,
7 basically an item library for patient
8 reporting of harms of treatment in the context
9 of cancer trials. And in selecting what
10 adverse events are appropriate for patient
11 reporting versus clinician reporting versus a
12 lab system, a set of criteria were created
13 based on the level of subjectivity of the
14 outcome. And then a modified Delphi process
15 was used with multiple stakeholders to figure
16 this out. And there are actually five
17 categories. I can't recall exactly offhand
18 but assuming like totally subjective, you
19 know, experiential with no observable
20 component, and then a little of both, and then
21 totally observable. So maybe starting all the
22 way over here with nausea which really only

1 the person experiencing it can truly know over
2 to something like rash or alopecia which a
3 patient or an observer could potentially
4 report on. In fact, in the case of rash, the
5 conclusion was perhaps a patient can report
6 the incidence of a rash but to characterize a
7 rash actually requires some sort of expert
8 training.

9 So I think that there are actually
10 methods that have been used to try to
11 determine this.

12 DR. FRANK: Yes, to determine
13 that. So I would just want to add that
14 clinician interpretation can be a really
15 important step. So depression is a good
16 example. It is an internal experience and yet
17 a lot of people make the compelling argument
18 that you must have clinician report about some
19 aspects of the experience of depression
20 because they are able to gather the evidence
21 in a way that the patient cannot. But another
22 example would be cognitive impairment and it

1 was already raised.

2 So it would be a big no, for many
3 people, step number two. Oh no, we can't ask
4 cognitively impaired patients to report on
5 this. But I think we need to question a lot
6 of those assumptions and so I would just
7 encourage us to all to think about that as a
8 point of contact as well.

9 DR. PERFETTO: Also had another
10 way of thinking about this in terms of re-
11 framing number two a little bit. Because I
12 think if we think about this issue of framing
13 a problem and figuring out what is important
14 to the patient, and then we have to have that
15 step of saying okay well maybe these things
16 that are important to the patient might be
17 patient-reported outcomes that we might want
18 to get to that are important to the patient
19 may not be the ones that would resolve that
20 problem. And so when we say appropriate, it
21 may be is there a match between the problem
22 and the measure because it could be a process

1 measure that resolves the problem and then you
2 would make the determination.

3 But to your point, I think it
4 would be good to have patients involved in
5 that discussion and that decision-making
6 because even if the end conclusion is oh no,
7 a PRO is not needed, a process measure will
8 do, it is good to have patients understand
9 that decision and be a part of that decision.

10 DR. ADAMS: Okay, I am going to
11 start in the back. And so Ted, you and then
12 Phyllis, and then I will come back up to
13 Kathy.

14 DR. GANIATS: I'm Ted from San
15 Diego. This is great. I really appreciated
16 everything that was said. And it stimulates
17 two ideas; one an editorial suggestion and
18 then second I will be selling tickets for the
19 fight between Jim and Eleanor later today.
20 I'm joking.

21 A dotted line from the green to
22 the orange. I think the way the diagram is

1 listed now, all process measures will become
2 outcome measures. And it might be something -
3 - we have said they don't all but the diagram
4 isn't consistent with what was said.

5 Now Eleanor brought up a wonderful
6 idea that there is a box zero stating what the
7 problem is. And Jim brought up that not
8 all measures, this is box five, not all
9 measures may be incorporated into the
10 practice. It might be that there is a survey
11 that was done. And I think that box zero and
12 box five have to interface somehow and that
13 box zero may tell us that we are interested in
14 a process measure. The problem is that
15 doctors aren't asking about pain. The process
16 measure is are they asking about pain, in
17 which case we might want to incorporate it
18 into practice. But there may be some times
19 when we want to just survey that having
20 something incorporated into the practice is
21 too burdensome and all we want to know is as
22 an outcome how do the groups compare. And we

1 could do a survey of a small number. So I
2 think extrapolating or expanding box five to
3 allow for a survey instead of implying, it is
4 only going to be incorporated into practice
5 allows Jim's comment to be incorporated. And
6 it feeds back into box zero.

7 And obviously I am joking about
8 you two fighting but the love fest will be --

9 DR. BASCH: I was just going to
10 comment that in box five, we talked about box
11 five a little bit and what does it mean
12 exactly. Does box five actually mean pilot
13 testing in practices where the target
14 population is represented in order to assure
15 that the measure is performing the way that
16 you believe it will perform, based on all of
17 your assumptions? Or does it actually mean
18 integration into practice as a process
19 measure?

20 DR. GANIATS: I go back to the
21 diabetes foot exam measure where an option was
22 to ask patients did the doctor examine your

1 feet or did you take your shoes off? And that
2 would not be in clinical practice as box five
3 words it. And so it is just allowing an
4 expansion of how we think we might test them.

5 DR. ADAMS: Any other response to
6 that?

7 DR. BELLOWS: So that was an
8 excellent comment. I totally agree that the
9 box zero and the specification have to be
10 tightly related. And I also agree that some
11 of the language of box five, as specified, is
12 incomplete in terms of how I would hope -- to
13 me it is not just about whether the measure is
14 performing as anticipated, it is about how is
15 the entire system responding. What is the
16 impact on the key stakeholders? If it is a
17 clinical measure in particular, what is the
18 overall in the interaction on the key
19 stakeholders? And that is bigger than the
20 performance of the measure itself. It is what
21 are the expectations created? What are the
22 expectations realized? All that kind of

1 stuff.

2 DR. ADAMS: Phyllis?

3 MS. TORDA: So I have several
4 reactions, mostly to Jim's presentation.

5 I think it is fine to do process
6 and outcome measures simultaneously. I will
7 say that our experience at NCQA is that
8 whether you should start with one or the
9 other, in large measure, depends on the
10 sophistication of the organization. In
11 organizations that have more experience with
12 quality improvement, and that is how I am
13 using the term sophistication in this case,
14 can go to the outcome measure and do the
15 analysis necessary to figure out the paucities
16 that will lead to better outcomes.

17 But organizations that don't have
18 that expertise really find it useful to have
19 the process measures that provide the roadmap
20 to good outcomes. So that is just an
21 elaboration.

22 With regard to the remarks about

1 harmonization, a couple of remarks. One is it
2 is much easier to achieve harmonization in
3 virgin territory than it is once people are
4 really attached to one tool or another. And
5 I think telling the whole nation that it has
6 to use one tool is a difficult thing.

7 I think some of your remarks, Jim,
8 went more to the disadvantages of using
9 different tools in the same organization as
10 opposed to the disadvantages or advantages --
11 as opposed to using tools in different
12 organizations that can be mapped. And some of
13 the waste and inefficiencies go away if one
14 organization is at least using the same tool.
15 And then those results could be crosswalked or
16 mapped across organizations.

17 I think we have given a little bit
18 short shrift to the unit of analysis issue.
19 And there is always feasibility issues and
20 statistical reasons why larger units of
21 analysis are easier than smaller ones but I
22 don't think we focused very much and it is

1 worth thinking about conceptually what is the
2 right unit of analysis. And some of these
3 discussions about box five and whether it is
4 clinical practice or it is really a bigger
5 group of people get to the unit of analysis
6 issue. You know, which individuals are making
7 contributions to the outcomes that we are
8 measuring?

9 And finally, a lot of talk
10 involving patients, which is great. A little,
11 I certainly would appreciate guidance about
12 how to do stuff because in real situations, it
13 is hard to recruit patients to participate in
14 many of these activities. And so any wisdom
15 that can be offered from the experts or the
16 audience and communicated by NQF around that
17 would be welcome.

18 DR. ADAMS: Any response?

19 DR. BELLOWS: Just a couple of
20 things really quickly. I think sophistication
21 is one really important aspect in how to go
22 but I don't think it is the only thing, by

1 far. It also has to do with priorities and
2 portfolio management and all that sort of
3 thing.

4 And we tend to think of these one
5 measure at a time but actually people in
6 operations in our delivery system are working
7 on 20 different things at the same time and it
8 is partly a matter of, on this particular,
9 with the use of the PHQ9, how far up it is in
10 their priority scheme and how hard they want
11 to push it. So I think there is a bunch of
12 factors of which sophistication is one.

13 On the harmonization, you are
14 totally right. A part of it is about within
15 institutions but also there is the thing that
16 our patients are crossing across many
17 different settings. And as they go from
18 hospital to primary care to skilled nursing or
19 whatever, they are going to be touching many
20 different institutions. So I actually think
21 that even for the sake of consistent
22 expectations for our patients, it makes sense

1 for us to have harmonization across
2 institutions as well. You know, I know if I
3 am going to be asked about pain, I know what
4 that question looks like. And I know if I am
5 going to be asked about symptoms, I know how
6 many questions to expect, that sort of thing.
7 So it is just a small thing.

8 And with respect to how to include
9 patients, to me there is a really important
10 distinction in the sort of box one through
11 three stuff. We are asking patients rather
12 hypothetical questions, in a way. What do you
13 think would matter to you and what do you
14 think we should measure. It is kind of like
15 asking people to reveal their preferences, as
16 if they had preferences that they could just
17 reveal. And to me, that is why I partly put
18 more stock in the box five, where you can
19 create an environment where something real
20 happens and then do the kind of qualitative
21 stuff that everybody in this room in some ways
22 knows how to do about what was this experience

1 like. What happened? How did it work out?
2 Did we miss something? That kind of stuff.

3 So I think the methods are clearer
4 in box five. Do it and learn, as opposed to
5 the methods in boxes one through three that
6 are somewhat more abstract and that I think
7 maybe none of us understand quite as well
8 because it is more conceptual.

9 DR. PERFETTO: I think to add to
10 that, I would turn to someone like Laurie
11 Frank and say you know, this is kind of where
12 PCORI is headed, to try to flesh out and
13 further develop those patient engagement
14 methodologies. I think to date my own
15 experience has been that we recruit patients
16 depending upon the circumstance and the
17 question from a variety of places, anyplace
18 from online having them submit information
19 online to various kinds of things to focus
20 groups. And they could be people who are
21 patients who are being seen by particular
22 kinds of physicians to any kind of general

1 focus group. So it is any and all at this
2 point and I think we are still going to be
3 tweaking those methodologies as we go.

4 DR. BASCH: I would just add very
5 briefly I have participated in a number of
6 panels that have recommended that a variety of
7 different measures could be used in the same
8 context. Many of those panels have assumed in
9 the future that there will be good approaches
10 for crosswalk and there are a few of those
11 initiatives going on but the truth is that
12 either there are a lot of problems crossing
13 between measures.

14 I actually personally would
15 strongly advocate for recommending a single
16 measure in a single context here and that the
17 bar be, as Jim I think aptly put it, very high
18 to unseat that. And if an investigator wants
19 to come along and demonstrate that a new
20 approach performs better, then they could
21 maybe unseat the first comer.

22 But you know, I think that it will

1 avoid some confusion. Some may disagree with
2 that.

3 The other thing that I would say
4 about patient engagement is again, you know,
5 I think boxes one through three rely on
6 qualitative research that would include, as
7 Eleanor pointed out, focus groups, key
8 informant interviews, cross-sectional surveys,
9 longitudinal surveys and there are fairly well
10 established approaches for aggregating and
11 analyzing that information.

12 DR. ADAMS: So I'm going to talk
13 about the queue because we have lots of hands
14 up. I know Kathy you have been waiting
15 patiently. And we do have one of our panel
16 members who also queued up earlier, Barb. So
17 I am giving Barb the signal now that after
18 Kathy she will come because she queued up
19 after you. And then I will get the four that
20 raised their hands in these two tables. Thank
21 you.

22 Kathy.

1 DR. LOHR: I thought this was a
2 wonderful discussion and thank you all.

3 I think the box zero is really
4 important. And boxes one through three I
5 would just reiterate what Ethan and others
6 have said. We have been doing some of this
7 kind of thing for 20, 30 years.

8 What might be missing from one
9 through three is some understanding that you
10 may have to, if you will, pay your patients
11 back. There may have to be something that is
12 given back, whether it is a pure incentive or
13 some other pieces of information, to thank
14 them but perhaps to make, if you will, worth
15 their time. So we need that.

16 On box two I wanted to say this is
17 another one of these perhaps it is not an
18 either/or question. And it can be phrased as
19 you want to determine whether and to what
20 extent the patient reporting on the outcome is
21 the appropriate thing because there is a
22 spectrum and gradations there. And I would

1 recommend that you change that.

2 I also have to say coming out of
3 long sort of Donabedian quality of care triad,
4 I could not work with this diagram because I
5 immediately got off onto process measures, as
6 one of structure process outcome, and I did
7 not understand why you would go from a process
8 measure of any sort to an outcome when this is
9 about patient-reported outcomes.

10 And so I am just wondering whether
11 at a minimum box six and the other ones, some
12 other term that is a synonym if you will, for
13 process, might be used. I mean there is
14 operational, there is event, there is use.
15 There is a bunch of words that maybe would
16 serve you better so you don't send people like
17 me off thinking why would we be talking about
18 process measures and then only after we have
19 done all those process measures am I getting
20 back to outcome measures.

21 Ted or somebody said maybe a
22 dotted line down from your green back to your

1 orange might help but following the way this
2 is here, and then talking about process
3 measures before you ever get to outcomes, I
4 think it runs a risk of misleading some of the
5 people, certainly in the quality of care,
6 maybe not so much accountability, but in the
7 quality of care world.

8 DR. ADAMS: I think, I know Barb's
9 been waiting on the virtual line for us. So
10 I am going to ask the operator to please queue
11 her up so she can ask a question.

12 DR. SUMMERS: Hi, I have my mute
13 off. Can you hear me?

14 DR. ADAMS: Yes, we can.

15 DR. SUMMERS: Oh, great. Thanks
16 so much for the opportunity to comment. It
17 has actually been lovely to be able just to
18 sit back and listen to the rich dialogue that
19 has been going on yesterday and today.

20 I had just three quick
21 comments/questions. The first really goes --
22 and they relate to measure use and the context

1 of measure use.

2 First going back to the notion of
3 risk adjustment. And one question that occurs
4 to me is how do we, how could we, and should
5 we include the patient perspective as it
6 relates to the relative significance of a PROM
7 in their overall care experience? For
8 example, can we somehow develop some patient-
9 reported risk adjustments?

10 And the example that I think about
11 could relate to an individual with prostate
12 cancer who, in treatment, sequence number one
13 may experience relatively little fatigue as a
14 consequence of the therapy being used. But if
15 their disease progresses and they advance to
16 a different therapy, that therapy could cause
17 significant fatigue. So although patients
18 would generally prefer to have no fatigue, I
19 think most patients would prefer some fatigue
20 to the alternative of death.

21 And then following on some of
22 Ethan's really excellent points, I think we

1 really should continue to focus on the
2 necessity of incorporating the patient-
3 reported outcome performance measures into
4 clinical workflow. Because it is not only
5 going to improve our response rates, it is
6 also going to hard wire incorporation of PROs
7 into clinical practice.

8 And then following on some of the
9 most recent discussion, the use of the PRO
10 performance measures in clinical practice is
11 also meaningful in achieving improvement. So
12 I believe that outcome measures should also
13 have utility in clinical practice as
14 clinicians look at their data and aggregate in
15 an attempt to determine how is it that they
16 can, as a practice group, achieve improvements
17 in their PRO performance measures. Thank you.

18 DR. ADAMS: Thank you, Barb. Any
19 comments for Barb?

20 So I am going to go back to our
21 table and work our way around. And Ted, did
22 I see your hand go up? Yes, and I will go to

1 this -- and David, I did see you, yes.

2 MS. WILKINSON: Hi, Linda
3 Wilkinson, Dartmouth-Hitchcock, Coordinator of
4 Patient and Family-Centered Care. And I
5 mention that because I think there are lots of
6 people addressing the desire to include
7 patients in either the formation of or the
8 evaluation of these PROMs. And I am heartened
9 to hear that from people whose focus is often
10 measurement itself and the protocols and so
11 on.

12 What I am hearing that I would
13 like to address very briefly is I am hearing
14 the concern that it might be hard to, or might
15 be confusing to, or dangerous to include
16 patients in the process sooner. I would like
17 to debunk that.

18 But what is also true is that
19 people have said where are we going to get
20 them. I mean, they have said it in many
21 languages. How are we going to do this? How
22 are we going to administer it? I guess we

1 could say you would us, meaning our
2 institution, as a test case. I can't tell you
3 how eager are patients are to share their
4 impressions and how amazingly revealing of
5 things that skilled clinicians and skilled
6 designers of programs have been to find the
7 things that they have not turned their
8 attention to that they realized was important.

9 And I would invite anyone who
10 wants to explore how we mechanically have gone
11 about this, what standards we have used for
12 who we are asking to join us and the like. We
13 are very happy to share. But I would, at
14 least for this meeting, urge people not to
15 discount it because we are not yet used to
16 doing it. It is in fact a lot easier. It
17 takes work. It takes attention. It is
18 exceedingly awarding and I would encourage you
19 to contact anyone like us who has had some
20 experience doing this and have found ways to
21 make it workable and very profitable.

22 So ollie ollie umphrey. Thank

1 you.

2 DR. ADAMS: I would like to thank
3 you for that offering to us because I think
4 within many of our processes, how we can
5 engage patients authentically at those various
6 levels. Any comments in regards? We are
7 grateful to your expertise that you could
8 offer for us there.

9 Dave?

10 DR. CELLA: Thank you. Dave Cella
11 from Northwestern. I agree it was a great
12 panel discussion.

13 I have a couple questions that
14 sort of I will follow I think, if there is
15 enough time, with a suggestion or a thought.
16 One question is box zero. Could you help me
17 differentiate that from context? Because when
18 people have been talking about context of use,
19 I think about box zero, what you described as
20 box zero but maybe I am missing something. I
21 just want to make sure.

22 DR. PERFETTO: I am just simply

1 saying that we have to articulate what box
2 zero is.

3 DR. CELLA: Which is the context
4 of use.

5 DR. PERFETTO: It could be the
6 context of use but it could be the reason why
7 we want to do this in the first place. And
8 that could be part of the context of use.

9 DR. CELLA: Yes, okay. All right.

10 DR. PERFETTO: But I think what we
11 have been talking about in terms of context is
12 describe the patient population. Describe the
13 setting. We haven't really said describe --

14 DR. CELLA: So as long as we have
15 a broader --

16 DR. PERFETTO: -- the question you
17 are trying to answer.

18 DR. CELLA: All right, so broader
19 definition of context.

20 DR. PERFETTO: Yes.

21 DR. CELLA: We are basically in
22 that -- okay.

1 DR. PERFETTO: Yes.

2 DR. CELLA: Okay. I just thought
3 it was missing something from the earlier
4 discussions.

5 The other question is about what I
6 think are Jim and Ethan's suggestion that we
7 pull back from standardizing and equating and
8 focus on one measure. Partly I am confused
9 and then I have a comment to make. But the
10 confusion is that I thought I had it nicely
11 and very positively drilled into my head that
12 NQF endorses performance measures, not PRO
13 measures. And as such, why would we be even
14 talking about the idea that only one measure,
15 PRO measure, unless I misunderstood that,
16 should be endorsed because NQF doesn't even do
17 that. Maybe I missed something there.

18 And then I have a comment about
19 PRO measures and equating and stones and
20 kilograms and pounds.

21 Did I miss something there?

22 DR. ADAMS: So Karen, do you want

1 to respond to the we don't endorse the tools
2 but why we would --

3 DR. PACE: So you are absolutely
4 right. We don't endorse the individual PROMs.
5 But by virtue of specifying a performance
6 measure that is going to be standardized, we
7 need to identify which PROM will be used to
8 collect the data.

9 So you know, although we don't
10 just endorse the PROM by virtue of the
11 performance measure, obviously we have some
12 relationship there. And I think the
13 discussion was should we endorse performance
14 measures that say you can use only one of the
15 instruments or two or three. But I think that
16 is where your equating comes in and maybe you
17 want to add something.

18 DR. PERFETTO: Can I give an
19 example here? Can I give an example on this
20 one?

21 There is a measure that exists now
22 and I am not sure I am remembering whether it

1 is NQF-endorsed, but there is a measure right
2 now that is used in rheumatoid arthritis. And
3 I don't remember off the top of my head if it
4 is endorsed or not but it is a good example.

5 There is a measure that says on an
6 annual basis, if a patient has rheumatoid
7 arthritis, they should have a functional
8 assessment done. It doesn't say how. It
9 doesn't say what tool to use. So it is really
10 a process measure. It is a check the box yes
11 or no, on an annual basis did this functional
12 assessment measure. I think the discussion is
13 in the process stream on here, does this go
14 the next step to say is a functional
15 assessment done with XYZ tool, which still
16 would be a process measure, versus it turning
17 into an outcomes measure that says functional
18 assessment -- function for this particular
19 group improved by Y based on the tool that
20 gets specified. And I think your question is
21 a very good one. Would NQF go that next step
22 to actually list which tools would be included

1 or excluded from that measure, whether it is
2 process or outcome. And that is the crux of
3 the question because right now, they are not
4 specified in that kind of detail.

5 DR. CELLA: So if I could then
6 with the comment, because it does kind of
7 follow -- I know those people want to talk.

8 So we used the -- Jim you used the
9 analogy of kilograms and pounds and then you
10 threw in stones. So one thing that got me
11 thinking was if today's measure is in stones
12 and yet, the one that is used in practice and
13 it is out there but yet we are aware that
14 there are better measures, you know, scales
15 that can measure in kilograms and pounds that
16 can truly be equated to one another with a
17 simple look-up table, why wouldn't we push for
18 the kilograms and pounds over stones?

19 And I think that is what you were
20 saying, Ethan, is that there ought to be an
21 ability to prove something is better and
22 switch to it.

1 But if the current could be a
2 metric that is indifferent to how you get that
3 metric as long as you have a way of getting to
4 that metric, like a kilogram or a pound, we
5 don't care what scale is used to come up with
6 that. I mean, usually I don't think NQF or
7 CMS asks which scale did you use or who
8 weighed the patient; or even was it self-
9 report weight or -- you do ask that. Okay.
10 Well, thank you. I'm glad to hear that.

11 But maybe I am making the point
12 and maybe not. It seems that there are areas,
13 not all of them but there are areas of health-
14 related quality of life like depression, which
15 is in many of the current guidelines where you
16 can link across different instruments. And I
17 thought I was hearing sort of an argument
18 against doing and I guess I disagree with that
19 argument if that I heard it correctly because
20 it seems like we care more about the pound
21 than about the scale and we care more about
22 the depression than we do about the

1 questionnaire.

2 And I am not advocating this in
3 areas where it is not ready but there are
4 areas where it is ready. So I guess that is
5 my comment.

6 DR. ADAMS: Now I am going to have
7 the panel to reply and I know Helen, you had
8 some response to the direct NQF question.

9 DR. BURSTIN: Could I just respond
10 very briefly?

11 So I think those are really great
12 questions. And I think the key thing is we
13 are trying to get to a set of standardized
14 measures that really allow people to compare
15 apples to apples.

16 So if there is information, for
17 example, and you talked about this, it was
18 very excited at the first workshop, David,
19 that there might be opportunities to provide
20 sort of almost equivalency tables, and I
21 forgot the exact term that you used, that
22 would say in fact that PHQ-9 versus the PROMIS

1 depression scale or equivalent. Use either
2 and there is a way to make them both work.
3 That's wonderful. But I think what we don't
4 want to have is to have a thousand flowers
5 bloom and not at the end of the day, allow the
6 measure itself to provide the comparability
7 that drives what we hope is standardization
8 and improvement.

9 Karen, does that work for you?

10 DR. ADAMS: Ethan.

11 DR. BASCH: I would just add we
12 also don't want to have -- since patients have
13 multiple conditions, maybe seeing multiple
14 providers have them answering multiple
15 depression scales in different context.

16 DR. ADAMS: So Ted, I know you
17 have been waiting patiently. And then I will
18 -- Ted Rooney, sorry. And then I will go back
19 and then Gene. Okay, go ahead..

20 MR. ROONEY: Okay, thanks. First
21 a quick question for Jim. On your extra two
22 boxes, it seemed like you were pleased enough

1 to have one box named after you. Now you want
2 three?

3 (Laughter.)

4 MR. ROONEY: But the real question
5 is, I live in the world of implementing
6 measures, both for accountability and
7 improvement. And we have been using the
8 Berwick NQF diagrams about ten years ago,
9 talked about the box, and QI on one side and
10 COM on the other. I don't believe one works
11 without the other. And we have been working
12 with this group for ten years now that meets
13 six times a year or five times a year or half
14 days with 14 PCPs, employers, health
15 planners, consumers, whatever. And we are in
16 the throes of this stuff. And I can't
17 emphasize enough the importance of
18 harmonization and benchmarking because if we
19 can't get one stand -- like if we could have
20 a PROMIS database like we have the CAHPS, it
21 would be phenomenally helpful because what our
22 docs want to know, they want to know how do

1 they compare to other areas. And then what
2 can they do about it to improve it?

3 And then in addition like if you
4 can get the PROMIS or something like that, you
5 know, standardized data base, you have no
6 problems with copyrights, it is easy to do,
7 and then have some technical assistance, I
8 don't know what it would be for us, but with
9 AHRQ they sponsor this CAHPS database. And we
10 are doing a state-wide project, in physician
11 practice and CAHPS is pretty straightforward
12 but I can't tell you how important it was to
13 have someone like Dale Shaller who we get to
14 do some technical assistance who meets with us
15 and talks with us about how we implement that.
16 And we involve our providers in that, too.
17 And it is just so important. And we don't --
18 it is so important to have some guidance on
19 how we can implement something so that at the
20 end of the day it makes it work in Maine but
21 we can compare Maine to Minnesota and other
22 places.

1 And then right now in Maine we do
2 really well on quality. Like we are some
3 better quality in the country. We are the
4 worst in cost. It works both ways. And then
5 sometime providers will say well we are
6 already better than the national average in
7 quality. Why are you pushing so hard? Well
8 the national average stinks but that is
9 besides the point.

10 We wanted to get to the point to
11 say well it is not just a look at your quality
12 compared by a state but is there a place in
13 Minnesota or Colorado or Texas that really has
14 superb quality? And then we can benchmark to
15 that and then show what the difference is.
16 Our providers would respond because they are
17 working as hard as they can. And when they
18 think they are doing really well, they sort
19 of, you have got to understand why are they
20 working so hard? Or when they find out that
21 over here they have figured out a better
22 mousetrap, we can get that imported.

1 But you can't do that unless you
2 have harmonization and standardization. And
3 you can't build a database with technical
4 support unless you have the harmonization. So
5 I know NQF just does the harmonization piece
6 but I implore us, if we can get like a PROMIS
7 database like we have with the CAHPS and get
8 some of the support technical assistance, it
9 would drive tremendous improvement.

10 DR. ADAMS: Jim, did you have a
11 comment to make?

12 DR. BELLOWS: Well first of all,
13 Eleanor and I have conferred on this and the
14 post-market surveillance box is going to have
15 her name on it and not mine.

16 (Laughter.)

17 DR. BELLOWS: So we do have
18 equanimity here.

19 DR. ADAMS: He's one through
20 three.

21 DR. BASCH: Always the bridesmaid,
22 never the bride.

1 (Laughter.)

2 DR. BELLOWS: David, with respect
3 to your questions, I totally get it but NQF
4 doesn't have the charter or the mandate to
5 design an entire system. But I guess it is
6 just my feeling that they have their hands on
7 an incredibly important control that could
8 move us either towards the thousand flowers
9 direction or more towards the greater
10 consistency direction. And the more those
11 that control is shifted in a way that brings
12 us towards harmonization and consistent use of
13 the same scales, I think the better off we are
14 in some ways, I think. Not on everything but
15 on some basic things.

16 And I know that there is one thing
17 for us is one really great aspect of use of
18 PROs within our system, for example, is as
19 people transition across settings and return
20 from specialty care back to primary care, from
21 primary care to skilled nursing, that it can
22 give a common language. And as people move

1 through our spine pain care for example, they
2 have consistent metric of what their pain was.
3 And the more we go into different scales and
4 different places, we just erode that.

5 So I think there is just things
6 about little preferences. If you use one of
7 the three established response scales you
8 automatically get a pass on some aspect. But
9 if you want to come bring in some other
10 different response scale, you have a higher
11 bar, it is just things like that, little
12 preferences to bring more coherences is what
13 I am hoping that they can do.

14 DR. ADAMS: David do you want to
15 respond to this, and then we will have time
16 for two more, which will be Ted and Gene.

17 DR. CELLA: Yes, although you
18 might also need to respond back to his points,
19 Ted's points.

20 And I actually I am breaking in
21 and I apologize for that because I think we
22 actually agree. And we are using language,

1 interestingly, somewhat differently but maybe
2 saying the same thing. So let me try again.

3 I am against a thousand flowers,
4 unless those flowers relate to a common
5 underlying unified metric. And when those
6 flowers relate to a common underlying metric,
7 I am in favor of those flowers because they
8 give people choice. But the metric is what
9 gets reported. And we can do that in some
10 areas and not in others. And so I have been
11 working on that for many years to get common
12 metrics and common language, as opposed to all
13 the flowers and people selling their wares.
14 So I think we actually agree on that and NQF
15 is in a good position, I think. And it works
16 well with that performance measure
17 certification as opposed to the PRO measure
18 certification because they can say we certify
19 on the metric and you can use the PHQ-9 or the
20 CESD or the PROMIS depression. It doesn't
21 matter because you are reporting the metric.

22 DR. ADAMS: Thank you, Ted.

1 DR. GANIATS: This is Ted and I
2 have a corollary or a slightly different take.
3 I think it depends on if it is a process
4 measure or an outcome measure. And so I co-
5 chaired a heart failure performance measure
6 panel. We recommended two or three process
7 measures. You should check for function.

8 But to be able to compare those,
9 there is just absolutely no way because the
10 theoretical constructs behind the three we
11 chose were so different you couldn't crosswalk
12 them.

13 And so if it was a process
14 measure, I like a thousand flowers. If it is
15 an outcome measure, I want to have one flower.
16 And I have an exceedingly high bar for
17 crosswalk. If it has a R square of 0.8, I
18 don't care. That is not good enough. Because
19 if it is an accountability measure and it is
20 only a 0.8, I think that is too much
21 variability.

22 I want one flower and I want the

1 one flower to have one bloom. And if you have
2 two instruments that aren't -- I mean the VA
3 version of the SF-36 and the RAND version of
4 the SF-36 and the quality metric version of
5 the SF-36, they are probably close enough.
6 But almost anything else, you are not going to
7 be able to do a close enough crosswalk for
8 accountability.

9 DR. ADAMS: Any response from our
10 panel? Gene do you want to -- or yes. I was
11 going to say, Lewis, with that thread, did you
12 have a comment? I saw your hand go up.

13 DR. KAZIS: Thank you. I just
14 want to indicate that David Cella is really on
15 the right track here. A common metric I think
16 is what we are after. It may take some time
17 but there is a body of literature out there I
18 think that began a number of years with Danny
19 Fryback who had an NIH funded grant to begin
20 to develop bridges across a number of
21 different assessments. Many of them were
22 generic in those days.

1 But I think that the objective
2 here is the metric. You know, that is what we
3 are looking at, a common metric. And the
4 methodology, I think, is there. It is just a
5 question of application of that methodology
6 across these many instruments.

7 DR. ADAMS: Please respond and
8 then we will go to Gene. Thank you.

9 DR. GANIATS: Denny and I, along
10 with a few others with the HUI, EQ-5D, SF-36,
11 and the QWB did simultaneous administration of
12 all of those in random digit dialing across
13 the country and disease-specific over time.

14 It is crap. Okay? It is really
15 sad. You can crosswalk all day long between
16 those instruments and their responsiveness to
17 change in two different conditions are
18 completely different; where sometimes the SF-
19 36 will show a change, sometimes it won't
20 depending on the condition. Sometimes the
21 QWB, sometimes not. So the fact that you can
22 crosswalk doesn't make them equivalent. And

1 so you have to be incredibly careful.

2 So there is one thing to be able
3 to do the arithmetic, the arithmetic of a
4 crosswalk. It is another thing for it to be
5 good enough for an accountability measure.

6 And I mean it is published out
7 there. I just think we have to be incredibly
8 careful.

9 DR. ADAMS: So Gene, I am going to
10 ask you. I know you have been waiting. And
11 then we have an audience comment and then I
12 will wrap us up. Gene? And anyone from our
13 panel? Sure, of course.

14 DR. NELSON: So this is just very
15 brief. The flow chart, once it gets revised
16 a bit will be really helpful. And that would
17 be really helpful to actually test it with a
18 measure coming through and there is some
19 opportunities with the ONC meaningful use PRO
20 measures, et cetera that we should really take
21 the flowchart as revised and try it out.

22 DR. ADAMS: Thank you, Gene. I

1 think that as you are raising here do we have
2 a few use cases that we want to put through
3 here would be very helpful.

4 And you mentioned you had a
5 comment from the panel in regards -- no?
6 Okay.

7 So there was someone from the
8 audience that wanted to comment on this, too.
9 And then Al, I'm going to give you the
10 pleasure of wrapping us up.

11 MS. POTTER: I'm D.E.B. Potter
12 from AHRQ. There are several of the PRO
13 measures that are included in our national
14 surveys. And so you have a benchmark of the
15 non-institutionalized civilian population.
16 And a lot of times you can cut them by various
17 sub-populations.

18 So I guess I urge people to think
19 about the use of that data. And should we
20 start to think about that as a way to build a
21 national benchmark? Because we are not going
22 to have the resources to build a benchmark

1 database for every single one of the PROs in
2 use.

3 DR. ADAMS: Thank you.

4 DR. KELLER: San Keller, American
5 Institutes for Research. And I wanted to
6 merge the two positions of the common metric
7 and the implications of using something that
8 you have shown statistically to be similar.
9 You know that there should be sensitivity
10 analysis to the effect of the differences and
11 whether or not they make a difference in the
12 application of the measure.

13 And I am reminded of Dana Safran's
14 work on the six response versus the four
15 response and how it orders doctors and so on.
16 So you can do that and those hypotheses should
17 be stated up-front when you are making those
18 translations to address that potential
19 criticism.

20 DR. ADAMS: Albert, I think it is
21 you. Yes, great. Thank you.

22 DR. WU: So I have a question

1 about I think that coming up with some use
2 cases is absolutely the smartest thing to do.
3 And to really specify the heck out of the
4 first use cases, so that we are really, really
5 focused on whatever it is we are focused on.

6 I sort of then became a little
7 unsure about how this is sort of going to get
8 rolled out because the first use case will
9 then be generalized somewhat if we are looking
10 at hypertension in African American men
11 between the ages of 50 and 55, what is the
12 next case -- what is the next use case going
13 to be? Or how are we then going to move from
14 that to all hypertension in all men,
15 hypertension in genders, hypertension in all
16 ethnicities, in primary care, in long-term
17 care, in acute care, in rural, in urban, and
18 so on and so forth.

19 So we wind up in a way -- do we
20 wind up with a family of related flow charts
21 for hypertension measures? Because in some
22 cases, the evidence is going to be there for

1 African Americans but not for some other
2 ethnicity. How is it going to -- how are the
3 family of flowcharts going to relate to each
4 other?

5 DR. PERFETTO: Our point was just
6 rather than just start with the outcome, the
7 hypertension outcome, it is thinking through
8 the context, as we were talking about earlier,
9 what is the problem. So maybe there is only
10 one population of hypertensives that you want
11 to improve care for and zero in on them and
12 the others you may not need to because you
13 don't have any indicator that there is an
14 issue there. Or you start with the one and
15 then you go to others. But you start with the
16 one where the problem is most significant. It
17 is really articulating the problem.

18 DR. ADAMS: Okay, so one other
19 comment and then we will wrap it up. But Al,
20 thank you, because I think the flowchart is
21 already serving its purpose. Because you are
22 already seeing how it could be used in various

1 ways with implementation. So thank you.

2 And Ted you want to wrap it up for
3 us, please?

4 DR. GANIATS: Yes, I just have a
5 question. I would think of a PRO as an
6 outcome. I would think of blood pressure as
7 an intermediate outcome. I don't care about -
8 - I mean from a PRO point of view, I don't
9 care about blood pressure. I care about
10 stroke, heart attack, et cetera.

11 So the PRO is conceptually much
12 closer to what we are interested in -- it is
13 what we are interested -- than essentially all
14 the other performance measures.

15 DR. ADAMS: So on that closing
16 remark, I would like to once again thank our
17 reactor panel. And shall we give you a round
18 of applause? Yes.

19 (Applause.)

20 DR. ADAMS: Okay, so we are going
21 to move on to lunch. And then there have been
22 several topics that have percolated in

1 addition to our future direction. So when we
2 come back from lunch, we will be discussing
3 that and Patti will be leading that off.

4 And we will be coming back from
5 lunch at 1:00, so in 45 minutes.

6 (Whereupon, at 12:13 p.m., a lunch
7 recess was taken.)

8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

1 A-F-T-E-R-N-O-O-N S-E-S-S-I-O-N

2 (1:03 p.m.)

3 DR. BRENNAN: Well, good afternoon
4 and welcome back to the last session.

5 So I have learned that as you go
6 through your career, in the beginning of your
7 career they ask you talk about the future of
8 a discipline. In the middle of your career,
9 they suddenly start asking you to give
10 retrospectives on your work. And when you are
11 at the end of your career, they put you back
12 into giving future perspectives again. So I
13 guess this is a sign that either I am at the
14 beginning of my career in quality out of
15 informatics or I am at the end of my career in
16 informatics, I'm not sure which.

17 I want to begin our last session
18 here today by actually doing a lot of the
19 things that we do often in the very last
20 minute and don't have a moment to reflect on
21 them, and that is to thank the staff and the
22 participants and the audience for the work

1 that they have done to make this Patient-
2 Reported Outcomes Workshop so successful.
3 Please join me in a round of applause for
4 everyone here.

5 (Applause.)

6 DR. BRENNAN: Thank you everyone.
7 The double Karen or whatever we have been led
8 by have just been inspirational.

9 But I also want to thank each of
10 you who have given up time from work, each of
11 you who has children at home starting school
12 this week, giving up time from big family
13 events, to be here to work through this.

14 In our last hour, we have one last
15 piece of work to get done today and then I am
16 going to give you a brief overview of what to
17 expect. Over the next couple of days, if you
18 begin reflecting on a conversation you had
19 here and you have an inspiration or a
20 clarification, please send it to Karen Pace or
21 Karen Adams. They will be pulling together a
22 draft report based on our conversations, the

1 background reports that were provided to the
2 meeting and the two workshops. That report
3 will be written within the next month. But if
4 you have thoughts in the next couple of days,
5 please send them on.

6 There is also you received for
7 this particular meeting a background document
8 that was prepared by RTI. If you have any
9 comments on this document, it would be
10 critical to get those here within the next
11 couple of days to early -- at the latest
12 Monday or Tuesday because the authors of that
13 document will be taking that feedback and
14 making a final copy of that report.

15 There will be a call with the
16 expert panel, those of you who are in this
17 room, sometime before October 26th. That will
18 be before the report goes out for public
19 comment. So you can expect to be hearing from
20 Gene and the scheduling folks.

21 The comment period begins October
22 26th. Please, as you know, encourage your

1 constituencies to review the report and make
2 comments on it.

3 There will be a meeting with the
4 entire expert panel via a webinar after the
5 comment period closes. That webinar will be
6 open to people, to the general public. So
7 those of you who are in the audience and would
8 like to listen in to that presentation, you
9 will be able to hear that probably before
10 Thanksgiving it is likely that will happen.

11 And then the final recommendations
12 are going to go to the CSAC on December the
13 10th. So there will be lots of work going on
14 in the background, lots of opportunity for
15 interaction. Your primary contact points are
16 Karen and Karen. We need to leave them with
17 some guidance and some instruction.

18 So I am going to ask everyone to
19 please pull out our colorful guide and box
20 here and we are going to review the
21 recommendations that were made in the previous
22 hour. If you have a pencil nearby, you might

1 actually want to update and mark up your
2 document. There will be a new document
3 circulated.

4 And then we will have a time for
5 discussion until about ten until two and then
6 we will start wrapping up the session. I
7 guarantee we have a hard stop at two o'clock
8 because I have a phone call, as well as some
9 of you.

10 So, thank you very much for the
11 panel right before lunch really gave us a
12 great deal of content to work with, as well as
13 commentary to work on. And we have several
14 adjustments. And so I want you take -- oh, I
15 can move these, can't I? I can't.

16 Please go to the next page. At
17 the very top of this diagram I want you to put
18 a black -- just a box that says box zero. Box
19 zero is what we are using as a placeholder
20 proposed to be the space where we would invite
21 the proposers of a new PRO-PM to explain the
22 motivation for it. Why is this happening now?

1 Is it opportunity? Is it clinical care
2 problem? Is it a sense of an absence of a
3 metric in the system?

4 So box zero is the first change
5 that we heard. You are not committed, even if
6 you are writing in ink. This is just I want
7 to bring you up to date to where we are with
8 our thinking about this. Next slide, please.

9 On the next slide, you will see in
10 box five that we have redlined the phrase
11 clinical practice and, instead, changed that
12 to be real world. What this means is to
13 clarify that we want -- before a PROM can
14 actually go through the evaluation process and
15 be applied to the criteria, someone has to use
16 it in the real world, where it is supposed to
17 be used. And if it is supposed to be used in
18 the clinical care setting, fine, then clinical
19 practice is fine but it might be a plan that
20 is using it. It might be a community that is
21 using it. It might be a large integrated
22 system. So it is not meant to imply that you

1 must use every prompt in a clinical care
2 service experience with a patient to have it
3 reviewed. It is meant to say you must have
4 real world experience with this, which then
5 leads us to what I am calling box five prime.
6 Next slide, please.

7 Just below box five, you should
8 make a small box called five prime and call
9 that fit for purpose. And I think that was
10 Rob's suggestion that we made sure we had a
11 point there where we figured out was this PROM
12 actually doing what we thought it would do?
13 Does it fit the purpose it was intended to do?

14 The last major change we heard in
15 the morning, if you go to the next slide,
16 please, is it goes at the very bottom of the
17 page, box 14. We are placing in there a
18 feedback, a box for feedback that probably is
19 going to have tentacles and arrows coming out
20 of it, going back into going back into
21 different parts of the process.

22 So now you see on your screen and

1 you see in front of you. And if the audience
2 at home is following, on your papers you
3 should see a slightly revised pathway that
4 will help the NQF create a systematic way to
5 start examining PROS and taking into the
6 process of PROMs and get up to the PRO-PM.

7 Our responsibilities in the next
8 half hour, 40 minutes are to look hard and
9 think hard and talk actively about this
10 document. We would like to get, if possible,
11 to a point of consensus for the staff, not
12 specific to individual words, maybe a box
13 would be bigger or smaller, but a conceptual
14 consensus that this is a pathway that we
15 believe as a group will be useful for going
16 from a PRO to a PRO-PM.

17 And so it will take a few minutes
18 of conversation. Now you had two sets of
19 conversations already to talk about whether
20 the current criteria for approval need to be
21 modified for the PRO-PM process. And the
22 sense that I got there was a lot of interest

1 in making clear the importance criteria number
2 one wasn't as much consensus around other of
3 the three criteria what changes need to be
4 made for the PRO.

5 But I would like you to reflect
6 for a moment about the discussions you sat in
7 and about the idea of what must be or should
8 be considered for modification to ensure that
9 the criteria the NQF uses to approve the PMS
10 is not going to present an unusual or
11 insurmountable barrier for the patient-
12 reported outcome.

13 And I will take comments and I see
14 that Dave is ready for a comment. Okay, Dave.

15 DR. CELLA: Well, this comes back
16 to the first thing I said this morning. So it
17 is kind of like repeating myself but in the
18 context of this flowchart.

19 I think it is great. It is great
20 to put all these things down on paper. But
21 then to me the question is how will it be
22 used. How will it be applied? If it gets

1 applied strictly, nothing will ever pass. You
2 can always find a way to say something is not
3 ready. So there are several points along this
4 continuum where a reviewer could say this
5 doesn't make it. This doesn't make it.

6 So it is possible to use this
7 diagram to reject everything.

8 DR. BRENNAN: So we would like
9 this diagram to be an enabler. So based on
10 Dave's comments, would you take a look through
11 here and just right now circle or place a
12 checkmark about where you think this pathway
13 might be particularly vulnerable to a
14 capricious or perhaps non-supportive response
15 by reviewers so that no PRO ever gets through.
16 Because I am going to take some time in a few
17 minutes to ask you what is missing. And it
18 might be what is missing is where the judgment
19 calls. Where is the point that we need to
20 have risks. So I think your point is very
21 well taken.

22 So take a look through here and

1 just mark off on the box or jot some notes for
2 yourself about do you see a point of risk
3 where in too rigid or inappropriate
4 application of one of these boxes or of the
5 commentary, remember that is on the second
6 page that might help you understand that might
7 make a PRO particularly vulnerable.

8 Other opening comments for now?

9 Yes.

10 MS. TORDA: It just strikes me
11 that for broader use really being more
12 explicit about the criteria for a PROM and the
13 criteria for a PRO-PM and how they relate
14 would be useful. Because I think we were
15 continually have to explain it to ourselves.
16 And if we had to explain it to ourselves,
17 being more explicit about it would be a good
18 idea.

19 DR. BRENNAN: So that would be
20 occurring in boxes 10, 11, and 12 or 10 and
21 11, I guess.

22 MS. TORDA: Well or even when you

1 are selecting --

2 DR. BRENNAN: Oh, no. I see.

3 MS. TORDA: -- the PROM that you
4 are looking for and then how you are using the
5 PROM and then how you are turning the use of
6 the PROM into a performance measure.

7 DR. BRENNAN: Yes, Karen?

8 DR. PACE: I was just going to say
9 the second note page unfortunately the number
10 boxes that those notes go with got left off.
11 But we can do more work there to make that
12 distinction to clarify what characteristics go
13 with selecting the PROM versus the PRO-PM if
14 that is useful.

15 DR. BRENNAN: Would it be possible
16 for someone to state what the PRO-PM might
17 look like so we are all on the same page with
18 that? So we have heard about PROMs. We know
19 that here is various phases to depression or
20 hypertension. But a performance measure, does
21 somebody feel energized by lunch?

22 MS. PITZEN: Hi, it's Collette

1 from Minnesota.

2 A performance measure would be
3 depression remission at six months. So the
4 outcome is having that remission event
5 occurring at a certain point in point and the
6 PROM is the PHQ-9.

7 DR. BRENNAN: Okay. Would you put
8 like a threshold like 100 percent of the
9 patients demonstrate depression remission at
10 six months?

11 MS. PITZEN: No.

12 DR. BRENNAN: Isn't the measure
13 the percentage of patients?

14 MS. PITZEN: Correct, it is the
15 percentage of patients that achieve remission
16 at six months.

17 DR. BRENNAN: So no threshold,
18 just the statement of the percentage. Okay.

19 MS. PITZEN: Correct.

20 DR. BRENNAN: Okay. All right so

21 --

22 MS. PITZEN: Could I back up and

1 add a comment of just something that would be
2 prohibitive, especially in this measure but
3 maybe for measures going forward?

4 The requirement to have a process
5 measure endorsed before you are going to that
6 outcome measure. I think it is very important
7 to have those processes in place but it is
8 almost like it is supportive of having the
9 outcome that you desire.

10 DR. BRENNAN: So I think that what
11 Karen is saying is that under box five prime
12 that we added, you really should have, those
13 are two pathways that could occur
14 simultaneously. But what you are recommending
15 is that they be made explicitly simultaneously
16 so there is not a dependency from one to the
17 other.

18 MS. PITZEN: I missed part of a
19 discussion this morning. So my apologies.

20 DR. BRENNAN: That's fine. And
21 someone had also suggested that we actually
22 might want to -- you might want to even invert

1 the green and orange box so that you do one
2 first and then the other. But the issue
3 clearly this diagram was not meant to imply
4 that you must go through the process before
5 the outcome.

6 Yes?

7 MS. DUBOW: Are we saying or
8 Collette did you say we have to have a process
9 measure before we can have an outcome measure?

10 DR. BRENNAN: No, she wanted to be
11 sure we didn't have to.

12 MS. DUBOW: Oh. Oh, that's fine.
13 I'm sorry. I misunderstood. Thank you.

14 DR. BRENNAN: Yes.

15 DR. PACE: I just want to clarify.
16 That was not the intention and we can fix the
17 diagram but the idea was that you could go
18 directly to an outcome measure but in some
19 cases you may want to consider the process
20 measure.

21 So we obviously need to make that
22 very clear on the diagram and we will work on

1 that. But I don't think the intention was
2 that it has to go through that pathway.

3 DR. BRENNAN: Right. And once
4 things get immortalized on a website, though,
5 they can be complicated.

6 Jack, yes please.

7 DR. FOWLER: This, I guess, has to
8 do with box 11. And we talked a little bit
9 about, I mean we talked off and on what
10 validation of this performance measure looks
11 like. And when Anne Deutsch was talking
12 yesterday afternoon, I think she was the one
13 that put up an example of saying if you had
14 some practices that you thought were exemplary
15 and then some practices that were usual care
16 and you could demonstrate a difference but
17 that would be an example of validity
18 information.

19 But I think it should be clear.
20 And again I can't see how you could get
21 evidence of validity without at least having
22 practices that varied in what they did in some

1 ways that you thought were credible that in
2 fact had different outcomes on your measure.

3 You know, we have talked around
4 about whether that was really essential or
5 not. And I just find it hard to believe that
6 if you have got an outcome that you want
7 practice to change, that you don't need an
8 example of several practices that behave
9 differently, that get different outcomes.
10 Because that is all I could believe would
11 constitute valid evidence that the way you
12 practice medicine could affect the outcome
13 that you are after.

14 And maybe you don't need to
15 elaborate on what that means but --

16 DR. BRENNAN: So let me just
17 restate it. We are taking all comments right
18 now. And so I think that if I am
19 understanding you correctly, what you are
20 saying is for box 11 where there is the
21 performance measure should be tested for
22 reliability and validity, you are suggesting

1 that that be made explicit on the level of
2 practices that we show variability across
3 practices and variability in what they do as
4 well as the outcomes they achieve.

5 DR. FOWLER: That's right.

6 DR. BRENNAN: Okay. And so that
7 is it. That is an example of how one might
8 demonstrate that kind of a test. That is
9 helpful.

10 Yes, John?

11 DR. WASSON: Two comments; first
12 is on Jack's comment.

13 What we also heard though earlier
14 today is that in some cases that would be the
15 highest level, I guess. And then there might
16 be a lower level, which is this is something
17 that is so important to measure for patient
18 reasons, et cetera, that although we need a
19 lot of validity and reliability criteria, so
20 to speak, we may not have an intervention that
21 is going to show an effect yet.

22 So I don't know if we want to

1 throw those out but at least they might be at
2 a different level.

3 DR. BRENNAN: If I can say that
4 back to you, what you are suggesting is that
5 there may be PROs, there may be concepts that
6 we want to assess the performance of a
7 practice on, that we don't have any way of
8 intervening with right now. And someone
9 brought up the idea of fatigue and chemo. And
10 those of you who are really good a fatigue and
11 chemo, I am sorry if I underspecified that
12 one. And so it may be appropriate to include
13 as another kind of validity evidence the fact
14 that practices or groups of patients or plans
15 vary in terms of this PRO, in terms of this
16 phenomenon, not that the care leads to changes
17 in the phenomenon.

18 DR. WASSON: At this time.

19 DR. BRENNAN: Okay. So you are
20 arguing in a broader sense to a higher level -
21 - I'm sorry -- various approaches to validity
22 evidence.

1 DR. WASSON: Yes, and
2 intermediate.

3 And then because Helen didn't
4 laugh at me for this last comment, I feel free
5 to bring it out.

6 DR. BRENNAN: Okay.

7 DR. WASSON: And you can blame
8 Helen for doing it.

9 DR. BRENNAN: All right.

10 DR. WASSON: Number 14, your
11 feedback.

12 DR. BRENNAN: Number 14, yes.

13 DR. WASSON: Yes, I was suggesting
14 to Helen, she didn't laugh, that I really
15 think it shouldn't be just feedback. It
16 actually should be sunset. That every measure
17 at the end of a three-year cycle automatically
18 will sunset unless there is positive evidence
19 that it is the best of the current measures or
20 that it has good evidence that it should be
21 continued. Because otherwise, we are going to
22 proliferate ourselves to death or kill our

1 patients.

2 DR. BRENNAN: We are going to have
3 a million measures.

4 DR. WASSON: yes.

5 DR. BRENNAN: Yes. Helen is not
6 really laughing just yet but she is into a
7 work mode up here.

8 So I heard a friendly amendment to
9 box 14 that we expand the concept of feedback
10 to include such things as earlier today there
11 was a mention of post-market surveillance and
12 now John is suggesting that we actually have
13 a hard stop on all measures over a set period
14 of time, or at least a reevaluation of the
15 continued value of the measures. I think that
16 is reasonable.

17 I would like to ask you, is that
18 unique to PROs or is that for all of the NQF
19 indicators and PMS?

20 DR. WASSON: I don't think anyone
21 should be automatically exempt.

22 DR. BRENNAN: Okay. You can tell

1 you are in this business.

2 DR. WASSON: Yes, because the
3 market is going to -- I mean we really are
4 going to change in our knowledge over the next
5 X number of years.

6 DR. BRENNAN: Okay. I mean I
7 think that will come for consideration and we
8 will see when it comes out of the staff mixer
9 what it looks like at the end but I think we
10 have got a pretty clear documentation of it.
11 And I personally actually like it very much
12 because we are, at the university, over-
13 assessed right now to the point if one more
14 person puts a yardstick up next to me, I will
15 spit on them.

16 Yes, Kathy?

17 MS. PITZEN: This is Collette. I
18 am probably oversimplifying but part of the
19 maintenance endorsement for the NQF measure is
20 you have to demonstrate that your measure is
21 still valuable and that there is variability
22 among the people that you are measuring and

1 that there is still opportunity to improve.
2 So I am a little bit opposed to the automatic
3 sunset setting. And I know Phyllis had a
4 comment as well.

5 DR. BRENNAN: And it sounds like
6 you have some knowledge about the process that
7 I don't that says there might be a mechanism
8 built into that already.

9 We are all not accepting John's
10 idea of no tenure. We are just including it
11 as part of the comment.

12 Kathy. Oh dear, you need longer
13 arms. There is a quality performance measure
14 going on up here; stretch the guest.

15 DR. LOHR: On the sort of box 14,
16 I don't know if you could take a page from
17 what the National Guidelines Clearinghouse
18 does but guidelines are essentially dropped if
19 they are not updated and otherwise some step
20 done to ensure that they are still, if you
21 will, valid and all up to date every five
22 years.

1 So I think three years and
2 sunsetting might be too soon.

3 DR. BRENNAN: Okay.

4 DR. LOHR: But a five- or six-year
5 window particularly because you are looking
6 for -- you are giving PROs at least or PRO-PMs
7 up to six years to be used in accountability
8 applications and so forth.

9 So conceptually, I think the
10 sunsetting idea might be a good one. Three
11 years I think is too short a term. And there
12 are models out there for what one might do to
13 sort of help with, if not sunsetting, at least
14 updating.

15 My other question, though, is your
16 bottom 10 through 13 or 14 are all orange or
17 will be orange. But I thought that everything
18 up through 12 is essentially the
19 submitter/developer's responsibility and that
20 13 and perhaps 14 will be NQF's responsibility
21 and the developer sort of disappears.

22 So should 13 and 14 be a different

1 color or a different part of the whole thing?

2 DR. BRENNAN: I think that would
3 actually just make the display useful. it may
4 be as the staff is redoing the display.
5 Because remember, this started with Eleanor's
6 doodle. So we have come a long way from
7 Eleanor's doodle. But I think what Kathy is
8 saying is that actually box 9 and 13 --

9 DR. LOHR: Yes, and nine.

10 DR. BRENNAN: -- are part of the
11 NQF internal process.

12 DR. LOHR: Yes, and everything
13 else belongs external to NQF because it is the
14 developer people and current users and so
15 forth who are going through this whole process
16 and then finally submitting something and then
17 NQF does its thing.

18 DR. BRENNAN: Right. That is
19 really very helpful.

20 Other comments at this point?

21 Okay, now we are going to come to the
22 interesting part of the conversation. Look

1 carefully at either your modifications or the
2 boxes here having heard the kind of changes
3 likely to come, so lines will move and there
4 may be 12 boxes instead of 14, but essentially
5 we are looking at a process.

6 And let us know if there is
7 anything that you absolutely cannot live with.
8 And this is the point in time to go back to
9 thinking about where are the trickster spots
10 that could actually capriciously kill
11 basically good measures because they have got
12 some weird performance.

13 Kathy and then the back table with
14 --

15 DR. LOHR: This is just really a
16 question. But is there a possibility of
17 having list A and list B of a lot of these
18 criteria such that some would be utterly
19 mandatory and others more desirable --

20 DR. BRENNAN: Okay.

21 DR. LOHR: -- and might move a
22 measure along more quickly or something like

1 that. But to me, this is a lot of criteria
2 that have to be met simultaneously with a lot
3 of data and maybe a lot of landmines, given
4 ten or 15 or 18 or so criteria. And there
5 might be some way of trying to say some are
6 just absolutely utterly required and others
7 might let us discriminate among or across
8 similar PROs or PROMs or so forth, instead of
9 having absolutely everything be completely
10 required.

11 DR. BRENNAN: Okay.

12 DR. LOHR: And it is a question.

13 DR. BRENNAN: That is really a
14 helpful question. Let me ask Karen or Karen.
15 It seems to me that that is consistent with
16 the evaluation criteria already. Yes, you
17 want to just comment on that for a minute?

18 DR. ADAMS: I mean, Karen, you can
19 speak to it. But what came to mind to me was
20 the NQF criteria around importance. It is a
21 must pass.

22 So if the measure is not deemed

1 important and a lot of this tied into our
2 meaningfulness and naturally scientific, et
3 cetera evidence, that you don't get pass go
4 for that. So I think it is looking through.

5 Some of the comments that came
6 back from the survey when we were looking at
7 the characteristics mentioned this and I think
8 it builds on what David said that nothing
9 could beat every criteria. So we want to be
10 careful.

11 So which one of these, when I was
12 thinking about this, some of these are very
13 helpful guidepost, and it is what we hold true
14 and where we want to go and other things are
15 hard and stern as I think you are saying and
16 additional guidance there would be helpful.

17 DR. BRENNAN: Additional guidance
18 like you would like some recommendations for
19 that now or over the next couple of months you
20 would like people to be thinking about it?

21 DR. PACE: Right, I think there is
22 more flexibility in those characteristics of

1 choosing the PROM and this pathway. But in
2 terms of NQF criteria, as Karen Adams was
3 saying, you know, measures have to meet our
4 criteria for importance to measure and report
5 for scientific acceptability and measure
6 properties. Usability or feasibility and
7 usability in use are more judgment calls to a
8 certain extent.

9 So I don't think we want to say
10 that. I mean we have heard a lot of
11 indication that maybe we want to be stricter,
12 I don't know that we would want to eliminate
13 NQF criteria. But I think there is definitely
14 flexibility in this pathway and also in
15 choosing those PROMs.

16 DR. BRENNAN: There is a comment
17 in the back. Is your comment directly related
18 to the Karen conversation? yes, go ahead
19 please and then Ted.

20 MS. DUBOW: I just wanted to make
21 the observation that this pathway provides
22 useful technical assistance, as opposed to

1 being a set of an NQF requirements. The way
2 the evaluation criteria are, for example,
3 where those are criteria that need to be
4 addressed.

5 This pathway to me suggests to
6 developers, measure developers and to
7 everybody else in the process what we think
8 needs to be wrapped into this process and it
9 provides -- it's useful. And I'm concerned
10 about eliminating anything in order to come up
11 with something that looks more palatable if we
12 don't bless it with the notion that this is a
13 mandatory set of must do every item kind of
14 thing but rather to suggest that indeed it is
15 a pathway. I just don't want to lose the
16 useful guidance that we have spent so much
17 time thinking about.

18 DR. BRENNAN: So if I can
19 summarize what Joyce is saying. Your hope is
20 that the pathway serve as a model for
21 proposers to know how to go through the
22 process and that we not mandate or become

1 rigid about the many pieces of it but simply
2 say this is a pathway. You need to follow
3 this. If you have got to make a change, you
4 need to explain why you are skipping
5 something.

6 Okay, actually both of you can
7 speak, that's fine. And then we will come up
8 to Ted here.

9 DR. PAWLSON: On this point.

10 DR. BRENNAN: Greg is speaking.

11 Sorry.

12 DR. PAWLSON: Greg Pawlson. On
13 this point, I think the issue that we are kind
14 of grappling with here is not whether I don't
15 think whether these criteria are the right
16 criteria but providing, especially in a new
17 area like this, more guidance than usual on
18 precisely what each of these mean and how far
19 we expect the review panel to go.

20 Because in the scars that I have
21 accumulated from the NQF review process, which
22 I have to say have gotten much more refined as

1 time has gone on. So I really want to
2 acknowledge that but this is a new area. And
3 what we don't want is somebody coming in and
4 saying oh, well that means you have got to
5 have absolutely everything in the reliability
6 thing absolutely nailed, you have got to have
7 I already used in 500 different practices,
8 because that will never happen because it
9 often takes NQF endorsement to get some people
10 to use the measure widely enough.

11 Now that doesn't mean you can't
12 test it in a couple of sites but I think
13 really making sure that the review panels
14 understand these are going to be new, they
15 haven't been broadly -- most of them have not
16 been broadly used as yet, at least in this
17 country. If we are going to take evidence
18 from Britain and Sweden we might do better.

19 But I think it is the degree to
20 which these -- and I would see especially
21 number five and number 11 as being potential
22 huge stumbling blocks if they are

1 misinterpreted or over-interpreted. And it
2 doesn't mean that those criteria shouldn't be
3 in there but it does mean that I think the
4 review panel is going to need some very clear
5 instruction on how to balance. And it always
6 is. I mean everybody who is in the room who
7 has been on a review panel knows that good a
8 review panel is always balancing off how
9 important is this, how critical is this to get
10 forward, and can we come back. And I don't
11 know whether you are planning to have
12 provisional approval of this or at least the
13 option of saying we passed this but we are
14 going to actually review it in a year and you
15 need to come back with additional evidence.

16 DR. BRENNAN: So Greg is calling
17 for some judgment throughout but actually
18 raised a brand new point which I am going to
19 ask Helen to address. Which is, in the
20 process after box 14 -- or rather maybe I
21 guess it is in box 13 when NQF makes the
22 endorsement -- is it feasible, is it possible

1 to consider a provisional endorsement. Like
2 we will endorse this for a year and then you
3 have got to come back?

4 DR. BURSTIN: This is a complex
5 issue.

6 DR. BRENNAN: Sorry about that
7 Helen.

8 DR. BURSTIN: So essentially we
9 have a very, very limited applicability for
10 untested measures coming through our process
11 which might be what people think of as
12 provisional. We don't allow it for outcomes
13 actually because I think outcomes are
14 something, frankly, that need to be tested
15 before they come in.

16 However, one of the things we have
17 been experimenting with, we have a pilot right
18 now, is actually trying to create a two-stage
19 endorsement process. So for some newer areas,
20 we probably may need to consider bringing in
21 the measure concept first, understand a
22 measure concept, the importance around the

1 concept and then allowing the measure to go
2 back out and get fully tested and blessed.

3 So I think there are different
4 approaches here. And again, just as an
5 interesting point, on the Minnesota measure
6 around PHQ-9, there were a lot of concerns
7 about the lack of risk adjustment, for
8 example, that there was no risk adjustment as
9 part of that measure. And there was an
10 understanding this was important enough. Put
11 it out there. We will learn. We will add
12 that in as it goes forward. So I think it is
13 important to also note that measures are
14 iterative and we recognize that and we are
15 happy to take updates to measures as they go
16 out in the field and we learn. It is really
17 through implementation that we gain a lot more
18 understanding of these measures.

19 DR. BRENNAN: So one of the things
20 that Helen has introduced is a possible
21 intermediate step, which I might call three
22 prime that would happen before a lot of work

1 went on the field, which is getting to
2 understand the concept early on. So there
3 might actually be yet another box added in.

4 Did you have another comment to
5 make, I'm sorry, Barb?

6 DR. GAGE: Yes, I was just going
7 to raise the concern, and I think it has been
8 hit upon in solutions in different forms, is
9 that it is an iterative process in getting
10 anything through. You don't want to make it
11 too tight or you won't be able to get to the
12 final points.

13 DR. BRENNAN: Excellent. Ted, you
14 have been patient.

15 MR. ROONEY: I pretty much want to
16 amplify what Greg said because the number
17 five, I mean if you want to do a new measure
18 on clinical data or hemoglobin A1Cs or BPs or
19 cost of care, there is a wealth of existing
20 data that you can get access to the model but
21 there doesn't exist a lot of the data that we
22 want to test with outcomes. So as long as

1 five is seeing that you are not going to have
2 all the data, testing validity and
3 reliability, and all these different
4 population segments because you don't do it,
5 it doesn't exist. So that is where I think
6 you get really tripped up if someone starts
7 comparing this.

8 The other quick comment was that
9 again I live in the world of both improvement
10 and accountability and Gene came over, Gene
11 Nelson came over to us a year ago to really
12 talk of PROMIS. We had huge excitement for it.
13 We cannot get one PCP practice to even test it
14 because they are so overwhelmed right now.

15 But whereas if you told me if I
16 can go back and say, look, this is going to be
17 an accountability measure in a year, I have
18 more practices that I could handle to do it.

19 So that is the thing, if it makes
20 it too hard to get to an accountability
21 measure, it will never happen or I would be
22 afraid it would never happen.

1 DR. BRENNAN: So I heard two
2 things in what you are saying and I want to
3 make sure I got them correctly. The first one
4 was there is a great absence of test data.
5 And so maybe one corollary activity might be
6 to think about how a test bed of data could be
7 developed that would allow people to begin to
8 test measures. And the second is that in the
9 absence of a mandate for action and in the
10 test bed, the clinical engagement is really
11 tough. Did I get that?

12 MR. ROONEY: Yes, and that is only
13 a problem then if you need the clinical
14 engagement to then approve it.

15 DR. BRENNAN: Right.

16 MR. ROONEY: So it becomes
17 circular.

18 DR. BRENNAN: Yes, I got it.

19 This gentleman and then over here.
20 Yes, sir? I'm going to call you Mike. I know
21 it is not Mike you just look like a Mike to
22 me. Jim.

1 DR. BELLOWS: Hi, this is probably
2 such a simplistic observation that it is not
3 worth saying. But to me the boxes in green
4 and the boxes in orange are incredibly
5 similar. And actually the more we talk about
6 it, it seems like they are almost the same.
7 There is stuff in green about it has to be
8 well-specified and there is stuff in orange
9 about case-mix adjustment and so forth. But
10 actually both of those things go in both of
11 those boxes. So I wonder if we might want to
12 just simplify it all by not repeating the
13 green boxes and the oranges boxes.

14 And then for people who are just
15 scared by the number of boxes on the page,
16 there wouldn't be as many boxes.

17 DR. BRENNAN: One of the things
18 that I have learned that is really important
19 when you read an NQF document is to read the
20 notes. So this might be arguing for fewer
21 boxes, more notes, maybe. That is good. That
22 is very helpful. Yes?

1 MS. TORDA: To go back to the
2 kinds of other tests or the data that you
3 threw out, I think we need to be clear. It
4 needs to be data that was collected for non-
5 research purposes.

6 DR. BRENNAN: Yes.

7 MS. TORDA: And what might be even
8 more useful is somehow to identify sites that
9 are actually using the PROM so that we would
10 know where to go for testing, as opposed to a
11 test bed of data.

12 DR. BRENNAN: I see. I see. So
13 one of the things that you would find helpful
14 is during the process of building up through
15 box one, two, three, four, five, it would be
16 useful to have some public list that you could
17 refer to. So if a site in Maine is working on
18 something you might collaborate with them.

19 The second thing I heard is that
20 data collected from real world people in a
21 real world activity is really scarce and
22 important.

1 MS. TORDA: Yes.

2 DR. BRENNAN: Okay, I am going to
3 go to the phone for just a moment, please. I
4 understand we have a comment or a question.

5 OPERATOR: At this time, in order
6 to ask a question press * then the number one
7 on your telephone keypad.

8 Again, to ask a question, press *
9 then the number one on your telephone keypad.

10 DR. BRENNAN: Well, all right.

11 OPERATOR: At this time, there are
12 no questions.

13 DR. BRENNAN: Thank you so much.

14 Okay, we are going to come back to
15 the room here. We have been talking about
16 what you can't live with. And what I am
17 hearing in the tenor of the conversation is
18 people can't live with rigidity. There needs
19 to be judgment, maybe there needs to be some
20 use cases that demonstrate various types of
21 PRO-PMs that come through and where their
22 evidence will be presented and how they would

1 be treated in this model.

2 Anything else -- and somebody
3 doesn't like the green and orange being
4 separated. I got that.

5 Anything else? It's a show
6 stopper. It is just going to be not a good
7 thing. Yes, Ted?

8 DR. GANIATS: I think this is sort
9 of obvious, at least to me, but I haven't
10 heard it explicitly stated. Most, if not all,
11 performance measures come from a guideline.
12 There is a guideline that states X should be
13 done. We are de novo creating criteria for a
14 performance measure and have nowhere stated
15 that it should be from a guideline or that
16 there should be evidence that it should be --
17 there is evidence that it makes life better.

18 And I just think it is a little
19 late to work through all of that but it is
20 something for NQF to think about. You know,
21 just because it is a patient-reported outcome
22 doesn't, by itself, mean it is good fodder for

1 performance measurement.

2 DR. BRENNAN: Very, very important
3 point, Ted. And Karen is going to respond to
4 that. Karen Pace.

5 DR. PACE: Just a clarification.
6 NQF does not require that for endorsement that
7 something be identified in a guideline. Our
8 criteria is about evidence. Many guidelines
9 are evidence-based but what we are really
10 interested in is the evidence behind a
11 guideline a recommendation and that evidence
12 doesn't have to be connected to a guideline
13 recommendation.

14 I think the whole discussion we
15 had here about actionability really relates to
16 that evidence. What you are saying and many,
17 that we have right now in our criteria that
18 health outcomes don't have to present a whole
19 body of evidence because they are kind of
20 evident on our face that we should measure
21 those. I think what we have heard here is we
22 want some evidence of actionability, which

1 really gets that again, is there is evidence
2 that there are interventions that affect the
3 PRO.

4 And again I think in this
5 discussion someone brought up again some
6 flexibility because there may be PROs just as
7 health outcomes that by measuring it we will
8 hopefully stimulate improvements. But I think
9 that is a judgment call.

10 But I think we have heard pretty
11 loudly about looking this actionability,
12 especially at the start of this endeavor.

13 DR. BRENNAN: Yes, Kathy and then
14 Ted.

15 DR. LOHR: Another question back
16 to the pathway. If I were a developer or
17 wanting to do something to develop a PRO that
18 would be a PROM that would eventually get
19 submitted, is the implication here that
20 somehow or other I have to start de novo with
21 boxes one and two? Or is there a possibility
22 that I can take something that I have been

1 working on for the past ten years, has a lot
2 of information behind it, I can pull together,
3 if you will, proof that I did the things that
4 I was supposed to do in box zeros, one and
5 two, and short circuit both in time and effort
6 some of what this implies would otherwise
7 would need to be spent? And can people start
8 with three?

9 DR. BRENNAN: I understand what
10 you are saying. I think what you are asking
11 for is to have boxes one, two, and three, be
12 able to be operationalized in any order. And
13 so I think that is a very interesting, very
14 reasonable suggestion because there may be
15 really, really good PROMs that haven't had
16 enough patient input that get some patient
17 input. There might be things that have had a
18 lot of patient input but are fairly long down
19 the track.

20 DR. LOHR: Right. And if I can
21 prove to you that I have done a decent job
22 with one and two, maybe then I can just go

1 ahead with three.

2 DR. BRENNAN: This speaks well,
3 though, to what one would consider proof or
4 evidence, whether it is done de novo or it is
5 historical. And I think that is very
6 important guidance. Ted?

7 DR. GANIATS: Yes, just in
8 response to Karen. Thank you for making me
9 relax and feel better and for causing me to
10 get quite nervous.

11 (Laughter.)

12 DR. BRENNAN: Boy, is she a
13 powerful woman.

14 DR. GANIATS: The first part
15 regarding evidence I am just ecstatic and you
16 can see me dancing with excitement.

17 On the other hand, I really don't
18 like the other statement. I think that the
19 performance measure or a measure that is
20 supposed to go through the NQF should be a
21 measure that is supposed to assure quality or
22 assess performance or something like that.

1 For an NQF measure's purpose to be to be an
2 intervention that is going to improve quality
3 is something that I think we would have to
4 talk long and hard about because I mean you
5 said, gee whiz, maybe this measure would get
6 people to do things better. I think that is
7 an intervention in the practice and,
8 personally, I didn't know that was part of
9 NQF's charge.

10 DR. BRENNAN: Helen?

11 DR. BURSTIN: It's not part of our
12 charge, per se, Ted. I think it is just as we
13 have gone through, particularly the issues
14 around evidence, with our Board. And this is
15 a multi-stakeholder group. We get a lot of
16 different perspectives. It is what makes NQF
17 very special.

18 You know we have heard clearly
19 from consumers and purchasers in particular
20 that there are clear instances where outcomes
21 have been put out there. We don't always know
22 what the right intervention is. And that by

1 putting it out there, publicly reporting on
2 it, interventions begin to emerge.

3 So I think it is circular. It is
4 not something linear. I think there is
5 something about the process of public
6 reporting, the process of learning about an
7 income that then leads to interventions, that
8 leads to -- I mean the classic example people
9 give is the public reporting on central line-
10 associated blood stream infections, which
11 actually in fact preceded a lot of the actual
12 interventions of what to do.

13 There are other examples like
14 that. It is not part of our charge but I
15 think we have to recognize that quality
16 measurement and improvement is iterative. And
17 we hope it is. And in fact, if putting some
18 of those outcomes out there drives some of
19 that improvement, I think that is a reasonable
20 hypothesis.

21 DR. GANIATS: Quality improvement
22 might be iterative but accountability, it just

1 makes me nervous to have an accountability
2 measure whose role it is to --

3 DR. BRENNAN: Albert is going to
4 fix this for us. Right?

5 DR. WU: Okay, Ted, I'm going to
6 fix you.

7 DR. BRENNAN: Uh-oh.

8 DR. WU: No. It does seem to me
9 that there are a number of sort of
10 aspirational outcomes.

11 DR. BRENNAN: Okay, I'm worried
12 about those already at other tables in this
13 place. So, yes.

14 DR. WU: No but I think that
15 insisting on accountability in three years or
16 five years or whatever for those measures,
17 particularly if all the processes aren't
18 specified is overreaching. But if there were
19 sort of a different -- since outcomes are
20 different, if the goal were simply to reduce
21 pain in cancer or whatever it winds up being,
22 to relieve dyspnea in chronic obstructive lung

1 disease, I wouldn't insist that that be an
2 accountability measure in the immediate
3 future. Maybe you get a longer time period.
4 This is the sort of thing that would drive
5 innovation, as opposed to pull people up to
6 speed.

7 DR. BRENNAN: That is helpful.

8 Well we have gone through the
9 things you can't live with and we have moved
10 a little bit into the things that you would
11 like to see added to at least the
12 interpretation and application of this
13 pathway. I want you to take one last look
14 through it and see if there is anything that
15 is unspecified or under-specified that you
16 believe would be important to include in this
17 pathway and our guidance about it to the NQF
18 staff.

19 Yes, is that Lewis?

20 DR. KAZIS: Hi.

21 DR. BRENNAN: He looks like a
22 Harry to me but I didn't want to say that.

1 Go ahead, Lewis.

2 DR. KAZIS: Sorry?

3 DR. BRENNAN: I re-baptized you.

4 DR. KAZIS: Oh. So this goes
5 along the lines of a box 14 again. And in
6 addition to the concept of sort of a continued
7 endorsement or recertification after a couple
8 of years, perhaps to have something along the
9 lines of on an annual basis to provide an
10 annual update.

11 DR. BRENNAN: Yes, I think that is
12 part of the process now.

13 DR. KAZIS: Okay.

14 DR. BRENNAN: So users of the PMS
15 have to state what they are doing.

16 DR. KAZIS: Right and then maybe a
17 recertification beyond that.

18 DR. BRENNAN: Yes, okay.
19 Excellent. But making it explicit that there
20 is a public trail. That's good.

21 Anything else under specified/
22 unspecified? Yes, Mike -- no it's Jim, I

1 know.

2 DR. BELLOWS: Well I made this
3 point earlier but I would love to see the word
4 harmonization somewhere on the second page.
5 And I know it exists elsewhere in the NQF
6 stuff but with respect to it being
7 particularly important for stuff that we
8 introduced into the system, I would love to
9 see that word stuck in in some appropriate
10 place and there is many appropriate places but
11 we could figure it out.

12 DR. BRENNAN: We spend too much
13 time at ONC harmonizing standards for me to
14 really want to see that word ever again in my
15 life. But what I would like you to be a
16 little bit more specific and say if what you
17 are meaning is that apropos of the discussion
18 earlier of one measure/multiple measures, you
19 are suggesting that we make explicit the need
20 for if there are multiple measures that there
21 be harmonization of some type.

22 DR. BELLOWS: That is correct or

1 maybe it also relates back to box zero, which
2 is what is the reason we are doing this. And
3 if we are just doing it because there is
4 another measure out there somebody wants, then
5 you could write that in box zero but whoever
6 is reviewing then measure might say is that an
7 adequate. But then if there is multiple
8 measures, then the harmonization kicks in.

9 DR. BRENNAN: So harmonization
10 explicitly. That's great. That's good.
11 Anything else underspecified/unspecified,
12 translated into three languages? Kathy.

13 DR. LOHR: I am not sure whether
14 folks would agree but to me it is still a
15 little unclear whether you are expecting
16 developers, when they have submitted a PROM to
17 have not only indicated whether risk
18 adjustment is needed for X, Y, or Z
19 applications but also specify anything about
20 the method for risk adjustment. I am not sure
21 that that is clear in here that all those
22 sorts of pieces of information would be needed

1 as well.

2 And I have some question in my
3 mind as to whether PRO developers would
4 necessarily have all the right information to
5 say do your risk adjustment this way rather
6 than that way. Or whether just saying the use
7 of this across -- for accountability maybe not
8 so much for internal quality improvement but
9 across sites or across plans, you are going to
10 have to risk adjust and leave it unspecified
11 as to how. That is a question.

12 DR. BRENNAN: Okay, so the
13 question is do we need to require that the
14 proposer make explicit whether risk adjustment
15 is needed and how to do it.

16 DR. LOHR: And how, yes.

17 DR. BRENNAN: Or is it acceptable
18 for them to give a nod to it must be there but
19 no specific plan. And Karen is going to make
20 a comment about that.

21

22 DR. LOHR: And then I have one

1 other quick question.

2 DR. PACE: Okay, I just want to
3 answer that question. In order to be a
4 specified performance measure, that includes
5 the risk model that goes with it. Because
6 remember measures that are endorsed for NQF
7 are endorsed to be suitable for accountability
8 purposes. And so people couldn't implement an
9 outcome measure that needs risk adjustment
10 without having that risk model already
11 specified with the measure.

12 DR. LOHR: Do they get more than
13 one way of doing it? I mean Anne's paper has
14 several risk adjustment models. Are you saying
15 the developer has got to pick one or they can
16 say you can do this, or this, or this?

17 DR. PACE: Pick one.

18 DR. LOHR: Oh, pick one, okay.

19 I think I would think that might
20 be tough but if that is an understood
21 requirement, fine.

22 The other thing, and it is not

1 another box exactly but maybe it falls into
2 the same kind of bucket as harmonization and
3 that is whether in all of this process NQF is
4 in a position to say there is a research
5 agenda here and turn some of these kinds of
6 methods or application kinds of question,
7 whether technical or more political, back to
8 sort of point to some research funders -- it
9 might be PCORI, it might be AHRQ, it might be
10 others -- and say there is a substantial
11 research agenda here that somebody else has
12 got to follow through with. Because I think
13 this is another generation's worth of research
14 here.

15 DR. BRENNAN: But I certainly
16 think that what we have learned at least this
17 particular part of the NQF process is that
18 there is a lot of intersections with a lot of
19 different communities and the unique
20 perspective that NQF has to offer in offering
21 up new agendas is really quite important.

22 I am going to actually -- we are

1 at five of and I want to make sure that the
2 staff feel like we have got enough of a sense
3 of where to go and then I am going to let you
4 all have the last six minutes for comments;
5 two minutes apiece.

6 So Helen you can go and Karen and
7 Karen you can come and say your goodbyes.
8 You're fine? You're fine?

9 All right, then let me be the one
10 to say to the group speak now or it is going
11 into stone on the internet and it will be
12 there forever. Anything else you want to add?
13 If you think on the plane on the way home oh
14 gosh, they should have, make sure you let the
15 Karens know.

16 I hope to see you in a colorful
17 future and I thank you all very much for all
18 that you have done to get us to this point in
19 time. And thank you again to the staff. Safe
20 travels everyone.

21 (Whereupon, at 1:55 p.m., the
22 foregoing proceeding was adjourned.)

A				
AARP 1:13	accountable 26:6,7	143:18 148:12	adjourn 4:25 24:2	Affordable 54:4
ability 12:15 59:21	accreditation 61:2	151:8,14 153:18	adjourned 238:22	afraid 22:11
60:17 77:9 84:15	accumulated	156:2 158:22	adjust 36:16 55:21	218:22
161:21	212:21	163:6 164:10,16	66:4 83:6 235:10	African 178:10
able 10:14 36:22	accurate 43:21	168:10,19 170:14	adjusted 27:8 34:8	179:1
43:7 44:8 68:10	accurately 44:9	171:22 173:9	34:20 55:2 59:16	afternoon 182:3
68:15 77:11 78:2	achieve 13:9 53:14	174:7 175:9,22	60:10	197:12
78:20 81:21 89:3	142:2 153:16	177:3,20 179:18	adjusters 53:14	age 34:9 40:3 63:18
89:8 90:21 113:11	194:15 199:4	180:15,20 183:21	82:15,20 83:3	66:7 125:22
117:6 125:8	achieving 55:16	208:18 210:2	adjustment 5:10	agencies 61:9
129:17 130:16	153:11	adaptation 69:15	30:11,17 32:20	agenda 237:5,11
135:20 151:17	acknowledge 13:14	69:16	48:1 51:3,8,17,18	agendas 237:21
172:8 173:7 175:2	47:14 59:1 93:14	add 85:1 91:18	51:20 52:1,8,10	ages 178:11
185:9 217:11	101:10 213:2	97:11 135:13	52:12,14 53:3,18	aggregate 90:18,19
226:12	acknowledged	146:9 147:4	53:20 54:21 55:17	90:22 153:14
absence 187:2	10:10	159:17 164:11	56:18 57:7,16,19	aggregating 4:10
219:4,9	act 20:21 54:5	195:1 216:11	59:13 60:14 61:3	148:10
absent 116:6	123:22	238:12	66:4,7 80:10 81:1	ago 165:8 218:11
absolute 76:11	action 219:9	added 195:12	81:4 83:1,14,22	agree 11:15 85:18
absolutely 17:21	actionability 10:4,6	217:3 231:11	85:1,7,10,21 89:3	140:8,10 156:11
18:3 159:3 172:9	10:7,22 11:5	adding 7:1	152:3 216:7,8	170:22 171:14
178:2 207:7 208:6	15:18 20:14,17	addition 35:15,22	220:9 234:18,20	234:14
208:9 213:5,6	22:14 101:20	123:4,5 166:3	235:5,14 236:9,14	agreed 25:19 98:11
abstract 146:6	102:6 114:10	181:1 232:6	adjustments 152:9	agreement 45:6,16
acceptability 210:5	115:11 224:15,22	additional 10:2	186:14	ahead 164:19
acceptable 44:1	225:11	25:13 35:14,16	administer 154:22	210:18 227:1
235:17	actionable 10:13	108:20 120:6	administered 39:17	232:1
accepting 204:9	10:17 11:12 15:19	122:21 209:16,17	administering 67:2	AHRQ 166:9
access 217:20	17:17 18:5 20:19	214:15	administration	176:12 237:9
accompaniment	21:12 23:15	additionally 117:18	1:19 12:6,7 39:15	aiming 102:8
119:22	123:14	address 17:3 32:17	41:1,16 42:11	AI 176:9 179:19
accompanying	activation 80:15	41:21 42:6 46:14	74:4 174:11	Alabama 25:3 62:7
118:6	active 17:13 65:3	47:21 48:7 56:8	admittedly 107:15	Alabama-Birmin...
account 8:1 12:13	actively 54:10	62:11 68:8 91:5	adopt 59:6	2:25
27:12 95:5	189:9	154:13 177:18	advance 152:15	Albert 3:9 177:20
accountability	activities 112:17	214:19	advantages 56:14	230:3
27:21 31:11,15	143:14	addressed 28:9	142:10	algorithms 83:8
94:11 112:20	activity 54:13	55:16 211:4	adventure 61:22	Alice 50:8,13,22
113:6 117:13	219:5 221:21	addressing 4:4	adventures 61:18	aligned 45:18
127:21 128:3	actual 25:10 27:4	24:20 25:4 37:21	adverse 134:10	Alliance 1:14
129:13 151:6	43:3 84:12 119:14	56:11 58:18 63:1	advice 100:5	allow 31:5 81:20
165:6 172:19	119:22 229:11	63:15 66:3 96:5	advocate 76:4	83:5 139:3 163:14
173:8 175:5 205:7	acute 178:17	154:6	87:21 88:1 147:15	164:5 215:12
218:10,17,20	Adams 3:15 97:22	adequate 30:9,16	advocating 101:16	219:7
229:22 230:1,15	109:14 130:22	234:7	163:2	allowed 121:13
231:2 235:7 236:7	133:13 137:10	adequately 83:6	affect 28:1 29:4	allowing 140:3
	140:5 141:2	adherence 35:8	33:5 198:12 225:2	216:1

allows 46:7 139:5	anxious 99:18	appropriate 17:2,6	88:18 104:6 107:9	134:18
alluded 66:20 68:9	anybody 37:22	26:20 51:8,12	115:4 126:1 145:3	assumption 56:21
alopecia 135:2	anyplace 146:17	76:20 78:11 90:17	145:5	76:10
alternative 37:9	anyway 45:15	104:12 108:3	asking 53:10 68:18	assumptions 77:1
66:9 67:9 70:2	APACHE 56:19,21	132:15 133:2	75:22 77:5,22	136:6 139:17
94:6,7 152:20	apiece 238:5	134:10 136:20	79:1,8 93:12	Assurance 2:23
alternatives 68:4	apologies 195:19	149:21 200:12	112:5 114:13	assurances 28:9
68:14	apologize 22:1	233:9,10	117:5 126:8	assure 8:19 139:14
amazing 6:8	170:21	appropriateness	138:15,16 145:11	227:21
amazingly 155:4	apparently 69:1,14	12:2,16	145:15 155:12	attached 142:4
amendment 202:8	appear 56:17	approval 189:20	182:9 226:10	attack 180:10
American 59:10	applause 109:9,13	214:12	asks 114:2 118:20	attempt 153:15
177:4 178:10	180:18,19 183:3,5	approve 190:9	162:7	attention 67:4
Americans 179:1	apples 163:15,15	219:14	aspect 120:3	115:17 118:7
amount 57:7 86:1	applicability 19:5	approximately	126:15 143:21	120:2 121:18
amplify 217:16	215:9	110:13	169:17 170:8	155:8,17
analogue 75:19	applicable 108:12	apropos 233:17	aspects 25:13	attribute 10:8
78:21	application 19:9	aptly 147:17	121:17 135:19	attributed 55:10
analogy 161:9	174:5 177:12	area 24:16 31:20	aspirational 230:10	attributinal 55:6
analyses 52:19	192:4 231:12	31:22 33:19 34:12	assess 7:5 38:9	55:8,14,16 56:3
analysis 31:5 57:21	237:6	58:20,20 68:12	43:15 45:3 200:6	at-risk 89:20
141:15 142:18,21	applications 31:12	69:6 73:18 80:11	227:22	audience 4:14,21
143:2,5 177:10	205:8 234:19	88:6 126:17	assessed 54:9	4:25 72:14 91:13
analyzing 148:11	applied 18:10	212:17 213:2	203:13	97:12 132:4
anchored 75:20,20	33:13 101:15	areas 23:15 34:9	assessing 23:4 59:4	143:16 175:11
Anderson 2:20	187:15 190:22	44:9 54:12 162:12	assessment 43:1	176:8 182:22
anesthesiology	191:1	162:13 163:3,4	53:22 54:7 66:16	185:7 189:1
122:17	applies 130:2	166:1 171:10	160:8,12,15,18	audiences 16:13
Anne 1:17 4:12	apply 23:1 97:5	215:19	assessments 12:16	authentically 156:5
24:17 32:8 47:14	applying 60:11	argue 60:15 105:3	173:21	authors 4:9 24:19
62:9 66:20 67:19	97:4 104:15	105:18	assigned 27:9	61:14 184:12
68:9 74:18 95:8	appointment 64:11	argues 51:11	assignment 45:7,17	automatic 204:2
197:11	64:13	arguing 200:20	assigns 54:14	automatically
Anne's 236:13	appreciate 100:7	220:20	assistance 65:2,10	170:8 201:17
annual 160:6,11	143:11	argument 53:15	166:7,14 168:8	202:21
232:9,10	appreciated 132:12	135:17 162:17,19	210:22	availability 8:21
answer 23:3 33:1	137:15	arithmetic 175:3,3	assistants 41:5	available 8:20
39:3,10 68:15	approach 48:13	arms 204:13	assisting 64:22	35:21 40:21 57:8
76:12 78:3 94:18	53:21 54:17 56:6	arrows 14:7 188:19	65:7	58:17 60:7 82:2,5
110:9,16 119:9	56:14 57:5,17	arthritis 160:2,7	associated 34:18	82:8 83:9
126:3 127:9,10	58:18 82:1,8,11	articulate 128:6	47:19 55:20 61:12	average 167:6,8
157:17 236:3	82:16 92:19,22	157:1	229:10	avoid 121:13 148:1
answering 51:13	93:6 108:3 147:20	articulating 179:17	Associates 2:1	awarding 155:18
164:14	approaches 4:10	asked 38:14,19	Association 2:7,12	aware 29:16 161:13
answers 89:21	56:10 120:15	39:2,2,4 42:2	59:10	A-F-T-E-R-N-O-...
124:11	147:9 148:10	47:21 62:11 74:6	assumed 147:8	182:1
anticipated 140:14	200:21 216:4	74:7,9,12,13 75:7	assuming 70:9	a.m 1:9 5:2 97:20

97:21	18:2 85:14 90:1,5	Bellows 1:15 4:19	44:4 47:2,3 66:11	165:1,9 168:14
A1Cs 217:18	90:9 99:3 103:14	99:9 102:1 109:18	73:6 91:3,14	185:19 186:18,18
	103:18 104:4	140:7 143:19	100:14 102:18	186:18 187:4,10
B	109:3,10 132:18	168:12,17 169:2	115:19 118:11	188:5,7,8,17,18
B 207:17	133:1 134:2 139:9	220:1 233:2,22	124:21 125:11,12	189:12 192:1
back 23:10 32:12	147:4 164:11	belongs 118:14	136:11 139:11	195:11 196:1
43:6 69:4 70:10	168:21	206:13	142:17 175:16	197:8 198:20
77:7,7 96:11	base 166:5	benchmark 167:14	197:8 204:2	202:9 204:15
97:12,20 98:7	based 22:7,11 30:1	176:14,21,22	231:10 233:16	206:8 214:20,21
100:21 101:8	33:4,16 37:1	benchmarking	black 186:18	217:3 221:15
119:5 124:6,18	42:15 49:15 59:9	165:18	blame 201:7	226:4 232:5 234:1
129:2,3,7 131:3	59:16 61:20 71:17	benchmarks 52:5	blank 128:10	234:5 237:1
137:11,12 139:6	81:20 85:5 88:3	beneficiaries 63:4	bleachers 19:18	boxes 113:15,16,18
139:20 149:11,12	98:16,21 107:12	benefit 127:7	bless 120:6 211:12	113:19 146:5
150:20,22 151:18	110:18 134:13	benefits 12:4	blessed 216:2	148:5 149:4
152:2 153:20	139:16 160:19	Berwick 165:8	blocks 213:22	164:22 192:4,20
158:7 164:18	183:22 191:9	best 4:9 24:5	blood 180:6,9	193:10 207:2,4
169:20 170:18	baseline 17:9 30:22	132:19 201:19	229:10	220:3,4,11,13,13
181:2,4 182:4,11	35:3 83:14 110:12	better 23:9 36:7,12	bloom 164:5 173:1	220:15,16,21
188:20,20 190:15	118:21	37:16 38:15 49:16	BlueCross 2:11	225:21 226:11
194:22 200:4	basic 169:15	51:21 66:14,15	BlueShield 2:12	Boy 227:12
207:8,13 209:6	basically 39:17	68:15 71:19 74:21	Board 228:14	BPs 217:18
210:17 214:10,15	41:8 46:12,17,19	77:19 84:20 87:15	body 61:1 173:17	Branch 2:10 25:1
215:3 216:2	67:21 70:11 82:7	92:3 112:10	224:19	brand 214:18
218:16 221:1	88:17 114:1 134:7	122:17 141:16	book 61:13	break 96:8 97:6,17
222:14 225:15	157:21 207:11	147:20 150:16	boost 91:21	102:20
234:1 237:7	basis 82:1 91:20	161:14,21 167:3,6	boosted 87:1	breaking 170:20
background 184:1	99:8 160:6,11	167:21 169:13	boosts 87:10	breathing 11:16
184:7 185:14	232:9	213:18 223:17	borrow 103:22	Brennan 1:9,12
backup 87:5	bastardized 117:12	227:9 228:6	Borun 2:17	4:22,24 7:10 9:3
balance 29:12	beat 209:9	beyond 64:12,13	Boston 2:2	19:12 182:3 183:6
60:19 214:5	bed 219:6,10	66:6 232:17	bottom 128:18	191:8 192:19
balancing 214:8	221:11	bias 28:3 38:8 48:4	188:16 205:16	193:2,7,15 194:7
BANKOWITZ	began 173:18	58:19 59:4 66:12	box 29:1 101:17	194:12,17,20
1:13	beginning 131:3	74:19 85:17,19,20	102:1 105:4,18	195:10,20 196:10
bar 121:12 147:17	182:6,14	115:17	109:19,20 110:2	196:14 197:3
170:11 172:16	begins 105:4	big 5:18 73:14	113:21,21 114:1	198:16 199:6
Barb 148:16,17	184:21	136:2 183:12	114:15 115:10	200:3,19 201:6,9
153:18,19 217:5	behave 198:8	bigger 84:13	116:5,8,22 128:18	201:12 202:2,5,22
BARBARA 1:22	behavior 111:4,6	140:19 143:4	129:10 138:6,8,11	203:6 204:5 205:3
2:19	behooves 18:20	189:13	138:12,13 139:2,6	206:2,10,18
Barb's 151:8	belief 112:6 115:17	Bill 82:2	139:10,10,12	207:20 208:11,13
barn 24:4	believe 32:6 120:8	Birmingham 25:4	140:2,9,11 143:3	209:17 210:16
barrier 190:11	139:16 153:12	62:7	145:10,18 146:4	211:18 212:10
barriers 40:3	165:10 189:15	birthday 109:6,8	149:3,16 150:11	214:16 215:6
Basch 1:14 4:18	198:5,10 231:16	109:12	156:16,19,20	216:19 217:13
16:18 17:18,21	bell 116:3,3	bit 9:2 25:7 36:9	157:1 160:10	219:1,15,18

220:17 221:6,12 222:2,10,13 224:2 225:13 226:9 227:2,12 228:10 230:3,7,11 231:7 231:21 232:3,11 232:14,18 233:12 234:9 235:12,17 237:15	built 204:8 bunch 112:8,13 118:22 120:11,13 121:14 122:2,4 144:11 150:15 burden 88:5 122:21 123:20 burdensome 130:5 138:21 Burke 109:7 BURSTIN 3:16 163:9 215:4,8 228:11 business 6:1 11:19 203:1 busy 5:19 86:9	capable 77:2 capricious 191:14 capriciously 207:10 capture 8:5 9:13 65:5 67:10 69:14 71:13 81:22 125:9 captured 7:22 capturing 70:1 car 116:21 care 12:16 13:3 21:5,15 26:6,7 30:3,4,7,8 34:22 36:14 39:8 53:5 54:5,12 55:10 56:1 64:16 80:17 84:16 111:1 144:18 150:3 151:5,7 152:7 154:4 162:5,20,21 169:20,20,21 170:1 172:18 178:16,17,17 179:11 180:7,9,9 187:1,18 188:1 197:15 200:16 217:19 career 182:6,7,8,11 182:14,15 careful 20:19,22 22:16 50:19 175:1 175:8 209:10 carefully 60:18 207:1 caregivers 101:2 carve 86:22 cascade 82:21 cascading 82:16 case 11:19 34:4 57:10,22 69:1 73:8 79:2 83:7 89:4 91:1 135:4 138:17 141:13 155:2 178:8,12,12 cases 18:13,15 57:13 100:2 176:2 178:2,4,22 196:19	199:14 222:20 case-mix 66:4,7 89:8 220:9 cataract 37:7 catchall 28:22 categories 39:12 46:20 134:17 categorized 53:3 category 63:18 cause 130:6 152:16 causes 114:14 causing 227:9 cautiously 23:11 Cella 1:16 21:18,20 21:21 156:10,10 157:3,9,14,18,21 158:2 161:5 170:17 173:14 190:15 Center 1:15 2:4,20 3:8 centered 62:17 82:13 centers 1:23 2:14 38:14 Center/VA/RAND 2:17 central 229:9 CER 12:2 certain 17:11 19:16 19:16 28:16 33:13 133:15 194:5 210:8 certainly 12:20 16:19 26:11 27:6 27:22 33:3,5,9 35:10 36:3,6,21 44:9 45:5 61:10 100:21 113:16 131:18 132:3 133:18 143:11 151:5 237:15 certification 171:17,18 certify 171:18 CESD 171:20 cetera 20:2 28:3	175:20 180:10 199:18 209:3 chaired 172:5 Chairs 1:10 challenge 15:6 48:16 53:22 74:8 74:16 111:8 challenges 51:3 52:15 challenging 40:1 44:4 change 35:10 55:9 78:9 108:18 111:4 111:5,8,9 112:1,5 112:7,16 113:12 150:1 174:17,19 187:4 188:14 198:7 203:4 212:3 changed 187:11 changes 55:13 190:3 200:16 207:2 changing 111:6 characteristics 15:16 55:19 98:8 103:9 104:15 105:21 193:12 209:7,22 characterize 135:6 charge 228:9,12 229:14 CHARLES 2:7 chart 132:17 133:10 175:15 charter 169:4 charts 178:20 cheat 103:11 check 29:1 116:22 160:10 172:7 checking 101:17 117:14 checkmark 191:12 chemo 200:9,11 chemotherapy 17:8 CHERYL 2:14 Chicago 22:4 child 44:13,16
	C			
	CAHPs 12:7 62:17 64:3,20 65:5 66:3 67:8,11 89:15 165:20 166:9,11 168:7 cake 109:6 calculating 59:7 calibration 30:10 call 64:16 87:9,13 101:5,22 102:2 106:9,10 115:17 131:16,19 184:15 186:8 188:8 216:21 219:20 225:9 called 37:20 40:9 66:10 82:16 85:19 92:20 104:8 107:19 118:7 188:8 calling 25:8 99:4 188:5 214:16 calls 191:19 210:7 Campbell 61:15 cancer 1:15 2:20 15:21 17:7,12 86:6,14 107:4 134:9 152:12 230:21			

children 11:15 183:11	Cleveland 2:1	62:10	150:2 175:18	commonly 49:18
Children's 2:3	clinic 2:1 41:10	collect 98:13 159:8	178:1 181:4	communicated
choice 78:14	clinical 10:15,18	collected 35:17,19	188:19 213:3	143:16
113:12 171:8	28:7,14,16 33:6	36:1 42:15 118:12	215:10	communities
choices 111:14	34:21 52:18 53:5	118:21 221:4,20	comment 20:11	237:19
130:11	53:10,14 56:5	collecting 41:6 85:8	47:18 59:13,14	community 2:13
choose 50:11	57:4 61:5 80:11	92:6 118:13	81:2 94:15 134:3	10:19 60:6 76:3,7
choosing 210:1,15	83:19 84:21 114:2	collection 35:14	139:5,10 140:8	77:18 84:5 93:10
chose 172:11	115:3,4,22 119:4	41:22 46:4 52:10	151:16 158:9,18	187:20
chronic 230:22	140:2,17 143:4	87:6 88:1	161:6 163:5	comorbidities 35:3
Cincinnati 2:3	153:4,7,10,13	collectively 120:15	168:11 173:12	company 93:19
circle 191:11	187:1,11,18,18	collects 117:20	175:11 176:5,8	comparability
circuit 226:5	188:1 217:18	college 117:1	179:19 184:19,21	164:6
circular 219:17	219:10,13	Collette 2:13 84:3,4	185:5 190:14	comparable 27:19
229:3	clinically 31:7 45:7	193:22 196:8	195:1 199:12	32:5 70:20 106:3
circulated 186:3	45:17	203:17	201:4 204:4,11	compare 60:10
circumstance	clinician 9:15	color 103:6 206:1	208:17 210:16,17	138:22 163:14
40:14 146:16	33:21 34:2 36:10	Colorado 167:13	217:4 218:8 222:4	166:1,21 172:8
citation 9:8	39:17 134:11	colorful 185:19	235:20	compared 32:20
cited 59:19	135:14,18	238:16	commentary	167:12
Citizens 92:13	clinicians 8:4 11:6	COM 165:10	186:13 192:5	comparing 218:7
civilian 176:15	14:16,17 43:5	combination 90:13	comments 20:13,16	comparisons 52:5
clarification	46:10 53:11,13	combine 71:6	32:9 43:8 48:6	compatible 12:19
183:20 224:5	114:11 153:14	combining 71:20	62:16 72:14 84:6	44:18
clarify 7:14 9:1	155:5	72:9	85:15,16,18	compelling 135:17
187:13 193:12	close 173:5,7	come 5:6 24:11	153:19 156:6	complaining 22:20
196:15	closer 11:16 65:16	27:1,13 30:20	184:9 185:2	complaints 73:13
Clarke 92:9	180:12	32:14 69:4 91:22	190:13 191:10	complete 86:11,11
classic 229:8	closes 185:5	96:11 97:13 110:3	192:8 198:17	86:13 87:9,15
classically 107:19	closing 4:22 180:15	113:10 114:19	199:11 206:20	completely 12:18
classified 45:17	CMS 81:16 162:7	115:18 116:7	209:5 238:4	58:6 174:18 208:9
classify 49:3	coalition 92:14	120:11 121:7	comments/questi...	completing 46:11
cleaner 124:2	cognitive 40:2	124:8 137:12	151:21	65:2,4 84:10
clear 50:7 111:15	41:11 63:14 68:20	147:19 148:18	commission 24:18	completion 86:20
190:1 196:22	68:22 69:2 76:9	162:5 170:9 181:2	commissioned 4:9	complex 47:17
197:19 203:10	76:11,17 77:10,20	203:7 206:6,21	37:19	54:18 56:2,13
214:4 221:3	78:2 122:21	207:3 211:10	commitment 23:14	66:11 215:4
228:20 234:21	123:20 135:22	212:7 214:10,15	committed 187:5	complexity 96:3
clearer 146:3	cognitively 80:4	215:3,15 222:14	37:19 99:20	130:9
Clearinghouse	136:4	222:21 223:11	committees 5:22	complicated 95:7
204:17	coherences 170:12	238:7	common 56:5,13	197:5
clearly 17:16 58:8	coherent 124:2	comer 147:21	56:16 57:1,2	complications 48:3
128:6 130:8 196:3	collaborate 221:18	comes 27:2 28:20	75:15 169:22	component 119:12
228:18	colleagues 13:20	114:8 116:16	171:4,6,11,12	134:20
clearly-defined	47:14 49:11,21	126:19 159:16	173:15 174:3	composite 71:2
49:22	50:3 52:6 53:1	190:15 203:8	177:6	91:4 95:13,22
	54:14,22 59:1	coming 120:7		96:1

comprehensive 21:2,11,16 47:16	connotation 69:17	228:19	55:4	175:13
computed 31:3	consensus 189:11	contact 59:8	conversation 5:20	covariate 83:14,22
computer 82:10	189:14 190:2	132:13 136:8	15:11 16:8,12	covariates 33:10,15
concept 14:2 121:9	consent 12:12	155:19 185:15	34:13 50:9 183:18	34:1 36:16 52:21
202:9 215:21,22	consequence	content 14:10 49:4	189:18 206:22	53:8
216:1 217:2 232:6	152:14	54:9 55:3 106:9	210:18 222:17	cover 99:4
concepts 7:19 9:6	consequences	186:12	conversations	Coye 113:4
33:17 44:6 48:20	117:22	contention 73:14	183:22 189:19	Co-Chair 1:12,13
200:5	consequential 8:9	content-specific	convince 23:7	crap 174:14
conceptual 7:16	8:17 128:14,20	51:9	cooperation 59:8	CRAWFORD 3:17
23:5 26:12 48:14	consider 8:5,17	context 25:20 48:8	Coordinator 2:5	create 70:12 71:2
50:4 99:8 100:18	16:13 28:8 34:1	48:11,15,17 49:11	154:3	91:4 123:14 134:6
126:15 146:8	44:13 67:9 81:1	50:1,6 55:11 56:7	cope 95:19	145:19 189:4
189:13	82:11 96:5 123:4	57:4 88:12 119:16	copy 184:14	215:18
conceptually 143:1	196:19 215:1,20	120:9 125:2,9	copyrights 166:6	created 6:8 80:12
180:11 205:9	227:3	131:8 134:8 147:8	core 93:16	117:2 134:12
concern 34:15,16	consideration 4:15	147:16 151:22	corollary 172:2	140:21
60:18 154:14	11:20 203:7	156:17,18 157:3,6	219:5	creating 51:11
217:7	considerations 7:4	157:8,11,19	correct 39:11 56:9	52:15 57:6 117:22
concerned 211:9	10:2 32:19 48:1	164:15 179:8	194:14,19 233:22	223:13
concerns 94:19	96:18 97:3 100:14	190:18	correctly 162:19	creation 54:5
216:6	100:18	contexts 16:20 17:4	198:19 219:3	credibility 10:18
conclude 108:1	considered 31:1	116:2 120:8	correctness 49:9,10	53:15
conclusion 135:5	55:1 84:1 190:8	contextual 7:22 8:1	49:13,17,21	credible 11:7 198:1
137:6	considering 19:9	8:8,10 124:22	correlated 83:17	credit 36:13
conclusions 4:6	48:12	continually 192:15	corrupted 117:8	criteria 4:6 16:6
49:13	consistency 77:3	continue 96:15	cost 12:5,7,9,10	19:4 24:15 25:7
concurrent 49:5	169:10	97:10 153:1	20:17 167:4	28:11,12 29:13
condition 174:20	consistent 41:18	continued 23:14	217:19	61:4 96:17,20,22
conditions 164:13	53:21 59:6 138:4	201:21 202:15	costly 130:5	97:5,9 103:8
174:17	144:21 169:12	232:6	costs 12:3,5	118:4,5,9,16
conduct 108:20	170:2 208:15	continuum 191:4	country 12:20	134:12 187:15
conference 1:8	Consortium 92:12	contract 93:20	93:15 167:3	189:20 190:1,3,9
47:12	constituencies	contradictory	174:13 213:17	192:12,13 199:19
conferred 168:13	185:1	48:20	Counts 2:16	207:18 208:1,4,16
confused 158:8	constitute 198:11	contrast 52:1	couple 11:21 21:6	208:20 209:9
confusing 48:19	construct 45:5 49:6	contribute 4:4	33:17 67:20 81:8	210:2,4,13 211:2
154:15	49:19 55:4 73:12	61:10	84:6 85:14 110:3	211:3 212:15,16
confusion 123:15	108:17	contributions	116:7 118:16	214:2 223:13
130:6 148:1	construction 51:1	143:7	125:2 126:19	224:8,17
158:10	constructs 172:10	control 22:18 55:22	142:1 143:19	criterion 10:7
congratulate 62:9	consumer 54:14	169:7,11	156:13 183:17	16:10 49:5,19
connect 84:15	92:20 93:5,21	controversial 34:12	184:4,11 209:19	55:5
connected 128:11	105:2 133:12	83:16	213:12 232:7	critical 90:15
224:12	consumers 7:9	controversy 34:9	course 6:9 10:19	184:10 214:9
connecting 129:15	16:15 53:17 80:20	37:13	12:17 80:12 98:20	criticism 177:19
	93:7 165:15	convergent 49:6	112:19 119:15	cross 105:13

crossing 144:16 147:12	dance 23:5	109:8 110:1 164:5	157:19	descriptor 46:6 76:1 77:19 78:4,7 78:21
crosswalk 46:20 70:13,19 75:6 78:19,20 123:6 147:10 172:11,17 173:7 174:15,22 175:4	dancing 227:16	166:20 174:15	definitions 50:6,20 59:6	design 83:18,19 120:20 169:5
crosswalked 44:19 45:12 46:13 142:15	dangerous 154:15	days 77:5 125:2 165:14 173:22 183:17 184:4,11	degree 55:9 213:19	designed 51:21 60:19
crosswalking 123:11	Danny 173:18	day-to-day 65:19	deletion 57:12,19 57:20	designers 155:6
crosswalks 122:5	Dartmouth 2:9,24 3:7 91:17 92:6	de 60:4 223:13 225:20 227:4	delicate 29:11	desirable 71:12 207:19
cross-disability 92:14	Dartmouth-Hitc... 154:3	deal 56:4 67:18 80:2 95:8 186:12	delivered 94:4	desire 154:6 195:9
cross-sectional 148:8	data 4:11 27:15 28:1 30:16 32:1 35:14,16 38:4,7 38:13,17 39:14 41:6,22 42:6,14 42:16,17 43:19 44:17 46:3 48:4 52:10 56:4,4,7,8 56:11 57:3,5,9,14 57:17,20 58:7,9 58:12 59:2,14 60:11 65:5 73:3 73:22 75:5 79:4 83:4,21 84:7 85:8 86:5,8,17 87:6,22 89:11 92:6 111:5 117:20 118:12,13 118:14 128:4 130:10,12 153:14 159:8 166:5 176:19 208:3 217:18,20,21 218:2 219:4,6 221:2,4,11,20	dealership 116:21	Delphi 134:14	detail 125:7 161:4 detailed 125:20 126:12
cross-walkable 122:13	database 165:20 166:9 168:3,7 177:1	dealing 50:4 51:2 56:6 57:5 62:13 83:20	demonstrate 7:6 11:5 12:2 30:9 31:4 147:19 194:9 197:16 199:8 203:20 222:20	details 60:7
CRRN 1:17	date 146:14 187:7 204:21	dealt 68:11 95:1	demonstrated 10:15 43:22	detection 74:19 85:19
crux 161:2	daunting 100:15	dear 204:12	demonstrating 45:6	determination 16:16 137:2
CSAC 185:12	Dave 21:21 156:9 156:10 190:14,14	dearly 117:2	demonstration 32:4	determine 90:17 132:14 133:1 135:11,12 149:19 153:15
CTC 134:5	Dave's 191:10	death 86:14 152:20 201:22	DENNIS 2:1	determines 132:19
cultural 69:15,21 106:22	David 1:16 2:15 21:18 154:1 163:18 169:2 170:14 173:14 209:8	Deb 43:6 46:13 68:10 70:3 72:22	Denny 174:9	determining 14:10 48:17 104:11
culture 61:16		debate 37:14 76:2	depend 57:8 58:19 89:22	Deutsch 1:17 4:12 24:18 32:11 37:6 49:10,20 50:2 52:6 53:1 59:1 62:9 197:11
cultures 70:7		DEBRA 2:17	dependency 195:16	develop 30:7 52:2 61:2 146:13 152:8 173:20 225:17
CUNNINGHAM 3:18		debunk 154:17	dependent 56:7	developed 43:7 58:4 60:13 76:5 82:2,17 104:18 108:15 219:7
current 36:18 68:13 84:17 162:1 162:15 189:20 201:19 206:14		decade 93:2	depending 71:15 90:20 146:16 174:20	developer 205:21 206:14 225:16 236:15
currently 41:3 46:21		December 185:12	depression 44:7 45:8 68:2 110:20 135:15,19 162:14 162:22 164:1,15 171:20 193:19 194:3,9	developers 120:14 211:6,6 234:16 235:3
cut 76:11 176:16		decent 226:21	depends 64:20 65:13 141:9 172:3	developing 53:13 62:14 70:14 85:2
cycle 131:20 201:17		decide 23:10 39:15 41:10 80:6 133:9	depression 44:7 45:8 68:2 110:20 135:15,19 162:14 162:22 164:1,15 171:20 193:19 194:3,9	development 51:6
C's 7:11,15		decided 31:17 128:8	describe 41:1 46:7 49:8 157:12,12,13	
C-O-N-T-E-N-T-S 4:1		decision 137:9,9	described 49:20 58:8 156:19	
		decisions 1:19 24:7 29:5	describing 127:2	
D		decision-making 54:8 137:5	description 40:22 41:20 68:17	
daily 54:15 77:5		deemed 208:22		
Dale 166:13		define 7:18 9:11		
Dana 177:13		defined 26:18 48:21 129:12		
		defining 48:8 50:18 131:4		
		definitely 25:22 37:12 38:2 44:19 63:9,19 89:9,12 89:13,22 210:13		
		definition 49:17		

61:16 85:3 106:17	121:11 123:13,21	discount 155:15	diversity 106:14	81:10,12,13,14
Developmental 2:8	129:7 130:7 142:9	discourage 89:16	docs 165:22	84:2 85:13,14
deviation 71:22	142:11 144:7,17	discriminant 49:6	doctor 139:22	88:14,16 90:1,3,5
72:6	144:20 147:7	discriminate 31:13	doctors 138:15	90:7,9,11 91:7,12
diabetes 21:3	152:16 162:16	55:5 208:7	177:15	92:7,9 94:14,17
139:21	164:15 170:3,4,10	discrimination	document 125:5,7	95:21 97:22
diagnosis 35:2	172:2,11 173:21	30:10 31:18	126:11 184:7,9,13	103:14,18 104:4
diagram 98:19	174:17,18 188:21	discussed 7:3 19:8	186:2,2 189:10	109:3,10,14,18
99:5 100:8 103:22	198:2,9 200:2	59:3 100:10	220:19	124:3 130:22
116:6 124:5	205:22 206:1	discussing 181:2	documentation	132:8,18,21 133:1
127:15 130:16	213:7 216:3 217:8	discussion 23:13	82:4 203:10	133:5,13 134:2
137:22 138:3	218:3 228:16	29:19 34:14 43:10	documenting 92:19	135:12 136:9
150:4 186:17	230:19,20 237:19	46:15 61:20 80:9	doing 6:3 13:11	137:10,14 139:9
191:7,9 196:3,17	differentiate	94:19 101:13	20:18 31:19 38:15	139:20 140:5,7
196:22	156:17	125:1 137:5 149:2	47:15 75:11 78:10	141:2 143:18,19
diagrammatic	differentiating	153:9 156:12	79:21 80:3 91:6	146:9 147:4
103:6	66:15	159:13 160:12	95:12 105:7,10	148:12 149:1
diagrams 165:8	Differentiation 4:7	186:5 195:19	112:14,15 117:3	151:8,12,14,15
dialing 174:12	differently 171:1	224:14 225:5	122:9 127:8	153:18 156:2,10
dialogue 7:17	198:9	233:17	130:21 149:6	156:22 157:3,5,9
151:18	difficult 47:17	discussions 29:6	155:16,20 162:18	157:10,14,16,18
Diego 1:22 20:13	64:10 95:14	30:21 127:13	166:10 167:18	157:20,21 158:1,2
137:15	105:14 142:6	143:3 158:4 190:6	182:18 188:12	158:22 159:3,18
differ 48:15 107:16	digit 174:12	disease 152:15	201:8 232:15	161:5 163:6,9
difference 27:12	dimension 55:14	231:1	234:2,3 236:13	164:10,11,16
78:1 167:15	dimensions 54:22	disease-specific	domain 60:16 72:6	168:10,12,17,19
177:11 197:16	direct 163:8	174:13	82:3	168:21 169:2
differences 27:7	direction 95:15	disenfranchisem...	domains 107:14,20	170:14,17 171:22
29:17 30:5 31:7	111:7 169:9,10	76:18	Donabedian 150:3	172:1 173:9,13
32:19 33:2 34:5	181:1	disparate 120:13	doodle 124:13	174:7,9 175:9,14
44:15 47:22 63:20	directionality 95:1	disparities 30:3	206:6,7	175:22 177:3,4,20
69:22 177:10	DIRECTIONS	34:19 55:21 56:1	dotted 137:21	177:22 179:5,18
different 12:18	4:23	display 206:3,4	150:22	180:4,15,20 182:3
18:15,19 27:17	directive 23:1	distinction 51:16	double 183:7	183:6 190:15
33:16,16 34:17	directly 17:3	145:10 193:12	double-booked	191:8 192:19
45:4 46:3 48:21	196:18 210:17	distinctions 18:21	22:1	193:2,7,8,15
49:1 50:14 54:16	Directors 2:8	115:21	downstream	194:7,12,17,20
57:18 60:10 63:14	Disabilities 92:13	distinguish 65:6	129:16	195:10,20 196:10
63:18 66:16 67:16	Disability 2:8	distinguished	Dr 5:3 9:3 11:22	196:14,15 197:3,7
69:13,17 70:10	disadvantages	109:21	12:14 16:18 17:18	198:16 199:5,6,11
71:9 74:9,9,10	56:15 142:8,10	distinguishing	17:21 18:2 19:12	200:3,18,19 201:1
82:17,21 92:5	disagree 148:1	65:11	20:12 21:20 24:10	201:6,7,9,10,12
102:4 106:19,21	162:18	distorting 117:9	32:11 37:4,6 47:6	201:13 202:2,4,5
106:22 107:5	disappears 205:21	district 22:22	47:7 49:10,20	202:20,22 203:2,6
111:13,13,22	discipline 182:8	dive 99:16	50:2 52:6 53:1	204:5,15 205:3,4
112:4 115:8	disciplines 49:2	dived 101:6	62:4,5 72:11 73:2	206:2,9,10,12,18
120:16,17 121:10	disclosing 119:20	diverse 49:1	80:8,9 81:5,6,7,8	207:15,20,21

208:11,12,13,18 209:17,21 210:16 211:18 212:9,10 212:12 214:16 215:4,6,8 216:19 217:6,13 219:1,15 219:18 220:1,17 221:6,12 222:2,10 222:13 223:8 224:2,5 225:13,15 226:9,20 227:2,7 227:12,14 228:10 228:11 229:21 230:3,5,7,8,11,14 231:7,20,21 232:2 232:3,4,11,13,14 232:16,18 233:2 233:12,22 234:9 234:13 235:12,16 235:17,22 236:2 236:12,17,18 237:15 draft 183:22 drawing 124:5 drilled 158:11 drive 113:2 168:9 231:4 driven 112:17 drives 164:7 229:18 driving 111:17 drop 57:10 117:1 dropped 204:18 DrPH 1:25 DSc 2:9 Dubow 1:9,13 4:2 5:5,14 9:20 16:3 17:15,19,22 18:4 18:22 19:11 20:10 21:17 24:1 196:7 196:12 210:20 due 15:21 40:2 Duly 92:11 Dumpty 50:9,10,15 dyspnea 230:22 D.C 1:9 D.E.B 176:11	E	eliminating 211:10 ELIZABETH 2:6 embedding 119:2,3 119:6 embrace 19:5 embraced 79:5 emerge 229:2 emerging 54:11 emphasis 10:3 118:12 emphasize 66:19 67:8 105:1 165:17 emphasizing 14:9 empirical 76:22 80:6 123:8 employers 165:14 empty 100:13 enabler 191:9 encourage 136:7 155:18 184:22 endeavor 225:12 ended 78:5 79:3 endorse 22:13 36:20 159:1,4,10 159:13 215:2 endorsed 41:3 46:21 97:8 130:19 158:16 160:4 195:5 236:6,7 endorsement 4:5 4:16 99:21 127:2 130:17 203:19 213:9 214:22 215:1,19 224:6 232:7 endorses 158:12 endorsing 25:18 31:10 ends 79:16 energized 193:21 engage 16:15 156:5 engagement 4:14 4:21,25 9:15 35:9 80:15,19 105:2,2 105:3,4,20 106:6 132:12 133:6 146:13 148:4	219:10,14 engaging 7:17 14:9 14:18 English 34:11 69:9 70:5 87:4 enrollees 94:12 ensure 60:6 61:3 94:11 190:8 204:20 ensuring 61:10 enterprise 8:12 enthusiastic 79:8 entire 57:10,22 74:4 76:19 110:21 140:15 169:5 185:4 entity 26:6,8 environment 120:12 145:19 environmental 123:9 envision 115:15 equal 71:11 equally 34:16 68:5 equanimity 168:18 equated 161:16 equating 158:7,19 159:16 equivalency 163:20 equivalent 27:19 164:1 174:22 EQ-5D 174:10 erode 170:4 error 83:17 errors 44:17 45:19 especially 63:1 64:19 66:8,22 89:5 120:9,12 195:2 212:16 213:20 225:12 essential 50:5 53:14 85:20 198:4 essentially 180:13 204:18 205:18 207:4 215:8 establish 106:9 established 61:4	148:10 170:7 establishing 56:3 establishment 60:22 estimator 81:19 et 20:2 28:3 175:20 180:10 199:18 209:2 Ethan 1:14 4:18 16:17 85:13 88:17 88:18 91:18 99:3 101:4 103:2,13 114:3 123:18 131:3 132:11 133:20 149:5 161:20 164:10 Ethan's 152:22 158:6 ethnicities 178:16 ethnicity 34:11 55:19 179:2 EUGENE 2:9 3:18 evaluate 104:13 108:11 evaluated 22:7,11 55:10 106:3 108:16 evaluating 55:2 105:21 evaluation 16:6 24:15 60:8 61:3 154:8 187:14 208:16 211:2 evaluations 65:9 Evan 3:22 91:13 92:7 evening 96:12 event 9:11 150:14 194:4 events 134:10 183:13 eventually 225:18 everybody 5:15,16 6:1 7:13 39:7 95:8 111:1 145:21 211:7 214:6 everyone's 23:18
---	----------	---	---	---

evidence 7:6 27:18 28:14,16 33:4,5 85:5 135:20 178:22 197:21 198:11 200:13,22 201:18,20 209:3 213:17 214:15 222:22 223:16,17 224:8,10,11,16,19 224:22 225:1 227:4,15 228:14	229:13 exceedingly 155:18 172:16 excellent 52:7 62:10 67:19 72:12 132:10 140:8 152:22 217:13 232:19 exception 31:16 excited 99:17 163:18 excitement 218:12 227:16 exclude 28:15 29:1 excluded 26:19 27:3 28:17 161:1 exclusion 29:14 exclusions 27:1 28:13 29:8 38:6 48:3 exemplary 197:14 exempt 202:21 exercise 18:8 exist 116:19 217:21 218:5 existing 104:13 107:13 116:10 217:19 exists 58:15 125:21 159:21 233:5 expand 202:9 expanding 139:2 expansion 140:4 expect 40:20 67:1 121:3 145:6 183:17 184:19 212:19 expectations 22:17 140:21,22 144:22 expected 41:15 56:16 expecting 234:15 expense 12:7 experience 16:22 62:18,19 64:9 86:1 92:21 99:12 110:10,19 135:16	135:19 141:7,11 145:22 146:15 152:7,13 155:20 188:2,4 experiences 87:4 experiencing 135:1 experiential 134:19 experimental 59:22 experimenting 215:17 expert 4:14,21,25 33:7 35:7 72:14 85:3,6 98:18 135:7 184:16 185:4 expertise 52:18 141:18 156:7 experts 53:10 81:4 122:3 143:15 explain 64:14 186:21 192:15,16 212:4 explicit 61:4 192:12,17 199:1 232:19 233:19 235:14 explicitly 42:1,6 195:15 223:10 234:10 explore 155:10 explores 61:15 express 13:6 extensive 58:14 81:16 82:3 extensively 51:11 extent 33:11 89:2 149:20 210:8 external 60:8,22 120:2 206:13 extra 164:21 extrapolating 139:2 extreme 70:16 eyeballed 6:15	55:3 69:18 74:15 106:10 224:20 faces 61:14 69:8,13 facilitate 54:2 facilities 42:20,20 74:20,22 75:11 facility 38:14 49:14 51:19 52:1 74:5 facing 53:22 FACP 1:13 2:11 fact 73:10,16 82:10 83:16 117:9 135:4 155:16 163:22 174:21 198:2 200:13 229:11,17 facto 60:4 factor 31:1 37:1,2 factors 30:2,3,19 33:3,22 34:8,21 35:1,8 52:10,13 52:16 53:2,4,5,17 53:20 55:17,22 58:22 80:10 144:12 failure 21:3 172:5 fair 24:6 86:1 fairly 148:9 226:18 falls 237:1 familiar 42:17 113:3 families 2:22 73:11 73:15,17 93:7 101:2 family 67:11,14 93:21 178:20 179:3 183:12 Family-Centered 154:4 family-operated 93:5 famous 50:8 129:21 far 23:21 92:2 95:17 144:1,9 212:18 fatigue 15:20,21,21 17:5,12 107:19	152:13,17,18,19 200:9,10 fatigued 17:9 favor 171:7 favorite 61:14 84:8 FDA 131:14 feasibility 142:19 210:6 feasible 214:22 federal 23:1 feed 129:2,3,7 feedback 98:21 102:22 128:22 129:17,18 131:12 131:20 184:13 188:18,18 201:11 201:15 202:9 feeds 139:6 feel 73:17 87:14 97:13 120:18 121:6 193:21 201:4 227:9 238:2 feeling 44:8 169:6 feet 140:1 Feinberg 1:17 felt 77:18 fest 139:8 fewer 220:20 fictitious 38:13 field 98:13 99:22 131:7 216:16 217:1 fielding 12:9 fifth 74:1,5 77:8 fight 137:19 fighting 139:8 figure 9:11 78:15 124:12 127:1 134:15 141:15 233:11 figured 167:21 188:11 figuring 16:14 61:22 90:13 136:13 Fihn 1:18 102:10 fill 41:13 74:15
F				
face 14:10 49:4				

filling 92:4	134:16 138:8,12	111:19 112:11	friendly 202:8	gee 228:5
final 58:10 59:13	139:2,10,11,12	118:22	front 5:6 96:11	gender 66:7
113:2 184:14	140:2,11 143:3	food 72:22	127:15 129:12	gender 178:15
185:11 217:12	145:18 146:4	foot 139:21	189:1	Gene 6:15 19:11
finally 8:7,17 143:9	165:13 187:10	Force 49:8	fruit 11:11 102:12	80:8 164:19
206:16	188:5,7,8 195:11	foregoing 97:18	Fryback 173:19	170:16 173:10
finance 93:21	204:21 205:4	238:22	full 100:13 117:8	174:8 175:9,12,22
financial 52:4	213:21 217:17	forever 238:12	fully 69:1 216:2	184:20 218:10,10
find 24:22 50:7,21	218:1 221:15	forgot 86:9 163:21	function 20:1 69:1	general 2:6 19:10
108:15 114:9	230:16 238:1	form 41:13	69:2 107:16	19:21 20:4,6
141:18 155:6	fix 196:16 230:4,6	formation 154:7	126:10 160:18	25:10 27:1 31:19
167:20 191:2	fixed 37:16	formed 5:22	172:7	34:19 36:22 42:1
198:5 221:13	flags 80:12	forms 217:8	functional 33:20,20	48:6 86:13,15
finding 6:2	flesh 146:12	formula 111:11	34:2 36:5 44:2,10	87:12 146:22
findings 60:1 77:14	flexibility 209:22	forth 95:17 117:22	54:15 160:7,11,14	185:6
finds 64:19	210:14 225:6	178:18 205:8	160:17	generalized 37:15
fine 103:20 141:5	Floor 1:8	206:15 208:8	functioning 116:18	178:9
187:18,19 195:20	flow 98:12,19 99:18	220:9	fundamental 51:16	generally 13:15
196:12 212:7	132:17 133:10	forum 1:1,8 93:13	94:6	31:9 80:20 152:18
236:21 238:8,8	175:15 178:20	94:9	funded 173:19	generated 27:14
first 5:12 6:13 7:4	flowchart 175:21	forward 24:11 40:7	funders 237:8	generating 52:12
9:5,9 14:1 20:14	179:20 190:18	42:3 130:4 195:3	funds 23:1	generation's
28:13 32:16 40:18	flowcharts 179:3	214:10 216:12	further 98:20	237:13
48:9 59:6 71:10	flower 172:15,22	found 65:8 68:5	121:21 146:13	generic 173:22
77:15 80:3 81:9	173:1	75:3 78:19 86:6	future 4:23 61:10	gentleman 219:19
85:17 87:14 88:17	flowers 164:4	86:13,15,22 87:12	87:16 147:9 181:1	getting 5:4 7:8
88:20 91:1 98:7	169:8 171:3,4,6,7	155:20	182:7,12 231:3	12:12 66:15 111:3
98:17 100:17	171:13 172:14	foundation 1:20	238:17	112:10 115:7
101:14 102:3	focus 16:2 73:10	25:22		126:7,20 150:19
103:19 104:6,9	105:12 112:1	four 51:13 92:22	G	162:3 217:1,9
105:5 109:18	146:19 147:1	99:5 104:6,8,14	GAGE 1:22 217:6	gigantic 111:7
110:6 112:2,6	148:7 153:1 154:9	105:19 108:10	gain 216:17	give 21:17 33:17
120:5 124:22	158:8	121:4 148:19	Galveston 2:10	36:13 43:8 99:15
130:22 133:14	focused 94:4	177:14 221:15	25:2	112:8 116:21
147:21 151:21	142:22 178:5,5	FOWLER 1:19	game 19:19	122:21 123:11
152:2 157:7	focusing 112:3	197:7 199:5	Ganey 2:1	159:18,19 169:22
163:18 164:20	fodder 223:22	frame 51:14 99:7	Ganiats 1:22 20:12	171:8 176:9
168:12 178:4,8	folks 82:11 184:20	framed 133:10	20:12 137:14	180:17 182:9
187:4 190:16	234:14	framework 27:21	139:20 172:1	183:16 229:9
196:2 199:11	follow 156:14	frameworks 48:14	174:9 180:4 223:8	235:18
215:21 219:3	161:7 212:2	framing 136:11,12	227:7,14 229:21	given 142:17
227:14	237:12	Frank 1:21 132:8	garbage 117:8	149:12 183:10
fit 188:9,13	following 47:21	132:21 133:5	gate 116:9	208:3
fitness 114:20,21	151:1 152:21	135:12 146:11	gather 20:21 128:4	gives 24:6
114:22	153:8 189:2	frankly 215:14	135:20	giving 148:17
five 77:5 102:2	follow-up 84:17	free 97:13 201:4	gathering 130:10	182:12 183:12
114:1,20 116:22	89:1,10 110:13	frequently 30:20	130:12	205:6

glad 162:10	22:3 24:13 25:6	gold 71:17,19	217:16	handled 30:11 58:9
glass 100:12	25:22 27:10,16	Goldstein 12:8	ground 112:17	hands 22:19 148:13
global 64:2,18	32:2,8,17 40:16	good 5:3,15 6:11	group 18:8 23:3,19	148:20 169:6
go 5:12 6:7 19:18	42:2 47:1 70:10	8:19 14:21 18:7	85:6 96:14 106:12	hanging 11:11
21:19 23:20,21	77:1,6 87:16 91:4	19:22 21:5,20	107:7 132:1 143:5	102:12
28:6 39:7 47:3	91:6 94:8,11 96:7	28:5 31:13 36:8	147:1 153:16	happen 185:10
69:3 73:22 95:15	96:15 98:3,15,20	36:11 47:7 50:17	160:19 165:12	213:8 216:22
96:12 97:16	98:21 99:4,6,10	63:21 80:19,22	189:15 228:15	218:21,22
101:15 102:15,16	99:14,20 100:18	85:10 115:12	238:10	happened 77:16
103:11 104:1,5,6	101:22 102:20,22	135:15 137:4,8	groups 36:18 37:3	146:1
105:8,17 106:6	103:1,6,22 104:1	141:20 147:9	45:7,18 54:16	happening 186:22
107:1,20 108:5,13	104:4,19 109:4,5	160:4,21 171:15	73:10 105:12	happens 8:18 125:3
110:6 116:20	109:10 110:9	172:18 175:5	138:22 146:20	145:20
118:17 121:20	113:1 114:17	182:3 192:17	148:7 200:14	happy 109:12
128:8 129:17	115:2,21 116:1	200:10 201:20	guarantee 186:7	110:2 155:13
133:9 139:20	119:12 121:4,12	205:10 207:11	guess 23:2 40:5	216:15
141:14 142:13	121:20 123:21	214:7 220:21	69:20 70:22 96:13	hard 11:14 44:7
143:21 144:17	124:9,12,14,20	223:6,22 226:15	111:8 115:16	122:10 143:13
147:3 150:7	125:11 126:8,11	232:20 234:10	117:15 154:22	144:10 153:6
153:20,22,22	127:7 129:21	goodbyes 238:7	162:18 163:4	154:14 167:7,17
160:13,21 164:18	130:10,15 132:2	GOODRICH 1:23	169:5 176:18	167:20 186:7
164:19 170:3	137:10 139:4,9	gosh 238:14	182:13 192:21	189:8,9 198:5
173:12 174:8	144:19 145:3,5	gotten 212:22	197:7 199:15	202:13 209:15
179:15 182:5	147:2,11 148:12	gradations 149:22	214:21	218:20 228:4
185:12 186:16	151:10,19 152:2	grandson 19:20	guest 204:14	harm 60:17
187:14 188:15	153:5,6,20 154:19	grant 173:19	guidance 131:6	harmonization
193:10,12 196:4	154:21,22 159:6	grapple 28:19	143:11 166:18	117:19 120:5,7,10
196:17 197:2	163:6 168:14	grappling 212:14	185:17 209:16,17	121:7 142:1,2
207:8 209:3,14	173:6,11 175:9	grateful 156:7	211:16 212:17	144:13 145:1
210:18 211:21	176:9,21 178:7,12	great 16:19 20:18	227:6 231:17	165:18 168:2,4,5
212:19 216:1,15	178:13,22 179:2,3	20:22 32:11,12,14	guide 185:19	169:12 233:4,21
218:16 220:10	180:20 183:16	67:22 80:1 85:15	guideline 223:11	234:8,9 237:2
221:1,10 222:3	185:12,13,18,20	103:14 117:10	223:12,15 224:7	harmonizing
226:22 227:20	188:19,20,20	131:22 132:6	224:11,12	233:13
232:1 238:3,6	189:15 190:10	137:15 143:10	guidelines 21:4	harms 134:8
goal 230:20	191:16 193:8	151:15 156:11	162:15 204:17,18	Harry 231:22
goals 19:16	195:3,5 199:21	163:11 169:17	224:8	hat 79:10,11
God 80:3	201:21 202:2	177:21 186:12	guidepost 209:13	Haven 2:22
goes 46:5 92:2	203:3,4 204:14	190:19,19 219:4	guys 103:16 109:3	head 158:11 160:3
117:20 151:21	206:15,21 213:14	234:10		headed 146:12
184:18 188:16	213:17 214:4,14	greater 68:22	H	health 1:18,23 2:2
216:12 232:4	214:18 217:6	71:22 72:1 169:9	half 16:5 100:12,13	2:18,22 3:9 8:16
236:5	218:1,16 219:20	green 137:21	165:13 189:8	19:16,16,21 20:1
going 5:5,10,21	222:2,14 223:6	150:22 196:1	hand 5:8 63:12	20:1 44:13 58:13
6:14,17,21 11:10	224:3 228:2 230:3	220:3,7,13 223:3	153:22 173:12	60:12 63:7,8 67:5
11:17 14:2 15:6	230:5 235:9,19	Greg 2:11 212:10	227:17	71:4,5 80:19 93:2
18:8 21:13,17,19	237:22 238:3,10	212:12 214:16	handle 218:18	93:19 94:12

162:13 165:14 224:18 225:7 healthcare 1:14 2:15 26:4 27:10 54:1,19,21 62:2 64:5 65:21 74:2,5 hear 7:17 12:14 32:12 47:8,9 73:13 81:6,12 94:21 151:13 154:9 162:10 185:9 heard 5:6 11:15,22 13:1,19 48:10 73:20 81:17 94:20 131:10 162:19 187:5 188:14 193:18 199:13 202:8 207:2 210:10 219:1 221:19 223:10 224:21 225:10 228:18 hearing 5:7 20:8 23:12 131:19 154:12,13 162:17 184:19 222:17 heart 21:3 60:1 172:5 180:10 heartened 154:8 heck 178:3 Helen 3:16 6:9 19:1 37:5,7 163:7 201:3,8,14 202:5 214:19 215:7 216:20 228:10 238:6 help 53:19 79:11 128:2 130:15 151:1 156:16 189:4 192:6 205:13 helped 7:10 10:5 129:11 helpful 5:20,21 14:6 40:17 42:3,8 98:12 165:21	175:16,17 176:3 199:9 206:19 208:14 209:13,16 220:22 221:13 231:7 helping 130:20 helps 7:16,19 53:14 127:9 129:14 hemoglobin 217:18 hey 101:8 112:14 hi 62:5 92:9 132:8 151:12 154:2 193:22 220:1 231:20 Hibbard 1:25 81:3 hierarchical 37:15 high 10:18 23:15 29:8 67:1 82:9 102:4 121:12 147:17 172:16 higher 39:1,9 49:16 74:22 170:10 200:20 highest 199:15 highlight 33:19 35:12 42:10 highlighted 54:6 highlights 6:19 highly 10:13,17 11:12 high-level 99:15 high-risk 89:17 HIP 102:14 historical 227:5 hit 2:5 217:8 Hitchcock 3:7 hold 21:8 23:10 209:13 holdup 22:4,6 hole 51:1 home 77:21,22 79:6 115:7 183:11 189:2 238:13 homes 42:19 67:12 73:14,15 74:3 honest 76:10 hope 23:14 140:12	164:7 211:19 229:17 238:16 hopefully 225:8 hopelessly 50:22 hoping 19:19 170:13 Hopkins 3:9 horrible 46:8,18 horse 24:3 HOS 12:9 81:17 82:5 83:10 hospital 2:4,6 26:5 37:21 144:18 hospitalized 125:22 126:9 hospitals 74:3 hot 10:12 hour 16:5 183:14 185:22 189:8 huge 213:22 218:12 HUI 174:10 human 87:8 Humpty 50:9,10,15 hundred 46:5 hunk 5:18 hypertension 178:10,14,15,15 178:21 179:7 193:20 hypertensives 179:10 hypotheses 112:4 177:16 hypothesis 112:20 229:20 hypothetical 107:3 107:10 145:12 hypothetically 107:7	200:9 204:10 205:10 ideal 40:13 ideas 16:7 66:2 137:17 identification 4:15 31:5 identified 7:15 74:1 104:15 107:22 133:15,17 224:7 identify 7:16,19 15:4 53:20 97:9 100:22 108:5 133:21 159:7 221:8 identifying 14:12 79:19 104:9,13 Iezioni 51:10 53:9 54:22 55:11 60:21 ill 86:10,12 illness 35:3 93:4 illustrates 49:22 54:17 illustrations 8:10 imagine 116:14 immediate 231:2 immediately 150:5 immortalized 197:4 impact 8:20 9:16 10:20 13:11 38:9 43:15 45:3 56:6 140:16 impaired 80:4 136:4 impairment 54:16 68:20 76:17 77:10 77:20 78:2 135:22 implement 28:6 111:15 166:15,19 236:8 implementability 115:11 implementation 13:2,11,16 41:7 41:17 101:13 180:1 216:17	implemented 10:16 41:8 129:10 implementing 40:15 84:21 129:6 165:5 implication 225:19 implications 38:6 43:13 44:22 57:6 115:9 177:7 implied 119:1 implies 226:6 implore 168:6 imply 187:22 196:3 implying 139:3 importance 7:8 14:9 15:17 16:10 16:14,16 20:3,4 49:22 79:19 105:1 122:18 128:7 131:11 165:17 190:1 208:20 210:4 215:22 important 6:4 9:8 10:11 11:8 13:18 14:14 15:18,22 17:19 18:1 19:1 19:17,21 20:20 21:1,1,10 22:16 23:17 33:3 35:1 35:10 40:12 41:16 43:20 45:7,9 48:9 48:12,16 52:7 57:6 58:6,12 59:5 62:22 63:10 65:11 73:12,18 85:7 92:3 94:8 101:1 104:10 105:16 107:9,14,20 119:2 119:15,21 120:9 126:18 127:17 128:1 133:7 135:15 136:13,16 136:18 143:21 145:9 149:4 155:8 166:12,17,18 169:7 195:6 199:17 209:1
---	---	--	---	--

214:9 216:10,13 220:18 221:22 224:2 227:6 231:16 233:7 237:21 imported 167:22 impressions 155:4 improve 17:13 58:17 62:2 119:8 153:5 166:2 179:11 204:1 228:2 improved 22:17 88:7 160:19 improvement 2:15 13:3 31:11 112:17 113:5,6 117:11 119:7 122:7,8,9 122:16 141:12 153:11 164:8 165:7 168:9 218:9 229:16,19,21 235:8 improvements 153:16 225:8 improves 89:12 imputation 56:13 56:17,20 58:5 81:15 86:18 88:7 impute 88:3 imputing 58:3 inappropriate 17:8 192:3 incentive 131:13 149:12 incentives 52:4 incidence 135:6 include 33:6 35:7 44:5 49:4 52:9 53:18 54:3,11 55:3,18 59:12 106:13,18 145:8 148:6 152:5 154:6 154:15 200:12 202:10 231:16 included 35:2,13 44:10 46:21	160:22 176:13 includes 79:4 81:18 104:18 117:17 236:4 including 16:14 32:12 204:10 income 229:7 incomplete 38:4 48:3 140:12 incomplete/missi... 38:7 incorporate 98:5 138:17 incorporated 138:9 138:20 139:4,5 incorporating 54:18 153:2 incorporation 153:6 incorrect 28:1 increase 88:5 96:3 incredibly 169:7 175:1,7 220:4 independent 60:22 93:5,21 index 68:3 indicate 29:9 173:14 indicated 234:17 indicates 28:16 indication 210:11 indicator 179:13 indicators 21:7,16 51:6 202:19 indifferent 162:2 individual 8:13,16 9:14 19:15 25:18 26:3 51:18,22 61:17 95:19 102:21 111:21 121:19 152:11 159:4 189:12 individualized 20:3 20:7 individually 90:10 90:12 individuals 8:3	49:1 112:4 143:6 Individual-Level 4:10,17 inefficiencies 142:13 infancy 95:2 infections 229:10 inferences 25:11 27:11 influence 30:2 58:9 72:1 101:21 inform 24:7 98:12 informant 105:12 148:8 informatics 182:15 182:16 information 7:22 8:6,12,14,15,18 9:13 16:21 20:22 24:7 35:19,20 40:21 42:4 57:8 60:12 68:11 79:13 112:9 114:7 119:5 119:17 128:12 146:18 148:11 149:13 163:16 197:18 226:2 234:22 235:4 informed 1:19 29:7 33:8 53:6 110:19 initial 83:13,22 104:7 106:19 111:18 112:11 initially 79:7 initiative 85:22 134:4,6 initiatives 147:11 inject 24:2 ink 187:6 innovation 231:5 input 24:8 53:16,19 54:11,18 98:16 99:1,18 108:16 226:16,17,18 inside 110:10 insight 33:10 insights 14:14 53:7	131:15 insist 231:1 insisting 230:15 inspiration 183:19 inspirational 183:8 instance 130:9 instances 228:20 Institute 1:21 2:9 2:15 91:17 Institutes 2:18 177:5 institution 1:18,22 2:19 155:2 institutions 144:15 144:20 145:2 instruction 185:17 214:5 instrument 42:18 43:3,4 45:1 73:5 74:17 79:17 84:11 instruments 27:17 32:4 45:20 75:10 75:14 78:19 109:22 123:21 159:15 162:16 173:2 174:6,16 insurmountable 190:11 integrated 187:21 integration 139:18 intellectual 47:15 intended 63:18 65:1,14,17,22 66:17 188:13 intensity 68:13 69:7 intent 111:16 intention 196:16 197:1 interact 65:20 interaction 65:19 106:16 140:18 185:15 interest 31:21 104:12,14 105:6 105:15 108:1 189:22	interested 38:1 138:13 180:12,13 224:10 interesting 12:14 39:10 52:14 69:11 71:20 87:18 94:20 206:22 216:5 226:13 interestingly 171:1 interests 60:20 interface 138:12 intermediate 180:7 201:2 216:21 internal 135:16 206:11 235:8 internet 238:11 interpretation 135:14 231:12 interpreted 48:22 intersections 237:18 intervening 200:8 intervention 10:14 14:15,18 29:4 199:20 228:2,7,22 interventions 51:21 225:2 229:2,7,12 interview 42:15 93:7 interviewed 38:21 41:12 interviewer 39:16 77:6 interviewing 41:6 interviews 105:12 148:8 introduce 24:13 44:17 45:19 121:8 introduced 115:3 216:20 233:8 introduction 4:2 121:1 introductory 5:11 inventory 68:3 invert 195:22 investigator 147:18 invitation 62:8
--	--	---	---	--

invite 155:9 186:20	<hr/> J <hr/>	KALAHN 2:21	kilograms 122:14	131:12 133:3,14
involve 105:11	Jack 1:19 14:13,20	KALDENBERG	158:20 161:9,15	134:19 135:1
106:8 110:21	15:2,3 197:6	2:1	161:18	138:21 143:6
166:16	Jack's 199:12	Karen 3:15,19 4:8	kind 13:12 16:11	145:2,2,3,4,5
involved 7:9 61:9	James 113:4	5:14 6:7,7 19:2,2	17:2 25:14 28:22	146:11 147:22
132:16 134:5	Jessica 3:21 96:16	19:2 36:15 103:3	37:1 39:10,12	148:4,14 151:8
137:4	Jim 1:15 4:19 99:9	103:12 104:8	40:13 64:17 66:10	159:9 161:7,14
involvement	101:22 102:1	118:6 124:4,15	72:7 81:10 85:21	163:7 164:16
133:12	109:16 124:21	158:22 164:9	88:22 96:15 97:8	165:22,22 166:5,8
involving 53:13	128:16 131:6	183:7,20,21	98:13 99:6,14	168:5 169:16
143:10	137:19 138:7	185:16,16 193:7	100:3 103:10	174:2 175:10
IPSS 108:7	142:7 147:17	195:11 208:14,14	119:20 121:1,5,10	177:9 184:22
IRENE 2:1	158:6 161:8	208:18 210:2,18	122:22 123:1	193:18 198:3
IRT 70:12	164:21 168:10	224:3,4 227:8	127:5,16 128:18	199:22 204:3,16
issue 12:12 18:10	219:22 232:22	235:19 238:6,7	130:15 131:20	207:6 210:3,12
18:16 20:14 22:13	Jim's 139:5 141:4	Karens 238:15	140:22 145:14,20	211:21 214:11
42:11 43:11 56:2	job 6:6 9:18 31:19	KATE 1:23	146:2,11,22 149:7	219:20 221:10
58:12 59:3 67:17	47:16 226:21	Kathy 2:5 94:16	161:4,6 190:17	223:20 228:8,18
81:14 84:11 86:4	John 2:24 12:11	137:13 148:14,18	199:8 200:13	228:21 233:1,5
90:2 91:5 92:17	59:21 81:2 199:10	148:22 203:16	207:2 211:13	238:15
95:7 128:3,3,21	202:12	204:12 206:7	212:13 224:19	knowing 27:3
130:18 131:5	Johns 3:9	207:13 225:13	237:2	41:15
136:12 142:18	John's 204:9	234:12	kinds 17:11 18:17	knowledge 59:20
143:6 179:14	join 97:13 132:4	KATZAN 2:1	34:6 95:3 106:11	203:4 204:6
196:2 212:13	155:12 183:3	KAZIS 2:2 81:6,8	116:1 120:17,17	knowledgeable
215:5	joining 132:3	81:12,14 173:13	125:13 146:19,22	53:16
issues 4:9 7:2,4	joking 137:20	231:20 232:2,4,13	221:2 237:5,6	knows 145:22
12:13 19:8 23:5,6	139:7	232:16	know 5:15,18,21	214:7
23:7 24:21 25:5	Joseph 61:15	keep 20:8 84:19	6:10,11 11:3,19	KOTAGAL 2:3
34:15 37:21 38:3	jot 192:1	95:18	12:4 13:13 14:1	<hr/> L <hr/>
40:1 42:6 47:19	journey 100:12	keeps 6:12	16:3,4,8,18 18:22	lab 134:12
50:4 52:8 55:15	Joyce 1:9,13 4:2	Keller 177:4,4	22:2,3 23:12,16	label 114:19
62:12 63:16 95:1	5:5,11 100:20	Ken 24:19,20,22	28:2,21 29:11	labeled 80:13
96:1,6 97:1 129:4	211:19	47:6	30:10 39:19 40:17	lack 216:7
142:19 228:13	judged 22:21	Kenneth 2:10 4:13	43:5 44:8 45:9	landmines 208:3
item 73:7 74:15	judgment 191:18	kept 14:8	47:1 62:21 63:11	landscape 106:1
78:17,18 79:15	210:7 214:17	KEVIN 2:4	65:20 66:3 67:5	language 34:11
80:7 122:4 134:7	222:19 225:9	key 4:9 51:5 55:14	70:17 71:10 78:15	40:3 48:18 50:1
211:13	Judith 1:25 81:3	66:18 105:12	79:5 85:18 87:14	69:17 140:11
items 64:2 73:5,21	July 92:18	140:16,18 148:7	88:2 89:4,6,7,20	169:22 170:22
73:21 75:21 76:1	jump 23:4,10,11,16	163:12	94:22 95:10 100:1	171:12
76:13 78:1 79:9	jumps 7:5 130:4	keypad 72:20	101:6 102:1,10	languages 70:6
84:12 108:9	justified 58:8	222:7,9	105:15,20 106:11	154:21 234:12
109:21 121:2,4,11	<hr/> K <hr/>	kicks 234:8	108:1 116:10,12	large 8:11 57:15
iterative 13:20 14:3	Kaiser 1:15 110:10	kid 117:1	116:13,20 120:4,7	141:9 187:21
14:6 216:14 217:9	111:2,12	kill 201:22 207:10	121:2 122:3,7,11	larger 142:20
229:16,22		kilogram 162:4	122:13 129:9	

LARSEN 2:4	232:1	142:17 143:10	looking 13:10 69:5	low 10:22 11:10
Larsson 11:22,22	Lewis's 85:1	152:13 170:6,11	75:2 77:8 96:19	40:18 42:21 102:5
12:15	library 134:7	178:6 197:8 204:2	99:21 104:18	lower 39:6 40:16
late 223:19	life 40:15 61:19	223:18 231:10	107:4 108:17	40:20 63:6 102:12
latest 184:11	95:14 116:10	233:16 234:15	174:3 178:9 193:4	199:16
laugh 201:4,14	162:14 223:17	live 65:15 93:9	205:5 207:5 209:4	lunch 180:21 181:2
laughing 202:6	233:15	165:5 207:7 218:9	209:6 225:11	181:5,6 186:11
Laughter 104:3	lifetime 126:3	222:16,18 231:9	looks 120:20,21,22	193:21
133:4 165:3	limitation 54:13	lively 16:12	145:4 197:10	lung 230:22
168:16 169:1	limitations 40:2	living 54:15	203:9 211:11	
227:11	41:11 58:4	Liz 10:5 12:8,8	231:21	M
LAURA 2:19	limited 34:11 89:17	22:14 102:5	look-up 161:17	MA 2:23
Laurie 13:22 109:6	133:11 215:9	local 113:6	loop 131:12,20	magnified 18:17
127:6 129:20	Linda 3:7 154:2	locate 93:20	Lori 1:21 132:6	magnitude 131:5
131:14 146:10	line 33:7 53:9 72:16	logistical 129:5	133:13	mailed 87:7
laying 9:18	137:21 150:22	LOHR 2:5 94:17	lose 211:15	main 7:2 91:5
lead 141:16	151:9 229:9	149:1 204:15	losing 81:11	Maine 2:16 166:20
leading 181:3	linear 37:16 229:4	205:4 206:9,12	lost 50:22 87:22	166:21 167:1
leads 188:5 200:16	lines 207:3 232:5,9	207:15,21 208:12	lot 10:3 13:5 14:11	221:17
229:7,8	linguistic 69:15,22	225:15 226:20	19:7 22:18 28:20	maintenance
lead-in 121:1	106:21	234:13 235:16,22	39:5 41:3 62:18	116:16 117:16
lean 68:20	link 13:2 46:19	236:12,18	62:19 72:22 73:2	203:19
learn 119:7 146:4	162:16	long 15:20 89:7	74:2,11 76:2	major 188:14
216:11,16	linked 46:17 49:18	124:8 150:3	77:17 78:6,7	makers 60:5
learned 51:5	Lisa 51:10	157:14 162:3	96:22 100:5	making 16:15
101:19 111:9	list 7:1 21:11 54:22	174:15 206:6	104:16 120:16,16	29:15 86:19
117:18 182:5	160:22 207:17,17	217:22 226:18	125:1 135:17	130:10 143:6
220:18 237:16	221:16	228:4	136:5 143:9	162:11 177:17
learning 13:16	listed 138:1	longer 204:12	147:12 155:16	184:14 190:1
131:21 229:6	listen 151:18 185:8	231:3	176:16 182:18	213:13 227:8
leave 121:16	list-wise 57:12,17	longitudinal 84:14	189:22 199:19	232:19
185:16 235:10	litany 47:19	88:1 105:13 148:9	207:17 208:1,2,3	Maldonado 25:3
led 183:7	literacy 67:5	long-term 178:16	209:1 210:10	Man 61:13
left 117:1 193:10	106:19	look 16:5 17:8	216:6,17,22	manage 57:3 58:7
legend 61:16	literally 83:2	74:14 79:15,17,18	217:21 226:1,18	managed 57:9
lend 12:21	literature 52:17	96:17 98:8 100:16	228:15 229:11	93:19
lessons 51:5	64:20 85:5 105:22	101:18 106:1	237:18,18	management 69:7
let's 45:12 101:8	107:13 108:6,14	107:17 116:14	lots 29:5 94:20	111:8,10 112:1
107:6	173:17	120:17 121:6	98:18 101:12	113:13 144:2
level 9:21 26:13	literatures 58:15	124:16 129:18	113:16 130:6	managers 41:5
51:19,20,20 52:2	little 9:1 24:14 25:7	131:8 153:14	131:1,6,22 148:13	managing 57:17
69:16 119:19	36:9 44:4 47:2,3	167:11 189:8	154:5 185:13,14	mandate 169:4
134:13 199:1,15	66:11 91:3,14	191:10,22 193:17	loud 5:17	211:22 219:9
199:16 200:2,20	116:3 118:11	206:22 218:16	loudly 225:11	mandated 42:18
levels 102:4 156:6	122:11 124:20	219:21 231:13	love 119:11 120:4	43:1 60:4 93:2,19
Lewis 2:2 14:5 81:5	125:11,12 134:20	looked 75:13 77:3,4	139:8 233:3,8	mandatory 87:2
173:11 231:19	136:11 139:11	124:6 133:15	lovely 9:4 151:17	207:19 211:13

mangle 7:13	meaning 155:1 233:17	159:6,11,21 160:1 160:5,10,12,16,17 161:1,11,15 164:6 171:16,17 172:4,4 172:5,14,15,19 175:5,18 177:12 193:6,20 194:2,12 195:2,5,6 196:9,9 196:18,20 197:10 198:2,21 199:17 201:16 203:19,20 204:13 207:22 208:22 210:4,5 211:6 213:10 215:21,22 216:1,5 216:9 217:17 218:17,21 223:14 224:20 227:19,19 227:21 228:5 230:2 231:2 234:4 234:6 236:4,9,11	48:2,5,13 50:2,19 51:4 52:9 55:2,12 58:11 59:15 60:3 61:12 62:15 66:21 67:7,9 70:1,2,10 70:20 71:3,15,21 85:2 89:7 95:16 95:19,22 96:2 104:13 110:5,6,8 111:17 114:5,12 115:18,21 116:9 116:17 118:8 119:13,14 120:11 121:19 122:5,19 123:5,10,13 130:3 130:7 131:17 138:1,2,8,9 141:6 141:19 147:7,13 150:5,18,19,20 151:3 153:3,10,12 153:17 158:12,13 158:19 159:14 161:14 163:14 165:6 172:7 175:20 176:13 178:21 180:14 195:3 201:19 202:3,13,15 207:11 210:3 215:10 216:13,15 216:18 219:8 223:11 230:16 233:18,20 234:8 236:6	Medicaid 1:24 2:14 92:12 93:3,18 medical 1:19 2:4,10 2:24 3:8 25:1 35:21 54:12 Medicare 1:23 2:14 63:3,4 66:9 89:18 92:11 medicine 1:17 198:12 medium 102:5 meet 61:4 210:3 meeting 92:18 124:4 155:14 184:2,7 185:3 meetings 61:21 meets 165:12 166:14 Melanie 91:16 member 67:11,14 92:10 members 92:16 148:16 Memorial 1:14 men 107:4,7 178:10 178:14 mental 20:1 63:8 71:5 93:4,19 mention 73:3 83:12 154:5 202:11 mentioned 10:3 14:11 19:13 29:3 36:15 38:11 42:13 46:1 74:19 86:2 100:17 123:16 176:4 209:7 merely 94:9 merge 177:6 merit 60:18 met 1:8 208:2 metadata 119:20 metastatic 107:17 method 56:20 60:2 234:20 methodological 96:1 100:14 129:4 129:8
mangled 8:22	meaningful 7:7 31:7 45:18 101:1 104:10 127:17 153:11 175:19			
manner 64:11	meaningfulness 7:5 23:4 100:21 114:10 209:2			
map 92:10 96:22	means 50:11 57:12 111:3 187:12 198:15 213:4			
mapped 142:12,16	meant 187:22 188:3 196:3			
maps 103:8	measure 14:15 17:6 21:5 26:1,14 26:18,20 27:5,14 27:18 28:5 29:2 31:3,12,16 32:2 36:5 38:8 42:13 43:9,14,18 45:2,5 45:8 46:2,9,22 49:12 52:16,22 61:9 72:2 79:3 84:13,14 85:3 90:21 94:5 97:8 99:11,20 101:16 106:3 110:12,14 110:17,17 112:2,6 112:22 113:1,11 114:2,16 115:2,5 115:15 116:16 117:3,7,12,13,16 118:20 119:8,10 120:14 121:9 124:18 125:20 126:13,18,21 128:7 129:22 130:19 131:7,8 136:22 137:1,7 138:14,16 139:15 139:19,21 140:13 140:17,20 141:9 141:14 144:5 145:14 147:16 150:8 151:22 152:1 158:8,14,15			
MARCEL 2:18				
march 104:20				
mark 186:1 192:1				
market 13:4 60:17 203:3				
MARY 2:22				
mask 55:22				
Massachusetts 2:6 93:18				
Mastanduno 91:16 91:17				
master 50:16,17				
masterful 7:12				
match 136:21				
matching 66:10				
matter 11:4 112:1 144:8 145:13 171:21				
matters 7:18 9:10 9:12				
MBA 1:13 2:25 3:7				
MD 1:13,14,18,22 1:23 2:1,3,4,6,11 2:17,18,20,22,24 3:9,16				
MDS 46:2 68:9,13				
MDS-3 43:7				
mean 20:14,19 35:13 50:12,14 73:20 80:2 124:7 131:17 132:18 139:11,12,17 150:13 154:20 162:6 173:2 175:6 180:8 197:9 203:3 203:6 208:18 210:10 212:18 213:11 214:2,3,6 217:17 223:22 228:4 229:8 236:13				
		measured 16:1 30:2 106:13		
		measurement 2:13 49:4,7,9 59:5 79:18 84:5,16 95:20 98:10 104:19 106:2 108:11 116:16 122:2,3 123:1,2,6 123:18 129:22 130:1 154:10 224:1 229:16		
		measurements 100:22		
		measures 6:2 13:11 13:13,15,17 18:11 18:11,14,15,17 19:5,9,21 20:6,7 23:16 26:22 27:8 29:21 30:14,14 31:10 32:21 33:12 33:14 34:6,16,20 35:11 36:19 38:18 39:14,17 40:7 41:2 42:5 44:13 45:11 46:12 47:20		
			measure's 228:1	
			measure/multiple 233:18	
			measuring 21:14 54:21 121:9 122:12 143:8 203:22 225:7	
			mechanically 155:10	
			mechanism 129:1 129:17 204:7	
			mechanisms 13:3 131:18	

methodologies 60:14 146:14 147:3	minority 63:6	38:20 39:1 42:12 45:22 46:8 77:10 77:11	3:9,16	necessary 30:18 141:15
methodologists 109:14	minuses 95:12	Moderator 4:24	MSc 1:14	necessity 153:2
methodology 70:12 174:4,5	minute 182:20 208:17	modes 52:11	MT 3:15	need 7:5 11:17 12:13 13:14 14:22 16:12 27:8,12 29:22 35:16 45:15 65:1 94:18 95:10 97:3 108:20 115:16 125:6,11 127:3 136:5 149:15 159:7 170:18 179:12 185:16 189:20 190:3 191:19 196:21 198:7,14 199:18 204:12 211:3 212:2,4 214:4,15 215:14 215:20 219:13 221:3 226:7 233:19 235:13
methods 4:4 27:15 31:4 32:2 41:22 48:14 52:11 58:2 58:7,16 59:7 60:7 60:10 61:4,11 78:17,18 81:4 87:6 93:15 135:10 146:3,5 237:6	minutes 6:14,18 64:13 96:8 181:5 189:8,17 191:17 238:4,5	modification 190:8	multidimensional 73:19	needed 38:9 43:15 45:2 60:19 137:7 234:18,22 235:15
metric 162:2,3,4 170:2 171:5,6,8 171:19,21 173:4 173:15 174:2,3 177:6 187:3	misinterpreted 214:1	modifications 207:1	multiple 27:15 31:20 32:1,3 56:10 62:14 67:18 71:1 72:9 76:3,15 88:10 90:5,8 95:6 122:8 123:4,10,13 123:21 134:15 164:13,13,14 233:20 234:7	needs 25:20 35:22 60:20 84:1 85:21 130:8 211:8 221:4 222:18,19 236:9
metrics 51:7 52:3 171:12	misleading 151:4	modified 81:18 134:14 189:21	multiplicity 88:10 90:2,4 123:17,19	neglected 15:11
MHS 1:23	misnomer 73:6	Molly 113:4	multi-stakeholder 228:15	Nelson 2:9 19:12 80:9 175:14 218:11
microphone 5:9	missed 158:17 195:18	moment 182:20 190:6 222:3	multi-step 79:14	nerds 122:3 123:6
middle 30:8 182:8	missing 28:1 38:4 38:17 39:13 42:6 42:21 44:17 48:4 56:4,4,6,8,11,13 57:3,5,9,11,17,20 57:21 58:3,7,9,12 59:2,14 81:15,22 84:7,12 86:5,16 89:11 113:22 114:15 127:14 128:18 129:9 149:8 156:20 158:3 191:17,18	months 84:18 110:14 194:3,10 194:16 209:19	MUP 1:13	nervous 227:10 230:1
mike 15:2,15 219:20,21,21 232:22	misunderstood 158:15 196:13	morning 5:3,15 18:7 21:20 47:8 68:18 77:6 100:20 188:15 190:16 195:19	mutable 80:16	never 11:15 110:1 168:22 213:8 218:21,22
mild 46:7	missingness 86:7	Mort 2:6 102:5	mute 151:12	new 2:22 13:13 85:2 92:10 116:9 121:9 147:19 186:2,21 212:16 213:2,14 214:18 217:17 237:21
million 202:3	misunderstood 158:15 196:13	MOSELEY 2:7	mutual 113:7	newer 58:5 215:19
mind 19:17 20:15 21:9 39:13 71:4 208:19 235:3	mix 27:7,13 89:4	motifs 20:8	myth 61:15	NHS 85:22
mind-boggling 12:20	mixer 203:8	motion 112:16	<hr/> N <hr/>	
mine 168:15	mode 41:1,15 202:7	motivate 36:8 55:12	nailed 213:6	
minimal 82:18,22 83:4	model 30:13 53:12 57:19 58:10 82:20 133:16 211:20 217:20 223:1 236:5,10	motivated 36:6	name 168:15	
minimize 44:16	modeling 37:8,11 37:13 53:3 57:14	motivating 36:11	named 109:22 165:1	
minimizing 86:5	models 30:9 37:16 37:17 52:12,15,18 53:18 57:7,16 59:16 60:11,16 82:17,21 85:9 205:12 236:14	motivation 35:8 36:3 80:16 186:22	naming 109:19	
minimum 42:16,17 73:3,6,22 75:5 79:4 150:11	Minnesota 2:13 84:5 166:21 167:13 194:1 216:5	mousetrap 167:22	nation 142:5	
		move 169:8,22 178:13 180:21 186:15 207:3,21	national 1:1,8 2:4,7 2:18,21,23 92:14 93:13 115:8 167:6 167:8 176:13,21 204:17	
		moved 231:9	naturalistic 83:20	
		moving 24:4,12 95:16	naturally 209:2	
		MPA 1:22	nature 13:21	
		MPH 1:18 2:9,11 2:15,16,17,18,21	nausea 44:6 134:22	
			NCI's 134:6	
			NCQA 141:7	
			nearby 185:22	
			necessarily 11:2 17:1 39:20 70:5 79:6 94:18 235:4	

nice 9:18	168:5 169:3	210:21 220:2	91:12 92:7 94:14	144:6
nicely 50:3 158:10	171:14 189:4	observational	96:7,10 97:22	operator 72:15,17
night 97:14	190:9 202:18	83:20 105:13	100:16 103:19	91:8,10 132:2
NIH 173:19	203:19 206:11,13	observations 15:13	109:1,5,18 116:4	151:10 222:5,11
nine 206:9	206:17 208:20	59:22	132:6 136:15	opinion 24:3 33:7
nod 235:18	210:2,13 211:1	observer 135:3	137:10 157:9,22	59:10 85:6
noise 120:16	212:21 213:9	obstructive 230:22	158:2 162:9	opportunities
121:14	214:21 220:19	obvious 61:21	164:19,20 174:14	163:19 175:19
non 58:12,18 59:3	223:20 224:6	223:9	176:6 179:18	opportunity 12:3
221:4	227:20 228:1,16	obviously 12:10	180:20 190:14	16:5 19:3 47:12
nonclinical 86:8	231:17 233:5	28:18 35:1 39:22	194:7,18,20 199:6	101:7 123:11
non-actionable	236:6 237:3,17,20	40:17 41:18 43:20	200:19 201:6	133:6 151:16
16:20	NQF's 205:20	44:18 86:17 114:5	202:22 203:6	185:14 187:1
non-institutional...	228:9	139:7 159:11	205:3 206:21	204:1
176:15	NQF-endorsed	196:21	207:20 208:11	opposed 76:22
non-PRO 33:13	4:18 160:1	occasionally 117:5	212:6 222:2,14	142:10,11 146:4
non-response	number 57:15 58:2	occur 26:12 106:6	230:5,11 232:13	171:12,17 204:2
58:15	58:22 72:19 82:17	195:13	232:18 235:12	210:22 221:10
non-spouse 65:21	102:2 104:14	occurred 6:20	236:2,18	231:5
non-supportive	105:4,18 108:3,4	77:12	OKUN 15:16	optimize 86:16,19
191:14	108:7,10 114:18	occurring 192:20	old 75:4	optimizing 86:4
normal 56:22	121:2,11 132:16	194:5	ollie 155:22,22	option 37:9 46:10
Northwestern 1:16	132:21 133:19	occurs 152:3	ombudsman 93:22	139:21 214:13
21:21 156:11	136:3,11 139:1	October 184:17,21	ombudsmen 73:13	options 46:3 72:8
note 53:2 193:9	147:5 152:12	offer 113:10 156:8	ONC 175:19	94:20
216:13	173:18,20 190:1	237:20	233:13	orange 124:17
notes 16:11 55:11	193:9 201:10,12	offered 101:7	once 56:7 116:9	137:22 151:1
192:1 193:10	203:5 213:21,21	143:15	142:3 175:15	196:1 205:16,17
220:20,21	217:16 220:15	offering 156:3	180:16 197:3	220:4,8 223:3
notion 152:2	222:6,9 230:9	237:20	ones 21:12 41:10	oranges 220:13
211:12	numeric 46:4 70:8	offhand 134:17	76:5 111:13	order 43:17 72:18
novo 223:13 225:20	nurses 74:13	Office 2:4	136:19 142:21	90:18 113:15
227:4	nursing 42:18,19	oftentimes 40:12	150:11	125:8 139:14
NQF 3:13 4:5,16	42:19,20 67:12	oh 8:9 29:2 37:6	one's 8:16	211:10 222:5
16:6 24:15 25:7	73:13,15 74:3	87:14 90:11 103:3	ongoing 10:9	226:12 236:3
25:18 26:22 28:10	77:21,22 79:6	132:5 136:3 137:6	online 146:18,19	orders 177:15
29:13 31:9 36:20	144:18 169:21	151:15 186:14	open 72:13 132:1	Oregon 1:25
40:8 47:11 49:7	N.W 1:9	193:2 196:12,12	185:6	organization 92:15
49:11 50:17 54:1		204:12 213:4	opening 192:8	141:10 142:9,14
61:8,8,21 62:8	O	232:4 236:18	operate 61:1	organizations 54:1
95:7,15 96:17,18	objective 61:1 64:2	238:13	operational 20:5	60:5,12 74:10
97:9 103:8 113:9	64:8,17 66:19	okay 5:3 11:17	75:16 150:14	92:16 93:18
115:18 116:14	174:1	14:22 24:12 26:9	operationalize	141:11,17 142:12
117:16 120:5,6	observable 134:19	31:2,2 32:7,12	125:15	142:16
131:6 143:16	134:21	47:5,7,8 62:4	operationalized	organizers 47:12
158:12,16 160:21	observation 33:21	72:21 76:21 80:8	50:1 226:12	orient 25:17
162:6 163:8 165:8	34:3 44:3 61:17	84:2 85:13 89:4	operations 86:21	orientation 106:21

106:22	outside 10:15 26:21	73:11,19 74:21,22	195:18 203:18	225:16 231:13,17
OTR 2:10	61:7 119:9	75:2 76:3,7 77:11	204:11 206:1,10	pathways 111:22
Ottensbacher 2:10	overall 71:4,6	77:18 107:18	206:22 216:9	113:5 195:13
4:13 24:19 47:7	140:18 152:7	108:7 126:10	227:14 228:8,11	patient 9:10,14,14
ought 6:22 11:10	overarching 7:3	138:15,16 145:3	229:14 232:12	13:16 14:12 15:17
161:20	overestimate 95:4	170:1,2 230:21	237:17	15:19,22 16:21
outcome 13:17	overlap 123:10	pair-wise 57:19,20	participants 132:4	19:15 21:8 24:8
14:13 18:11 27:7	124:20	palatable 211:11	182:22	26:2 27:7,13
29:21 30:2,14	overlaps 128:15	panel 4:12,14,21,25	participate 8:11	28:17,21 29:2,4,7
32:21 33:5 35:15	overreaching	5:13 10:5 21:19	47:13 53:11 93:10	29:13,17 30:1,21
44:6 51:14 52:21	230:18	24:11,14,17 32:9	143:13	33:3,21 34:7,21
58:19 80:19 83:15	oversimplifying	34:14 35:7 72:12	participated 147:5	41:8 44:5 46:7
104:12,14 110:6	203:18	72:14 85:15 97:6	participation 5:16	51:19,20 53:2,4,4
110:14,17 111:19	overview 4:5 24:14	98:3,15,18,18	97:15	53:19 54:11 55:18
113:1,11 118:13	52:7 99:15 102:18	100:6 131:1 132:9	particular 13:15	57:11 58:22 63:4
124:17 130:3	106:1 183:16	148:15 156:12	23:18,19 26:4	63:10,10 64:4
132:15,20 133:2	overwhelmed	163:7 172:6	31:20 62:12 67:4	71:15 74:14 79:8
134:14 138:2,22	100:9 218:14	173:10 175:13	68:12 82:1 83:6	82:12 88:2 92:20
141:6,14 149:20	over-interpreted	176:5 180:17	87:6 95:9 126:22	104:11 105:2,4,20
150:6,8,20 153:3	214:1	184:16 185:4	132:20 140:17	106:5,11,16 108:2
153:12 161:2	o'clock 186:7	186:11 212:19	144:8 146:21	108:16 112:16
172:4,15 179:6,7	O-F 4:1	214:4,7,8	160:18 184:7	125:12,21 132:12
180:6,7 190:12		panels 53:10 147:6	228:19 237:17	132:14,19 133:2,6
194:4 195:6,9	P	147:8 213:13	particularly 11:6	133:12,22 134:6,7
196:5,9,18 198:6	Pace 3:19 4:8 5:3	paper 4:9 24:19	48:12 51:2 79:7	134:10 135:3,5,21
198:12 223:21	19:2 24:10 37:4	33:17 34:10 37:17	99:12 101:19	136:14,16,18
236:9	47:6 62:4 72:11	37:18 38:2 47:16	102:2,3 131:13	146:13 148:4
outcomes 1:3,21	72:21 80:8 81:5,7	62:10,12 83:13	191:13 192:7	149:20 152:5,8
6:2 13:8 19:13,14	81:10,13 84:2	95:9 104:17 113:4	205:5 228:13	153:2 154:4
19:17 20:3,4 21:9	85:13 88:14 91:7	190:20 236:13	230:17 233:7	157:12 160:6
21:10 34:18 35:11	91:12 92:7 94:14	papers 189:2	partly 144:8	162:8 183:1 188:2
36:19 54:3,4,7,21	95:21 159:3	parallel 22:8 67:13	145:17 158:8	190:11 199:17
55:9 62:1 63:13	183:20 193:8	parameters 56:22	partners 54:7	217:14 226:16,16
73:9 80:19 81:20	196:15 209:21	parent 44:15	Partnership 2:22	226:18
82:12 99:13 102:9	224:4,5 236:2,17	parents 44:14	parts 122:15,16	patiently 148:15
102:13,16 104:9	package 103:4	part 22:6 24:13	129:7 188:21	164:17
105:15 108:1	packet 104:1	25:8 26:17 32:17	pass 102:15 109:16	patients 8:2 10:20
127:16 136:17	page 118:6 186:16	34:14 36:13 40:6	170:8 191:1	11:2,4 12:12
141:16,20 143:7	188:17 192:6	40:11 42:8,10,22	208:21 209:3	14:10,17 15:5
150:9 151:3	193:9,17 204:16	79:16 86:20	passed 214:13	16:22 17:9,20
160:17 183:2	220:15 233:4	100:17 102:21	path 100:11	23:19 26:19 27:9
198:2,9 199:4	paid 93:2,17 120:1	106:16,17 113:20	pathway 4:17 97:7	28:15 29:1,8 33:9
215:12,13 217:22	pain 38:20 39:2	115:7 117:4 118:1	100:6,17 102:20	35:17 36:6,8,11
224:18 225:7	42:12 44:6 46:1,4	120:4 124:17,18	133:8,20 189:3,14	36:12 38:20 39:1
228:20 229:18	46:6,7,17 68:12	124:22 128:6	191:12 197:2	41:6,12,13 46:10
230:10,19	68:13,18 69:6,7,7	132:17 137:9	210:1,14,21 211:5	51:22 53:6,17
outline 35:5	69:16,19 70:16	144:14 157:8	211:15,20 212:2	73:10,16 80:21

84:10,15,18 86:10 86:12 91:22 101:2 106:14,18 107:12 107:14 112:10 114:11 118:21 121:2 126:9 128:1 132:16 136:4 137:4,8 139:22 143:10,13 144:16 144:22 145:9,11 146:15,21 149:10 152:17,19 154:7 154:16 155:3 156:5 164:12 194:9,13,15 200:14 202:1 patient's 17:12 patient-centered 1:21 53:21 54:4 patient-child 44:15 patient-defined 19:13 patient-generated 19:14 patient-reported 1:3 6:2 35:11 36:19 54:3 62:1 73:8 136:17 150:9 223:21 Patricia 1:9,12 Patti 4:22,24 7:10 7:14 8:22 19:12 96:9 97:11 124:19 126:15 128:14 130:14 181:3 Patti's 7:11 paucities 141:15 Pause 103:17 109:2 Pawlson 2:11 212:9 212:12,12 pay 22:5 121:18 149:10 paying 67:4 PCORI 54:5 133:16 146:12 237:9 PCP 218:13	PCPs 165:14 peer 33:6 penalizing 14:16 pencil 185:22 people 5:7 7:17 8:2 8:11 11:21 19:22 23:17 27:2 28:21 38:13,19 39:5,15 46:16 66:13 67:6 68:6,15 76:12,15 77:10,18 78:6,7,9 79:18 80:4 86:9 87:9,14 96:10 106:10,15 109:20 111:20 112:5,12 113:2,3,11 115:6 117:8 122:18,21 123:22 135:17 136:3 142:3 143:5 144:5 145:15 146:20 150:16 151:5 154:6,9,19 155:14 156:18 161:7 163:14 169:19,22 171:8 171:13 176:18 185:6 203:22 206:14 209:20 213:9 215:11 219:7 220:14 221:20 222:18 226:7 228:6 229:8 231:5 236:8 percent 38:19 42:11 45:22 81:22 84:19 87:2,11 194:8 percentage 39:1,9 40:20 194:13,15 194:18 percentages 39:6 perceptions 88:22 perceptual 63:14 percolated 180:22 perfect 23:8 perfectly 122:12 Perfetto 2:12 4:19	99:12 124:3 136:9 146:9 156:22 157:5,10,16,20 158:1 159:18 179:5 perform 139:16 performance 25:10 26:1,13,18,20,22 27:4,18 28:5 31:8 31:10,12 32:21 33:12,14 34:6,20 35:11 36:18 37:22 38:8 40:6 42:13 43:9,14,18 45:2 46:9,12,22 47:20 48:2,5,13 49:12 49:15 50:2,19 51:4,7 52:5,9,16 55:13 58:11,20,20 59:4,15 60:3 61:12 62:15 71:3 72:1 79:20 89:7 90:20 95:16 96:2 98:10 99:11,20 100:22 106:20 111:17 112:22 119:7,13 124:18 140:20 153:3,10 153:17 158:12 159:5,11,13 171:16 172:5 180:14 193:6,20 194:2 197:10 198:21 200:6 204:13 207:12 223:11,14 224:1 227:19,22 236:4 performing 26:8 139:15 140:14 performs 147:20 period 77:12 184:21 185:5 202:13 231:3 Permanente 1:15 110:11 111:3,12 person 40:1 44:3 63:17 64:4,21,22	65:1,14,15,18,19 66:1,17 67:3 79:10 87:9 92:20 105:3 114:21 115:9 122:19 133:22 135:1 203:14 personal 24:2 personally 147:14 203:11 228:8 persons 35:18 77:19 92:11 93:3 perspective 67:10 116:15 152:5 237:20 perspectives 67:16 182:12 228:16 persuaded 22:15 pertinent 38:16 perturbation 114:13 Pfizer 2:12 99:13 phase 7:21 125:14 phased 13:1 phases 193:19 PhD 1:12,15,16,17 1:19,21,22 2:1,5 2:10,12,15,19,19 2:21,25 3:15,19 phenomenally 165:21 phenomenon 200:16,17 philosopher 59:20 phone 67:3 72:16 91:9 186:8 222:3 PHQ-9 68:2 84:8 110:11 118:19,22 163:22 171:19 194:6 216:6 PHQ9 144:9 phrase 187:10 phrased 149:18 Phyllis 2:23 18:6 137:12 141:2 204:3 physical 20:1 63:7	71:5 physician 26:5 64:5 64:14 166:10 physicians 111:4,7 112:9 119:5 146:22 pick 38:22 236:15 236:17,18 picking 85:4 picture 102:19 130:15 pictures 124:16 piece 128:20 129:8 129:16,16 168:5 183:15 pieces 16:21 129:15 130:13 149:13 212:1 234:22 pilot 40:8 52:19 114:3,4,22 139:12 215:17 piloted 114:6 piloting 114:8,21 115:10 PITZEN 2:13 84:4 193:22 194:11,14 194:19,22 195:18 203:17 place 14:1 24:22 38:22 39:7,9 40:19 96:4 119:6 157:7 167:12 191:11 195:7 230:13 233:10 placeholder 186:19 placement 113:17 places 39:5 146:17 166:22 170:4 233:10 placing 188:17 plan 187:19 235:19 plane 238:13 planners 165:15 planning 214:11 plans 93:2 94:12 200:14 235:9 play 99:22
---	---	---	--	---

please 5:8 10:1 11:13 13:19 15:15 25:16 32:22 36:14 62:20 64:18 70:11 78:14 97:13 132:2 132:4 151:10 174:7 180:3 183:3 183:20 184:5,22 185:19 186:16 187:8 188:6,16 197:6 210:19 222:3	political 237:7 pooled 43:19 poor 31:13,19 63:7 population 25:21 51:15 58:21 66:22 76:19 78:22 79:21 88:4 89:20,22 104:11 105:6,16 106:4,15,20 107:6 107:15,17 108:13 125:13,16 127:18 139:14 157:12 176:15 179:10 218:4	potentially 55:22 135:3 Potter 176:11,11 pound 162:4,20 pounds 122:14 158:20 161:9,15 161:18 POWELL 2:14 power 82:10 powerful 227:13 practical 131:6 practically 31:6 practice 9:16 10:17 26:6 40:19 55:12 84:21 101:15 114:3,5 115:3 117:21 138:10,18 138:20 139:4,18 140:2 143:4 153:7 153:10,13,16 161:12 166:11 187:11,19 198:7 198:12 200:7 218:13 228:7	prep 98:18 101:5 prepared 184:8 prequel 101:9 104:9 present 1:10 30:6 34:22 53:5 133:6 190:10 224:18 presentation 7:11 33:8 103:18 141:4 185:8 presented 38:12 222:22 presents 52:14 Presidents 37:20 presiding 1:10 press 2:1 72:19 222:6,8 pressure 100:6 122:22 123:1 180:6,9 presumably 111:1 pretty 126:6,6 166:11 203:10 217:15 225:10 previous 48:11 52:17 70:11 185:21 primary 111:1 144:18 169:20,21 178:16 185:15 prime 188:5,8 195:11 216:22 primetime 98:10 principle 86:7 prior 77:12 priori 56:9 priorities 144:1 priority 144:10 private 60:20 PRO 4:7,10,18 7:16,19 9:11,22 9:22 22:12 26:21 33:16 34:5 35:15 47:19 48:1,5,12 50:18 51:3 52:8 52:15 58:11 59:4 59:15 61:12 97:7	120:9 126:9 130:3 134:5 137:7 153:9 153:17 158:12,15 158:19 171:17 175:19 176:12 180:5,8,11 189:16 190:4 191:15 192:7 200:15 225:3,17 235:3 probably 11:1 14:17 22:10 34:3 35:13 39:4,4,6,11 40:16 46:14 57:3 62:16 71:11 87:3 105:7 108:2 117:10 126:11 130:2,4,7 173:5 185:9 188:18 203:18 215:20 220:1 problem 29:10 56:5 59:2 74:18 83:17 84:10 123:19 127:10,19 127:21 128:2,9,21 129:5,6,11,13,13 130:20 131:4 136:13,20,21 137:1 138:7,14 179:9,16,17 187:2 219:13 problematic 70:4 75:8 83:21 problems 67:6 75:16 88:10 95:20 147:12 166:6 procedures 56:14 proceed 110:8,17 110:18 113:13 proceeding 97:19 238:22 process 14:4,7 16:15 30:8 53:12 54:8 61:2 79:15 80:6 99:10 101:6 101:16,18 102:6 110:5,8,11,17
pleased 164:22 pleasure 176:10 pluses 95:12 PM 10:1 26:22 PMs 190:9 202:19 232:14 pneumonia 126:2,4 point 17:15 36:21 42:2 72:16 76:11 82:14 83:11 84:7 84:22 87:22 88:20 94:21 105:5,19 124:19 126:8 127:22 133:19 136:8 137:3 147:2 162:11 167:9,10 179:5 180:8 188:11 189:11 191:19,20 192:2 194:5,5 203:13 206:20 207:8 212:9,13 214:18 216:5 224:3 233:3 237:8 238:18 pointed 106:4 148:7 pointing 124:9 points 81:9 84:16 124:19 132:13 133:15,17,18,22 152:22 170:18,19 185:15 191:3 217:12 policies 60:19 policy 9:16 60:4	portfolios 144:2 posed 43:12 position 132:20 171:15 237:4 positions 177:6 positive 65:9,22 201:18 positively 158:11 possibility 121:13 207:16 225:21 possible 24:5 41:19 72:8 78:9 118:16 189:10 191:6 193:15 214:22 216:20 post-market 13:12 116:8,13 117:3 168:14 202:11 post-marketing 128:17,19 post-production 86:18 post-prostatecto... 107:6 108:6 potential 17:10,14 33:10 52:21 53:7 58:12,16 61:6 105:19 177:18 213:21	potentially 55:22 135:3 Potter 176:11,11 pound 162:4,20 pounds 122:14 158:20 161:9,15 161:18 POWELL 2:14 power 82:10 powerful 227:13 practical 131:6 practically 31:6 practice 9:16 10:17 26:6 40:19 55:12 84:21 101:15 114:3,5 115:3 117:21 138:10,18 138:20 139:4,18 140:2 143:4 153:7 153:10,13,16 161:12 166:11 187:11,19 198:7 198:12 200:7 218:13 228:7 practices 4:9 139:13 197:14,15 197:22 198:8 199:2,3 200:14 213:7 218:18 practicing 53:11 pragmatic 11:20 preamble 101:9 preceded 229:11 precise 125:4 precisely 212:18 predict 71:19 predictive 49:5 55:6 prefer 152:18,19 preferable 86:17 89:9,14 preference 28:21 29:14,18 preferences 71:14 145:15,16 170:6 170:12 Premier 1:13		

111:18 112:2,5,22 113:6,10 116:17 117:5,12,16 118:2 118:8,14,19 119:12 120:5,18 120:20 121:8 125:19 126:13 127:2 129:2 134:14 136:22 137:7 138:1,14,15 139:18 141:5,19 150:5,6,7,13,18 150:19 151:2 154:16 160:10,13 160:16 161:2 172:3,6,13 187:14 188:21 189:6,21 195:4 196:4,8,19 204:6 206:11,15 207:5 211:7,8,22 212:21 214:20 215:10,19 217:9 221:14 229:5,6 232:12 237:3,17	194:6 210:1 221:9 225:18 234:16 PROMIS 108:9 163:22 165:20 166:4 168:6 171:20 218:12 promoted 60:14 prompt 188:1 prompts 67:22 PROMs 11:9 45:4 62:14 67:18 71:1 72:9 85:22 88:10 90:6,8,14 95:6 98:8 108:5 154:8 159:4 189:6 193:18 208:8 210:15 226:15 proof 226:3 227:3 propensity 66:10 properties 104:19 106:2 108:12 210:6 proportion 67:1 118:20 proposed 40:10 186:20 proposer 235:14 proposers 186:21 211:21 Proprietary 60:12 PROs 23:7 44:1 130:1 153:6 169:18 177:1 189:5 200:5 202:18 205:6 208:8 225:6 prostate 107:4 152:11 prostates 107:8 protocols 154:10 prove 161:21 226:21 proven 23:17 provide 33:9 52:4,7 53:7 65:10,16 68:10,14,17 69:5 71:8 90:15 141:19	163:19 164:6 232:9 provided 21:6 184:1 provider 8:14 22:19 26:4 29:3 49:14 51:19 52:2 55:13 92:2 providers 22:9,10 27:10 29:17 31:20 54:2 71:16 74:10 76:4 79:22 91:21 91:22 112:18 123:8,9,20 164:14 166:16 167:5,16 provider-driven 112:7 provides 210:21 211:9 providing 21:15 212:16 provisional 214:12 215:1,12 provoking 131:2 proxies 43:12,13,22 44:14,16 62:22 66:16 67:2 94:19 95:3 proximate 80:18 proxy 41:21 43:17 43:20 44:3,12 62:13 63:5,13,17 63:22 64:21,22 65:6,8,13,14,21 66:3,5,13 67:10 87:19,21 88:2,8 89:10,16 PRO-based 100:22 PRO-PM 4:7,18 8:19 30:21 32:20 40:10,22 41:20 186:21 189:6,16 189:21 192:13 193:13,16 PRO-PMs 4:11,16 96:19 205:6 222:21	psychological 35:7 psychosocial 80:11 80:13 public 52:3 59:10 59:19 60:8,16,20 82:3 184:18 185:6 221:16 229:5,9 232:20 publications 82:6 publicly 229:1 published 82:7 175:6 pull 97:2 158:7 185:19 226:2 231:5 pulling 183:21 purchasers 228:19 pure 149:12 purpose 51:15,17 94:2 114:20,21,22 115:1 179:21 188:9,13 228:1 purposes 60:15 221:5 236:8 purview 61:8 push 23:2 144:11 161:17 pushed 22:14 pushing 167:7 put 15:12 35:5 40:7 79:10 96:16 100:2 100:5 102:19 103:5,8,16 114:3 118:1 123:9 128:12 145:17 147:17 176:2 182:11 186:17 190:20 194:7 197:13 216:10 228:21 puts 203:14 putting 60:16 74:16 100:8 112:21 229:1,17 P-R-O-C-E-E-D-... 5:1 p.m 181:6 182:2	238:21 <hr/> Q <hr/> QI 165:9 qualitative 105:7 105:10 106:8 108:21 145:20 148:6 quality 1:1,8 2:16 2:23 4:6 8:19 21:6 22:21 25:12 27:11 29:10 30:4 31:14 32:21 38:13 49:13,16 51:6 52:2 53:22 61:9 62:2 93:13 94:9 127:20 128:3 129:12 131:5 141:12 150:3 151:5,7 162:14 167:2,3,7,11,14 173:4 182:14 204:13 227:21 228:2 229:15,21 235:8 quandary 78:6 quantitative 105:8 105:11 queried 115:7 question 16:19 17:4 23:3 27:2 38:5 39:18 43:12 44:21 50:13,15 56:8 72:19 87:20 88:9,17 89:21 94:15 108:19 110:7 113:14 118:3 127:9 132:11 133:8 136:5 145:4 146:17 149:18 151:11 152:3 156:16 157:16 158:5 160:20 161:3 163:8 164:21 165:4 174:5 177:22
---	--	--	--	--

180:5 190:21	RADLEY 2:15	165:4 187:12,16	216:16 218:6,11	redlined 187:10
205:15 207:16	raise 124:12,14	188:4 221:20,21	219:10 220:18	redoing 206:4
208:12,14 222:4,6	217:7	reality 84:20	221:21 224:9,15	reduce 230:20
222:8 225:15	raised 92:17 136:1	realized 140:22	225:1 226:15,15	reevaluation
235:2,11,13 236:1	148:20 214:18	155:8	227:17 233:14	202:14
236:3 237:6	raises 22:5	really 6:4,4 9:12,17	237:21	refer 221:17
questionnaire 87:7	raising 176:1	14:6 17:22 18:17	realm 131:15	referenced 54:20
87:8 163:1	RAND 78:15 173:3	22:12 27:3,19	reason 39:20 86:7	referred 56:16
questionnaires	random 174:12	31:13,19 34:4	126:1 157:6 234:2	57:12 80:1
58:14 86:20 87:10	randomized 83:18	36:11 37:22 39:8	reasonable 44:12	refers 49:12 55:8
87:16	83:19	41:14 42:3 43:5	64:11 202:16	refined 212:22
questions 32:10,16	randomly 27:9	44:7 55:21 69:6	226:14 229:19	refining 98:20
35:18 47:21 48:8	range 58:16 60:15	73:16 75:10,18	reasonably 43:21	reflect 11:3 24:8
51:13 58:13 63:15	rapid 131:20	79:14 80:5 85:20	reasons 76:15	182:20 190:5
65:3 67:15 72:13	rash 135:2,4,6,7	86:3,12 87:13	142:20 199:18	reflected 87:3
91:8,11,15 94:6	rate 38:7 40:10,16	88:12 89:16 94:20	recall 14:20 77:8	reflecting 183:18
94:17 110:4	40:18 41:14 48:4	97:2 98:6 99:17	77:11 134:17	reflects 49:16
112:13 124:11	64:5,5 84:18	100:5,7,12 101:5	recapped 100:20	112:6
131:2 132:1 145:6	89:13 91:21	101:7 104:8 105:5	receive 62:3	refusal 59:8
145:12 156:13	119:22	110:7,21 112:3,6	received 98:16	regard 99:1 141:22
163:12 169:3	rates 42:22 58:13	114:11,20 115:8	103:4 184:6	regarding 48:19
222:12	58:16,17 59:7,8,8	115:13 116:13	recertification	51:17 54:8 58:15
queue 72:15 98:2	59:9 77:3 86:4,19	117:10,14,20	232:7,17	59:13 85:17 87:19
132:2 148:13	87:1,10 153:5	118:9 119:1,21	recess 181:7	227:15
151:10	rating 46:4	121:12,12 122:9	reciprocal 72:5	regardless 39:3
queued 148:16,18	ratings 64:3,4,18	122:10,10 123:12	recognize 93:13	69:2
quick 15:10 28:22	rationale 30:16	123:14,22 124:10	94:9 216:14	regards 99:2 156:6
94:17 151:20	126:21 127:3	126:20 127:18	229:15	176:5
164:21 218:8	128:7	129:9,11 130:21	recognizing 13:7	regions 111:13,21
236:1	reactions 141:4	133:7 134:22	recommend 133:13	registration 88:11
quickly 143:20	reactor 4:12 131:1	135:14 137:15	150:1	registries 12:1,17
207:22	180:17	141:18 142:4	recommendation	12:19
quite 23:8 37:14	reactors 99:2	143:4,20,21 145:9	117:15 224:11,13	regression 37:8,10
82:9 83:15,21	102:21	149:3 151:21	recommendations	37:13,17 71:16
86:12 115:19	read 124:7 220:19	152:22 153:1	59:9 185:11,21	81:19
118:14 125:20	220:19	157:13 160:9	209:18	regulatory 131:13
146:7 227:10	readiness 35:9	163:11,14 167:2	recommended	reinforcement
237:21	101:14	167:13,18 169:17	88:19 89:19 147:6	113:7
QWB 174:11,21	reading 65:2	173:14 174:14	172:6	reiterate 67:20
	ready 61:19,22	175:16,17,20	recommending	149:5
	98:9 102:13 163:3	178:3,4,4 179:17	147:15 195:14	reject 23:20 191:7
	163:4 190:14	186:11 192:11	record 35:21 57:11	rejecting 29:9
R	191:3	195:12 198:4	97:19,21	rejoin 96:13 98:1
R 72:21 172:17	real 20:6 28:6,7	200:10 201:14	records 15:4	relate 13:8 24:15
rabbit 51:1	40:15 107:3	202:6 203:3	recruit 143:13	25:7 69:19 122:13
race 34:11 55:19	116:10,18 123:8,9	206:19 207:15	146:15	123:7 151:22
race/ethnicity	143:12 145:19	208:13 213:1,13	red 19:19 80:12	152:11 171:4,6
34:17				
radar 92:19				

179:3 192:13	removes 57:20	requires 20:21	153:5 163:8 170:7	98:22 101:6
related 4:16 20:13	repeated 120:21	51:13 59:17 68:21	170:10 173:9	107:11 109:15
30:3 34:10,19	repeating 190:17	135:7	177:14,15 191:14	112:9,14 113:15
38:16 50:18,20	220:12	requiring 112:11	227:8	118:4,9 119:5
81:16 140:10	replicable 59:17	research 1:21 33:6	responses 41:21	120:10 125:16
162:14 178:20	replicate 59:22	41:4,4,5 44:14	43:18,20 44:3,12	127:15 133:10
210:17	Replication 59:17	45:6 46:19 52:19	65:16 77:5	143:2 144:14
relates 22:9 31:14	reply 163:7	56:5,18 58:14	responsibilities	157:9,18 159:4
100:20 123:1	report 41:9 49:8	59:11 63:3 64:19	189:7	160:1 161:3 167:1
152:6 224:15	75:4,7 76:16	105:8,13,14	responsibility	173:15 186:11
234:1	83:12 126:18	108:21 120:12	205:19,20	191:11 194:20
relationship 26:15	132:14,20 133:2	133:17 148:6	responsiveness	197:3 198:17
65:13 159:12	135:4,5,18 136:4	177:5 221:5 237:4	174:16	199:5 200:8 201:9
relationships 52:20	162:9 183:22	237:8,11,13	restate 198:17	203:13 206:18
relative 9:14 152:6	184:2,14,18 185:1	researcher 79:10	resulted 42:21	209:21 212:15
relatively 12:19	210:4	resident 67:13	results 40:11 57:18	215:17 218:14
42:21 56:11	reported 13:17	residents 42:12	92:1 113:2 142:15	219:15 222:10
152:13	18:11 21:9 40:11	45:22 73:15 77:9	resume 97:17	224:17 226:20
relax 227:9	44:6 79:8 119:18	77:22 79:12	retrospectives	228:22 230:4
relevant 50:6 52:8	152:9 153:3 171:9	resolve 124:13	182:10	232:16 235:4
reliability 13:21	183:2 190:12	127:10,11 128:4	return 169:19	238:9
14:3 26:15 44:1	reporting 52:3 64:2	128:22 130:18	returning 119:4	rigid 192:3 212:1
48:10 77:4 108:18	87:21 104:11	136:19	reveal 145:15,17	rigidity 222:18
114:7 117:19	119:16 120:2	resolves 137:1	revealing 155:4	rigor 118:1
198:22 199:19	134:8,11,11	resources 20:20	review 42:8 105:22	ringer 25:15
213:5 218:3	149:20 171:21	51:22 176:22	108:5,15 185:1,20	risk 30:8,11,12,13
reliable 24:7 68:5	229:1,6,9	respect 8:15 110:9	212:19,21 213:13	30:14,17,19,22
relieve 230:22	reports 44:16 63:1	113:17 118:8	214:4,7,8,14	32:19 33:22 36:17
rely 148:5	63:11 64:16 66:19	145:8 169:2 233:6	reviewed 33:6	48:1 51:3,8,13,17
remark 180:16	74:22 82:4 88:2,8	respond 39:16 40:2	83:13 188:3	51:18,20 52:1,8
remarkable 6:6	184:1	88:15 159:1 163:9	reviewer 191:4	52:10,12,13 53:2
remarks 4:22 5:12	represent 70:17	167:16 170:15,18	reviewers 191:15	53:13,18,20 54:20
141:22 142:1,7	92:12	174:7 224:3	reviewing 6:18	55:2,17 56:18
remember 8:3 14:4	representative	respondent 63:19	234:6	57:6,16,18 59:13
15:9 160:3 192:5	114:4,9 115:13,14	65:7,17 66:5,5	revised 175:15,21	59:16 60:9,14
206:5 236:6	represented 139:14	respondents 65:8	189:3	61:3 80:10 81:1,4
remembering	represents 112:3	responding 64:21	REVISIT 4:17	82:15,19 83:1,3,6
159:22	reproduce 59:21	77:2 140:15	re-baptized 232:3	85:1,7,10 88:4
remind 15:12	require 70:18 82:9	response 28:3 38:7	rheumatoid 160:2	122:1 127:7 151:4
62:21 72:18	224:6 235:13	40:10,16,18 41:14	160:6	152:3,9 192:2
reminded 131:3	required 60:4	48:4 56:9 58:13	rich 151:18	216:7,8 234:17,20
177:13	82:19 83:1 112:21	58:19 59:4,7 77:3	RICHARD 1:13	235:5,10,14 236:5
remission 110:15	208:6,10	78:17,18 85:19	right 18:2,3 19:11	236:9,10,14
111:20 194:3,4,9	requirement 195:4	86:4,19 87:1,10	23:8 29:12 32:7	risks 191:20
194:15	236:21	89:13 91:21	32:13 39:11 47:4	risk-adjusted
remove 36:10	requirements	120:22 122:4	70:14 72:11 77:14	30:15 55:12 61:11
removed 107:8	211:1	140:5 143:18	88:22 90:13 95:21	risk-adjustment

29:22 51:12 53:12 RN 1:17 2:13,16,19 road 23:20,22 24:4 roadmap 141:19 Rob 2:25 25:2 47:1 62:4,6 87:20 88:9 88:14 Robert 4:13 Roberto's 95:11 robustness 58:4 Rob's 188:10 Rogers 82:2 ROI 11:19 role 54:6 61:15 63:10 65:3 230:2 rolled 178:8 room 1:8 91:8 109:21 113:3 115:4 122:2 124:6 145:21 184:17 214:6 222:15 Rooney 2:16 164:18,20 165:4 217:15 219:12,16 Ross 92:9,9 roughly 111:21 round 130:15 180:17 183:3 route 101:16 128:8 routinely 131:16 RTI 2:5 24:18 47:14 184:8 running 85:8 129:3 129:5 runs 151:4 rural 178:17 rush 13:3	SALIVE 2:18 sample 77:21 San 1:22 20:12 137:14 177:4 sat 190:6 satisfaction 23:18 satisfactory 57:4 saw 75:14 77:9 173:12 saying 73:4 88:19 91:19 100:4 107:11 123:5 129:21 130:2 136:15 157:1 161:20 171:2 195:11 196:7 197:13 198:20 206:8 209:15 210:3 211:19 213:4 214:13 219:2 220:3 224:16 226:10 235:6 236:14 says 160:5,17 186:18 204:7 scale 45:1 46:5,6 64:6 68:16 69:8 70:15,17 75:6,17 75:18,19,20,22 76:1 77:19 78:4 78:21,22 121:10 162:5,7,21 164:1 170:10 scales 70:13 71:9 71:19 75:6 76:3 109:21 120:17,22 161:14 164:15 169:13 170:3,7 scarce 221:21 scared 220:15 scars 212:20 ScD 2:2 schedules 5:19 scheduling 184:20 scheme 144:10 school 1:17 2:2,24 183:11	science 59:20 122:8 scientific 60:2,6 61:5 209:2 210:5 score 25:10 26:7 49:15,16 66:10 71:2,7 90:10 scored 90:12 scores 22:8,12,12 22:22 26:3 27:14 30:22 31:3 32:5 35:4 71:5 72:4 95:13 scoring 31:4 scornful 50:11 screen 188:22 screening 68:1 74:21 screwy 122:10 scribble 124:8 script 43:4 se 228:12 second 9:12 37:4 84:22 105:19 106:5 118:6 120:3 137:18 192:5 193:9 219:8 221:19 233:4 section 26:17 32:18 sectional 105:14 sector 60:20 see 9:17 14:6 16:6 23:14 28:22 30:5 30:11,13 38:2 45:13 69:9,18 80:2 85:9 92:5 100:11 104:7 119:11 120:4 125:6 132:5 153:22 154:1 187:9 188:22 189:1,3 190:13 192:2 193:2 197:20 203:8 213:20 221:12,12 227:16 231:11,14 233:3,9,14 238:16 seeing 164:13	179:22 218:1 seen 16:10 96:22 146:21 sees 26:22 segment 76:19 segments 218:4 select 11:10 selected 45:20 52:17 127:4 selecting 52:9,13 53:17 55:17 134:9 193:1,13 selection 66:12 selects 8:14 self 39:14 41:8 76:15 162:8 self-report 33:22 34:2 108:2 selling 137:18 171:13 semi 113:20 send 76:18 150:16 183:20 184:5 senior 38:14 seniors 38:21 sense 8:8,9 13:6 65:18 66:15 80:22 110:5 113:9,17 123:18,20 125:19 127:7 144:22 187:2 189:22 200:20 238:2 sensitivity 45:10 108:18 177:9 separate 82:14 separated 223:4 SEPTEMBER 1:6 sequence 152:12 serious 109:15 serve 150:16 211:20 service 188:2 services 1:24 2:8,14 8:21 serving 63:17 66:22 179:21 SES 34:17	session 182:4,17 186:6 set 42:16,17 60:11 73:4,22 75:5 79:4 82:18,22 83:4,21 95:22 112:16 134:12 163:13 202:13 211:1,13 sets 57:14 189:18 setting 22:16 23:9 23:19 58:21 114:9 115:14,20 125:12 157:13 187:18 204:3 settings 54:16 114:18 144:17 169:19 settled 22:6 severe 38:20 39:2 42:12 46:1,8,8,17 46:18 77:11 severe/horrible 70:18 severity 35:2 73:21 79:3 sexual 107:16 SF 174:18 SF-36 81:21 173:3 173:4,5 174:10 Shaller 166:13 share 155:3,13 shared 82:6 131:14 sheet 103:11 SHEILA 3:17 shifted 169:11 shoes 140:1 short 33:1 142:18 205:11 226:5 shorthand 8:3 show 75:19,21 167:15 174:19 199:2,21 223:5 showed 14:5,7 132:13 showing 52:19 shown 44:14 177:8 shrift 142:18
S				
sad 174:15 Safe 238:19 Safran's 177:13 sake 129:22 130:1 144:21 Saliba 2:17 43:6 46:13 68:10 73:1 73:2				

side 165:9	skills 54:15	somebody 15:14	speaks 9:21 227:2	square 172:17
sign 74:1,5 182:13	skipping 212:4	35:6 44:8 87:15	special 103:15,19	staff 3:13 5:21 6:5
signal 76:18 148:17	slide 6:14 10:1	109:7 117:4,14	108:22 109:8	41:9 77:22 78:22
significance 152:6	11:13 13:19 14:4	150:21 193:21	228:17	79:6,11 182:21
significant 6:20	14:5 15:8 25:16	213:3 223:2 234:4	specialties 92:5	189:11 203:8
31:6 52:20 152:17	26:9 28:10 29:20	237:11	111:2	206:4 231:18
179:16	31:2 32:14,15,22	someplace 10:21	specialty 110:22	238:2,19
similar 18:14 22:19	34:6 36:14 38:2	somewhat 146:6	169:20	staging 54:13
45:11 48:20 50:8	39:11 40:4 43:16	171:1 178:9	specific 26:16	stakeholder 54:18
67:15 108:17	44:11,20 45:3,20	soon 205:2	28:11,12 57:21	stakeholders 7:7
177:8 208:8 220:5	62:19 64:18 66:1	sooner 154:16	64:9 79:20 115:19	54:6 76:6,13
simple 36:17 56:12	67:16 69:3 70:11	sophisticated 58:2	132:13 134:1	78:12 134:15
84:11 95:19	70:20,21 96:17	sophistication	189:12 233:16	140:16,19
111:10 126:6	101:12,12 102:7	141:10,13 143:20	235:19	stand 165:19
161:17	103:16,19 104:21	144:12	specifically 18:19	standard 22:8,11
simpler 124:2	105:9,17 106:7	sorry 11:13 24:21	29:21 47:20	22:22 71:18,19,22
simplify 220:12	107:1,21 108:13	37:7 164:18	specification 115:1	72:6 86:20
simplistic 220:2	108:22 109:6	196:13 200:11,21	125:4 140:9	standardization
simply 156:22	187:8,9 188:6,15	212:11 215:6	specifications	164:7 168:2
212:1 230:20	slides 6:7 15:12	217:5 232:2	125:5,7,17 126:5	standardized 79:16
simultaneous	95:12 98:2 133:21	sort 6:12 73:8 76:5	126:11	159:6 163:13
174:11	slightly 63:7 172:2	78:5,13 79:2	specificity 45:10	166:5
simultaneously	189:3	86:21 87:17 95:17	specified 29:14	standardizing 72:4
141:6 195:14,15	Sloan-Kettering	119:15 135:7	32:3 119:14	158:7
208:2	1:14	144:2 145:6,10	140:11 160:20	standards 61:2
sing 109:11	small 18:8 44:15	150:3,8 156:14	161:4 230:18	155:11 233:13
Singing 109:12	139:1 145:7 188:8	162:17 163:20	232:21 236:4,11	start 11:9 23:14,15
single 56:16,19	smaller 64:1	167:18 178:6,7	specify 114:16	25:6 30:7 34:22
147:15,16 177:1	142:21 189:13	204:15 205:13,21	178:3 234:19	40:14 53:5 73:4,7
sir 219:20	smart 112:12	223:8 230:9,19	specifying 4:11	83:2 85:8 96:4
sit 19:18 151:18	smartest 178:2	231:4 232:6 237:8	44:22 115:13	99:22 103:15
site 93:8 221:17	SMITH 2:19	sorts 234:22	127:19 159:5	110:5 125:15
sites 213:12 221:8	social 8:12	soundness 61:5	spectrum 10:6 11:8	127:5,18 130:21
235:9	Societies 37:20	sounds 204:5	22:13 149:22	132:5 137:11
situation 8:16 50:8	society 61:18	source 73:14	speed 231:6	141:8 176:20
situations 28:7	socioeconomic	sources 27:15 32:1	spend 6:14,17 29:6	179:6,14,15 182:9
143:12	55:20	52:11	233:12	186:6 189:5
six 84:18 110:13	software 57:10	Sox 19:19	spending 21:14	225:12,20 226:7
150:11 165:13	sole 94:2	space 186:20	spent 211:16 226:7	started 24:11 47:10
177:14 194:3,10	solicit 102:22	Spanish 69:10,12	spillover 128:13	73:9,16 76:10
194:16 205:7	soliciting 53:16,19	69:13 70:5	spine 6:11 170:1	98:8 127:9,11
238:4	solution 61:6,7	speak 103:11	spit 203:15	133:21 206:5
six-year 205:4	solutions 14:21	199:20 208:19	split 37:2	starting 100:11
skill 68:22	217:8	212:7 238:10	spoke 102:11	134:21 183:11
skilled 42:18,19	solve 127:20 128:2	speakers 48:11	sponsor 166:9	starts 82:19 96:19
144:18 155:5,5	128:9 129:11	speaking 5:9	spots 207:9	129:2 218:6
169:21	130:20	212:10	Spouses 65:14	state 2:8 53:6 93:3

93:17,20 101:13 167:12 193:16 232:15 stated 177:17 223:10,14 statement 91:20 194:18 227:18 states 53:13 59:21 92:22 93:1 111:21 223:12 state-wide 166:10 stating 138:6 statistical 30:13 37:20,21 57:9,14 58:2 91:20 142:20 statistically 31:6 52:20 177:8 status 19:21 33:20 33:20 34:2 36:5 44:2,10 71:4 106:20 Steinman 54:13 step 48:9 59:6 61:7 101:8 106:5 121:21 126:14 132:16,21 133:9 135:15 136:3,15 160:14,21 204:19 216:21 STEPHAN 1:18 steps 4:22 99:4,11 104:5,6,8 stern 209:15 Steve 13:4 102:10 stick 70:7 stimulate 225:8 stimulates 137:16 stinks 167:8 stock 145:18 stone 9:7 238:11 stones 122:14 158:19 161:10,11 161:18 stop 72:13 108:21 186:7 202:13 stopper 223:6 straight 6:12	straightforward 126:6 166:11 strata 37:11 strategies 51:12 54:10 58:5 63:14 86:16 94:10 strategy 30:1 56:17 87:5 stratification 30:12 stratify 36:17 37:1 37:10 stream 111:5 160:13 229:10 Street 1:9 strengthened 129:19 Strengths/Weak... 4:10 stress 9:9 stretch 204:14 stricter 210:11 strictly 191:1 strike 22:3,4 strikes 192:10 stroke 180:10 stronger 131:19 strongly 22:13 147:15 struck 18:9 102:3 structure 150:6 stuck 233:9 studies 56:19 63:22 study 73:8 77:15 79:2 81:17 83:18 stuff 12:4 114:9 117:2,17 118:5 119:1 122:6 141:1 143:12 145:11,21 146:2 165:16 220:7,8 233:6,7 stumbling 213:22 stupendous 122:6 subgroup 28:17 subject 10:13 60:8 90:16 123:7 subjective 44:5 64:7 134:18	subjectivity 134:13 submit 146:18 submitted 225:19 234:16 submitter/develop... 205:19 submitting 206:16 subsequently 82:6 substantial 237:10 substantially 88:5 substantive 67:22 substitution 56:12 56:15 57:2 87:21 sub-population 86:22 sub-populations 176:17 successful 183:2 suddenly 182:9 suggest 56:19 59:5 113:18 118:15 123:3 211:14 suggested 60:21 195:21 suggesting 198:22 200:4 201:13 202:12 233:19 suggestion 13:22 35:6 137:17 156:15 158:6 188:10 226:14 suggestions 124:10 suggests 53:9 211:5 suitable 10:14 236:7 summarize 211:19 summary 67:19 SUMMERS 2:19 151:12,15 sunset 201:16,18 204:3 sunsetting 205:2,10 205:13 superb 167:14 supplement 93:15 103:7 supplemental	92:19 93:14 94:7 94:10 support 30:17 168:4,8 supported 28:14 supportive 195:8 supposed 43:5 126:1,4 187:16,17 226:4 227:20,21 supposedly 74:6 sure 21:5,12 29:18 33:11 47:9 106:15 109:20 118:14 125:16 128:10 156:21 159:22 175:13 182:16 188:10 196:11 213:13 219:3 234:13,20 238:1 238:14 surprised 77:13 surveillance 13:12 116:8,13 117:4 128:17,19 131:11 131:17 168:14 202:11 survey 63:12 65:4 67:3,11 68:14 92:1,4 138:10,19 139:1,3 209:6 surveys 28:2 58:13 63:4,10 66:9 89:1 89:15 105:11 148:8,9 176:14 suspect 113:2 sustainability 112:7 Sweden 12:1 15:5 213:18 Swedish 87:4 115:6 switch 161:22 symptom 68:2 symptoms 11:3 44:7 76:16 107:16 145:5 synonym 150:12 system 1:23 2:22	3:10 12:18,21 65:21 92:21 110:21 111:16 114:14 115:8 119:3,7,17 121:15 121:19 124:2 134:12 140:15 144:6 169:5,18 187:3,22 233:8 systematic 27:22 45:19 54:17 75:1 78:1 80:6 94:22 189:4 systematically 74:13,20 systemness 118:18 systems 13:2 74:2 S-E-S-S-I-O-N 182:1
T				
table 11:1 16:9 96:13 97:13,14 98:1 103:5 127:13 153:21 161:17 207:13 tables 16:11 96:9 148:20 163:20 230:12 take 12:13 14:1 79:9 89:3 91:7,15 96:7 97:17 99:15 106:1 122:10 140:1 172:2 173:16 175:20 186:14 189:17 190:13 191:10,16 191:22 204:16 213:17 216:15 225:22 231:13 taken 95:5 111:21 120:14 181:7 191:21 takes 8:1 87:13 98:6 155:17,17 213:9 take-aways 131:22				

talk 12:8,9 13:1,20 23:6 25:12 34:10 37:18 47:1 73:12 79:12 127:6 143:9 148:12 161:7 182:7 189:9,19 218:12 220:5 228:4	teams 93:6 technical 52:11 104:17 166:7,14 168:3,8 210:22 237:7 Ted 1:22 2:16 20:10,12,16 137:11,14 150:21 153:21 164:16,18 170:16 171:22 172:1 180:2 210:19 212:8 217:13 223:7 224:3 225:14 227:6 228:12 230:5 Ted's 170:19 Tee-Up 4:9 telephone 2:14,21 72:20 222:7,9 tell 74:14 117:7 138:13 155:2 166:12 202:22 telling 70:3 142:5 tempted 121:20 ten 6:14,17 46:18 64:6 68:16,21 70:16 75:17,18,21 78:3,8,20 87:11 165:8,12 186:5 208:4 226:1 tend 63:5,5 64:1,6 64:16,16 65:15,22 67:14 144:4 tended 74:21 tends 82:8 tenor 222:17 tension 20:2 tentacles 188:19 tenure 204:10 term 49:8,10,21 141:13 150:12 163:21 205:11 terminology 48:18 terms 7:11 26:8 30:19,22 34:7 37:13 39:13 41:7	48:22 49:3,18 50:18,21 62:13,22 66:2,12,20 68:12 69:6,18 81:9 82:14 89:15 90:14 95:2 96:5,19 127:6 128:2,16 129:5,9 136:10 140:12 157:11 200:15,15 210:2 terrific 118:10 territory 142:3 test 76:22 100:3 140:4 155:2 175:17 199:8 213:12 217:22 218:13 219:4,6,8 219:10 221:11 tested 38:19 73:21 77:2,17,21 198:21 215:14 216:2 testing 14:1 38:9 40:6,8,9,11,13 41:3,17 43:15 45:2 49:7 79:20 90:17 110:12 111:19 112:12 115:10 123:8 125:14 139:13 218:2 221:10 tests 221:2 Texas 2:10,19 25:1 167:13 text 54:20 thank 5:4,14,16 6:5 6:5,8,15 9:4,19 16:3 20:10 32:14 37:7 47:5,11 62:3 62:8 72:9,11 73:2 80:8 84:2 92:4 94:12,14 99:3 101:4 103:2,3,12 109:19 124:15 131:1 132:6 148:20 149:2,13 153:17,18 155:22 156:2,10 162:10	171:22 173:13 174:8 175:22 177:3,21 179:20 180:1,16 182:21 183:6,9 186:10 196:13 222:13 227:8 238:17,19 thanks 32:10 85:12 85:14 103:14 104:2 124:3 132:8 132:9 151:15 164:20 Thanksgiving 185:10 theme 10:9 theoretical 52:18 172:10 theory 78:18 112:20 122:4 therapists 36:7 therapy 152:14,16 152:16 thing 9:5 21:7 43:2 63:21 65:12 66:18 71:10,20 80:12 81:1 95:9 111:9 112:14 116:22 117:6 126:22 142:6 143:22 144:3,15 145:6,7 148:3 149:7,21 161:10 163:12 169:16 171:2 175:2,4 178:2 190:16 206:1,17 211:14 213:6 218:19 221:19 223:7 231:4 236:22 things 9:21 15:11 17:16 18:5,13 21:4 25:14 26:16 28:4 30:7 35:2,17 40:3,15 50:14 64:14 67:20 69:11 80:14 94:4 100:3 100:10 102:14	110:4 113:10 115:12 122:9,15 124:14 125:6,13 128:1,11,16 129:20 136:15 143:20 144:7 146:19 155:5,7 169:15 170:5,11 182:19 190:20 197:4 202:10 209:14 215:16 216:19 219:2 220:10,17 221:13 226:3,17 228:6 231:9,10 think 6:3,21 7:7,10 7:12,20 8:7,22 9:3 9:12,16,18 10:6 13:4,7,13 14:11 14:13,22 15:6 16:18,19 17:13,20 18:9,20 19:1,1,2,7 19:12 20:7 21:1,7 22:9,9 24:8 25:19 28:19 29:12 30:19 33:1,2 34:4 36:20 39:4,5 40:12,20 41:14,22 42:2,5,7 43:2 45:12 47:4 63:16 66:20 71:7 71:11 72:3 73:9 80:3 84:1 85:20 86:3 87:3 88:11 89:2,9 94:8 95:6 96:4 97:4 98:13 99:6,19,21 100:7 100:19 101:8,14 101:19 102:10,13 103:15 107:5 108:6,8 109:4,5 110:7 113:8 114:15,16,18 115:2,16 116:5 118:7 120:1,18,19 121:6,16,18 123:17,18 125:3,5 125:10,19 126:12
--	---	---	---	--

126:18 127:3,5,12	228:12 229:3,4,15	221:15 226:8,11	199:14 202:10	223:1
128:13 129:8,14	229:19 230:14	227:1 230:15	today's 161:11	treating 111:20
130:1 131:2,7,10	232:11 236:19,19	234:12	told 73:11 76:13	treatment 15:22
131:18 133:3,5,18	237:12,16 238:13	three-year 201:17	218:15	17:13 110:20
133:20,20 135:9	thinking 7:2 11:9	threshold 70:15	tone 50:11	134:8 152:12
136:5,7,12,12	16:13 20:9 21:3	194:8,17	tool 43:1 84:9,12	treatments 15:21
137:3,22 138:11	68:19 70:22 74:16	threw 161:10 221:3	106:17 142:4,6,14	tremendous 168:9
139:2 140:4 141:5	80:5 89:5,6 98:5	throes 165:16	160:9,15,19	triad 150:3
142:5,7,17,22	98:14,19 121:3	throw 25:15 200:1	tools 68:1 84:21	trial 10:15 83:19
143:20,22 144:4	126:16,17,22	tickets 137:18	142:9,11 159:1	86:8
144:11,20 145:13	136:10 143:1	tie 98:4,22	160:22	trials 134:9
145:14 146:3,6,9	150:17 161:11	tied 130:14 209:1	top 160:3 186:17	trickster 207:9
146:14 147:2,17	179:7 187:8 207:9	ties 128:20	topic 38:1,5 45:14	tricky 80:11
147:22 148:5	209:12,20 211:17	tight 217:11	47:17 51:11	tried 65:5 67:8
149:3 151:4,8	thinks 85:6 104:22	tightly 140:10	topics 180:22	68:14 76:5 105:1
152:10,19,22	third 9:15 37:9	time 5:18 10:8 13:6	TORDA 2:23 18:7	tripped 218:6
154:5 156:3,14,19	77:7	15:20 21:14,15	19:7 141:3 192:10	trouble 5:7
157:10 158:6	third-party 93:4	23:21 29:6 51:14	192:22 193:3	true 51:2 154:18
159:12,15 160:12	thorny 24:21	64:13 72:17 75:22	221:1,7 222:1	209:13
160:20 161:19	thought 5:19 17:15	77:15 84:14 87:14	totally 134:18,21	truly 135:1 161:16
162:6 163:11,12	39:10 72:22 98:11	88:12,20,21 89:8	140:8 144:14	TRUST 4:4
164:3 167:18	100:4 107:2 130:8	89:13 91:10,15	169:3	truth 147:11
169:13,14 170:5	130:14 131:1	96:8 105:5,19	touch 88:13 133:15	try 5:9 20:4,21
170:21 171:14,15	149:1 156:15	116:3 119:6,8	133:17,18,19,22	95:18 98:4,22
172:3,20 173:15	158:2,10 162:17	120:20 122:19	touches 86:3 105:6	107:2 127:10
173:18 174:1,4	188:12 197:14	144:5,7 149:15	touching 144:19	135:10 146:12
175:7 176:1,18,20	198:1 205:17	156:15 170:15	tough 219:11	171:2 175:21
177:20 178:1	thoughts 40:5	173:16 174:13	236:20	trying 25:15 26:3
179:20 180:5,6	184:4	183:10,12 186:4	track 14:13 173:15	30:5 41:12 68:8
188:9 189:9	thousand 61:14	191:16 200:18	226:19	69:14,21 102:19
190:19 191:12,20	164:4 169:8 171:3	202:14 207:8	trail 232:20	127:1,11,20 128:4
192:14 195:6,10	172:14	211:17 213:1	trainer 79:11	128:21 130:18
197:1,12,19	thread 173:11	222:5,11 226:5	training 135:8	157:17 163:13
198:18 201:15	threat 44:20 59:2	231:3 233:13	trajectory 88:3,8	208:5 215:18
202:15,20 203:7,9	84:13	238:19	transition 169:19	Tuesday 184:12
205:1,9,11 206:2	threaten 25:14	times 42:14 48:21	translate 70:6 75:9	turn 5:10 32:8
206:7 209:4,7,15	threats 4:4,6 26:11	116:7 138:18	122:20	103:1 146:10
209:21 210:9,13	32:18	165:13,13 176:16	translated 9:4	237:5
211:7 212:13,15	three 7:11,15 37:2	TINETTI 2:22	234:12	turned 117:10
213:12,19 214:3	83:5 85:16 108:4	tiredness 17:5	translation 69:12	155:7
215:11,13 216:3	130:13 145:11	107:18 108:8	75:10	turning 117:13
216:12 217:7	146:5 148:5 149:4	today 25:12 47:18	translations 177:18	160:16 193:5
218:5 219:6 221:3	149:9 151:20	73:3,20 76:9 80:2	transparency	tweak 19:4 97:3
223:8,18,20	159:15 165:2	94:11 98:6,15,17	59:15,18 61:11	tweaked 16:8
224:14,21 225:4,8	168:20 170:7	102:11 109:8	transparent 29:16	tweaking 147:3
225:10 226:10,13	172:6,10 190:3	137:19 151:19	travels 238:20	twice 131:10
227:5,18 228:3,6	205:1,10 216:21	182:18 183:15	treated 16:2 110:15	two 15:16 17:14

20:13,16 27:16 37:2 39:12 45:10 46:3,20 48:7 61:21 62:11 67:16 68:1,3,4 69:10 70:13 71:6 72:8 75:15 78:19 93:1 94:17 107:5,14 108:3,7 113:5,19 128:11 129:15 132:16,21 136:3 136:11 137:17 139:8 148:20 149:16 159:15 164:21 170:16 172:6 173:2 174:17 177:6 184:2 186:5,7 189:18 195:13 199:11 219:1 221:15 225:21 226:5,11,22 238:5 two-stage 215:18 tying 111:5 type 11:5 69:19 70:12 71:2 233:21 types 28:2 49:3 79:4 222:20 typical 35:1 typically 35:20 52:16 T-A-B-L-E 4:1	underlying 171:5,6 underspecified 200:11 underspecified/u... 234:11 understand 8:15 8:20 10:5 11:14 17:1 20:5 64:15 79:12 92:3 123:12 123:22 137:8 146:7 150:7 167:19 192:6 213:14 215:21 217:2 222:4 226:9 understanding 35:9 52:3 67:6 88:6,18 95:3 106:12 122:22 149:9 198:19 216:10,18 understood 58:6 236:20 under-specified 231:15 unfortunately 15:2 193:9 unified 171:5 uniform 121:6 unintended 117:22 unique 4:15 32:19 47:22 51:2 96:18 97:2,4 202:18 237:19 unit 142:18 143:2,5 units 142:20 universally 89:19 university 1:12,16 1:22,25 2:2,10,19 2:25 25:1,3 62:7 203:12 unmeasured 56:22 unseat 147:18,21 unspecified 231:15 232:22 235:10 unsure 178:7 untested 215:10 unusual 190:10	unwilling 86:11 update 186:1 232:10 updated 204:19 updates 216:15 updating 205:14 up-front 99:7 101:1 128:10 129:15 177:17 urban 178:17 urge 155:14 176:18 urgency 13:6 urinary 107:16 urology 102:14 usability 210:6,7 use 8:5 9:13 12:1 15:15 17:2,8 26:4 27:11,16,20 32:3 37:10 41:21 43:11 43:17 44:16 45:4 45:21 49:21 50:9 62:1,13,22 63:5 66:4,13 68:6 69:13 70:3,12 71:16 78:11 84:8 88:21 89:16 100:2 108:8 114:2 120:21 122:4 125:2,9 129:22 130:21 131:8,17 142:6 144:9 150:14 151:22 152:1 153:9 156:18 157:4,6,8 159:14 160:9 162:7 164:1 169:12,17 170:6 171:19 175:19 176:2,19 177:2 178:1,4,8,12 187:15 188:1 191:6 192:11 193:5 210:7 213:10 222:20 235:6 useful 11:2 56:20 82:9 96:14 99:19	141:18 189:15 192:14 193:14 206:3 210:22 211:9,16 221:8,16 users 101:3 206:14 232:14 uses 49:8 190:9 usual 197:15 212:17 usually 105:22 162:6 utility 153:13 utterly 207:18 208:6	values 26:3 54:14 56:16 57:1,3,11 58:3 71:14 81:15 81:22 Vanna 104:2 variability 74:11 172:21 199:2,3 203:21 variables 34:17 55:20 57:15 66:6 82:18,22 83:3 85:5,7,9,11 variation 48:18 varied 197:22 variety 146:17 147:6 various 36:16 75:5 76:4 146:19 156:5 176:16 179:22 193:19 200:21 222:20 vary 41:14 200:15 vendors 60:13 vendor-driven 12:6 verbal 46:6 68:17 68:21 70:8 76:1 77:19 78:3,7,21 verbally 75:20 version 69:10,10 173:3,3,4 versus 30:12 34:5 51:19 64:2,17 65:7,21 66:17 68:7,21 70:15 71:15 78:3 100:13 115:5,22 134:11 134:11 160:16 163:22 177:14 193:13 Veterans 1:18 veteran's 74:4 view 7:12 180:8 viewed 80:18 virgin 142:3 virtual 151:9 virtually 132:3 virtue 159:5,10
<hr/> U <hr/>			<hr/> V <hr/>	
u 131:4 UCLA 2:17 79:10 Uh-oh 230:7 ultimately 16:2 79:9 90:19 102:9 102:16 113:8 114:12 UMA 2:3 umphrey 155:22 unable 40:1 86:10 86:11 unclear 234:15 underestimate 95:4			VA 173:2 vaccination 126:2 126:5 valid 24:6 25:20 26:1 59:15 68:5 198:11 204:21 validation 197:10 validity 4:4,6 13:21 13:22 14:11 24:13 24:21 25:8,9,13 25:14 26:11,15 28:1 31:14 32:18 38:8,10 43:14,15 44:20 45:3 48:5,7 48:10,17,19 49:4 49:7,9,11,19 50:5 50:20 55:1,3,3,4,4 55:5,5,6,7,8,14,16 56:3 59:3 60:9 61:5 84:13 106:10 106:10 108:18 114:7 117:18 129:6 197:17,21 198:22 199:19 200:13,21 218:2 valuable 16:22 33:10 53:7 203:21 value 56:13 57:21 83:14 114:12 202:15 valued 80:20	

visual 75:19 78:21 98:11 124:15	179:10 180:2 182:17 183:9	139:15 145:12 151:1 153:21	107:7,12 131:3 142:8 217:1	166:20 177:14 182:10,22 183:10
vital 74:1,5	186:1,14,17 187:6	162:3 164:2	weren't 97:14	183:13,15 185:13
voluntary 86:21	187:13 195:22,22	169:11 172:9	101:16	186:12,13 193:11
vulnerable 63:2 191:13 192:7	196:15,19 198:6 199:22 200:6 208:17 209:9,14 210:9,11,12 211:15 213:1,3 217:10,15,17,22 219:2 220:11 224:22 231:13,22 233:14 236:2 238:1,12	176:20 178:19 189:4 191:2 198:11 200:7 206:6 208:5 211:1 235:5,6 236:13 238:13	whispered 109:7 whiz 228:5 wide 58:16 widely 54:20 59:19 213:10 Wilkinson 3:7 154:2,3 WILLIAMSON 3:22 wind 178:19,20 window 205:5 winds 230:21 wire 153:6 Wisconsin-Madi... 1:12 wisdom 143:14 wish 19:22 81:2 117:2,14 woman 227:13 Women 2:22 wonder 220:11 wondered 95:10 wonderful 117:11 120:13 138:5 149:2 164:3 wondering 150:10 Wonderland 50:21 Wong-Baker 69:8 word 21:18 50:10 123:16 233:3,9,14 words 48:21,22 50:14 140:3 150:15 189:12 work 6:3,19 22:21 24:5 33:19 45:13 47:15 54:12 60:6 73:4 76:6 79:11 81:16 85:22 86:5 93:11 105:11 106:9 114:13 120:6 132:7 146:1 150:4 153:21 155:17 164:2,9	196:22 202:7 216:22 223:19 workable 155:21 worked 76:7 83:9 workflow 115:5,22 119:4 153:4 Workgroup 92:10 workgroups 85:4 working 36:4 41:9 84:19 85:3 116:11 117:6 144:6 165:11 167:17,20 171:11 221:17 226:1 works 165:10 167:4 171:15 workshop 1:4,8 47:13 98:7,17 102:3 104:16,16 133:14 163:18 183:2 workshops 184:2 world 20:6 28:7 116:18 122:7,16 151:7 165:5 187:12,16 188:4 218:9 221:20,21 worried 230:11 worse 63:8 worst 167:4 worth 127:8 143:1 149:14 220:3 237:13 wouldn't 161:17 220:16 231:1 wrap 175:12 179:19 180:2 wrapped 211:8 wrapping 176:10 186:6 Wrap-up 4:25 write 234:5 writing 187:6
<hr/> W <hr/>				
wait 32:13 37:4 64:12	250:9,11,12 251:15 253:1,3 257:10,15,17,22 259:2 260:11 264:22 271:13,22 273:14 276:2 278:1,12	ways 18:18 36:16 49:1 74:9 97:4 100:9,11 121:22 122:8,11 126:19 145:21 155:20 167:4 169:14 180:1 198:1 weak 56:17 wealth 217:19 weather 65:6 WEBER 3:21 webinar 185:4,5 website 82:5 83:10 197:4 WEDNESDAY 1:6 Weech 25:2 Weech-Maldona... 2:25 4:13 62:5,6 88:16 90:3,7,11 week 183:12 weighed 162:8 weight 72:5 122:12 162:9 weighting 71:17 weights 71:8,12 90:14,18 weird 207:12 welcome 97:15 143:17 182:4 well-intentioned 117:11 well-meaning 112:12 well-specified 220:8 went 77:4 80:5 97:19,20 98:19		
wait 32:13 37:4 64:12	wanted 42:10 69:4 72:7 84:7 85:1 92:18 94:3 101:4 126:21 149:16 167:10 176:8 177:5 196:10 210:20 wanting 225:17 wants 22:22 121:8 147:18 155:10 234:4 wares 171:13 Washington 1:9 wasn't 15:3 39:21 77:15 190:2 Wasson 2:24 12:11 81:2 199:11 200:18 201:1,7,10 201:13 202:4,20 203:2 waste 142:13 watchful 14:19 watching 87:15 way 15:5 28:22 29:15 36:17 45:16 60:9 64:15 66:14 70:22 72:3 79:19 86:18 97:9 110:7 118:19 121:6 124:1,8 125:9 132:7 133:10 134:22 135:21 136:10 137:22			
wait 32:13 37:4 64:12				
waiting 14:19 91:5 148:14 151:9 164:17 175:10				
waive 5:8				
walk 99:10				
walked 124:4				
walks 130:17				
want 5:15 6:4,5 9:1 13:5,9 14:13 19:18 20:11,22 21:10,11,12 22:7 23:4 24:5 25:12 28:15 29:2 30:8 35:12 36:9,13 38:15 39:7,16 45:21 47:9 55:21 66:19 67:9,20 71:6,13,16 73:1 78:8,9 82:11 88:14 90:19 91:18 96:10,13,16 97:1 97:11 100:21 101:10 102:17 108:4,11 110:3 120:19,19 123:4 124:18 128:22 129:9 130:11 132:1 135:13 136:17 138:17,19 138:21 144:10 149:19 156:21 157:7 158:22 159:17 161:7 164:4,12 165:1,22 165:22 170:9,14 172:15,22,22 173:10,14 176:2				

written 9:7 43:4 51:10 110:7 184:3	P	24:2 24:13 25:8	
wrong 76:14 77:14	p 50:16	20 96:8 144:7 149:7	
WU 3:9 177:22	#	2012 1:6	
230:5,8,14	#2 1:4	2013 111:16	
X	0	238 4:25	
X 203:5 223:12	0.8 172:17,20	25 4:8 84:19 96:8	
234:18	1	26th 184:17,22	
XYZ 160:15	1:00 181:5	3	
Y	1:03 182:2	3,000 77:21	
Y 160:19 234:18	1:55 238:21	3.0 68:10	
Yale 2:22	10 192:20,20	30 87:1 149:7	
yardstick 203:14	205:16	33 4:12	
year 165:13,13	10th 185:13	36 174:19	
214:14 215:2	10:09 97:20	4	
218:11,17	10:30 97:16	40 189:8	
years 58:1 149:7	10:52 97:21	45 181:5	
165:8,12 171:11	100 194:8	450 73:5 79:16	
173:18 203:5	1030 1:8	48 4:13	
204:22 205:1,7,11	104 4:18	5	
226:1 230:15,16	11 192:20,21 197:8	5 109:20 115:10	
232:8	198:20 213:21	50 64:12 178:11	
yesterday 5:6,17,20	110 4:19	500 213:7	
7:12 10:9 21:22	12 1:6 83:3 192:20	55 178:11	
23:13 25:9 33:8	205:18 207:4	6	
38:11 42:14 63:16	12:13 181:6	6 4:2 113:16	
81:18 96:12 98:6	125 4:19	60 121:5	
100:1 102:5,15	13 205:16,20,22	63 4:13	
103:10 106:4	206:8 214:21	64 12:19	
151:19 197:12	133 4:21	65 125:22	
yesterday's 6:19	14 92:5 165:14	7	
young 40:3	188:17 201:10,12	7 113:16	
Z	202:9 204:15	73 4:14	
Z 234:18	205:16,20,22	8	
zero 46:5 64:6	207:4 214:20	8 113:16	
68:16,21 75:17,17	232:5	8:30 1:9 5:2	
75:20 78:3,8,20	15 208:4	9	
138:6,11,13 139:6	15th 1:9	9 113:16 206:8	
140:9 149:3	15,000 111:3,6	9th 1:8	
156:16,19,20	18 208:4	90 81:22	
157:2 179:11	183 4:22	99 4:16	
186:18,19 187:4	186 4:24		
234:1,5	191 4:25		
zeros 226:4	1990s 51:7		
Ziman 59:21	2		

C E R T I F I C A T E

This is to certify that the foregoing transcript

In the matter of: Patient Reported Outcomes Workshop 2

Before: NQF

Date: 09-12-12

Place: Washington, DC

was duly recorded and accurately transcribed under my direction; further, that said transcript is a true and accurate record of the proceedings.



Court Reporter

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701