

NATIONAL QUALITY FORUM

+ + + + +

VALUE SET HARMONIZATION COMMITTEE

+ + + + +

TUESDAY
APRIL 21, 2015

+ + + + +

The Committee met at the National Quality Forum, 9th Floor Conference Room, 1030 15th Street, N.W., Washington, D.C., at 8:38 a.m., Zahid Butt and Michael Lieberman, Co-Chairs, presiding.

PRESENT:

ZAHID BUTT, MD, FACG, Co-Chair
MICHAEL LIEBERMAN, MD, MS, Co-Chair
HOWARD BREGMAN, MD, MS, Epic
CHENGJIAN CHE, MD, Booz Allen Hamilton
CHRISTOPHER CHUTE, MD, DrPH, Johns Hopkins
University
CYNTHIA CULLEN, MS, MBA, PMP, Mathematica Policy
Research
YAN HERAS, PhD, Lantana Consulting
WENDY HOFNER, RN, NextGen Health Care
MATT HUMPHREY, Telligen
RUTE MARTINS, MS, The Joint Commission
ROBERT McCLURE, MD, MD Partners
MARJORIE RALLINS, DPM, Physician Consortium for
Performance Improvement
JOSEPH SCHNEIDER, MD, MBA, FAAP, Baylor Scott &
White Health
ANN SMITH, RN, BSN, MSHA, National Committee for
Quality Assurance
NANCY WALKER, MHA, RHIA, Trinity Health

NQF STAFF:

HELEN BURSTIN, MD, MPH, FACP, Chief Scientific
Officer

JASON GOLDWATER, MA, MPA, Senior Director

ANN HAMMERSMITH, JD, General Counsel

SHARON HIBAY, RN, DNP, Senior Director

ANN PHILLIPS, MHA, Project Analyst

KATHRYN STREETER, MS, Senior Project Manager

MARCIA WILSON, PhD, MBA, Senior Vice President,
Quality Measurement

ALSO PRESENT:

KEVIN LARSEN, MD, Medical Director, Meaningful
Use, Office of the National Coordinator of
Health IT, Department of Health and Human
Services

JULIA SKAPIK, MD, MPH, Medical Officer, Office
of the National Coordinator for Health IT,
Department of Health and Human Services

TABLE OF CONTENTS

Welcome and Introduction of Staff.	4
and Co-Chairs	
Committee Introductions and Disclosure	7
of Interest	
Setting the Stage.	18
Committee Discussion - Prevailing Issues in.	22
Value Set Harmonization	
Value Set Selection Analysis	121
Jason Goldwater, MA, MPA,	
NQF Senior Director	
Developing a Criteria.	185
for Value Set Harmonization	
Full Panel	
Developing a Process for Value	200
Set Harmonization	
by Jason Goldwater/Full Committee	
Testing the Pilot Process for.	266
Value Set Harmonization	
by Jason Goldwater/Full Committee	
Public Comment	317
Next Steps	317
by Kathryn Streeter	
Adjourn.	322

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

2 8:38 a.m.

3 MR. GOLDWATER: Okay, so why don't we
4 go ahead and begin? I know there are a couple of
5 people that are supposed to be here that have not
6 arrived yet, so we will do our best to catch them
7 up when they are here. Hopefully, they will be
8 here shortly. Apparently, as I told you before,
9 I heard the traffic is nightmarish, so that might
10 be causing some particular delays, but we don't
11 want to wait any further.

12 So on behalf of the National Quality
13 Forum, I want to welcome all of you to this very
14 important and, hopefully, a very, as much as
15 value sets can be, entertaining discussion over
16 the next eight hours. My name is Jason
17 Goldwater. I'm the Senior Director here at the
18 National Quality Forum overseeing the Value Set
19 Harmonization Project.

20 And I really do want to take a few
21 moments to thank all of you for attending this
22 morning and into this afternoon. I realize a lot

1 of you came from places as long as the West
2 Coast, and then some of you came from Howard
3 County and it probably took you the same amount
4 of time to get here, from what I understand, just
5 about.

6 We have a pretty full agenda ahead of
7 us today. There's a lot of issues to discuss, so
8 I want to turn it over to my colleague, Katie
9 Streeter, who is the Senior Project Manager and
10 basically runs the day-to-day operations of this
11 contract, to sort of go over the agenda. Katie?

12 MS. STREETER: Thank you. Good
13 morning, everyone. We'll be starting off today
14 by doing introductions. The staff will introduce
15 ourselves, and then our General Counsel, Ann
16 Hammersmith, will lead the Committee
17 introductions, and we'll be going through a
18 disclosure of interests exercise.

19 We'll then be talking about ground
20 rules for today's meeting and setting the stage,
21 our expectations. The Committee will then first
22 dive into our first discussion about Prevailing

1 Issues in Value Set Harmonization. We'll then be
2 discussing the benefits of value set
3 harmonization: what are we looking to get out of
4 this project?

5 Staff will then summarize an exercise
6 we performed, a preliminary analysis for value
7 set selection. The Committee will then be
8 talking about developing a criteria for value set
9 harmonization before we break for lunch at 12:30.
10 We'll then be talking about developing and
11 testing a process for value set harmonization.

12 And, lastly, we will break for public
13 comment. I would like to remind everyone that
14 this meeting is open to the public, so we may
15 have members, NQF members, and members of the
16 public listening in. And then we will adjourn by
17 4:00.

18 And just a reminder, the restrooms are
19 out past the main conference area past the
20 elevators on the right. We will be trying to
21 stick to our break and lunch time as best as we
22 can. So we have two breaks at 10:45 and 3:30.

1 Lunch will be served at 12:30, and we plan on
2 taking a 30-minute break then.

3 And if you have any issues connecting
4 to Wi-Fi, we do have -- I believe we have signs
5 around here on the table that lists the log-in
6 and password, or you can send me an email if you
7 have any issues and we can have our IT people
8 help you out. Ann?

9 MS. HAMMERSMITH: Thank you, Katie.
10 I see a few familiar faces, so some of you may be
11 familiar with this part of the meeting. But I
12 will go over it with you, and then we will go
13 around the table and we'll have you disclose.

14 The Value Set Harmonization meeting,
15 it's not a CDP project, it's not a MAP project.
16 It is other, which we mean affectionately. But
17 we still have to do disclosures of interests. My
18 understanding is that all of you are subject
19 matter experts, so you got our long form where we
20 asked you details about your professional
21 activities.

22 So what we will be looking for you to

1 disclose today is if you were involved in
2 anything that directly relates to the subject
3 matter before the Committee. Just because you
4 disclose does not mean you are biased or that you
5 have a conflict. Part of the reason we do this
6 is to be open, to be transparent, so that all of
7 you can know where each other are coming from and
8 also so that the public will know where you are
9 coming from.

10 We are particularly interested in your
11 disclosure of grants, research activities, or
12 speaking engagements, but only if it relates to
13 the subject matter before the Committee. Please
14 don't summarize your CV. Just keep your
15 disclosure to the subject matter before the
16 Committee.

17 I want to remind you of two things
18 before we disclose. You sit as an individual on
19 this committee. You're not representing your
20 employer. You're not representing anyone who may
21 have nominated you to serve on the Committee.

22 In addition, I want to remind you

1 that, unlike many conflict of interest processes,
2 we're not just interested in disclosures of
3 monetary interests. Because of the nature of the
4 work that we do and that all of you will do in
5 this committee meeting, we're also interested in
6 activities, again, that directly relate to the
7 subject matter before the Committee.

8 And you may not have been paid for
9 them. You may have sat on a committee for your
10 professional society that's relevant to the topic
11 today. You know, just because money hasn't
12 changed hands doesn't mean that it shouldn't be
13 disclosed.

14 So with that, let's start the
15 disclosures. Tell us your name, tell us who
16 you're with, and if you have anything to
17 disclose. And, Dr. Tcheng, I will call on you at
18 the end of the disclosure. So let's start with
19 the co-chairs. Dr. Lieberman?

20 CO-CHAIR LIEBERMAN: Hi, I'm Mike
21 Lieberman. I'm the Acting Chief Health
22 Information Officer at OHSU, Oregon Health and

1 Science University. I have no significant
2 disclosures.

3 CO-CHAIR BUTT: Good morning. I'm
4 Zahid Butt, CEO of Medisolv. We are a quality
5 measurement software vendor. We do use value
6 sets in many of our applications. I do not have
7 any other disclosures to make.

8 MEMBER HUMPHREY: Matt Humphrey. I
9 work as a Solutions Delivery Manager at Telligen.
10 Nothing to disclose.

11 MEMBER CHUTE: Chris Chute, Bloomberg
12 Distinguished Professor of Health Informatics at
13 Hopkins, also Chief Health Research Information
14 Officer at Hopkins. My disclosures are I chair
15 the ICD-11 Committee for the World Health
16 Organization. I also sit on the Joint SNOMED ICD
17 Harmonization Committee.

18 MEMBER SMITH: Anne Smith. I'm
19 Director of Measure Validation at NCQA, National
20 Committee for Quality Assurance. And we develop
21 value sets for quality, for our quality measures.

22 MEMBER CULLEN: Cynthia Cullen,

1 Mathematica Policy Research. We're a social
2 policy research firm. We do clinical quality
3 measure development and develop and use value
4 sets.

5 MEMBER McCLURE: Rob McClure. I'm
6 deeply involved in this subject matter. I'm a
7 consultant to ONC, involved in helping to do
8 value set harmonization and value set evaluation
9 for the quality measures.

10 I'm a consultant to the National
11 Library of Medicine in the development of the
12 VSAC, which is used to house and support the
13 creation of value sets around all of those
14 things. I've been doing value set development
15 work for a long time. I'm a co-chair at HL-7,
16 Vocabulary Workgroup at HL-7, and involved in the
17 development of the standard that defines how
18 value sets are defined.

19 MEMBER HERAS: My name is Yan Heras.
20 I'm an independent consultant, and I'm actually
21 currently working on leading the QRDA
22 implementation guide work for CMS, so that

1 involves some value set and also participating in
2 the eMeasure development for hospital side. So
3 that's my disclosure.

4 MEMBER SCHNEIDER: Joe Schneider. I'm
5 Chief Medical Information Officer of the North
6 Texas Division of Baylor Scott and White Health,
7 the old Baylor. I'm a practicing pediatrician at
8 UT Southwestern. My disclosure probably comes in
9 as I chair the Practice Management Council at the
10 Texas Medical Association, which is on the record
11 as opposing ICD-10.

12 MEMBER WALKER: Good morning, this is
13 Nancy Walker. I'm the Director of the Quality
14 Health Record at Trinity Health, and I use the
15 value sets in evaluating our eMeasures for all
16 the facilities that we have.

17 MEMBER HOFNER: Hello, my name is
18 Wendy Hofner. I'm with NextGen Health Care. I
19 am currently the Director of Meaningful Use
20 Services, and we use value sets within our
21 quality measure program. I do not have any
22 disclosures.

1 MEMBER RALLINS: Good morning, I'm
2 Marjorie Rallins with AMA-PCPI. Of course, we
3 develop measures, we conduct measure testing and
4 develop value sets in developing specifications.
5 I also sit on the Content Standards Committee
6 that reports into the HIT standards work ----
7 excuse me. The Content Standards Workgroup that
8 reports into HIT Standards Committee of ONC.

9 MEMBER CHE: My name is Chengjian Che,
10 I go by Cheng. So I work for Booz Allen
11 Hamilton. I used to be an EH measure developer,
12 so I was developing the value sets. Now I'm the
13 value set user. Nothing to disclose.

14 MEMBER BREGMAN: Howard Bregman,
15 Director of Clinical Informatics at Epic, the
16 electronic health record vendor. And I have
17 nothing to disclose.

18 MEMBER MARTINS: Rute Martins with the
19 Joint Commission, wherein we develop eCQM, so we
20 develop value sets. We're also an eCQM receiver.
21 No conflicts to disclose.

22 MS. HAMMERSMITH: Okay, thank you.

1 And, Dr. Tcheng, are you on the phone? Dr.
2 Tcheng? Okay, guess not. Any other Committee
3 members on the phone? No, okay.

4 Thank you for the disclosures. Before
5 I leave today, I want to remind you that we look
6 to you to help us make the conflict of interest
7 process work. Part of what that means, in
8 addition to disclosing, is that if you're in the
9 meeting and you think you have a conflict or if
10 you think one of your Committee members has a
11 conflict or is behaving in a biased manner, we
12 ask you to speak up.

13 You can do it in real-time. If you
14 don't want to do it that way, you can approach
15 your co-chairs who will work with NQF staff or
16 you can work with NQF staff directly. What we
17 don't want is for you to sit there thinking, oh,
18 maybe I have a conflict, or I know that so-and-so
19 is up to their eyeballs in something and they may
20 be biased. We really want you to tell us in
21 realtime.

22 So with that, do you have any

1 questions, comments? Okay, thank you.

2 MR. GOLDWATER: Okay. Thank you all
3 very much for your introductions. So we'll take
4 a few moments and introduce ourselves since we'll
5 be with you today and for the remainder of this
6 contract, which will extend into next year.

7 So as I mentioned before, my name is
8 Jason Goldwater. I'm a Senior Director here at
9 NQF. I've been involved in health IT for about
10 20 years now, starting with the HIPAA X12
11 transaction set standards, when those were
12 implemented.

13 I spent a good portion of my career at
14 CMS. Actually, it was HCFA when I first started,
15 if we can all remember back to those good old
16 days. And spent a lot of time with the Office of
17 Clinical Standards and Quality, which apparently
18 has now also been changed to the Center for
19 Clinical Standards and Quality, working on a lot
20 of software for manual record extraction for
21 quality measures, including the CMS abstraction
22 reporting tool which I think Matt Humphrey, who

1 is here, is now taking over those duties.

2 So I have a long relationship with
3 value sets, standards. I've attended and
4 participated in SNOMED groups, HL7 standards,
5 X12/HL7 harmonization, which was a lot of fun.
6 And also spent a lot of time working with ONC on
7 a variety of projects, including the SHARP
8 projects, as Chris may remember, where I was the
9 PI investigating and doing an evaluation of
10 those.

11 Katie?

12 MS. STREETER: Thank you. Hi, I'm
13 Katie Streeter. I'm Senior Project Manager here
14 at our Quality Measurement Department at National
15 Quality Forum. I've been here for about four and
16 a half years. I've worked primarily on many
17 different consensus development projects for the
18 endorsement of performance measures. And more
19 recently, I've started to become more involved in
20 the health IT-related projects.

21 MS. PHILLIPS: Hi, I'm Ann Phillips.
22 I'm a Project Analyst here at NQF. I work on

1 most of the health IT projects with NQF. I
2 started with transition of the QDM. I work with
3 eMeasures. I work on HIT patient safety and with
4 the Value Set Harmonization Project. I've been
5 here about a year and a half.

6 DR. HIBAY: Good morning. I'm Sharon
7 Hibay. I'm one of the Senior Directors here at
8 NQF. I want to welcome everyone, it's nice to
9 put some names and faces together that I've been
10 working with for a long time.

11 I've been in the measurement space
12 since before 2000. And probably my greatest, or
13 most relevant work, with the value sets is
14 working with lots of you on the Meaningful Use 2
15 measures, retooling -- actually, back to
16 Meaningful Use 1 measures.

17 So I worked as a contractor with CMS
18 -- with PQRS, Meaningful Use, ACO measures. In
19 addition, I've worked very intimately with ICD-
20 10, ICD-9, SNOMED. I think we're all saying the
21 same sort of stuff. And then after I did a stint
22 with CMS contracting, I was Director of

1 Performance Measures with the American Board of
2 Internal Medicine where I oversaw about 1300
3 different measures for their inventory.

4 So I'm very happy to be here and share
5 and build this process with everyone.

6 MR. GOLDWATER: Okay. So I want to
7 take just a few moments to set the stage for --
8 oh, sorry Marcia. I forgot.

9 DR. WILSON: Hi, I'm Marcia Wilson,
10 I'm forgettable Senior Vice President of Quality
11 Measure, and I oversee the measure endorsement
12 and measure selection processes. Thank you.

13 MR. GOLDWATER: It should also be
14 noted Marcia is my boss. We know how my
15 performance review will go at the end of the
16 year. Thank you, Sharon, for pointing that out.

17 I do want to take a few moments to set
18 the stage because we do have a fairly packed
19 agenda, and we only want to keep you all here for
20 a day.

21 So setting up some ground rules and
22 some logistics. So first and foremost, I realize

1 this is an all-day discussion on value sets. So
2 the coffee is plentiful and it is behind me.
3 Feel free to get some whenever you need to.

4 We understand, in working with value
5 sets, terminology is incredibly important. All
6 of you are experts in various terminologies and
7 have used them significantly throughout most of
8 your career, I would assume. But we don't want
9 to be spending a lot of time discussing the ins
10 and outs of terminology. It's important, but we
11 really need to work on building a consensus to
12 this group on how we will do value set
13 harmonization.

14 We want to work towards the defined
15 meeting objectives. That is the wish of our
16 client who is funding this project, who will be
17 here, I'm assuming, at some point. And we will
18 talk about what those meeting objectives are as
19 we move throughout the presentation.

20 The staff here, Katie and Ann, will
21 maintain a list of important but out-of-scope
22 parking lot issues that will be tackled at future

1 meetings.

2 Please know that we are recording this
3 meeting, as is standard process for every NQF
4 meeting. So please speak into your microphone
5 when you have something to say. If during the
6 course of our discussion, you want to pipe in,
7 chime in, whatever the case may be, just turn
8 your placard to this, and I will call on you.

9 I would ask that when you are making
10 comments, please keep them as succinct as
11 possible. I realize we all have a lot to say,
12 but we do also have a lot to get through in the
13 next eight hours. So I want to make sure we try
14 to get everything done so that we are proceeding
15 along as we need to, both for our client and for
16 the purpose of this project.

17 Members of the public will have the
18 opportunity to provide comments throughout the
19 meeting. Verbal remarks should be brief, and any
20 details should be submitted to the staff.

21 So I don't know -- I'm assuming there
22 are people here who know a lot about NQF, but I

1 don't know if everybody knows everything ----
2 what NQF does. So I want to turn this over to
3 Ann just to give you all a brief description of
4 what NQF does.

5 MS. PHILLIPS: The National Quality
6 Forum is a private, nonprofit, voluntary,
7 consensus standard-setting organization. The NQF
8 operates under a three-part mission to improve
9 the quality of American healthcare.

10 Our aim is to build consensus on
11 national priorities and goals for performance
12 improvement and working in partnerships in order
13 to achieve them, endorsing national standards for
14 measuring and publicly reporting on performance
15 and promoting the attainment of national goals
16 through education and outreach program.

17 Our membership is broken up into eight
18 councils: consumer, health plan, health
19 professionals, provider organizations, public and
20 community health agencies, purchasers, quality
21 measurement research and improvement, supplier
22 and industry.

1 MR. GOLDWATER: So I want to now take,
2 again, a few moments and describe for you the
3 project. I know we had an orientation for all of
4 you where we went over just sort of the basic
5 highlights of what we were charged to do, but I
6 want to get a little bit more specific because I
7 think that will help guide the discussion.

8 NQF is defining value set
9 harmonization as the process by which unnecessary
10 or unjustifiable variance will be eliminated from
11 common value sets and electronic clinical quality
12 measures by the reconciliation and integration of
13 competing and/or overlapping value sets.

14 Under your guidance, we are looking to
15 develop and pilot test a harmonization approval
16 process to promote consistency and accuracy in
17 eCQM value sets. These harmonized value sets
18 will also provide a basis of gap analysis and for
19 examination of face validity of future value
20 sets. It will also offer guidance on how
21 approved value set status should be integrated
22 into our endorsement process of electronic

1 clinical quality measures.

2 The project is going to address the
3 following issues: what are the harmonization
4 criteria for value sets used in eCQM development
5 and when is it applicable? Will measure
6 developers, and there are quite a few of you
7 here, be mandated to demonstrate they have
8 actively utilized the Value Set Authorization
9 Center, or the VSAC for short, harmonize value
10 sets in eCQM development, and what components of
11 this process apply to the review and approval of
12 newly-submitted value sets and how should that
13 process be structured?

14 We will address what the role of value
15 set authors and stewards in responding to
16 recommendations for changes or additions to value
17 sets. How are these recommendations for
18 additions or changes in the value set content
19 integrated into the existing VSAC catalog, and
20 then how does this process and approval integrate
21 with or impact our overall measure endorsement
22 process?

1 The deliverables that we are
2 responsible for from now through the end of the
3 contract: a harmonization process for resolving
4 missing, duplicate, competing, or otherwise
5 problematic value sets; ground rules for measure
6 developers on the use of endorsed harmonized
7 value sets to build measures; and then guidance
8 on policies and procedures for coordinating this
9 harmonization work with the VSAC.

10 So as you can see, fairly easy things.
11 It should be a very short meeting.

12 Our time line and milestones. So
13 we're meeting today, and we will, hopefully, come
14 up with a process that we will then start to
15 pilot with our technical expert panel. We will
16 identify test measures, a couple of them, to use
17 this process on. We will develop and draft the
18 harmonization approval process, and then we'll do
19 an iterative test and report back to you the
20 results of that.

21 The Committee charge. The Committee,
22 your committee, will provide guidance in the

1 development of this process and provide input on
2 the identification of variance in value sets,
3 criteria for evaluating variance in value sets,
4 and an iterative pilot process for resolving this
5 variance.

6 And I should note here that we do have
7 two co-chairs, Dr. Lieberman and Dr. Butt, who
8 have graciously agreed, we did not force them
9 against their will, to be co-chairs of this
10 committee. And so they are going to help us
11 steer this discussion. I think all of you know
12 them and know them well, so they have significant
13 and extensive expertise in this area. And we
14 asked them to be the co-chairs to help facilitate
15 this. They also are very familiar with NQF and
16 have worked with us in the past.

17 The ground rules for today is to
18 identify the basic issues surrounding value sets
19 and devise methods to potentially correct these
20 problems. The focus is a proposed solution,
21 which is very important to our clients, which is
22 Office of the National Coordinator, CMS, and NLM.

1 It is vital that by the time we get to 4:00, we
2 construct a proposed methodology. We actually
3 were thinking about we were going to hold you
4 here and not let you go back home until we have
5 one, but I thought that was a bit extreme, quite
6 honestly.

7 The co-chairs are here to facilitate
8 the session, identify additional information that
9 might be useful to the Committee, and help keep
10 the project on track.

11 So let's begin our discussion. So I
12 want to first of all, again, I know a lot of you
13 know a good deal about value sets, but we do want
14 to have just a basic, even understanding of the
15 life cycle of a value set. So I'm going to turn
16 it to Ann to walk you through this.

17 MS. PHILLIPS: Okay. This was new to
18 me, but I asked the NLM exactly how a value set
19 is published in the VSAC, and it starts
20 conceptualization, which happens outside of the
21 VSAC.

22 The author creates a new value set,

1 and that value set is drafted. Then the author
2 submits the value set for a steward's approval,
3 and that steward can be within the organization
4 or in an outside organization. And that steward
5 will review the proposed value set, and, at that
6 point, the steward can reject it, and the author
7 has to redraft it or abandon it, or the steward
8 approved it.

9 Once the approved value set is
10 approved in the VSAC, it's ready to publish. Now
11 proposed value sets and draft value sets are
12 listed in the VSAC. They are not publicly
13 accessible, but if you have authoring privileges,
14 you can see that there are many draft and
15 proposed value sets that have not been approved
16 and are not published.

17 However, once the value set is
18 approved, it is ready to publish. And publishing
19 is as simple as pressing a button, and your value
20 set will appear as a published value set after
21 midnight on the day that you press the publish
22 button.

1 The VSAC publishes a value set, and it
2 doesn't undergo any kind of updates unless it's
3 associated with an eCQM. Every January/February,
4 that process begins and is completed by May. And
5 those are the value sets in eQMs that are used
6 in federal programs. Currently there are no
7 other programs that require that value sets be
8 reviewed yearly, only the eQMs used in federal
9 programs.

10 So once the value set hits that, hits
11 the VSAC, unless it's looked at in a federal
12 program, it's going to stay, unless someone
13 outside of the Value Set Center initiates some
14 kind of update.

15 MR. GOLDWATER: So before we start the
16 discussion, somebody new has entered the room.
17 And she is our Chief Science Officer, so I do
18 want her to introduce herself. While you have a
19 mouthful of food, it's not excuse. So feel free.

20 DR. BURSTIN: That was the worst
21 possible timing, as well as the worst possible --
22 you don't realize how hard it is to eat a hard-

1 boiled egg while somebody calls on you.

2 Good morning, everybody. I'm Helen
3 Burstin. I'm the Chief Scientific Officer.
4 Thanks to so many of you for coming back. We've
5 had many of you on prior committees, and thanks
6 to all of our new folks, as well.

7 We're really excited about this new
8 work and continuing to sort of push the field
9 forward and sort of building these key building
10 blocks of eMeasures. So delighted.

11 Apologies for being late. My 84 year
12 old mother decided to have chest pain at 8:00,
13 and the daughter doctor is usually pretty
14 critical to those discussions. She's fine.

15 So anyway, thanks so much and looking
16 forward to the day.

17 MR. GOLDWATER: Okay. So I want to
18 start the discussion, and I'm also going to let
19 Michael and Zahid lead this, as well. So again,
20 leveraging all of your expertise and knowledge,
21 can you discuss with us what you believe the
22 major issues around value sets are and have been?

1 Dr. Chute?

2 MEMBER CHUTE: Well, I'm still a
3 pointy-headed academic. Now it's on tape. I
4 guess I want to center around something that I
5 thought you missed in your overarching goals and
6 scope, and I would articulate that as shared
7 principles for value set generation and use that
8 would engender harmonization out of the box.

9 And you know, I'm naive in this space,
10 as many of you know. But I'm curious if, for
11 example for quality metrics, there is a principle
12 that all value sets would be drawn from a
13 parsimonious, non-overlapping, specified set of
14 terminologies and classifications.

15 The obvious candidate are the
16 meaningful use suspects that, for example, if
17 you're going to specify a medication, thou shalt
18 an RxNorm code, thou shalt not use NDC, thou
19 shalt not use NDF or whatever may be in fashion.
20 But one would pick a --- the principle would
21 articulate what is the domain from which any and
22 all value sets would derive.

1 I submit that if such a principle is
2 not in place, if organizations, communities,
3 whatever, are free to derive value sets from any
4 terminology they choose, or worse, make their own
5 pizzas, we will never be able to achieve any
6 meaningful harmonization.

7 MR. GOLDWATER: Dr. Rallins?

8 MEMBER RALLINS: So I wanted to build
9 on Dr. Chute's comments. And Chris, there are
10 some principles that the value sets that are in
11 federal programs were developed against, and that
12 happened in 2011. But I do -- you know, I do
13 agree with you that you've got to have a set of
14 principles to build from.

15 In addition to that, those guidelines
16 that the measure developers are using -- when the
17 Standards Committee developed those guidelines,
18 it was the intent on what you should report
19 quality measures with, not how you actually
20 capture that. So that's a -- you know, I think
21 that's an important distinction to keep in mind.

22 CO-CHAIR LIEBERMAN: So could I ask a

1 question? So what is the current state of
2 affairs in that manner? Does the VSAC ---- they
3 do have a set of terminologies that they
4 currently use and it's limited, isn't that
5 correct? To the terminologies you referred to as
6 part of meaningful use.

7 MEMBER RALLINS: Well, they were --
8 those are the ---- for the measures that are in
9 meaningful use, those are the guidelines that we
10 follow. And they're developed in accordance with
11 the -- I don't want to get into too much
12 technical detail, but we've took the data
13 elements in the categories that are used for the
14 quality data model and developed recommendations
15 against those.

16 MR. GOLDWATER: So I want to point
17 out, and we are probably -- we are going to talk
18 about this a little later. So we took on some
19 pre-work analysis with the help of NLM before we
20 met today, in order to see if we were able to
21 identify within meaningful use a couple of
22 measures, whether there was overlapping value

1 sets and whether there were similar concepts
2 being expressed in different ways.

3 And there were a number of them.
4 Particularly in depression measures, we found
5 there to be significant degrees of overlap and
6 similar concepts being represented. And in
7 particular, we found there to be a lot of overlap
8 between SNOMED and ICD-9 and ICD-10.

9 And so going back to what Dr. Chute
10 was saying, which is if we are not sort of
11 developing a pre-standard process and criteria
12 and putting constraints immediately on the
13 development of value sets, how are we going to
14 sort of resolve that particular issue, which I
15 see as being somewhat pervasive and I don't know
16 of any way, at this point, to particularly get
17 through that issue.

18 MEMBER MARTINS: So that's also part
19 of the guidelines is that there were identified
20 standard vocabularies, such as SNOMED for
21 diagnosis, but then transitional vocabularies
22 were identified. So that overlap is actually

1 built in, which is interesting.

2 There were ICD-9 and ICD-10 codes
3 initially in the HITSP specifications, but
4 there's a huge outcry from the field that these
5 are the codes that we have. This is structured
6 information that we currently have. Why can't we
7 use these codes? It's included in their ongoing
8 conversations every year about when to pull the
9 plug on ICD-9 and ICD-10 as transitional
10 terminologies for eCQMs. So that is part of the
11 built-in variation.

12 I don't think anyone knows, at this
13 point, how that affects the standardization of
14 the reporting and how that affects potentially
15 the measure rates. So that's where it's coming
16 from.

17 What I would say, in terms of the
18 issues for harmonization, knowing that we have a
19 certain set of built-in variation and that there
20 are principles around which vocabularies should
21 be used in value sets, is that, you know, just as
22 providers want clinical decision support, measure

1 developers need decision support, as well.

2 And having this information available
3 on, is the value set that I'm creating already
4 overlapping with ten other value sets that
5 already exist? Having ---- trusting, really,
6 that the value sets that already exist do meet
7 quality standards. Otherwise, we're just going
8 to be developing the same value set. And we
9 trust that the value set that's already there
10 makes sense and we should be using it.

11 So that's what I would say is a big
12 issue in the harmonization is trusting value sets
13 that are already there for re-use and being able
14 -- having tools to help us to identify where
15 overlap may exist, as opposed to doing it
16 manually.

17 MR. GOLDWATER: Dr. Chute?

18 MEMBER CHUTE: As one of the founders
19 of the Common Ontology effort between SNOMED and
20 ICD, I can speak with some authority on this
21 notion of overlap and semantic dissonance.

22 To put it mildly, as long as we have

1 these interim terminologies and built-in overlap,
2 the goal of harmonization is elusive, and indeed,
3 impossible. So if that is to persist, we might
4 as well go home.

5 I think there are workarounds. I have
6 been sometimes accused of being pragmatic. And I
7 think the workarounds are the following: that we
8 should propose that value sets be defined in a
9 canonical form with a single set of
10 terminologies.

11 One has to acknowledge that we live in
12 a real world and that data is not necessarily
13 connected -- collected in raw SNOMED form, and I
14 get that. Thus it is perfectly acceptable to
15 designate what I would characterize as quality
16 metric surrogates, and they would not be the same
17 as the quality metrics, but they would be
18 surrogates and reported as such. And those
19 surrogates would involve mapping of usual
20 suspects to the canonical defined form.

21 For example, one might define a
22 quality metric in terms of SNOMED. Organizations

1 like Kaiser might actually report in that quality
2 metric form. Other organizations, mere mortals,
3 might still have ICD codes as their exclusive
4 modality of diagnostic designation.

5 It's important to recognize that the
6 quality metric that they would report is a
7 surrogate. It is not identical to the quality
8 metric that is canonically defined. It is
9 impossible to, given the state of the art today
10 and given the many, many mappings that are
11 implicit between and among, for example,
12 diagnostic terminologies, it is not correct to
13 say that you can have a mapping and that it is
14 the same quality metric. It is a different
15 quality metric.

16 MR. GOLDWATER: So we do have somebody
17 else who has entered the building, who also
18 happens to be one of our clients. So I'm going
19 to have Julia introduce herself, and then I have
20 you a comment.

21 DR. SKAPIK: Julia Skapik from ONC.
22 I'm a Medical Officer, and I've worked for the

1 past several years on setting up the VSAC and
2 trying to improve the processes around value
3 sets.

4 I really appreciate Dr. Chute's
5 comments there. I would say that we do consider
6 it the goal of this project to catalog and
7 understand what best practices and
8 recommendations around value sets in general are,
9 particularly in a case like this where it
10 potentially limits your ability to harmonize when
11 there are multiple terminologies involved. And I
12 would encourage you not to all go home, but
13 rather to include that as part of your
14 recommendations in your report.

15 MR. GOLDWATER: Zahid?

16 CO-CHAIR BUTT: So yes, so I'm very
17 encouraged to have plenty of pragmatists at the
18 table. But I think we sort of -- you know, as
19 you said, in terms of the pragmatism, we sort of
20 come from the practical side of things where the
21 eCQMs have to be implemented today and generate
22 results that are meaningful.

1 The only thing that I would like to
2 just mention at this point is that, potentially
3 within the eQOMs, there are separate use cases in
4 which a certain level of overlap perhaps is
5 acceptable, in terms of perhaps defining an
6 inpatient population where a precision in
7 complete alignment may not be necessary on a one-
8 to-one basis. But perhaps in certain portions of
9 the same eQOM where there is a more precise use
10 case, that might be more applicable in terms of,
11 you know, whether you're defining a certain
12 effect or a negation principle.

13 There might be, within the eQOM,
14 certain use cases where there is a very precise
15 definition necessary and perhaps a singular
16 terminology is needed. Whereas in certain use
17 cases it may be that, if you're defining a large
18 population of a certain type of thrombotic stroke
19 or hemorrhagic stroke, it may not be as -- the
20 precision of the mapping may not be as required.

21 It's just another idea to sort of
22 think about while we transition from these

1 various terminologies into a future state.

2 MR. GOLDWATER: Dr. Che?

3 MEMBER CHE: So when we talk about a
4 trust -- we have to take into consideration of,
5 you know, how this value set has been vetted or
6 tested. You know, when we develop a set,
7 sometimes it would just come from the ideal
8 concept. If we look at SNOMED CT, we'd say, yes,
9 this concept probably will represent this kind of
10 new idea. But has this been verified, tested in
11 EHR or in reality? So maybe some pieces may
12 seem, in this value set definition -- has this
13 been tested and vetted?

14 MR. GOLDWATER: Dr. Rallins?

15 MEMBER RALLINS: I just wanted to go
16 back again, as a member of the workgroup that
17 developed the recommendations that the measure
18 developers are using to develop value sets, Dr.
19 Chute, I can assure you there was passionate
20 debate about using a single ontology-based
21 vocabulary.

22 MEMBER CHUTE: Yes, I know. I was

1 part of that debate.

2 MEMBER RALLINS: Right, right. And we
3 learned in that, on that, of course, because we
4 wanted ontology-based vocabularies that could
5 actually capture clinical detail, but we also
6 looked at where organizations actually were in
7 their maturation, or their path towards using
8 ontology-based vocabularies. Hence, we ended, we
9 landed on transition vocabularies, which, you
10 know, can be described as administrative ICD-9,
11 10, etcetera.

12 But those recommendations also had
13 expiration dates for the transition vocabularies,
14 and I think we should contemplate that. I don't
15 know, Dr. Skapik, if ONC is contemplating the
16 expiration dates on those recommendations for the
17 value sets.

18 DR. SKAPIK: So thanks, Marjorie. I
19 think you know that I brought this up for some
20 time, and I don't think that there's been, you
21 know, the level of consideration in terms of what
22 to do about value sets. I think that expertise

1 in this room is really ideally poised, especially
2 as external stakeholders, to provide us with
3 comments and advice on that specific topic.

4 As you know, the recommendations made
5 by the Standards Committee were not in any way
6 codified in a rule, or any other kind of
7 language. It was merely a list of
8 recommendations. So I think we're at a point
9 where ONC and CMS and HHS, overall could make a
10 decision either way. I think that, if there's a
11 strong sense from a group of broad experts that
12 one path is better than another, that a more
13 forceful case might be made back to the Standards
14 Committee, and also to the federal government
15 itself, to make that change.

16 MR. GOLDWATER: Dr. Chute and then Dr.
17 Rallins.

18 MEMBER CHUTE: Sorry for going out of
19 sequence, but, having been a member of the HIT
20 Standards Committee at that time, I would point
21 out, just as a bit of history, that in the
22 Meaningful Use 1 specification, the

1 recommendations from the Standards Committee were
2 for single terminology. Those recommendations
3 were overridden by ONC and HHS, and that's how we
4 ended up with the dual system, should we say.
5 But it should be made on record that the
6 Standards Committee advocated a single
7 terminology.

8 DR. SKAPIK: Sure. And I would say
9 that, you know, although the Standards Committee
10 had reluctantly endorsed the use of transitional
11 terminologies, they did say that a year into
12 Meaningful Use 3 they expected those to be
13 expiring.

14 So I would say that that's around now,
15 although it's a little bit nebulous given delays
16 in the execution of stage 3, that that should
17 probably be undertaken. I don't think it
18 necessarily requires any actual modifications to
19 the rule language, or to an actual rule for us to
20 execute on that, and I think it is a technically
21 sound approach and something that probably, even
22 if ONC and CMS were to change that approach, they

1 probably wanted to feel confident that this is
2 the right time to do that. So any evidence that
3 would support that would probably be useful.

4 MR. GOLDWATER: Dr. McClure?

5 MEMBER McCLURE: This is really a
6 question of process. I have my bias, I don't
7 doubt that, but I'd ask the chairs to consider,
8 part of what we're talking about is questions on
9 how a value set should be created. And those
10 obviously have an impact of what we do in the
11 context of harmonization.

12 And so I wonder, you know, at the risk
13 of being chained into the room, that we consider
14 -- before we try and figure out how to do
15 harmonization, we think about this committee
16 would have some work before it to have
17 recommendations on how value sets should be
18 created from the beginning. Dr. Chute raised
19 that as his very first point. So I'm asking if
20 the chairs believe that that's something that
21 this committee should fully address in some way
22 first, before it does the other.

1 MR. GOLDWATER: I'll let the chairs
2 answer that first, and then we'll get some
3 responses.

4 CO-CHAIR LIEBERMAN: Well, I think
5 that's in the scope. And we talk a lot about the
6 charge being how we harmonize existing value
7 sets, but part of that was in the process of how
8 you develop a new value set, and how that gets
9 approved and brought in, especially in light of
10 if there are already existing value sets that
11 need to, that would need to be taken under
12 consideration before you agree to create a new
13 one. So I would say that that is within scope in
14 general.

15 MR. GOLDWATER: Ms. Martins and Dr.
16 Heras.

17 MEMBER MARTINS: So back to the
18 question of the vocabularies that are co-existing
19 right now with the eQMs, we know that that
20 creates problems in terms of the reporting when
21 we don't have a single canonical form of the
22 measures. But let's just assume for a minute

1 that ICD-9 has been taken on --

2 (Telephonic interference)

3 MEMBER MARTINS: -- that visit. The
4 data is still not being captured in SNOMED --

5 (Telephonic interference)

6 MEMBER MARTINS: -- so the mapping
7 still exists. The overlap would exist, but it
8 would be across a number of unknown local
9 proprietary/non-proprietary vocabularies. So I
10 would argue that we're always going to have
11 surrogates, unless the data is being captured in
12 these standard vocabularies at the point of
13 entry, really. So we're always going to have
14 that overlap.

15 And then the other thought here, in
16 terms of the ICD-9 and ICD-10, one important
17 thing to remember is that, and this is always a
18 problem because these measures have a history,
19 most of these measures, and they were developed
20 using ICD-10 and ICD-9 measures, original
21 vocabulary tested against ICD-9 to capture
22 certain populations. And to this day, I still

1 don't know whether using SNOMED will have the
2 same effect. So that's something that is, I
3 think, really critical as we move to different
4 vocabularies, to see that the measures retain the
5 properties that we would like them to retain when
6 we use these different vocabularies.

7 MR. GOLDWATER: Dr. Heras?

8 MEMBER HERAS: Yes, so for major
9 issues around value sets, from my experience, I
10 see a value measure -- and so one area it's
11 really looking at different measures, so they're
12 developed by different developers. And sometimes
13 they don't look at what others are developed. So
14 I think how you create a value set, the process
15 really needs to be -- so I echo the doctor's
16 comments. So we need some process for how we
17 gather value sets.

18 And the second one that we talk about
19 is the existing overlapping terminologies that we
20 said for diagnoses. We need to have ICD-9, ICD-
21 10, and SNOMED. So this is something that we
22 have to go for, and this is the measures that

1 we're having to use. I think just the mapping --
2 because during the development process we do the
3 mapping. Sometimes, we usually start out from,
4 like, ICD-9 from, you know, the paper measure
5 manual when we create the mapping, but we don't
6 document that mapping anywhere.

7 So I think that process, you know,
8 part of the development that we should capture
9 that and at least, you know, as that one step
10 forwards, we can -- during the eCQM we had three
11 different value sets within the grouping. At
12 least we can provide that level of mapping. I
13 know, still, when you implement this, people
14 still have to map their local codes or whatever
15 codes they have to the value set.

16 So a third one that I see is really
17 from the, at the value sets in the measure and to
18 the reporting standards and how that, you know,
19 the mismatch there, you know, from where --
20 according to the reporting standards, it requires
21 something different than, you know, the value
22 sets being used in the eCQM. So that's the three

1 major issues that I see.

2 MEMBER CHUTE: I think that's a nice
3 summary of the three major issues, but I do want
4 to address Ms. Martins' point, which is apt, and
5 that is that perhaps it's a fool's errand to
6 think that one would ever have a canonical metric
7 that is genuinely reported as data collected. I
8 appreciate that.

9 That begs the question of where really
10 lies most of the dissonance. I think, as a
11 practical matter, the mapping from laboratory
12 codes to LOINC is, if not an exact science, at
13 least acceptable for most purposes, certainly for
14 statistical aggregation and metric purposes.

15 Correspondingly, I think mappings from
16 proprietary drug codes to RxNorm are
17 correspondingly robust. I won't say reliable,
18 but adequate. So maybe obsession over that level
19 of micro dissonance at the source level to a
20 canonical designation may be tolerable.

21 The rub is really with the diagnostic
22 codes. And as I said, working with SNOMED on

1 what we call a common ontology, and here I'll
2 disclose my biases, as consistent with my
3 disclosures. ICD-11 is working very, very
4 assiduously to ensure that ICD-11 is defined in
5 terms of SNOMED semantics. The prior versions of
6 ICD have not done that.

7 Yet, that is the way virtually all of
8 the diagnostic data is collected in this country
9 at this time, and it begs the question of whether
10 an exception to the meaningful use specification
11 might be considered by NQF, at least for a period
12 of time until we have a more robust rendering,
13 and that is that the published canonical form of
14 NQF metrics might be, gasp, ICD-10, anticipating
15 the ICD-10 conversion. I will go on record, by
16 the way, as saying I don't object to the ICD-10
17 conversion, although I think ICD-11 is going to
18 be better, but that's all right.

19 (Laughter)

20 MEMBER CHUTE: So, you know, the issue
21 of that principle, what do we designate as the
22 source terminologies for at least canonical

1 metrics specification, I think, persists. What
2 I'm putting on the table is that to cut through
3 the major source of the dissonance, which is
4 clearly in the diagnostic codes, that a
5 consideration and exception to the meaningful use
6 specification be considered explicitly to embrace
7 ICD-10 as the canonical form for quality metrics.

8 MR. GOLDWATER: Zahid?

9 CO-CHAIR BUTT: So just to follow up
10 on what Chris just said, I think that the way,
11 one way at least, as an overarching principle to
12 at least consider here would be that perhaps
13 SNOMED and ICD-9, 10, or 11 could potentially
14 live together in harmony.

15 The question is really how to
16 harmonize it, what is the principle as it
17 pertains to eCQMs, because SNOMED, being the most
18 granular of clinical terminologies, in terms of
19 the diagnostic tests potentially are best suited
20 for the documentation by the clinicians, because
21 that would get the closest to the concept in
22 their day-to-day documentation. And the ICD-9

1 and 10 pretty much are at a slightly higher level
2 than that, and so, in that sense, I don't
3 consider them competing with each other, but one
4 feeding into the other.

5 And if that framework could be
6 formalized somehow, perhaps there would be less
7 potential problems where you are trying to
8 compete, as opposed to when you're trying to
9 harmonize these in a sort of a -- not
10 horizontally but more vertically, because the use
11 case for the ICD classification system is going
12 to persist probably forever, because I don't see
13 a day when you will be submitting your claims
14 with SNOMED diagnostic codes.

15 Probably wouldn't be needed, that
16 granularity wouldn't be needed, because they'll
17 still have to convert that back to some
18 classifier to make it relevant for what they need
19 to do, while the claims measures that CMS is
20 moving towards, outcomes measures, are all going
21 to be based on that data that's submitted through
22 that process.

1 So I think it would be best for us to
2 find a way to formalize some sort of relationship
3 which is implicit in the word harmonization
4 because, otherwise, we would be saying that we
5 need just a singular, everywhere, singular
6 terminology.

7 MEMBER SCHNEIDER: As a person who has
8 to implement these things, I find myself agreeing
9 with Dr. Chute. We've got SNOMED for this, ICD-
10 10 for that. We're trying to do ICD-9. And from
11 a practical standpoint, I can't do everything and
12 I can't be an expert in everything. And so while
13 there could be some sort of relationship of these
14 things, I would say, from a physician and
15 possibly a hospital standpoint, asking to speak
16 one language and then those who want to convert
17 it to something else can have a set of published
18 tables, as to here's how you convert from this to
19 that, and I understand that that's not easy. But
20 asking me to -- you know, we've got teams doing
21 ICD-10, we've got teams doing SNOMED coding, and
22 it's just driving us crazy.

1 So, please, let's get -- I think Dr.
2 Chute's concept of a single place where we're
3 going, I guess I'm reminded of narrow gauge
4 railways. The Illinois Central basically said,
5 overnight, we're going to switch. They didn't
6 try to make all sorts of transition things. It
7 was basically literally over the course of
8 several days we went to our current gauge.

9 I think we have to set a direction and
10 say this is where we're going, and we're going by
11 this date. In between, we have what Dr. Chute
12 calls surrogates, and we have to recognize them
13 as such and accept them as such for those who
14 can't get there. But after a certain date,
15 that's it. You are in standardville. Thanks.

16 CO-CHAIR BUTT: Just to -- I, again,
17 want to clarify what I said. I didn't imply that
18 the physician or the clinicians would have to
19 deal with two separate things. I think they are
20 having to do it today, and that's part of the
21 problem. I think that the framework I'm at least
22 suggesting for consideration is that the

1 physician would only deal with SNOMED, and that's
2 all. There's no need for the physician then to
3 also have to select the appropriate ICD-9 or 10.
4 That could all be done through mapping.

5 And it's a problem when something is
6 coded in 9 or 10 and you have to go backwards to
7 SNOMED. That's the bigger problem. But once
8 something is coded in SNOMED, let's say by a
9 physician as part of their documentation, whether
10 that's selecting the SNOMED directly or it's
11 mapping to the local term, and that's, I think,
12 what Chris was alluding to, once that's done by
13 the physician, then I think the physician should
14 be done really.

15 The next level of classification
16 that's needed for the use cases should happen
17 potentially automatically and behind the scenes
18 and vetted by coding, and the physicians wouldn't
19 have to select two different code systems.

20 DR. SKAPIK: So some more things that
21 came up when Dr. Chute was talking earlier was,
22 currently, we get a lot of questions from the

1 community about what are the rules surrounding
2 mapping, and the current answer that we give to
3 people is it's expected that you can justify your
4 mapping, but we haven't really provided people
5 with any consistent or reliable or audit-based or
6 audit sort of protective mappings.

7 And I agree that there are some cases
8 in which mapping is much easier and not very
9 subjective. We have had reports from people in
10 the field who have discovered that there are
11 vendors doing mapping that would be inconsistent
12 with the intent of measures, and there are some
13 concerns about how do I know that I'm going to
14 pass an audit and be able to keep any incentive
15 payment if there's not better guidance.

16 So I think that any guidance that the
17 Committee has about what the appropriate ways to
18 do mapping are, who should be responsible for
19 determining what appropriate mapping is, should
20 there be better resources? I mean, we know that
21 there are resources in existence that could
22 potentially help people, but they have not been

1 endorsed by HHS in any way.

2 That sort of guidance, I think, is
3 very helpful, and I think that, to Zahid's
4 comment, I think to say what is expected in terms
5 of roles, and relationships, and understanding
6 different terminologies is similarly helpful,
7 because it's very difficult I think for a lot of
8 implementers to train physicians on what to do
9 and, you know, nurses, anyone who is doing
10 coding, without some sort of more clear guidance
11 on that topic.

12 MR. GOLDWATER: Dr. Bregman and then
13 Dr. Rallins.

14 MEMBER BREGMAN: Well, let nothing I
15 say be interpreted to mean that I'm not in
16 support of having a single terminology for any
17 given value set. However, I'd like to invite us
18 to move on because, really, we're asked to
19 address what are the major issues around value
20 sets, and I don't think that various
21 terminologies is really deal-killer. I can
22 imagine if we were in Canada and we had two

1 official languages, no one could really argue
2 that we need to just standardize and only speak
3 one language. You have to live in a world of two
4 languages.

5 So I would raise the other issues
6 around value sets, speaking practically, which is
7 that a single concept for one measure is not
8 equal to the same concept of another measure.

9 And that, I think, is not so much the terminology
10 but that is what is the real frustration for most
11 providers that are reporting on quality measures,
12 which is that what is defined as a flu vaccine --
13 and I just pick an example, probably not the best
14 one but a very accessible example -- what is a
15 flu vaccine for one measure is not the same as a
16 flu vaccine in another measure.

17 And, therefore, when I administer a
18 flu vaccine, I may count for one, and yet another
19 one, which seems to have the same goal, it
20 doesn't count. And I think that, more than the
21 terminology issue, is really what we should try
22 to tackle: how do we get various measures to use

1 the same value sets when, essentially -- the
2 initial description by Jason was not so much
3 eliminate variation, eliminate unjustifiable
4 variation. So if it's not justifiable, how do we
5 get these in sync?

6 MR. GOLDWATER: Dr. Rallins, do you
7 have a comment?

8 MEMBER RALLINS: I'll save that
9 comment for later.

10 MR. GOLDWATER: Dr. Schneider?

11 MEMBER SCHNEIDER: If you could go
12 back to the little map of how value sets are
13 created. When I saw this, I saw this thing
14 called the VSAC, and the very first box says
15 anybody can create a value set. And it reminds
16 me of the problems that we have of reports, in
17 terms of my own organization. Anybody could ask
18 for a report, and we made every single report.

19 And so the process, if you have sort
20 of an uncontrolled process with multiple
21 different possible standards at the very, very
22 beginning, you've got to narrow that down. I

1 mean, there needs to be, I would say and
2 probably, the VSAC is the way to do this
3 nationally -- that would be a proposal -- is I
4 want to suggest that I'm going to create a value
5 set that would be a review process against other
6 value sets, a question of, boy, these seem very
7 similar. And if you don't pass that stage, it's
8 a box in front of the actual creation, then you
9 don't even get to the ability to create a value
10 set.

11 You can do one locally, if you want.
12 I mean, you can do whatever you want locally.
13 But you cannot create something without a prior
14 stage that says, yes, this doesn't overlap with
15 anything else we're doing and it fits the
16 standards criteria of what we defined as
17 necessary for this sort of thing.

18 MR. GOLDWATER: Dr. McClure?

19 MEMBER McCLURE: And so I want to lend
20 some support to Howard's comment about what we do
21 next. So even though, and I still firmly believe
22 I think that for us to accomplish a useful we're

1 going to have to say something about how good
2 value sets are created, and we've spent a bunch
3 of time talking about the terminologies that
4 might be involved in that.

5 The issue that Howard gives of
6 consistency in terms of the meaning of an idea
7 that is referenced inside of a quality measure is
8 a big issue for implementers, and particularly
9 for providers. The idea of, you know, if I say
10 these two quality measures both say there's -- if
11 you've given a flu vaccine, it's important. It
12 might be you're out in one place and in in
13 another. But, in fact, the two value sets that
14 are used by those two measures are different.

15 There's an issue in terms of
16 harmonization, and I think that's a whole
17 different set of things to discuss from, having
18 created a good value set, you can document that
19 you did create a good value set. I mean, they
20 certainly overlap.

21 So I do think that it's worthy, you
22 know, we have to set aside time for both of these

1 things. And, you know, I can imagine a white
2 board where one is for these are issues with
3 regards to harmonization, and these are issues
4 with regards to good quality practice in terms of
5 creating value sets. So we just keep track of
6 those as we go along.

7 Having been doing this for 30 years,
8 I know we can auger in in a lot of places, and
9 choosing terminologies, clearly, is one of those
10 and it's not a very productive spot to grow
11 fruit. So I don't know that I would spend much
12 more time on that.

13 I do want to say one more thing with
14 regards to -- two pieces. One, in terms of the
15 VSAC, just to clarify, yes, it's true that anyone
16 could create a value set VSAC is not -- you know,
17 it didn't create that opportunity. That's always
18 been true. But what we're talking about is not
19 only creating value sets but using value sets,
20 right? And so the fact that, in part, what this
21 committee, I believe, should be doing is saying
22 here are how we identify high-quality value sets.

1 The presumption would be that only high-quality
2 value sets would end up being used, even though
3 you may have less high-quality value sets in a
4 VSAC. So it doesn't require necessarily a change
5 in the VSAC. It means documenting how you can
6 identify high-quality value sets and make sure
7 they're used.

8 And the other thing, just back to this
9 issue of how do we identify. So two value sets
10 are named vaccines, or flu vaccines. Just
11 because they're both named flu vaccines doesn't
12 necessarily mean they actually are intended to
13 fully encompass what every one of us would say
14 that list of flu vaccines is. And so I think
15 part of, as we, again, start to capture
16 information that Committee members are going to
17 bring you with regards to our final product, part
18 of what we need to do in the context of
19 harmonization is clarify how we get value set
20 authors and stewards to say exactly what they
21 mean.

22 And through that process, we can then

1 better understand are these to be harmonized or
2 should they actually be different and, therefore,
3 communicate to users, no, the reason that these
4 look different is that they have a purpose to be
5 different.

6 MR. GOLDWATER: So before I call on
7 somebody else, let me just interject for two
8 minutes here. I think that this has been a very
9 interesting discussion, and I think the issues
10 that have been raised are fairly consistent with
11 the issues that we have found since we began this
12 project. And I think terminology is a
13 significant issue. It has been for a while. I
14 mean, this is not anything that's new.

15 ICD codes have been consistently used
16 in billing since billing was accepted, and
17 SNOMED, you know, came in as a far more robust
18 clinical vocabulary. But replacing ICD-10 with
19 SNOMED, while perhaps desirable for those of us
20 that are informaticists, may not necessarily be
21 that feasible in the reality.

22 I think the issues with value set

1 harmonization, terminology is part of it. But I
2 think why we didn't want to spend a lot of time
3 on this, although I think having the discussion
4 was interesting and needed, is that we're not
5 going to resolve that today. There's no way that
6 we're, in eight hours, going to resolve
7 terminology issues that have been persistent for
8 the last 20 or 30 years. It's a very noble idea,
9 and worthwhile of a different discussion, but not
10 something that we're actually going to be able to
11 solve.

12 I think the issues that have been
13 raised, particularly around the ones that Dr.
14 Bregman and Dr. McClure brought up, as well as
15 others, is what constitutes a good quality value
16 set? How do we assess whether that is a good
17 quality value set, and how do we get authors and
18 stewards to conform to a particular framework to
19 develop a good quality value set that is
20 relatively harmonized with a particular clinical
21 concept so that we do not have these areas of
22 unnecessary overlap.

1 And I realize that does involve
2 terminology to some extent, but I would ask that,
3 I think, while we have those issues in our head,
4 to sort of move forward from that and think we
5 can't solve the terminology issue, although,
6 Chris, I wish we could, trust me. I'm in total
7 agreement with you, and I'm not saying that just
8 because I like you. I really do agree with that.
9 But I think we need to sort of try to develop
10 some framework around how we can try to harmonize
11 so that we have a pilot process that we can start
12 testing sometime in the next month.

13 Before I get to Dr. Rallins and Dr.
14 Lieberman, we do have somebody else that's
15 entered the room. So I do have to introduce him,
16 and I would want to anyway. So, Kevin, I hate to
17 put you on the spot, but why don't you introduce
18 yourself?

19 DR. LARSEN: Sure. Kevin Larsen from
20 ONC. I think I know most of you, and thank you
21 for doing this. As part of our work in measure
22 alignment across HHS, one of the latest things

1 we're working on is what's called micro-
2 alignment. So we've realized, through analysis
3 from things like value and analyses like this,
4 that, even though we've committed to aligning
5 measures, if we all say NQF is 0018, that doesn't
6 necessarily mean that that's the specifications
7 we're asking everyone to do in every program and
8 every place.

9 So this is kind of our round two of
10 our alignment activities. This is the very start
11 of it, which is to think about where do we align
12 on all the details of measures that are key and
13 important, and how do we figure out what that is?

14 We're really happy to have NQF doing
15 this. This is not trying to solve all the value
16 set problems in the world. It's trying to solve
17 value set problems as they pertain to measures.
18 We know that value sets are used for lots of
19 things, but NQF is, very specifically, an expert
20 at measurement. And so we are really hoping to
21 start this pathway, this journey here. And thank
22 you all for participating.

1 MR. GOLDWATER: Thanks. So as I turn
2 it now to Dr. Lieberman and then Dr. Rallins,
3 let's try to focus, for the next 30 minutes,
4 until we take our break, you know, on what are
5 your thoughts about what constitute a good value
6 set, how do we assess whether it's a good value
7 set?

8 CO-CHAIR LIEBERMAN: Thanks. I just,
9 I have, I guess, one last comment on the last
10 part before we move to that. But, I mean, so it
11 seems that for a value set, what we're really
12 starting with is a clinical concept. And it
13 should be, I mean, well described with language
14 to start with. And I was just reviewing some
15 value sets, and maybe I'm not looking in the
16 right place, but, you know, a concise description
17 of really what you're getting after with trying
18 to put together these sets of values would be
19 useful.

20 And then I think we need to kind of
21 move down the line from there to a representation
22 of that concept in some codified manner. And

1 we've discussed, you know, SNOMED would seem to
2 be the best method to do that for a diagnosis.
3 But as the process goes on, you then take that
4 initial description, that initial coded
5 description, and it loses precision as you move
6 down the line. So then we use other types of
7 code sets, like ICD, for that.

8 But then when you think about the
9 clinician and how that information is getting
10 into the system, they're not, they may be
11 choosing an ICD code, they may be choosing some
12 other sort of description that's available in
13 their record that allows them to do that. They
14 may be using that as a diagnosis they need to
15 attach to a lab test they order, and it might not
16 really be what the patient has that you're
17 seeing. So you lose kind of precision all the
18 way down the line as that information gets into
19 the system.

20 I mean, I think that's something that
21 can be addressed elsewhere in the process as
22 well, where do you get this information? And I

1 know early on in this process, we've talked about
2 -- not this process, but in kind of the eCQM
3 process -- is where do you get diagnosis
4 information? Should it be just from the problem
5 list? Should it be from encountered diagnoses
6 and so on?

7 And I think the idea initially was,
8 well, really it should be the problem list as
9 kind of the source of truth for what diagnoses to
10 associate with a patient. But we all know that
11 that doesn't always work well either and that
12 problem lists are problematic for their own
13 reasons.

14 But we have to do the best we can in
15 each of those steps. So I think there is some
16 room for improvement at the outset in terms of
17 describing what the concept is that we're trying
18 to get after. And we want to keep as much
19 precision throughout the process as possible, and
20 I think there are a couple of, you know, we've
21 touched on the code issue and I think that that's
22 something that we potentially could make a

1 recommendation around, although maybe perhaps
2 that's better left for another day. But it's
3 kind of a manageable issue, whether we talk about
4 whether it's a similar measure, as opposed to the
5 exact one that we're talking about.

6 But the other issue then is, you know,
7 how do we manage the similar concepts to make
8 sure that we actually want to use, that there is
9 the need for a similar but distinct concept when
10 perhaps the original one would have been good
11 enough. And that's, I think, where we could take
12 this discussion at this point.

13 MEMBER RALLINS: Jason, I really
14 appreciate your summary. And I do believe that
15 we need to really focus on developing high-
16 quality value sets that we can harmonization.

17 I do think we will have to contemplate
18 the vocabularies and make this comment in that,
19 Dr. Lieberman, you mentioned sort of, you know,
20 looking at the concepts to make sure you
21 understand the meaning. But as we move towards
22 the vocabularies, like SNOMED, LOINC, and RxNorm,

1 there are other things, other complexities within
2 those vocabularies that are creating the
3 challenges that we're having now because you
4 don't get the true detail by just reading this
5 string of a SNOMED code or a LOINC code. And I
6 think that's where the challenge is.

7 So while we don't want to get into it,
8 it's kind of in the weeds. I think, at some
9 point, this conversation or another, we're going
10 to have to revisit that.

11 MR. GOLDWATER: Ms. Martins?

12 MEMBER MARTINS: So I did want to
13 support Rob in his comments about, you know, what
14 is a good-quality value set, how do we create a
15 good value set, because that's really fixing the
16 machine. We're preventing further mis-
17 harmonizations. But we also have to address the
18 backlog, right? So I think there's really two
19 discussions that need to happen in order to fix
20 the problem at hand for implementers but, at the
21 same time fix the process.

22 And in terms of fixing the process, I

1 really think that, and, actually, even with a
2 non-harmonization of value sets that exists right
3 now, the interesting thing about how different
4 measures were developed by different people and
5 the same concept was represented in different
6 ways in the same terminology is really
7 illustrative of a lack of a framework, right?
8 Because if we can put some rules around that,
9 what a good value set looks like, there's, I
10 guess, a first draft in that in the VSAC with the
11 authoring best practices.

12 It's a three-page document and
13 probably should be 30 pages, you know. We should
14 build on what's there and really define, and I
15 think we need to go into the weeds, as Marjorie
16 said, in the terminology. What are the term
17 types that we should be using for RxNorm?

18 Do we include anything that could meet
19 the intent of our concept in the value set, or
20 are we parsimonious in choosing concepts that
21 are, you know, are we just creating noise with a
22 huge value set that puts, you drop everything

1 that could potentially be used in a system, when
2 you know that perhaps this information is not
3 structured in systems yet, and so you have an
4 opportunity to actually standardize at the point
5 of entry. So that's the sort of guidelines I see
6 around what a good-quality value set would look
7 like.

8 And then, lastly, everyone is trying
9 to reverse-engineer value sets. So implementers
10 have to reverse-engineer value sets to make sense
11 of whatever it is that the value set creator
12 meant. I can tell you that all my value sets
13 have purpose statements in the VSAC that is not
14 accessible by anyone at the implementer level.
15 They're there. No one sees them. So there's a
16 problem with accessibility right there. That
17 would be a huge implementer help, I would say.

18 And then as we look at other measure
19 developers' value sets, we also don't have the
20 ability to see how the value set was created,
21 that history. And you mentioned the mappings,
22 the documentation of how that value set came to

1 be is important for harmonization because that's
2 where the trust can come from. So we need to
3 stop reverse-engineering value sets and just have
4 all the information necessary to interpret them,
5 both on the developer side and on the implementer
6 side.

7 MR. GOLDWATER: Dr. Chute?

8 MEMBER CHUTE: In a rare demonstration
9 of being willing to move on, I actually want to
10 second and perhaps reinforce those points that
11 you made on what constitutes a good value set.
12 You're quite correct. Hiding meta data in a
13 place that is not visible to developers and users
14 or worse, even the provenance, and forcing that
15 to be reverse-engineered is not acceptable.

16 That begs a question that maybe a
17 micro-education session during this meeting might
18 be apt. And I'm wondering if, Rob, you might
19 lead that. Specifically, what is the information
20 model around a value set this week in VSAC?
21 Specifically, does it, for example, require a
22 fully-specified name? Does it require a human

1 language description, preferably English? I'm
2 not sure I want to get into bilingual issues.
3 Does it require a set of relationships to other
4 related value sets as a required field or
5 component of a value set?

6 I mean, what model does exist? I
7 assume it's a derivative of many of the
8 vocabulary value set models. As you know, CTS-2
9 is my hobby horse, and favorite pony. But that
10 being said, what does VSAC currently have? And
11 from a context of NQF and designation of future
12 value sets, it might be prudent to have an audit,
13 and maybe this is already done, of how complete
14 that information model, how completely populated
15 that information model is for value sets that are
16 actually used. And whether that should be a
17 requirement that, you know, value sets will be
18 deprecated unless they have fully-populated and
19 validated components of this information model,
20 that's a question to you, Rob.

21 MR. GOLDWATER: Dr. McClure?

22 MEMBER McCLURE: I'm certainly willing

1 to show the VSAC, and what its parts are, and
2 what we have. I can answer with regards to how
3 well populated the value sets are. I mean, many
4 of us are going to raise points that we wish were
5 better in reality, so here's an example of that.

6 I think probably, like all of us, you
7 can guess, I'm a great advocate for clarifying
8 what our meaning of the value sets. That's why I
9 made the point, and I think it's really critical.
10 I think Howard and every implementer struggles
11 with this.

12 But the VSAC, originally when it was
13 created, there's a field and it is,
14 unfortunately, not visible to anyone who isn't an
15 author, which is a problem and that needs to be
16 solved. The NLM knows it's a problem and is in
17 the process of solving it. It's called "the
18 purpose." I'll take full blame for that name,
19 and I now dislike that name. A better word is
20 "scope," so it describes the scope of this
21 clinical idea that the value set is intending to
22 represent.

1 The value set is a collection of
2 concepts that all of which are intended to be
3 considered, and I'm going to put air quotes
4 around this word, equivalent to that idea, right?
5 The idea that -- and if you've got this recorded
6 in your patient's data, then that patient meets
7 the criteria, they fall within the scope. So,
8 obviously, the question of what is that scope is
9 central to the meaning of the value set and the
10 content of the value set.

11 We originally, in the VSAC, made that
12 set of -- there's actually four segments to that
13 in order to, as a tool really to help people
14 think through all of the elements that they
15 should in creating that. That was originally
16 created as a required field, and because, as a
17 tradition, value sets, the idea of a value set
18 had not been, you know, this kind of information
19 wasn't included in value sets. And so as we are
20 kind of front-end loading all the material that
21 was necessary to get the eCQMs up, essentially
22 none of them have this data and we ran into

1 timing issues.

2 And so, right now, a small percentage
3 -- and small is probably wrong because, to be
4 honest, I actually don't know and, in fact, maybe
5 we do know that now. I think we did do an
6 analysis of this, so Julia --

7 DR. SKAPIK: So we've currently been
8 in the process over the last couple of weeks of
9 scouring through to find missing purpose
10 statements of meta data and have it filled in by
11 owners. We're over 50-percent complete, at least
12 through the 2014 content. Of course, you can't
13 see that, as Rob pointed out. And, hopefully,
14 we'll be able to make downloadables available for
15 2015 measure update that includes that meta data.

16 MEMBER McCLURE: So we have 50
17 percent. That's not great, but it's a heck of a
18 lot better than it was six months ago. And so I
19 think, you know, again, and I keep thinking of
20 these virtual white boards where we're going to
21 be capturing this stuff, because even I can't
22 remember all of the things that are going to come

1 up in this process, because it's central to what
2 I do.

3 But I think that this idea of being
4 clear is something that is fundamental to value-
5 set creation and is fundamental to value-set
6 harmonization because, otherwise, we have to make
7 guesses as to whether, you know, flu vaccine
8 value set A and flu vaccine value set B are, in
9 fact, should be harmonized or whether they're
10 different.

11 And I'll make one last comment, and
12 then I'll turn off my thing, and that is that,
13 again, many of us, I think, understand this, but
14 I can't tell you how important it is when you
15 really get to the pragmatics of this, and that is
16 looking at value sets outside of their known use,
17 and this is actually at odds with the idea of
18 value set harmonization and value set re-use,
19 which is also a great tenet of, I think, a goal,
20 and that is that we want value sets to be re-
21 used. And I've really --- my thinking on this
22 has matured over time, and there are clearly

1 value sets that I think are the sort that should
2 be promoted as reusable. There are general value
3 sets.

4 But there are many value sets, and I
5 don't know what the percentage is, but if I was
6 forced to give a number I would say that the
7 reusable value sets is a smaller percentage than
8 the non-reusable value sets. And that so this
9 other non, not necessarily forcefully re-used
10 value sets, non-reusable value sets, the point to
11 highlight is that, in order to really understand
12 the scope of that value set, you need to
13 understand how it's being used.

14 And so we try and bring that in in
15 terms of expecting authors of value sets to, in
16 some way, describe that in the context of its
17 scope. That doesn't mean that another use can't
18 be identified and that value set could be re-
19 used. But it gets to this point of being very
20 clear about, yes, these are all -- again, using
21 this made-up example -- flu vaccines except this
22 one because, in fact, a good example is that

1 perhaps you want all of the administrable
2 vaccines, vaccines that use CVX codes that are
3 actually truly, you can order them and go and
4 give them to a person, versus those vaccine codes
5 that are meant to represent historical records of
6 vaccine use that you can't go and say I'm going
7 to order one of these because it's not specific
8 because it's intended to capture a person's
9 recollection, which isn't going to be specific.

10 Now, those both look like, you know,
11 value sets that have flu vaccine, but they have
12 very different requirements and you can't
13 harmonize them. And so getting to that knowledge
14 is central to doing harmonization work.

15 MR. GOLDWATER: So let me sort of
16 summarize, I think, kind of where we are on that
17 third bullet on resolving issues. There seems to
18 be a discussion that there are really two
19 separate pathways here. There's one for
20 implementers of value sets, and then there are
21 ones for developers of value sets, and the --

22 Now, without getting into how we're

1 going to do this, the issues for resolving,
2 thoughts of resolving issues around implementers
3 are accessibility of the value sets,
4 understanding the meta data behind the value
5 sets, the provenance for the value set creation.

6 In terms of development, going back to
7 what Dr. McClure was saying, understanding the
8 clear meaning or the clear scope of what the
9 value set is being created for and how then to
10 develop the value set to be in alignment of what
11 that scope is. Is that a fairly accurate
12 representation of what we have discussed? Dr.
13 Chute? I'm sorry. Ms. Martins?

14 MEMBER MARTINS: So I -- sorry, I need
15 to bring up my points because I forget. So I
16 think one point that you were making, Rob, that I
17 think is really important is that information
18 around a value set is not sufficient. The
19 relationship of value sets needs to be described,
20 as well. And I think that's something that
21 hasn't been done, the tools don't support.

22 But as a new value set is developed

1 and it's clearly not equivalent to a value set
2 that already exists, that needs to be documented,
3 as well, so that, again, people don't have to
4 reverse-engineer these separate value sets and
5 try to figure out what the differences are.
6 Those differences should be illustrated, and this
7 is bigger than any definition around a single
8 value set.

9 And then my second point would be
10 around, for those of you who remember the God-
11 forsaken HITSP specifications for the eCQMs, they
12 actually were really good about defining value
13 sets. And I wish we hadn't blown that to pieces
14 and started all over again because they had all
15 sorts of information around the value sets. They
16 had intentional definitions for the value sets,
17 which goes back to the reverse-engineering. If
18 you have an intentional definition, that's the
19 engineering of the value sets, so you should have
20 a clear picture of what's in and what's out. So
21 I think we should recover some of those concepts
22 and some of that thinking that went into the

1 HITSP specifications as far as value sets are
2 concerned.

3 MR. GOLDWATER: Dr. Chute?

4 MEMBER CHUTE: Yes, there were many
5 babies that went out with the HITSP bath water,
6 sadly. I have a very short question and a very
7 specific one. I heard, to my surprise, that
8 purpose or scope is a hidden variable. Now, I
9 admit naivety about what's actually going on, but
10 is there some intellectual property reason or
11 other reason why we just can't turn that, in fact
12 why we can't turn everything about a value set on
13 in terms of having users be able to see it? I'm
14 incredulous.

15 DR. SKAPIK: So, Dr. Chute, I will say
16 that, you know, initially, as content was being
17 brought into the VSAC, there were some
18 intellectual property sort of general issues
19 surrounding the value sets. I think, over time,
20 a lot of those concerns have been assuaged. And
21 as Rob mentioned, you know, it was an initial
22 requirement of the VSAC that no value set could

1 be published without that meta data, but that had
2 to actually be backed out of the system because
3 of limitations on timing and the ability to get
4 the work done in accordance with the publication
5 of the measures.

6 So we're working to re-institute that,
7 and I'll let Rob comment on that --

8 MR. GOLDWATER: I'll let Dr. McClure
9 interject, and then I'll go to the chairs and
10 then --

11 MEMBER MCCLURE: Yes. So just to
12 answer that question, so the fact -- again, so
13 authors, those people who are creating value sets
14 and do have access to being able to view the
15 purposes that in the --- for existing value sets
16 -- but general users don't. And the simple
17 answer is that, I'll just characterize that as an
18 oops. I mean, it just clearly, as your
19 incredulity is noted, as is many others, the
20 development process to get that out and available
21 is high on the development priority list, and it
22 just hasn't happened yet.

1 MR. GOLDWATER: Dr. Lieberman?

2 CO-CHAIR LIEBERMAN: Yes, I wanted to
3 go back to Robert's example about flu vaccines
4 that are administrable flu vaccines. So,
5 actually, you know, part of this is my love of
6 SNOMED, as well, but you could start with your
7 set of all flu vaccines and then have a subset of
8 those which are administrable. And it would seem
9 that if you're actually trying to maintain a set
10 of codes to manage measurement of flu vaccine and
11 other things, you would want to go about it that
12 way.

13 So you would start with your value set
14 for all flu vaccinations, and then you could have
15 a subset or describe a subset for these special
16 purposes that you have. And that gets into this
17 question of, you know, what is the best way to
18 represent a concept within a value set and should
19 it be, you know, SNOMED-based description logic
20 or something of that nature so that you're as
21 specific as possible.

22 And part of that is I don't know quite

1 what the scope of this is, as well. So when we
2 talk about what exactly is the purpose, the very
3 specific purpose of a value set, it really is
4 kind of this, I think it's this collection of, we
5 use it as a collection of codes to express a
6 concept, and we start with the concept. And it
7 probably should be limited to that and it's not
8 more than that in terms of thinking about
9 measures and measure-authoring tool and
10 developing phrases because we have other tools
11 within the measuring authoring tool and ways of
12 describing concepts using the measure in any
13 measurement so that we don't need to kind of
14 overload a value set. But we should be clear in
15 exactly what we expect from a value set.

16 MR. GOLDWATER: Zahid?

17 CO-CHAIR BUTT: Yes, so I think the way
18 sort of that it appears that the issues for
19 developers are really the same issues that the
20 implementers need to know. It's just that the
21 developers are doing a different thing, whereas
22 the implementers are doing a different thing, but

1 they both have, like, scope and what constitutes
2 the concept, if there's a variation. The
3 implementers are as interested in all of that as
4 the developers are. So it's just that the work
5 they're doing is different, but I think there's
6 really commonality in all of those issues between
7 the two sides.

8 MR. GOLDWATER: Dr. Schneider?

9 MEMBER SCHNEIDER: Yes, for those of
10 you who know me, I've got a manufacturing
11 background and this is a manufacturing process
12 that I see unfolding here. And in manufacturing,
13 I once faced a situation where we had made a room
14 full this size with defective pacemakers, and the
15 answer that we were pursuing was just make more
16 pacemakers in order to get our production out
17 because we have to do that. And, of course, it
18 kept on filling up the room.

19 So I would suggest that if we know
20 what -- and I think I'm hearing that much good
21 work has gone into what does it take to make a
22 good value set, what are the requirements of

1 that. I would say we don't necessarily have to
2 collect that today, but it ought to be collected
3 quickly, put into a recommendation of this group.
4 And then my other recommendation would be stop
5 the madness, and that is, basically, you must, in
6 order to do a new value set as of today or
7 tomorrow, you must follow these regulations. And
8 if you do not, it is not a value set that gets to
9 VSAC. It's draconian, but it's the only way to
10 cure a patient of their ills.

11 MR. GOLDWATER: Dr. Bregman?

12 MEMBER BREGMAN: Well, one value we
13 are endorsing or it sounds like we're moving
14 towards endorsing is transparency, which I fully
15 agree with. And the second value that I would
16 like to recommend is, essentially, compromise.

17 And I would just play on Dr.
18 Schneider's manufacturing analogy, if you talk
19 about two car manufacturers, if Jaguar decides to
20 make a gas cap and Maserati is making a gas cap,
21 it's very natural for them to say, you know what?
22 We can design the best gas cap, so we're going to

1 do it ourselves, and who cares if it fits
2 Jaguar's, right?

3 And I think it's the same basic issue.
4 If you're an expert committee, and I've not
5 served on one, to develop a quality measure, it's
6 very easy to say, well, you know what? This
7 other value set that was created for this other
8 purpose, that's not quite good enough, so we'll
9 create ours, which will be 98 percent the same
10 but it will still be ours and it will be
11 perfectly suited for our measure. That's the
12 kind of lack of compromise that I think we need
13 to move away from, which is that if you need to
14 introduce some lack of specificity or even,
15 potentially, error, although probably I didn't
16 want to go into that word, but, in order to use a
17 value set that already exists because the
18 benefit, because the reduced cost is worth the
19 benefit, that should be a value that the measure
20 developers should value.

21 MR. GOLDWATER: Dr. Chute and Dr.
22 Rallins.

1 MEMBER CHUTE: I think we all agree
2 that re-use of preexisting work is important, but
3 I very much like the point that was made about
4 nesting those value sets. And at the risk of
5 becoming ontological, it really is true that most
6 value sets are derivatives or subsets of other
7 more global, more generalizable value sets.

8 It's an interesting question of
9 whether this committee wants to recommend the
10 relatively academic exercise of requiring that
11 all value sets be specified as either subsets or,
12 you know, what the Venn diagram relationship
13 would be with other value sets. It would have a
14 huge advantage to implementers because then
15 there'd be clarity of what the relationships are.
16 It would, however, impose a fairly rigorous and,
17 I might say, challenging but, nevertheless,
18 useful step in the development of value sets.

19 So it really is are we after a very
20 robust, reliable, clearly-defined relationships
21 between and among value sets, or is it okay when
22 we think about harmonization to say, well, as

1 long as they're grossly overlapping and, you
2 know, they sort of adhere to some generalized
3 kind of principle. How rigorous can or should we
4 be? And I might add my prejudice here is the
5 more rigor that we require in value set
6 definition and development, the easier it will be
7 for implementers to make sense of all that.

8 MEMBER RALLINS: So I wanted to point
9 out that value sets are not developed in
10 isolation, right? So they're developed for a
11 purpose. And usually, right now, the value sets
12 that are in the VSAC were developed to describe
13 the data elements that are part of quality
14 measures.

15 And so, you know, we have some overlap
16 because those quality measures themselves, more
17 than likely, were developed in isolation of each
18 other. So I think that, you know, that's where
19 we get to the issue of compromise, and I think
20 we'll have to get to an element of tolerance, if
21 that means the same thing, because if you look at
22 the root cause of why, one of the root causes of

1 why they look like they do, that might be
2 something to consider.

3 MR. GOLDWATER: Okay, so, Helen go
4 ahead --- okay, Dr. McClure?

5 MEMBER McCLURE: Okay. So a couple of
6 points. One, to Chris's point, and this aligns
7 with what Marjorie was saying, the value sets, if
8 you look at it in a pointed-headed way, if you
9 look at it academically, if you look at it and
10 just say what codes are inside of value sets and
11 how do they align with other codes of value sets,
12 there's, without question, lots of overlap. But
13 in considering this, we also need to consider the
14 fact that, even though value sets are at times
15 made in isolation, at times not, measures are
16 made in isolation frequently, although with some,
17 I think, eyes looking to other things.

18 And then in doing that, there's an
19 issue of provenance so that, even though there
20 are two value sets that have significant overlap
21 or even complete alignment, there is a political
22 issue -- I'll use that phrase -- of who owns that

1 value set, and this is particularly important in
2 the context of value sets that build upon other
3 value sets that we have to consider.

4 So if I have a value set that has got
5 50 concepts in it, and another value set that is
6 more general, looks at that and says, well, yes,
7 those were 50 that were in mine, and I've got
8 these other 25, in order for that second
9 organization to say what I'm going to do -- and
10 I'm not going to go through the technical process
11 but basically build upon that first one, take
12 that one, say I'm just adding, I've got another
13 set that I'm adding to that first set, they have
14 to trust the steward of the first value set.

15 And in considering this issue, we were
16 unsure as to how to create an environment where
17 that trust could be easily identified and agreed
18 upon. And so the expectation was that, in fact,
19 while that would be encouraged and we were still
20 working to create an environment to support that,
21 and I think many of the things that this
22 committee will arrive at will, I would hope, I

1 think, inform how something in the VSAC called
2 VSAC collaboration, the VSAC collaboration tool,
3 will function.

4 Until we have an environment that
5 makes that process easier, we're going to have to
6 live with the fact that there will, at times, be
7 -- I'll air quotes -- justifiable lack of
8 harmonization because of this concern around
9 provenance and trustability. So I think we need
10 to live in that world and figure out how our
11 recommendations live in the current world and
12 then suggest solutions that could reduce that
13 problem in the future.

14 And then the second thing I want to
15 say again, this ties to this issue about
16 understanding how value sets are used. And that
17 is a part of this, right? So the idea of saying,
18 okay, these value sets have, they are close but
19 actually, for documented reasons, differ. And
20 as, you know, as Howard was saying, but in the
21 real application of this, so we deal with this a
22 lot, I think, throughout how the process of

1 building value sets, low-loan harmonizing value
2 sets, how important is it in the context of a
3 quality measure -- what are quality measures used
4 to do, right? And in terms of identifying
5 evidence of quality. In the real process of
6 actually doing clinical care and then documenting
7 clinical care and then doing data analysis on
8 documented clinical quality care, is the nuanced
9 difference between these codes important?

10 And you can't do good -- this is
11 really not so -- it is important in the context
12 of creating value sets, but I believe it's much
13 more important in the context of harmonizing
14 value sets. How does this committee provide
15 guidance so that measure developers can really
16 assess that in a protected way so that they can
17 communicate to their stakeholders that this is
18 good enough?

19 MR. GOLDWATER: Helen?

20 DR. BURSTIN: Yes, thanks. This is a
21 great discussion. In some ways, it's very
22 reminiscent of the conversations we have about

1 harmonizing measures. Really, this is not any
2 different. Replace measure with the word value
3 set. And I think --- perhaps I've just been
4 doing this for too long, but I think part of my
5 concern is we should not be repeating the issues
6 we have with the other data sources with
7 eMeasures since they are our data source of the
8 future. And if there are opportunities for us to
9 kind of push ahead and be bolder, even if it's on
10 a time line, I think we do need to get to the
11 exact vision, exactly what you said, Chris:
12 robust, reliable, clearly-defined relationship
13 among value sets.

14 If we can't do that, we cannot
15 harmonize measures anymore. It doesn't make
16 sense to have different definitions in these
17 value sets for the different eMeasures because
18 they are not, in fact, harmonized. And if we
19 look at the secretary's announcement of just a
20 couple of months ago or a month ago, the idea of
21 moving towards value, looking across episodes,
22 moving away from measurement that is, in fact,

1 setting level of analysis, and clinician-based is
2 really changing.

3 So you're going to have measures that,
4 in fact, have to work for the clinician, the
5 hospital, the nursing home across a patient-
6 focused episode. CHF has to be CHF. It doesn't
7 make sense anymore to have a different lens.

8 And I totally understand how this grew
9 up, Marjorie. It makes perfect sense for how it
10 emerged through MU if this is the measure we're
11 developing for this clinician set. But going
12 forward, this is supposed to be about us going
13 forward. So I would hope you really do embrace
14 the ideas of being bold, even if there's a time
15 line attached to it. We cannot harmonize
16 measures unless we can, in fact, get these
17 building blocks harmonized.

18 MR. GOLDWATER: Ms. Smith?

19 MEMBER SMITH: I just wanted to add to
20 what Rob said. It's not just trust between
21 measure developers. It's also very real timing.
22 If I base my value set on his and mine needs to

1 be updated for meaningful use and his does not,
2 then I need to know that his is going to be
3 updated when I need it to be updated so that I
4 can use it.

5 MR. GOLDWATER: Dr. Che?

6 MEMBER CHE: So we, as human beings,
7 have this tendency to figure out other part of
8 thought process. So that's, you know, between
9 the measure developer and the user. As a user,
10 you're trying to figure out how the author
11 developed -- I mean, what's the thought process
12 in there?

13 So I think, you know, the meta data,
14 you know, the purpose and scope, inclusion and
15 exclusion, will help to define what you're trying
16 to represent in that concept. But also a lot of
17 times, people will think, you know, for the same
18 diagnosis, we will have maybe this code, but it's
19 not included in your original value set, so I'd
20 like to have that code, or this code you define
21 in your value set, I never used in my clinical
22 setting, so this is useless.

1 So maybe, sometimes, I'm not sure it's
2 a good idea to capture, you know, that frequency
3 at a code level when you define a value set. You
4 know, then people can evaluate, you know, why you
5 use this code for a diagnosis or why you include
6 the doses of the medication in your value set
7 because you know this is only applicable to just
8 the, you know, the children, you know, or vice
9 versa. So maybe, you know, at a code level, the
10 capture is necessary.

11 MR. GOLDWATER: Matt?

12 MEMBER HUMPHREY: I just wanted to
13 play devil's advocate a little bit because there
14 have been some comments about getting close
15 enough. I guess the goal, especially in the
16 realm of the clinical quality measures, is to
17 have a machine-readable electronic consumable
18 measure. And in that sense, I don't care how the
19 implementers feel or are able to consume these
20 value sets if a machine is doing it for them.

21 A value set in the clinical quality
22 measure realm serves one purpose in my mind, and

1 that is a logical ore, so the only reason we use
2 it is because we don't want to build a measure
3 that says this code or this code or this code.
4 It's just a grouper.

5 And so if we value getting the measure
6 logic exactly correct, we should probably value
7 getting the value set content exactly correct, as
8 well. So just to urge caution in getting close
9 enough.

10 MR. GOLDWATER: Ms. Martins?

11 CO-CHAIR LIEBERMAN: So first, along
12 that, for that comment, I mean, you say you don't
13 care how the implementer brings it in.
14 Unfortunately, even a machine-readable measure
15 will likely require some manual mapping when it
16 comes into play. I mean, just with my experience
17 with them, there's always that last step of
18 mapping whatever the terminology is used for the
19 measure to the codes that are used in your
20 system. And so there is, there is some issues at
21 that point with trying to maintain the precision
22 of the measure, as well.

1 But the other comment I wanted to make
2 is when we talk about trying to get measure
3 developers to harmonize measures, you know, we
4 have to think about what are their incentives to
5 do so? We know that there's a lot of incentives
6 not to. We've heard about what those are, about,
7 you know, wanting the timeliness of the measure,
8 having it being exactly like you like it; and we
9 can think about incentives, one of them being,
10 well, we won't accept your measure unless it's
11 harmonized, but we should think about what else
12 can we do to make it more palatable for people to
13 harmonize them.

14 And along those lines, you know, is
15 there another entity that can take over some of
16 the work of maintaining that value set? I don't
17 know if that's within VSAC's realm or not. But
18 for a certain set of these value sets, the ones
19 that are commonly used, CHF, diabetes, and so on,
20 again, it doesn't really make sense for lots of
21 different people trying to maintain those over
22 time when we are really, most of us are all after

1 the same concept.

2 So is that enough of an incentive if
3 you say, if you use this value set, you know, you
4 aren't on the hook to maintain it and that will
5 be maintained by some organization, which I think
6 is part of what we're here tasked to decide what
7 that organization might look like. And along
8 those lines, you come up with, for value sets,
9 can there be different levels of value sets? So,
10 you know, these are the preferred set, these are
11 level one value sets that will be maintained by
12 this third party. And then are there level two
13 value sets which we understand that, you know,
14 this is still a good value set that has its need
15 to be somewhat different from the level one and
16 then level three value sets and so on? And when
17 it comes time to measure acceptance, we then look
18 and say, well, you know, if you've used value
19 levels one and level two, that's acceptable. If
20 there's level three, you need to, you know,
21 provide some reason for that and so on. So you
22 can kind of begin to see a system where it's not

1 cut and dry where there are good or bad value
2 sets but varying levels of value sets that can be
3 used and benefits to using the ones that are the
4 more accepted level.

5 MR. GOLDWATER: Okay. Ms. Martins and
6 then Julia.

7 MEMBER MARTINS: So along the lines of
8 Howard's comment in terms of compromise and
9 Marjorie and Matt's comments in terms of the
10 compromise that is needed for harmonizing value
11 sets, I agree we need to weigh in the cost-
12 benefit of creating a new value set that isn't
13 quite right but maybe it's good enough. But I
14 think that it can't be -- we need to assess the
15 value of the value set that exists. So just
16 because a value set exists it shouldn't be
17 default, there shouldn't be a default assumption
18 that it is the best value set that should be
19 used. And I think there's a really clear
20 criterion to decide that. Is it evidence-based?
21 Is it helpful in quality improvement? Is it
22 meaningful for the users who are capturing the

1 data? And I think these are other criteria,
2 other values that should be assessed when
3 determining whether something should be
4 harmonized, whether an existing value set should
5 be replaced with another one. And some of these
6 value sets really do require a very broad input
7 into what they should look like.

8 If we're talking about level one value
9 sets that are perhaps reusable across various
10 settings with a large number of users, a large
11 number of re-use potential, those are the value
12 sets that are probably, getting them right makes
13 sense. So that was my first comment.

14 Then I also wanted to ask the group
15 because we're talking about value set
16 harmonization within the context of eCQMs, but
17 that's not everything that implementers need to
18 deal with. They have to deal with CDA reports
19 that use value sets that are not only different
20 but sometimes conflicting with eCQM value sets.
21 So how do we figure that out? So I just wanted
22 to throw that out there.

1 And then to Anne's point and also
2 Mike's point in terms of the incentive for
3 harmonization, I'm going back to tools. Right
4 now, it's just there's no tracking whatsoever
5 who's using what value set, who's dependent on
6 whom to update a value set and when. So we need
7 to be able, I need to be able to see who's using
8 my value set so that I can reach out to these
9 people and say, well, here's what I intend to do
10 with it, is it going to break your measure,
11 something along those lines.

12 So, again, tooling, I think, is going
13 to be critical for this whole process to work.

14 DR. SKAPIK: Those are some great
15 points. One thing I want to point out to both
16 Helen's point and to Rute's point is that there's
17 a legacy issue involved with value set
18 harmonization here. In my mind, the reason we
19 have to do this project is not because,
20 hopefully, we'll need to do major harmonization
21 efforts over and over moving forward but, rather,
22 that, because originally users in the measure

1 authoring tool couldn't see other value sets at
2 all, they naturally have to create their own
3 value sets, and so there are many different
4 similar value sets created by necessity in order
5 to specify the measures.

6 And, here, I like the idea that has
7 been brought up by Rute and Helen which is that
8 we come up with these sort of not necessarily
9 formally-endorsable but these high-value, high-
10 quality, reusable concepts. There have been a
11 number of different groups, including a group of
12 implementers, who suggested there should be a
13 menu of these high-quality items and that measure
14 developers should be required or encouraged to
15 select only from that set unless they can justify
16 why they need to create new content that's
17 separate from that and that there be a process
18 for the community to endorse and provide feedback
19 on the creation of new content so that
20 implementers in the field would have sort of a
21 complete set of content they could expect and
22 would express almost any concept needed in the

1 current programs.

2 So I would be very interested to hear
3 feedback from this group on that approach and how
4 one might execute it.

5 MR. GOLDWATER: Dr. Heras?

6 MEMBER HERAS: Yes, I just wanted to
7 comment on the process of developing value sets.
8 So a lot of the --- currently the VSAC right now
9 is so much better than a couple of years ago but
10 right now only captured the appropriate
11 statement. So a lot of the development work is
12 still outside of the VSAC. Just here on this
13 2014 eMeasure annual update, just so much work is
14 outside, you know, it's captured in spreadsheet,
15 a lot of repetitive work. So, for example, if I
16 go there to review a value set, I don't know, you
17 know, what will stand. And people, when they
18 took the spreadsheet, want to go back to review
19 again, oh, they have to re-do it again.

20 So just all these details, you know,
21 you would see comments captured on spreadsheet
22 what this code is not, you know, it should be

1 removed. But all those details are just not
2 captured anywhere.

3 So I think, in the future, if we could
4 somehow, you know, if we have the tooling to
5 support that, that would be wonderful. But if we
6 can't get there that quickly, maybe somehow we
7 can capture that and just have a formal process
8 to possess that, you know, commenting. And when
9 I first put the value set together, you know, how
10 these codes are selected, why. And sometimes
11 they see people, you know, like if it's a
12 finding, but they put a codifier as no code. So
13 for that level of detail, you know, we have
14 structured, you know, guidance how to do that and
15 capture the flow so we don't repeat the QA
16 process and also more people can comment on in
17 the future.

18 So that's one part. And also the
19 other side is I'm actually really interested to
20 see -- if we could do this, that would be great -
21 - is now we have measures actually being
22 submitted to CMS, so if we could take a couple of

1 measures to see exactly what data has been, you
2 know, sent and exactly what codes people have
3 been sent for that particular measures, we can
4 actually see how the data, you know, just from
5 the, you know, first hand to see how the quality
6 of the data and whether the value sets are
7 different and also, especially, if people pick
8 SNOMED code versus ICD-9 code versus ICD-10, do
9 they make any difference in the performance rate?

10 So I'm just always curious to see
11 exactly the impact when we define value sets,
12 sometimes we just pick a code but exactly what
13 the impact is, you know, to the real measure.

14 MR. GOLDWATER: Matt and then Zahid.
15 Zahid?

16 CO-CHAIR BUTT: Yes, just in terms of,
17 I know we talked about how does or what is the
18 best way to represent a clinical concept through
19 a value set. Perhaps a framework might be that
20 the concept needs to be defined either at an
21 individual value set level, which means that it's
22 a single terminology involved, or at the grouping

1 level where multiple terminologies might be in
2 place. So perhaps a framework to define whether
3 you are attempting to define the concept either
4 at the group level or at the individual value set
5 level may be something to consider.

6 MR. GOLDWATER: So Ms. Martins and
7 then I'll summarize and we can take a short
8 break.

9 MEMBER MARTINS: I just wanted to say
10 that I completely second Yan's idea of seeing the
11 data. We've been working on this for three or
12 four years now. We don't have any data. This is
13 ridiculous to some extent, but I'd like to see
14 that information fed back into the VSAC à la
15 LOINC where you know how the codes are being used
16 and ranked according to their frequency of use.
17 And I'd like to see that for my value sets and
18 see, oh, maybe I can just get rid of some of
19 these values here. That would feed into the
20 maintenance process.

21 And, actually, that's a comment I
22 wanted to make on the slides where there's the

1 value set life cycle. It really doesn't end when
2 it's published. It never ends, and the
3 maintenance piece cannot be underestimated
4 because it is very significant.

5 DR. SKAPIK: And I'll just say NLM is
6 very interested in having that information.
7 They're not clear what the best way of capturing
8 it is, so suggestions from the group would be
9 also helpful.

10 MR. GOLDWATER: All right. So Dr.
11 Chute, Dr. McClure, quickly.

12 MEMBER CHUTE: A brief zinger before
13 the break. I hope we all realize that value sets
14 as a way of characterizing a clinical concept
15 are, in fact, a very poor surrogate. If we want
16 to get really pointy-headed about this, the
17 fashionable phrase is high throughput clinical
18 phenotyping, and it typically involves a series
19 of algorithms that, oh, by the way, invoke value
20 sets. But there's a whole lot of logic. If you
21 want to find your pool of diabetics, you look at
22 drug utilization, you look at laboratory results,

1 you look at diagnostic codes, you look at
2 procedures, and you look at permutations,
3 multiple permutations of all of those puppies.

4 So I hope we realize that when we're
5 talking about value sets, we're still talking
6 about a very poor cousin to the actual goal of
7 what we're trying to achieve. Now, for quality
8 metrics, it may be satisfactory. But I think we
9 have to understand that, as soon as we dip our
10 toes in the grand unified world of clinical
11 application versus quality application, that what
12 we use for quality may not pass in a clinical
13 decision support environment.

14 MR. GOLDWATER: Dr. McClure?

15 MEMBER MCCLURE: Actually, I'm going
16 to comment on that, and then I'll say what I was
17 going to say, and that is I agree with you,
18 Chris, but I would actually characterize that as
19 just, you know, complex logic in the context of
20 still using value sets. Certainly, there are
21 value sets that become smaller and smaller in
22 terms of their targeted set of expectations

1 within the data. But you are very much on track
2 to this issue of, I think everybody understands
3 the question is how is the Committee going to
4 accomplish this with regards to understanding
5 that value sets, evaluated in isolation, is
6 useless. I mean, we have to think in the context
7 of how you create a good value set, particularly
8 how you harmonize. When you look at it and you
9 say, well, these could be harmonized, but, in
10 fact, one group was ignoring the fact that
11 there's these various issues going on and another
12 group understood it, and so they were more
13 discrete in their logic, whereas these aren't.

14 And so we can't harmonize these
15 because really what needs to be harmonized is the
16 model of the quality measure. And then the value
17 set will fall out.

18 So we would really be remiss if we
19 don't tackle this larger problem without somehow
20 getting stuck in the mud of trying to actually do
21 measure harmonization and not just -- so that's
22 one.

1 But the second thing, I just wanted to
2 highlight something because it's something I've
3 thought a lot about and we've mentioned it and
4 it's really important, and that is there are many
5 ways to characterize value sets, but, in the
6 context of our use, there really are two. One of
7 them I think predominates, and we pretend it's
8 the other. And those two things are there are
9 value sets that the measure developer is saying I
10 think that -- I'm guessing people don't really
11 capture this, I'll use the word in code. We
12 don't really capture this, and so I'm giving
13 guidance about the fact that I want this
14 captured, this is an important piece of
15 information. Maybe you capture it sometimes but
16 not all the times, and so I'm communicating to
17 you through the series of concepts and, quite
18 honestly, through the measure that this is the
19 kind of information that you're expected to do.

20 Now, I don't know if we were asked
21 what percentage the measure developers really
22 honestly would say that that's going on. But

1 given the kind of implementation issues that we
2 hear occur all the time, the fact is that's a
3 gigantic percentage of what's happening.

4 The other is I'm confident these
5 things are captured, and I need to make sure that
6 I've got the entire scope of concepts that are
7 captured, are in my value set. In essence, I'm
8 telling the implementer, hey, don't worry, I've
9 got it in here, so if you're capturing it you
10 don't have to worry about taking something that's
11 detailed in the context of clinical care and kind
12 of walking up the hierarchy or mapping it to
13 something else that I actually have because I
14 know you're capturing it and, i.e., the ICD
15 situations.

16 That first piece, though, if we create
17 value sets with the same mind set for both of
18 those situations, we create havoc. And in
19 particular, when you're communicating to folks
20 here's the set of concepts that -- or here's the
21 thing that I want you to capture, particularly in
22 the context of what's really going on, i.e. if

1 they are already capturing it and it's in their
2 local environment, then they're going to have to
3 do mapping.

4 And so I'll take this to the logical
5 and somewhat improper end point. You could put
6 one concept in that value set and say map
7 everything to this. Now, that's obviously not a
8 great solution because then you're not
9 communicating probably sufficient to do good
10 mapping, right? Because, again, part of the
11 whole issue around value sets that we have to
12 embrace and that we've been pretending doesn't
13 happen is mapping. And the fidelity of mapping,
14 it's kind of important.

15 Anyway, what I'm trying to communicate
16 is that I think it is actually important to
17 separate out the constructs about particular
18 value sets in harmonization and also in creating
19 when what you're doing is communicating to say,
20 hey, in the past you might have captured this,
21 you might not, there might be a few things,
22 here's what we want you to encode. And in those

1 cases, do we want to give a value set of 5,000
2 concepts versus those places where we're
3 confident there's capture and reliable high-
4 fidelity mappings already in place with regards
5 to the code system that we're going to use in our
6 value set and, particularly when you've got big
7 things, say, okay, these are the 5,000 that I
8 know are out there and all of them are equivalent
9 in my context. Those are very different
10 situations, and if we pretend they're the same we
11 create havoc downstream I think.

12 MR. GOLDWATER: Okay. Zahid, the last
13 word, and then I'll summarize.

14 CO-CHAIR BUTT: Yes. So I think it
15 sort of is along the lines that Rob just said.
16 In terms of what values get used in terms of
17 implementation or what data gets captured, again,
18 depends upon the use case. So for example, you
19 could have a very long value set of RxNorm codes
20 in the implementation process. That really
21 doesn't change whether that's a short list or
22 long list because the pharmacy system would have

1 the entire thing of RxNorm in there. The issue
2 there is does the value set contain a medication
3 that's not in the system or if there's a new
4 medication.

5 But when it comes to any kind of value
6 set that's used for a pick list of some sort that
7 a clinician has to, that needs to be, again, very
8 --- sort of parsimonious, and often people will
9 take a long list and they'll shorten it and just
10 implement 5 of the 50 that are in there, and so
11 that's what they'll capture.

12 And so it kind of depends upon the use
13 case in terms of what gets captured and how it
14 gets implemented.

15 MR. GOLDWATER: Okay. So with that,
16 I think we're going to take a 15-minute break.
17 When we come back, I'll run you all through some
18 of the pre-work analysis that we did because I
19 think it is highlighting a number of these issues
20 that we've talked about. And then what we would
21 like to get into then is sort of categorizing
22 these issues and start developing potential

1 mechanisms of resolving them. And then after
2 lunch, we'll start developing a more formalized
3 process that we can then start testing.

4 So thank you. This has been a great
5 discussion. It's everything we thought it was
6 going to be and more. So thank you all very
7 much.

8 (Whereupon, the above-entitled matter
9 went off the record at 10:49 a.m. resumed at
10 11:10 a.m.)

11 MR. GOLDWATER: Okay. So, let's
12 reconvene. Thank you for those that have.

13 Dr. Schneider, are you a basketball
14 fan?

15 MEMBER SCHNEIDER: College.

16 MR. GOLDWATER: College, oh. I was
17 going to say, well you know, the Mavericks and
18 Rockets are playing tonight, let's --

19 MEMBER SCHNEIDER: Oh, well, secondary
20 matters.

21 MR. GOLDWATER: We should interface.
22 Like I say, I'm from Dallas originally, which is

1 the only reason why I have an interest.

2 All right. So what we're going to do
3 at least for the first 15 parts -- minutes of
4 this -- second half of this discussion is, I want
5 to go over some of the pre-work analysis that we
6 did for ONC prior to this meeting.

7 And I want to make this disclaimer.
8 Ann, Katie and I all worked on this together. We
9 are not physicians. We do not claim to be
10 physicians. We do not play physicians on TV.

11 And we did not make any sort of
12 deductions based on our lack of clinical
13 expertise. We simply looked at concepts that
14 look similar that were represented in two
15 different ways, and pointed those out.

16 So, --

17 CO-CHAIRMAN BUTT: And many of us are
18 becoming like you guys.

19 (Off mic comments)

20 MR. GOLDWATER: I'll take it as a
21 compliment. So, what we want to do is go through
22 what the analysis that we did. Because I think

1 some of it does align with some of the
2 discussion.

3 Get your feedback on that pre-work
4 analysis. And then again, start delving into how
5 we sort of tune, finely tune some of these areas
6 of harmonization that have been discussed.

7 So, we took on some pre-work analysis
8 40NC and the basis for this was a paper developed
9 by Wittenberg and Bodenreider. Which we used
10 sort of as the core methodology rather than
11 devising one ourselves, we used one that had
12 already been published.

13 Which looked for assessment for
14 completeness and correctness in value sets. And
15 looked for opportunities for harmonization by
16 eliminating redundancies in groups of like-minded
17 value sets.

18 The measures that we used -- we used
19 the meaningful use two measures. We first
20 started by asking Kevin and Julia, who were very
21 gracious and used their staff to provide data
22 back to us on the most frequently reported

1 meaningful use measures, thinking that would be a
2 good starting point.

3 That we would look at those that had
4 been reported the most, and see if there was any
5 sort of variance or deviations or overlaps. And
6 we didn't find anything initially in the most
7 frequently reported.

8 So, we just kept working our way down
9 -- until eventually we got to five measures
10 divided between eligible provider and eligible
11 hospital measures that we used as the basis for
12 analysis.

13 And we took the overall value set and
14 the OID that was associated with that. And then
15 from that parent value set, when we delve into
16 the subvalue sets to see what level of overlap
17 there may have been.

18 We compared the codes and content in
19 the same topic measures. We did this manually,
20 which I would not recommend doing with some --
21 with value sets that extended into the -- yes,
22 like beyond the capabilities of Excel, then you

1 certainly know how many you have.

2 And the method for comparing the
3 similarity and diversity, we used a Jaccard
4 Index. Which again goes back to the Wittenberg
5 and Bodenreider analysis as that's what they
6 used. Next slide.

7 So, our eligible professional measures
8 using the Jaccard Index, one of the measures we
9 used was depression. Depression screening after
10 nine months.

11 And we looked at two value sets. The
12 Jaccard threshold was .49 and above. Anything
13 that fell below .49 we did not include.

14 And also, at the request of ONC, CMS
15 and NLM, we only looked at terminologies that
16 were SNOMED, LOINC, RxNorm and CPT. We did not
17 look at ICDs at all.

18 We did however note whether there was
19 some overlap between the SNOMED codes and the
20 ICDs that we looked at. But we did not delve
21 into that analysis.

22 You can see some of the value sets

1 that we found with one measure as opposed to
2 another. And the types of measures that we were
3 looking at.

4 And again, without being a clinician,
5 we found a value set for depression diagnosis and
6 then another value set for major depression
7 including remission. We found depression
8 screening denominator and counter codes new and
9 then a BMI and encounter code set where there was
10 a correlation.

11 And then even towards the bottom of
12 this, we found a value set for bipolar disorder.
13 And then another one for bipolar diagnosis. The
14 high Jaccard indicates that there was high
15 overlap in the subvalue sets that were associated
16 with each of these parent value sets. Next
17 slide.

18 Some of the other ones that we found,
19 which I personally found interesting not knowing
20 what the differences were with these. We found
21 some subvalue sets that looked at like recurrent
22 depression which is characterized as a disorder.

1 And then recurrent major depression as
2 a disorder. And I'm not sure what the difference
3 is between those two. Or chronic depression or
4 chronic recurrent major depressive order. Or
5 major depression and partial remission or
6 recurrent major depression and partial remission.

7 Again, these had Jaccard Indexes that
8 were high enough indicating that there was
9 overlap between these two. And again, it gets
10 back to the issue of is this acceptable degrees
11 of overlap, or is this redundancy that needs to
12 be harmonized. Next slide.

13 We looked at a manual comparison of
14 eligible hospital measures. Ann Phillips took
15 the yeoman's task of doing the stroke and BTE
16 measures, which have thousands upon thousands
17 upon thousands of value sets.

18 So, we both thought there has to be an
19 automated way of doing this, which we will be
20 investigating at some point in time.

21 And these are the measures that she
22 found where there was significant degrees of

1 overlap, at least .49 and above. Because there's
2 so many value sets, we did not break this down.
3 Otherwise, we would be here for a couple of hours
4 and not having a discussion.

5 But you can see in some of the stroke
6 measures, particularly those that dealt with
7 therapy and medications, there was significant
8 degrees of overlap. Next slide.

9 So we examined all the value sets
10 associated with these measures. Again, dealing
11 with AMI and stroke.

12 And these two particular value sets,
13 both of which the Joint Commission is the
14 steward, were entirely identical. There were no
15 unique codes amongst them. They were exactly
16 alike. And used throughout the measures that are
17 listed. Next slide.

18 With these five OIDs, so these five
19 parent value sets, again, most of these were done
20 by the Joint Commission, except one was developed
21 by Lantana. And again, in measures that were AMI
22 and stroke based, we found some interesting

1 observations.

2 Is anticoagulant therapy complete?
3 Can it be harmonized with perinatal
4 anticoagulant? We found antithrombolytic therapy
5 was missing in many aspirin products that were
6 found in the aspirin value set.

7 And we found another injectable factor
8 prophylaxis was missing. The same type drugs
9 found in the perinatal anticoagulant. So --
10 parental, sorry.

11 See, I'm not a physician, Kevin. I
12 don't even know how to pronounce the words.

13 So, in some cases we would find a
14 complete value set of drugs. And in another
15 value set we would find none of them at all.
16 Even though they were dealing with the same
17 condition.

18 Which again sort of goes back to,
19 what's the scope? What's the intent? And then,
20 there was no way of tracing them other than we
21 know the Joint Commission was the steward.

22 There was no way of sort of tracing it

1 back to how was this created? What data was
2 used? And so forth. Next slide.

3 And then you can actually see in one
4 value set for antithrombolytic therapy, there was
5 a list of medications. And in another one for
6 aspirin, there was a list of medications.

7 And in one of those value sets, some
8 of them are completely missing. They're not
9 there.

10 Go ahead.

11 MS. PHILLIPS: I will say that you are
12 looking at probably an eighth. Maybe less than
13 an eighth of the entire spreadsheet for this,
14 that I put together between three or four
15 different drugs. That it had some overlap and a
16 lot missing.

17 MR. GOLDWATER: So, and again, no way
18 to go back and trace this. And no way to
19 understand how this was developed initially and
20 what refinements had or have not been made. Next
21 slide.

22 Again, identifying five other value

1 sets and the measures that they are associated
2 with. Again, with AMI, stroke and BTE being the
3 ones that were examined.

4 Statin specific, value set list of
5 medication names, but didn't have any dosages.
6 Antithrombytic specific, was duplicative with
7 antithrombytic therapy. But dosage information
8 was not in the specific measure.

9 Antithrombytic specific and
10 anticoagulant specific were almost entirely
11 duplicative. Warfarin did not include any dosage
12 information.

13 And the other one, which I'm not going
14 to pronounce, was missing the same ingredient
15 drugs. Although other measures similar to that,
16 had that formulation. Next slide.

17 Okay. We're --

18 (Laughter)

19 MR. GOLDWATER: I am unbelievably
20 efficient. I know, yes. Right.

21 So, I think in summary, I think you
22 can see, I hope, that we got some of this right.

1 Some of the very issues that were being brought
2 about, which were, again, what is the scope of
3 the measure?

4 And then what are the scope of the
5 value sets that have to constitute that measure?
6 Are the value sets sort of adequately, as best as
7 possible, representing the clinical intent of
8 those particular measures?

9 How do we get to the provenance of how
10 these value sets were created? And understand
11 sort of their different variations and versions?

12 Because clearly, these are measures
13 that have been around for a while. We did not
14 get with measures that are just started.

15 Those of you that have been NQM
16 understand VTE, stroke, AMI have been around
17 since I was starting to work in this area 20
18 years ago. So, these are not new.

19 So, there are certainly, what changes
20 or variations have been made in the value sets as
21 they have evolved. And then sort of getting back
22 to understanding what these value sets are, how

1 then do we sort of come up with a clear
2 consistent value set that has all the correct
3 information?

4 How do we evaluate that? And then
5 what direction do we give to indicate this is how
6 it should be constructed in a way so that we
7 don't find these things again as we're moving
8 forward.

9 And so I think where I want to start
10 with the discussion is, I think it gets back to
11 Dr. McClure's point, how then do we sort of
12 understand mapping the scope of a measure to its
13 value set? And how do we measure the scope of a
14 value set?

15 Kevin?

16 DR. LARSEN: Yes, just a little bit of
17 framing. And I'm sorry I wasn't here at the
18 beginning. So this isn't a way to point any
19 fingers at anybody.

20 You know, we are uncovering things
21 that were created. And there are lots of reasons
22 why things are the way they are. So, it's also,

1 this is an -- the intention here is to be a pilot
2 by example.

3 So, we also think or probably think
4 that we're not going to be able to go through,
5 you know, 15,000 value sets to this level of
6 detail. And there just is, you know, no way a
7 committee like this can do that.

8 But we're hoping by sort of raising
9 some examples up and having a discussion that we
10 can continue to evolve and inform how this
11 process could look. And how it lines up to an
12 overall measurement strategy and an overall kind
13 of NQF set of processes of evaluating which kinds
14 of measures are of high value and which kinds of
15 measures need more work.

16 MR. GOLDWATER: Zahid?

17 CO-CHAIRMAN BUTT: So I think in terms
18 of sort of the process that we need to go
19 through, you've got two specific, I think, use
20 cases. One is that you have all these existing
21 value sets out there that we know are
22 duplicative.

1 In some cases they have errors in
2 them. And so there's a specific goal to try to
3 find a way in how do you take care of the legacy
4 issue.

5 And the other is that, you know, if
6 there are new measures and new value sets, what's
7 the entry point for that? Now there's an
8 overlap. Obviously the same -- hopefully the
9 same process will inform both situations.

10 But the entry point is somewhat
11 different. And so, that's sort of the scope in
12 the sense of it.

13 MR. GOLDWATER: Dr. Chute?

14 MEMBER CHUTE: Rute had mentioned in
15 the earlier session the HITSP work on intentional
16 value sets. And Marjorie actually was in -- and
17 I and Rute were chatting about it during the
18 break.

19 But these examples are really
20 characterizations of what I would call drug
21 classes. And efforts, arguably imperfect efforts
22 to enumerate what elements, what RxNorm drugs or

1 whatever, actually belong to a member of that
2 particular drug class.

3 In the context of measure development,
4 it seems perhaps desirable to entertain that
5 measure authors might perhaps specify the drug
6 class, rather than try to make up their own darn
7 value set. And at a very authoritative forum,
8 which was Don Lindberg's retirement party last
9 week, I was chatting with Olivier Bodenreider on
10 this very point.

11 And I said to Olivier, you know, gosh,
12 are you guys going to deliver drug classes that
13 we can rely upon? Because one of the big
14 problems with drug classes is that they were in
15 NDF-RT and other environments.

16 Well, I could prattle on. Suffice it
17 to say that RxNorm now has, according to Olivier,
18 specified a more robust characterization of drug
19 classes. And where it fails to be sufficiently
20 robust, obviously NLM is welcome to input.

21 The point being, why are we going
22 through this whole value set exercise ourselves?

1 When lots of other organizations and presumably
2 highly authoritative and designated organizations
3 like NLM, in the case of drug class
4 specification, are investing considerable
5 resources and expertise to engage in that process
6 for us.

7 MR. GOLDWATER: So, first Chris, you
8 must be a blast at parties if that's what you're
9 talking about.

10 (Laughter)

11 MR. GOLDWATER: And so Dr. Che?

12 MEMBER CHE: So I just want to comment
13 on these efforts. So, we have done something
14 similar about two years ago on the medicine
15 harmonization.

16 So I want to say, it doesn't have to
17 be the manual effort. That we have developed a
18 tool where you can scan at a code level between
19 any sets of the value sets.

20 So, that's, you know, has been done.
21 So, in terms of the result, we brought this kind
22 of similar kind of comparison to the value set

1 steward of developers. And we want to ask them,
2 what's your reasoning?

3 First of all, are you aware of these,
4 you know, duplications? And what was your
5 reasoning if you want to stay with the way, you
6 know, your value set is now. I mean, you have to
7 provide some justification.

8 So a lot of times they can provide the
9 justification. So, I think you know, that could
10 be some of the process, you know, we can go
11 through. You know, you have to look at each
12 individual set of values that you determine why
13 you want to, you know, treat that way.

14 And you can also capture that original
15 thought. And you know, provide it to the user.
16 And the user likes to know that as well.

17 MR. GOLDWATER: Ms. Martins?

18 MEMBER MARTINS: So my babies are on
19 display. And they're horrible. I mean, no, no,
20 I just --

21 (Laughter)

22 MEMBER MARTINS: So, this is very

1 interesting because the analysis was done with no
2 prior knowledge of what had gone into this. So
3 the results are actually quite interesting.

4 It goes back to the lack of
5 documentation around how value sets are made.
6 For instance, the value sets that was name end
7 with specific are actually value sets that were
8 only include ingredients for RxNorm. And they
9 were created to solve an implementation problem.

10 So, you know, --

11 MEMBER MARTIN: Well they are -- now
12 they're mine.

13 (Simultaneous speaking)

14 MEMBER MARTIN: Oh, no.

15 DR. BURSTIN: We get a transcript of
16 this meeting --

17 (Laughter)

18 MEMBER MARTIN: Warfarin is actually
19 my bigger baby. But, so it does go back to the
20 lack of documentation I think around some of
21 these.

22 And an interesting point about this is

1 that I am fully aware that some of these value
2 sets have a ton of overlap. And we've never
3 really addressed it. Because initially, when
4 they were developed, they were developed in
5 different fronts. Different people, all of that
6 legacy issue.

7 But, I have a table. And I've had
8 this table probably since late 2012 that shows
9 what the overlap is. We never addressed it
10 because this would mean actually creating better
11 value sets, but to the cost of the implementation
12 community.

13 So, that's an interesting factor to
14 consider here is that, we would need to create
15 smaller units, smaller value sets that we could
16 then use to build up these antithrombotic versus
17 anticoagulant for stroke versus VTE patients.

18 And we never really did it because of
19 the cost it would bring to the implementation
20 community. Having said that, it's something that
21 we're happy to do if that's something that the
22 implementation community feels is valuable.

1 And it would also actually lower the
2 cost of maintenance to it when we think about it.
3 Because you don't have to do it multiple times
4 and multiple value sets.

5 So, just to throw some context around
6 some of these findings.

7 MR. GOLDWATER: So, yes, we had no
8 idea what the past history was. I mean, we just
9 knew who the steward was. And it was just
10 basically a line by line analysis of all of this.

11 And I wish we knew that there was a
12 tool. And so, we'll talk to you about that later
13 when this --

14 MEMBER McCLURE: It took a long time
15 for me to get to that point where I was just
16 going to interrupt.

17 So, the -- did you look at the
18 purposes? Because for example, the ones that end
19 in specific all do actually have purpose.

20 So in the context of your analysis did
21 you look at the -- the description? Now, the
22 comparison --

1 MR. GOLDWATER: So -- so --

2 MEMBER McCLURE: Oh, you're not
3 authors.

4 (Laughter)

5 MR. GOLDWATER: Right.

6 MEMBER McCLURE: Never mind.

7 MR. GOLDWATER: And so Dr. McClure,
8 the other reason why, again, I did not want to
9 extend the boundaries of what we are not
10 qualified to do. So, I admit, we're pretty
11 adept.

12 But, I -- we wanted to sort of get
13 away from any sort of conclusion about the
14 differences between recurrent major depression
15 and major depression. I don't know what those
16 differences are.

17 So, you know, they just look alike to
18 me. And the Jaccard was indicating an overlap.
19 So we highlighted it. You know, that, to me,
20 indicated what there was a purpose for.

21 Before I get to Dr. Bregman, I do want
22 to sort of get back to, you know, the focus that

1 Zahid wants to sort of lay out here. Which is we
2 got legacy value sets, a lot of them.

3 And then we have, you know, the idea
4 of making new value sets which happens fairly
5 frequently. So, in terms of legacy value sets,
6 which a lot of what is what we're focusing on
7 here, again, how do we sort of constitute what is
8 a good value set as opposed to one that needs
9 some degree of refinement?

10 And how then do we determine what some
11 -- when something needs to be harmonized and when
12 something does not? What's acceptable overlap?

13 Dr. Bregman?

14 MEMBER BREGMAN: Well, I'm very
15 interested in the history of these value sets.
16 However, that interest is limited because it
17 doesn't really matter.

18 It doesn't matter what the history of
19 these value sets are. The question is, what are
20 we going to do from here?

21 Now Dr. Chute has proposed a rather
22 radical solution, which may be an effective

1 solution. That's something I think we should
2 discuss.

3 But really, look, some of these value
4 sets are synonymous and should not be distinct.
5 Some of them clearly ought to be distinct for
6 whatever reason that we may not know now, but
7 they should be.

8 Where we going to go with this? Would
9 we have to reconvene all of the committees that
10 created them in order to do anything with them?

11 I'm afraid that the answer might be
12 yes. And that would just -- then we would just
13 throw up our hands and say, well forget it. That
14 can't be done.

15 Or is there another way to do it? I'm
16 not saying I know the answer. But, for example
17 if, could the NLM own value sets based on
18 pharmaceutical class? --- and maintain them and
19 then the measure stewards would basically say
20 yes, that's what we meant.

21 We just meant statins in whatever form
22 they are. And therefore, we are going to abandon

1 our current value set and we're going to go to
2 the NLM maintained value set. Which may just be
3 based on the statin pharmaceutical class and
4 nothing more granular than that.

5 But that's the kind of solution we
6 have to come up with. Hopefully by the end of
7 the day. Something like that.

8 And I'm glad that we are focusing on
9 drugs. Because I suggested -- I was talking to
10 Nancy and I said, if all we did today was only
11 come up with a solution for pharmaceuticals only,
12 and didn't even tackle laboratory results or
13 other SNOMED concept or diagnoses, which who
14 wants to touch that, I think that would be a big
15 achievement just to tackle drugs.

16 And I think a lot of clinicians would
17 like that a lot. Because that's what they often
18 struggle with.

19 MR. GOLDWATER: Sharon?

20 DR. HIBAY: Yes. I'd like to just
21 play devil's advocate about whether or not going
22 back to the measure developer themselves is a

1 prudent option?

2 That will depend upon their level of
3 involvement. Their skill, their knowledge.
4 Their ability to capture history. All of those
5 pieces.

6 So, it would seem that we would look
7 for a solution that would be a consistent
8 measuring stick across all measure developers.
9 So, especially at this time.

10 So one of the premises of this
11 proposal when we first went after it, was you
12 know, the efficiencies that would be utilized by
13 harmonizing. So you can be new or somewhat
14 novice to the measure development space.

15 And you can come in and say, you know
16 what, I don't have to go and figure out what is
17 diabetes. So it's a bit umbrella for diabetes
18 and what are all the subdiagnosis umbrellas, you
19 know, value sets for those.

20 Someone's already done that work for
21 me. So if I would go to Sharon Hibay, measure
22 developer, and say, well, let me decide what is

1 diabetes, I just don't think that quite goes to a
2 -- I don't know how else to say this, but to a
3 higher enough authority. And one that would be a
4 consistent and reliable measuring stick.

5 So I just would kind of put that out
6 to the group.

7 MR. GOLDWATER: Dr. Lieberman?

8 CO-CHAIRMAN LIEBERMAN: I think to
9 build on what Howard and Chris said, I think the,
10 you know, the medication classes would be great.
11 I haven't looked at RxNorm recently to know
12 whether or not their medication class system
13 would meet the needs of this project at this
14 time.

15 But that would be a -- I mean, that's
16 exact what we do --- is when we look at a measure
17 and they're looking for beta blockers, yes,
18 that's how I look at my list that eventually
19 comes out in the EMR and says okay, those are the
20 beta blockers, but it's not finding something
21 else. So was there another way to look for it?

22 So, that would be very, very useful.

1 And you wouldn't necessarily need, you have to
2 decide, you know, where do -- where do we use a
3 value set versus where do we use this
4 terminology?

5 And it may be that, you know, you
6 might need to reproduce and have a value set for
7 each of the drug classes to start with. And then
8 you know, combinations after that.

9 But what you do need is, what I think
10 would be useful is, then to have in the
11 definition of the value set, you also have a
12 logic statement using one of these terminologies
13 such as, you know, all beta blockers except for
14 ophthalmic ones. Or whatever that is.

15 But you can express that in a logic
16 statement so it's very clear what you plan to
17 use. And that I think, you know, eventually
18 would help the implementers as well in
19 determining how to implement that in their
20 system.

21 And it maybe is, you know, we all have
22 this ideal of the electronically consumable

1 electronic measure. But -- and that may happen
2 someday.

3 But before then, you can take -- you
4 can be more accurate in your implementation if
5 you have that type of logic to work from. And
6 especially if there's a, you know, good
7 supporting terminology around that.

8 And you could do a similar thing for
9 diagnosis as well.

10 MR. GOLDWATER: Zahid?

11 CO-CHAIRMAN BUTT: So, yes, I think
12 medications do sort of cover the broadest
13 spectrum of the issues in this area. And the
14 reason why some of the levels of granularity are
15 required or were felt to be needed in medication,
16 comes down to the use case or the workflow at
17 what point. Especially at negation occurred.

18 And so, that's where sometimes if it's
19 a physician ordering negation, it was felt that
20 the values that needed to be at the ingredient
21 level. Potentially in some cases it could be
22 even at the class level.

1 And if it is negated at the point of
2 administration, it's got to be at the fully
3 specified RxNorm level. Because in the workflow,
4 that's kind of where all of these things are
5 occurring.

6 And so, that's sort of to me the piece
7 that forces this level of you know, multiple
8 layers of value sets presumably within the same
9 family of measures. And so, I think if we can
10 come up with a process of how do you determine
11 that in the context of the workflow, because
12 eventually that's what's important in the
13 implementation.

14 And I agree with Chris 100 percent
15 that for the things that are already specified as
16 a standard through either NLM or somebody that
17 for that type of usage, it should be basically
18 used -- we should use the ones that are already
19 standardized and available.

20 But, if the need is for something
21 different, then that needs to be called out and
22 say, you know, why is it different? And what's

1 the metadata, what's the concept supporting the
2 difference?

3 MEMBER SMITH: So, I just want -- I
4 just want to caution people. Because all of
5 these value sets, just as a reminder, go to
6 specific measures that were developed many times
7 in concert with a set of clinicians or experts
8 who agreed that certain types of people needed
9 certain treatments.

10 And the measure is really trying to
11 narrow it down to these are the people. And this
12 is the event that should happen.

13 And so when we talk about, you know,
14 maybe this value set is good enough and we can
15 reuse it. But it's not really targeted at the
16 set of people that were meant to receive that
17 type of treatment.

18 Then we talk about physicians who
19 maybe can't achieve 100 percent. And people will
20 say, well why can't you get higher than an 80
21 percent? Well, because I have all these people
22 in my measure that I have to report on that

1 really shouldn't have received this treatment.

2 So, I think we need to balance. I
3 mean, not that no value sets can be reusable.
4 But I think we have to balance with the end
5 result as well.

6 And say, if we're going to create
7 value sets that are good enough. Or that you
8 have to reuse, then we also have to look at the
9 downstream effect and say that maybe a physician
10 isn't going to be able to get 100 percent either.

11 MR. GOLDWATER: Joe Schneider?

12 MEMBER SCHNEIDER: Just, I wanted to
13 pick up on Howard and Sharon's comment about the
14 -- you know, what do we do about all the things
15 that are there?

16 I heard we've got 1,500 value sets.
17 Some of which are good. And some of which are
18 possibly significantly defective.

19 And the concept that we would go back
20 to the steward as if the steward was the owner,
21 is, I don't think, a good one. I want to
22 distinguish between, there are stewards and

1 there's owners and they're different.

2 And when you create a value set, I
3 would like to -- maybe it's already been done or
4 proposed or whatever. But when you create a
5 value set and you submit it into the VSAC ---
6 that you are giving up ownership rights of that.

7 You may be the steward in terms of
8 keeping it current and so on. But you no longer
9 own it. And whether you get to change it is
10 something that the VSAC or a body within the VSAC
11 gets to say whether you can do that or not.

12 MR. GOLDWATER: Zahid?

13 CO-CHAIRMAN BUTT: So I think just to
14 follow up on what Ann was saying. I think
15 conceptually what we're trying to do is to say
16 that the variation is acceptable as long as it is
17 done through exception and it is well documented
18 in a transparent way, why the exception was
19 necessary.

20 Sort of the framework that we should
21 try to reuse them as the default. But if there
22 is a need to not to use the default, then there

1 needs to be full disclosure as to what concept
2 constitutes.

3 And that should be visible to
4 everybody including the implementers.

5 MR. GOLDWATER: Dr. Rallins?

6 MEMBER RALLINS: And just to build on
7 that further, on Ann and Zahid's points, so
8 whoever is actually receiving, you know, say the
9 new value sets that are based on logic
10 statements. Also, have to be able to interpret
11 them in that way.

12 I mean, so we can be very clear on how
13 we see them. But when you really get to
14 implementation on the value sets, so receiving
15 them and interpreting the data, well, you know,
16 that's a whole another world then this one, so.

17 MR. GOLDWATER: Dr. Schneider, did you
18 have something else? Okay. Yes, Kevin?

19 DR. LARSEN: Yes, could you go back to
20 the depression one for a sec?

21 MR. GOLDWATER: Sure.

22 DR. LARSEN: I think another tension

1 that would be interesting to hear this group talk
2 about is the kind of specialist versus generalist
3 tension that we sometimes face in these measures.

4 And when I look at the depression
5 issues here, I try to wear two hats supporting
6 the psychiatry community that has very nuanced
7 differentiation between diagnostic terms and the
8 generalist community which has a less nuanced
9 differentiation. And sort of would be interested
10 in how this group thinks about those kinds of
11 issues as we approach this in a kind of national
12 suite of tools and measures.

13 MR. GOLDWATER: So, I think --- I
14 guess, trying to move forward a little bit. Let
15 me start off with, I guess, there's two issues
16 that have sort of come up, that have surfaced.

17 So the first is, this is a large
18 undertaking by any stretch of the imagination.
19 Certainly there is an awful lot to do in now five
20 hours, six hours.

21 So, do we as a Committee, do you want
22 to focus on perhaps developing a pilot process

1 that specifically just focuses on medications?

2 And that would be what we do for the rest of

3 today.

4 And not do lab tests, diagnoses, et
5 cetera. And Kevin, is that acceptable?

6 DR. LARSEN: Yes. I mean, we're -- we
7 want you guys to pilot something that you think
8 makes sense.

9 MR. GOLDWATER: Right. Does that seem
10 agreeable to -- Dr. McClure?

11 MEMBER McCLURE: I saved you from the
12 very last part of that sentence. Let's see, how
13 am I going to approach this?

14 The -- well, first off, let me say
15 that I'm in support of focusing on a particular
16 area. And medications, I think, are a reasonable
17 thing to do.

18 But, I do want to say a couple of
19 other things. You've heard me say now a few
20 things that I think we need to capture. And I
21 know you're transcribing and doing that.

22 I really want to see us identifying

1 certain things. There's good ideas that are
2 coming out that we can't address in the context
3 of -- or certainly today, and perhaps even in the
4 phase of the work that we're proposing to try to
5 accomplish.

6 But the fact that they've been said,
7 it needs to be recorded because they're the sort
8 of things that get said in the context of this
9 work in general across a lot of different
10 meetings. And then they just kind of get lost.

11 And you know, when you hear them 15
12 times, you realize they're important. But nobody
13 ever really puts them on a priority list to
14 actually deal with.

15 And so, I really would like this
16 Committee to identify those things. And endorse
17 that they get addressed at some point.

18 And so, I just want to -- I can't say
19 too strongly how strongly I feel that we need to
20 do that as part of our work. Maybe not today.
21 But as part of our work.

22 And in the context of that, so making

1 a decision for example, to say okay, we're going
2 to focus on medications. There's some elements
3 to this that I'm still a little -- struggling a
4 little bit in order to understand what's our
5 charge?

6 Because we've talked about various
7 ways of kind of cutting this. And I think we do
8 need to be very clear about that. Because I
9 think it's possible to accomplish things. And
10 then again, these other things go on a priority
11 list.

12 So, for example, the difference
13 between addressing existing ECQM value sets and
14 harmonizing those. Versus saying how
15 harmonization should be approached in the future.

16 The difference between addressing and
17 identifying opportunities -- so there I talked
18 about how you harmonized. Addressing and
19 identifying those value sets that should be
20 harmonized versus how one should look and utilize
21 existing value sets in the process of creating
22 new value sets in the future.

1 The issue with regards to the -- how
2 one -- what kind of information should be
3 available to -- should be documented by authors
4 for existing value sets. And I don't know that
5 there's going to be a lot of difference between
6 what you would then do it in the future.

7 But, what kind of information do we
8 think is necessary in order to do harmonization
9 versus and in complement to, create knowledge
10 about value sets going forward, i.e. this issue
11 about drawing in elements of how is this value
12 set used? Right.

13 And then finally, as I look at this,
14 this really highlights for me too, the issue of
15 understanding code systems. And then, you know,
16 this is what -- Chris brought this up. And we've
17 talked around this. And we're going to --
18 there's dragons in this.

19 So, the idea of -- the knowledge
20 inherent in any terminology and how you use that.
21 And how that plays into again, our two kind of
22 areas, one the expectations around harmonization.

1 Very much overlapping but different from the
2 expectations in terms of creating new value set
3 content.

4 So for example, and I'll just point
5 this out as an example of that, but just very
6 much aligned with this idea of drug classes,
7 which has its own unique brand of dragons. I
8 can't help but see Game of Thrones when I say
9 that.

10 But, sorry. So, I'm going to even
11 actually misstate, but tympanometry. How do you
12 actually pronounce it? Tympanometry.

13 Tympanometry testing. And then next
14 with high frequent tympanometry. My guess is,
15 without, thank God, knowing this as a fact, is
16 that the tympanometry testing is a collector
17 concept from SNOMED.

18 And therefore, is -- and a very useful
19 concept in the context of all tympanometry. And
20 the other one is a specific one.

21 And so, part of the details that I
22 wish we wouldn't have to deal with. We have to

1 say something about though, is expectations with
2 regards to those concepts being in value sets.
3 And their use.

4 I mean again, this really covers both
5 what we want to tell people in terms of creating
6 great value sets. Because honestly, people don't
7 know how to make good value sets.

8 And I would be thrilled, I mean,
9 thrilled if I -- if this Committee can do work in
10 that context. That we could bring back to VSAC
11 to support better value set creation.

12 I mean, that would -- because quite
13 honestly, I can't imagine another situation
14 arising where I can participate and then bring
15 that knowledge back. You know, so let's do it.

16 But it then speaks to this issue of
17 expectations that we could give. And then
18 guidance to tool developers. Which by the way,
19 that's what NLM is.

20 And NLM has many hats. But the one
21 that is -- the hat that's closest to us in the
22 VSAC, the VSAC is a tool. And so what we need to

1 bring back to the NLM is expectations with
2 regards to tool functionality.

3 It's a very different thing to also
4 talk about desire with regards to terminology
5 content. Because there are a few of those too.

6 So NLM has a different hat in a
7 different part of the world where it makes
8 RxNorm. And we could say, gosh, there's
9 something missing from RxNorm, that if we had,
10 you made available as a part of your tools,
11 authors could be encouraged to use. Right?

12 All right. I'll stop there.

13 MR. GOLDWATER: Chris?

14 MEMBER CHUTE: Never at a shortage for
15 radical or arrogant recommendations, I'm
16 wondering if in the context of drugs, and I
17 incidentally agree with the goal of perhaps
18 focusing on drugs as a handy use case. Because
19 whatever lessons and exemplar might emerge from
20 that, could be, hopefully, generalizable to
21 others.

22 That has implications. And one of

1 them might be that in future, all drug related
2 value set definitions be done in terms of drug
3 classes.

4 For example, let's talk about
5 allergies. Let's talk about penicillin
6 allergies. Well, anybody who's ever read a
7 pharmacopeia knows that the proliferation of
8 penicillin is daunting.

9 And to have anybody try to make yet
10 another list of which penicillins are bad for you
11 or good for you, is probably not a useful
12 exercise. It exists in RxNorm. I mean, that was
13 the Bodenreider classes that I referred to.

14 And furthermore, it may turn out that
15 if you actually look at a quality metric, you
16 don't care about penicillins as much as you
17 actually care about beta-lactam drugs. Which,
18 for those you that don't know, is a more
19 generalized category and tends to share antigenic
20 properties.

21 Oh, okay. Well, you really meant
22 beta-lactam drugs. And it would be cool if the

1 value set specification were done at the level of
2 drug classes as they exist in a resource like
3 RxNorm.

4 That has the implication that all
5 these quaint historical value sets that we're
6 agonizing about are irrelevant. Because they
7 would be recast in the context of drug class
8 categories.

9 That's not to say that a value set
10 could not have explicit exclusions. And I very
11 much like the example that was brought up about
12 ophthalmologic beta blockers because they tend
13 not to have systemic absorption, therefore their,
14 you know, therapeutic indications and use are
15 somewhat different.

16 And you know, that would be a grand --
17 then the value set would be a larger statement
18 that is, you know, NLM beta blockers exclude or
19 minus the ophthalmologic ones. And those also
20 would be enumerated.

21 If one pursues that path, I can
22 predict one would quickly discover that Olivier's

1 collection of handy drug classes as they exist in
2 the NLM RxNorm are not satisfactory for many of
3 the use cases that we would encounter. We then
4 have two solutions.

5 We can go back to the nasty old
6 business of making up our own enumerated list in
7 our backyard. Or, we can work with NLM to say,
8 you know, Olivier, it would be really handy if we
9 had a list of ophthalmologic beta blockers which
10 may or may not already exist, but let's assume
11 for the moment that they don't.

12 And you know, rather than NQF going
13 through the exercises specifying what those are,
14 we request that NLM -- we make a use case
15 requirement that it would -- that these are --
16 this is a drug class that should exist within
17 RxNorm.

18 And that it's -- because of these use
19 cases and requirements, and I can imagine that it
20 would happen. In other words, we outsource the
21 whole task of drug enumeration to a community and
22 an organization that is already doing it.

1 That is doing it transparently. That
2 is doing it with good principals. That is doing
3 it in the public interest. And that is doing it
4 with more than a modicum of authority.

5 In which case, we can have lunch.

6 MR. GOLDWATER: So, so not to run
7 counter to your radical argument and set of
8 ideas, I think that's, you know, if the
9 inevitable conclusion of the project is -- and I
10 don't think that's a bad one, which is that NLM
11 takes the responsibility for this task.

12 And I think invariably, that's
13 probably what that's going to lead to. Our
14 charge as NQF, let me clarify, is not to solve
15 the problem and then be the steward for lack of a
16 better word, to continually solve the problem
17 indefinitely.

18 That's not anything I think that we
19 are looking to do. I think it is to work on
20 coming up with a methodology to potentially solve
21 the issue. And then determine who will take that
22 on from that point forward.

1 That's what our charge, that's what
2 the contract is. So, I think Chris, the ideas
3 that you're presenting are perfectly acceptable.

4 My issue, not issue, but, I think my
5 question is, for measures that are going to be
6 created, I think leveraging a different way of
7 looking at medications by focusing on the class
8 within RxNorm, is probably certainly something to
9 consider.

10 But, it goes back to what Dr. McClure
11 was just saying. Which is, we have ECQMs that
12 already exist. That are already being used.
13 That are being used in programs nationally. That
14 are the basis for compensation or incentive
15 payments to physicians or to hospitals.

16 So, with that and those existing value
17 sets, what do we do with those? I think that,
18 you know, it goes again to Zahid, we have legacy
19 value sets. And then we have value sets to be
20 created.

21 The two be created, if we think of a
22 different methodology that leverages drug classes

1 rather than sort of the very specific elements
2 that at times are overlapping, that's something
3 we can discuss as a recommendation. But for
4 legacy value sets that are currently in use, you
5 know, how do we propose to begin the process of
6 harmonizing those?

7 And I think that's sort of what our
8 analysis is showing. And what I think the focus
9 probably needs to be.

10 Ms. Martins?

11 MEMBER CHUTE: Can I just -- just to
12 follow up. Because I -- in my commentary, I did
13 go so far as to say, they should be deprecated
14 and recast.

15 MEMBER MARTINS: So, I think that the
16 generalization of drug classes for RxNorm is
17 really -- we need intentional definitions for
18 value sets.

19 And that answers the question for new
20 value sets. That answers the question for value
21 sets that are in existence in terms of a starting
22 point to see should these value sets even be

1 harmonized.

2 There's an incredible amount of work
3 that needs to go into existing value sets.
4 Because they are enumerated lists. And we may
5 not have that documentation of the history.

6 So it will require building these
7 value sets again as intentional value sets. And
8 then correlating the intentional definitions and
9 the resulting lists and see if this something
10 that should be harmonized.

11 So that's the first question, right?
12 And then going back to how they should be
13 harmonized.

14 I have to say that explicitly leaving
15 out the people who determined that there should
16 be a value set. And who know what the purpose of
17 the creation of that value set is, is probably a
18 misstep in my opinion.

19 But, I think what would be
20 interesting, would be to run a pilot where you
21 have the stewards involved who know what the
22 value set is all about. And another group that

1 has to reverse engineer the value set and
2 harmonize and see what we come up with.

3 I think it's an interesting question
4 in terms of whether or not the stewards should be
5 involved. But so, I think that if we focused a
6 discussion and going back to should we do RxNorm,
7 if we just focused a discussion on RxNorm, as the
8 ideas started coming up, we're talking about
9 specifically drug classes.

10 And we may run the risk of providing
11 -- having recommendations for RxNorm only that
12 are not necessarily generalizable. So I would
13 caution against that.

14 MR. GOLDWATER: Dr. Lieberman?

15 CO-CHAIRMAN LIEBERMAN: Well, yes.
16 No, I think first of all, I think Chris' point is
17 a good one.

18 That we don't -- that we can -- we can
19 continue to use current measures and we can say
20 that they are -- and we can deprecate them over
21 time. And we can build in this requirement to
22 express the concepts using a hierarchical

1 terminologies as part of the review process.

2 And you can even, you know, you can
3 set it up in such a way that prioritizes some
4 measures over others if they do this. So that
5 over time you will -- again, it will be more
6 advantageous to a measure developer to do this
7 work as opposed to not do it.

8 And when you run into areas where the
9 terminology doesn't meet the needs, you can still
10 deal with that through other tools that we have
11 around the measure definition and the measure
12 authoring tool and what not. So even if you
13 can't find ophthalmologic beta blockers, if you
14 have a route or some other information that you
15 can use to build out that concept in the overall
16 measure, you can do that.

17 So, but we definitely do need a
18 process in place to have the most useful concepts
19 built into the terminology over time. But I
20 don't think that it has to be a limiting factor.

21 MR. GOLDWATER: Zahid and then Dr.
22 Schneider.

1 CO-CHAIRMAN BUTT: So I think one way
2 to sort of look at this legacy issue is that we
3 know that disease exists, right? And so now we
4 need to find out what led to the disease and what
5 is the treatment.

6 And once we do that, hopefully we can
7 then prevent the disease from occurring again.
8 Which is forming new value sets.

9 So, I think we need to figure out, you
10 know, let's just say there are a bunch of value
11 sets in the medication area. The question will
12 be, and that's where the stewards are going to
13 have to be central, especially if there are more
14 than one steward involved.

15 And you know, who is the authoritative
16 source? What is that consensus building process?
17 Who determines?

18 Because once you determine that in the
19 context of an existing problem, you can use that
20 same process to then prevent the problem from
21 occurring in the future. Obviously you would
22 have to take into account some governance issues

1 and so forth.

2 But I think that what may appear
3 sometimes to be duplicative may have good reason.
4 And so like the one that Rob was point out
5 through this tympanometry testing, so let's just
6 assume that there are ten of these, some high
7 frequency, some medium frequency.

8 So there is the granularity issue
9 involved here. Potentially the ones that get the
10 test would get it at the high frequency or at
11 that granularity. So if it's some test that was
12 done and performed and documented, it would be at
13 that level.

14 But the physician who is supposed to
15 order that doesn't want to negate it if they
16 don't want to order it at that granularity. They
17 want to negate it at tympanometry test not done
18 because it was not indicated.

19 So, there is a use case issue that
20 gets involved. And we have to be very careful
21 that we don't make some sort of sweeping
22 recommendation that doesn't take that into

1 account.

2 And that's where all the stewards have
3 to be at the table. I believe implementers,
4 software vendors have to be, because they now
5 have some experience.

6 So these things are very closely tied
7 to each other. And so, somehow we've got to
8 figure out a process and a way in which there is
9 some consensus building around what should be
10 done.

11 MEMBER SCHNEIDER: Yes, thank you.
12 Just -- I wanted to pick up on Mr. McClure and
13 Chris' and the other concepts of, you know, how
14 do we get -- how do we stop the madness of making
15 new things that don't -- that aren't right? And
16 clean up that which is.

17 I think Mr. McClure was sort of right
18 on when he said, there's some really good
19 concepts here. And we rapidly have to get those
20 put in place.

21 We have to designate a governing body
22 that says, that is the place where you look for

1 these things. And that's how you create value
2 sets from here on out.

3 And then may I make a suggestion?
4 Because this is how we did it with the pacemaker
5 thing. So at a certain point, we have rejects.

6 You have, Dear Stewards, you have X
7 period of time to comply to get your value set
8 into this format. And if you don't, then at the
9 end of that time, you are cast out by the
10 authority. You are no longer a recognized value
11 set.

12 Now that again, draconian type
13 efforts, but I think the fact that we've got
14 1,500 things that they are -- and probably more
15 coming our way almost every single day, I would
16 say demand some pretty rapid action.

17 And the best way is, control what's
18 coming in. And then give a time period for clean
19 up by the stewards. And if not, out you go.

20 MR. GOLDWATER: Dr. Lieberman?

21 CO-CHAIRMAN LIEBERMAN: Just a brief
22 comment here. I did look up tympanometry and

1 there's only one child concept, which is high
2 frequency tympanometry.

3 So, but that's a good example where
4 you didn't really need, I mean, the measure
5 developer shouldn't have to worry about that.
6 They should just say tympanometry and if there
7 had been 15 sub-concepts that should have been
8 included as well.

9 So again, I mean, we really want to
10 take advantage of these other -- this information
11 that's built into these other terminology systems
12 that we have. And not put the onus on somebody
13 to choose every -- choose and maintain every
14 applicable code.

15 MR. GOLDWATER: Ms. Cullen?

16 MEMBER CULLEN: I recognize the
17 interest in wanting to kick things out. But
18 these measures have -- the values sets are
19 associated with measures that are used in
20 programs.

21 Which means you are kicking measures
22 out of programs outside of a regulatory cycle.

1 And that's a problem.

2 MR. GOLDWATER: Right. I mean, that
3 does bring up a good point. Which certainly I
4 don't think we're going to have an extensive
5 discussion about. Which is, sort of the cycle of
6 how measures are created and how measures are
7 maintained.

8 There is a regulatory process for this
9 once a call for measures is out. Once they are
10 submitted. The three year cycle of measures
11 being maintained. So, you know, punting out
12 value sets may fundamentally alter a measure
13 before it's in cycle.

14 So, I think we've -- there may be a
15 way of looking at sort of a happy median here to
16 do that. I don't want to thoroughly reject the
17 idea. But we do have to keep in mind sort of the
18 regulatory constraints.

19 MEMBER MARTINS: I think more than
20 regulatory, and this is something that we've come
21 across multiple times as we develop ECQMs. We
22 hit the limitations of the framework every day

1 because it's being developed.

2 Because these tools are new. I mean,
3 the value set authority center was developed
4 after the first value sets were published. So
5 that's how much tooling is lagging behind.

6 And when we talk about drug classes in
7 RxNorm, and I don't claim to be an RxNorm expert,
8 but I think they got in also after. They were
9 created after the first RxNorm value sets were
10 created.

11 I don't know how complete the drug
12 classes are. And so I think we need to find that
13 happy medium. But knowing where our technical
14 limitations are so that we don't shoot ourselves
15 in the foot and all of a sudden have to move to
16 these from imperfect value sets to another set of
17 imperfect value sets with the time limitations.

18 So I think all of these need to be
19 carefully considered as we think about blowing up
20 some value sets and moving to others.

21 MR. GOLDWATER: Sharon?

22 DR. HIBAY: I think I'm chiming the

1 sentiments of a number of people who have spoken
2 on this. I think that we've said, or the group
3 has collectively said, there's a different
4 process for those measures, as Cindy would say,
5 that are currently in use.

6 And those measures that going forward
7 we would like it to be ABC and D. So perhaps I
8 might throw out a proposal to say, we would look
9 at developing a process that would be those going
10 forward.

11 And then also then say, with the
12 recognition of the limitations or the additional
13 considerations we need to look at related to
14 those measures that are currently in use, you
15 know, how might we do this differently?

16 I -- and again, I just want to also
17 state a little bit slightly different what I said
18 earlier. About measure developers being involved
19 in the process and the ultimate decision making
20 authority.

21 I don't know, I feel like I'm dancing
22 around words that aren't yet, sort of concepts

1 that aren't yet quite formalized. But, who would
2 be the ultimate owner of the value set.

3 We certainly would want the input of
4 the measure developer. It's vital to
5 understanding the concept, the purpose statement,
6 whatever. The scope of the value set.

7 When I initially wrote language for
8 this proposal, I stated that, you know, there's
9 different ways value sets are created. You know,
10 I was a developer of the BMI measure follow up.

11 So, if you love it, you can smile.
12 But if you don't, please don't throw things at
13 me. The value sets in that were created for
14 very, very, very, explicit purposes.

15 One of the value sets in there would
16 be follow up for a high BMI. Okay. That is not
17 a value set that you would say is, and I used
18 this language previously, harmonizable. It's
19 not. It's a very fit for purpose. Very measure
20 specific value set.

21 A value set where you might want to
22 look at diabetes, you know, you could look at

1 that whole giant umbrella of what is diabetes.

2 And then develop it into subset diagnosis.

3 And say okay, so for a measure I would
4 want to look at diabetes, but do I need to look
5 at gestational diabetes? And do I need to look
6 at steward induced diabetes?

7 So you would have that giant umbrella.
8 And then you would have some smaller subsets
9 underneath that umbrella. And then, you know,
10 what's -- who is the authority? Who are the
11 people? How do we vet? How do we test? How do
12 we endorse?

13 How do we approve value set concepts
14 from here going forward? And I would like to
15 harken the group back to Helen's chart, which is
16 don't be afraid to be bold and innovative. This
17 is a great opportunity for us.

18 So we have -- we can look now and then
19 going forward into our new space. But then also
20 we recognize there's going to be varying
21 different considerations for those measures and
22 those value sets that are already in place.

1 And we should know also that those
2 value sets were built in measure development
3 silos. After the measures were developed, then
4 we tried to come together and hold hands and sing
5 Kumbaya.

6 But we didn't do it. And we were very
7 secretive in the beginning. And I know that
8 because I was one of the measure developers.

9 And so now we're trying to harmonize
10 based upon these walls that were erected. And
11 now we're trying to disassemble the walls. So,
12 it will require a different either subset of
13 rules or some nuance to the rules. Or something
14 like that.

15 So I just want to encourage the group
16 to think about it from those two perspectives.

17 MEMBER McCLURE: Just informative.
18 So, actually the first one's not so informative.
19 Two different really issues.

20 So one is this issue of the use of the
21 word steward and author. It would probably be
22 good, to be consistent in terms of our use of

1 that word in this context.

2 So let me tell you what it means in
3 the context of VSAC. And so in the context of
4 VSAC, the steward is the person who is ultimately
5 responsible for the content of the value set in
6 this place.

7 So, they own. So that word owner and
8 steward are synonymous.

9 The idea of there being both a steward
10 and an author comes from the reality of the
11 process of creating value sets. Particularly in
12 the context of ECQMs and the CMS contracting
13 around that.

14 But it's true in general. And that
15 is, there's somebody who's responsible for the
16 value set. And the intent there is, is that you
17 could always go to that entity and that's where
18 the buck stops.

19 And then there's other entities that
20 are responsible for actually doing the work. And
21 sometimes there's almost more than arm's length
22 between them. And you know, acknowledging that

1 is important.

2 But also you'd have a tool. And tools
3 require user logins and things like that. And
4 they have different roles and responsibilities.

5 And I think it works actually. And
6 so, that's what those mean. So, if I may, and
7 particularly given the fact that we're talking
8 about creating guidance that will result in
9 recommendations back to tool developing --
10 development in the context of the VSAC, that we
11 get that kind of in cement.

12 So, stewards are people who own, or
13 entities that own and have responsibilities for
14 ongoing maintenance and content. If there's an
15 issue with content you talk to the steward, you
16 don't talk to the author.

17 Authors are just people who actually
18 do the work of making sure that the content is in
19 there. They're a tool user in essence.

20 And so, I think that's pretty straight
21 forward and it makes sense. And I think this
22 issue of what -- and let me also say that there

1 is no problem with changing stewardship of value
2 sets.

3 And so if someone as a steward of a
4 value set in the context of one particular
5 process in creating. And then, you know, we give
6 guidance about the fact that we believe that
7 certain value sets by criteria should have
8 ownership, i.e. stewardship transferred to some
9 other entity, certain we could give that guidance
10 and the tool could support that.

11 So, the other thing I wanted to talk
12 about, and this one, boy. You know when I said
13 there were dragons, here's where the dragons are.

14 So in the context of medications, drug
15 classing is a dragon. It is Drago. And it is
16 not set. There's -- this has been a side issue
17 for me for a long time.

18 And there's more -- you know, none of
19 the players are literally in this room. So, and
20 NLM is the smallest of the potential players.
21 FDA has a big say in this and is basically --
22 well, I'm not going to say.

1 So, it's very interesting in some
2 approach. And so the -- so what we see, so when
3 you spoke with Olivier, Olivier was reflecting
4 his work on creating a tool that utilizes the
5 data that's been brought into the RxNorm from
6 NDF-RT.

7 RxNorm has no drug class information
8 inherent in it. NDF-RT does. And that work is -
9 - what's a nice word for this? I was very much
10 responsible for this.

11 So this -- it's schizophrenic in that
12 there is some content that has class related
13 information that's a derivative of one part of
14 work. And there's other class information that
15 is very much current and is a derivative of
16 another set of work.

17 And those two things don't perfectly
18 align. And so including -- while I absolutely
19 agree that we want some of the work that we might
20 now be focusing on in terms of this focus on
21 medications, could -- our recommendations could
22 easily be to utilize as, you know, Chris

1 elegantly said, utilize the experience and
2 knowledge of authoritative sources as a preamble
3 if not a basis for any work that would be done.

4 Both potentially backward looking,
5 i.e. dealing with legacy issues in terms of
6 identifying how to better harmonize. As well as
7 future looking things.

8 And I'm very much in support of that.
9 So I want that to be very clear.

10 But I just want to say that there's
11 not -- unfortunately that's not a really piece of
12 solid ground that we can point to, to say here's
13 where there's clarity. So part of what we might
14 need to do is say this is so important that there
15 needs to be encouraged work on making that ground
16 solid.

17 Because one of the things that I've
18 been a pain about, quite honestly in this area,
19 is that of all the things that we are working to
20 do, identification of drugs that are to be
21 associated with a particular drug class, has to
22 be solid. Because patients will die if there's

1 inconsistency and lack of transparency about what
2 a drug class means.

3 And particularly, you know, I mean,
4 there's practical tightness around this that I
5 don't want to get into. But we tended to think
6 about drug classes for two things.

7 One of them is, drug classes are
8 really valuable and NDF-RT actually created them
9 to support drug ordering. In order to be able to
10 provide drop down lists so that I didn't get
11 thrown ten thousand things in one big flat list.

12 So I wanted -- if I'm interested in a
13 certain series of drugs, I wanted to see only
14 those drugs that fell into that class. And I
15 needed a way of being able to create a drop down
16 list.

17 That's a very useful use of drug
18 classes. If you go and look at drug classes and
19 say oh, okay. I'm not going to worry about that.
20 I'm also going to use them as a way of
21 identifying let's say allergenic substances.
22 That's a very different use case.

1 And if you pick a drug class that was
2 designed to support a drug ordering environment,
3 and use that same concept to represent something
4 that a patient is allergic to, I hope you're kind
5 of sensing that those are two very different and
6 very dangerous things that intersect in a place.
7 But one takes you to the yellow brick road and
8 the other one takes you into the dark forest.

9 And if you don't realize that, then
10 you've got a problem. And so one of the things
11 that we've worked to do, but it's turned out to
12 be much harder, is to have an open and
13 transparent place where there is one drug
14 classification that everybody agrees to.

15 And then it's the same. So when I'm
16 looking for drugs that I want to order, I can
17 pick the same concept to say, I know this patient
18 is actually, if you were about to order any drugs
19 that are a descendent out of that list, you
20 should avoid them. And I'm confident of that.

21 So if I pick this concept and it shows
22 up down in Florida and it also shows up in

1 Oregon, that patient, no matter what, is not
2 going to be exposed to the same orderable drugs.

3 And so -- and to finish, that's
4 actually something the NLM -- the NLM is very
5 concerned about being handed tasks that have two
6 bad elements.

7 One, they don't have any money for.
8 And two, that there is some knowledge that the
9 NLM must have in order to be able to successfully
10 do it.

11 And the NLM will tell you, they are
12 not knowledge creators. They are knowledge
13 manipulators and cataloguers. And manipulators,
14 i.e. RxNorm is not creating knowledge. RxNorm
15 reflects knowledge that it gets and produces a
16 tool that makes it much more accessible.

17 But they aren't -- you know, they work
18 very hard to try and not create. For example,
19 that's why drug classes are not in there.
20 Someone gave them an authoritative source for
21 drug classes, i.e. the VA in the context of NDF-
22 RT, they'll use it.

1 So, again, I want to highlight that I
2 am in -- I think I'm in significant support of
3 focusing on medications as a starting point.

4 But if our solution requires rock
5 solid drug classification for example, then we
6 have to realize that doesn't exist right now.
7 And so we would be telling someone that they need
8 to actually do the work of creating that.

9 MR. GOLDWATER: Chris?

10 MEMBER CHUTE: Dr. McClure, sir,
11 they're not dragons. They're alligators.
12 Because there are a heck of a lot more of them.

13 And otherwise I agree with everything
14 you said. I would say that with some caveats
15 though. I -- this conversation is based on
16 hearsay, so it's clear that more due diligence
17 needs to be done.

18 But actually, Olivier, again at the
19 authoritative retirement party, was
20 characterizing work that is actually synthetic of
21 multiple drug classes. I agree, that the NDF-RT
22 drug classes are severely problematic and

1 incomplete.

2 And let me give you a pragmatic
3 example. And I was going to do this earlier, I
4 didn't think it was relevant, but maybe it is.

5 Topical corticosteroids for example.
6 In NDF-RT, half of the products are -- the drug
7 class is topical agent. Well, that's a true
8 statement.

9 The other half of the same darn kind
10 of drugs, are classified as corticosteroids. One
11 of the major problems with NDF-RT is that it had
12 a mono-hierarchy.

13 You could be -- you could belong to
14 one and only one kind of drug class. And they
15 made highly arbitrary and inconsistent decisions
16 about which specific agents were in which class.

17 That is intolerable for the kind of
18 use case that we're talking about. I have not
19 verified this, so again, this is hearsay, it
20 needs to be validated.

21 But what Olivier told me at the party,
22 was that in fact, RxNorm now has a new

1 independent drug class component that did not
2 previously exist. That is synthetic from FDA.
3 That is synthetic from SNOMED. That is synthetic
4 from NDF-RT and other sources.

5 That is a poly-hierarchy. It's
6 quality needs evaluation. And I cannot sit here
7 and say, darn it, it's the one we should use.
8 Because due diligence needs to be done.

9 But I do think we need to go
10 somewhere. And I do think that we cannot and
11 should not advocate that NQF or for that matter
12 any other single organization, make up its own
13 ersatz drug classifications, which frankly, the
14 value sets you showed me are exactly that.

15 They are, I don't mean to be
16 disparaging, but they are, well, I won't be
17 disparaging. They are independent efforts, let's
18 put it that way, at creating drug classes that
19 may or may not reflect state of the art.

20 And I'm simply asserting that one's
21 approach to moving forward is to identify an
22 organization that would curate best knowledge and

1 best evidence. That's what NLM does. To
2 generate drug information.

3 And that in fact, quality control,
4 quality checks because it's true NLM doesn't have
5 infinite resources. They are probably one of the
6 tighter ships I know in government.

7 That the quality assurance on that
8 could be the NQF community that might find, you
9 know, dorky things like topical corticosteroids
10 are either a topical agent or a corticosteroid
11 and not both, as a -- and I think that's been
12 fixed incidentally, in the RxNorm drug
13 classification convene.

14 So, there's lots of work that needs to
15 be done. And again, they're not dragons, they're
16 alligators because there are so many of them.

17 MR. GOLDWATER: Dr. McClure then Ms.
18 Martins.

19 MEMBER McCLURE: So just a response to
20 my dear friend, Chris. You're right.

21 And so, but just to be clear, in
22 essence what Chris is saying is why I said what I

1 said. Which is the work that he references for
2 the retirement party of our dear friend who is
3 the longest serving government employee I think
4 in existence, is research work.

5 And so, it's not -- it is actually
6 available on a website. It's partial and it's
7 incomplete.

8 And so part of -- as I say, so if part
9 of what we do is we say we're not picking
10 medications just simply because they're easy,
11 we're picking medications for a variety of
12 reasons that mean they're the best first place to
13 go.

14 And in order to be able to succeed
15 here, one of the things that we need in order to
16 actually show how this kind of thing is valuable
17 in other domains also, is to have drug classes.
18 And in order to get drug classes right, we need
19 to make sure that we have solid ground.

20 And that work might in fact best be
21 something that, you know, NLM's ability to curate
22 knowledge from a variety of sources could be an

1 important part of that.

2 MS. MARTINS: So I think I have a
3 question and not a comment. And specifically to
4 drugs and drug classes.

5 You know, once we have a drug class,
6 is that going to solve all of the problems for
7 all of the measures that we're looking at? Not
8 in terms of, you know, the specific process of
9 harmonization, but are they appropriate to be
10 used within each and every measures?

11 So, is it possible that certain
12 anticoagulants are used for one condition? And
13 others are used for another condition?

14 So, I would propose that these drug
15 classes and whatever we do with other
16 terminologies, that the idea of having these high
17 quality, very broad, value sets is great. And
18 that value sets for specific measures should be
19 derived off of those larger sets.

20 For example, I'm thinking about the
21 Kaiser problem list set that is published, I
22 think along with SNOMED, is it? That is -- and I

1 don't know if that's a high quality core --
2 exactly, there you go.

3 It's not Kaiser anymore. All right.

4 (Laughter)

5 MS. MARTINS: So that's sort of a
6 starter set that would preclude a lot of the
7 harmonization issues from happening. But at the
8 same time, as I think about these overlapping
9 value sets that were just shown here for stroke
10 for instance, if you create a value set for
11 antithrombotics and a value set for
12 anticoagulants, then you also have to see how
13 these fit together and which are the building
14 blocks of others.

15 So it's quite the task. Even just for
16 medications, to have that clear picture of the
17 drug classes and how they fit together and relate
18 to each other.

19 And then building from that, value
20 sets that are measure specific.

21 MR. GOLDWATER: Zahid and then Dr.
22 McClure.

1 CO-CHAIRMAN BUTT: So, I think
2 conceptually really we're at -- I think we're
3 sort of moving towards is that perhaps a process
4 would be that you first try to specify in a class
5 that's existing.

6 If you can't do it, go to the next
7 level. Which might be a specific indication that
8 you have to create a value set for. And within
9 that, then you need to make sure that it's not
10 already in existence and reconcile that.

11 And so it's sort of some sort of a
12 gated process needs to be defined, which to some
13 extent even the existing measures may have to go
14 through if here is duplication. Because -- and
15 in terms of terminology, I suppose I'm looking at
16 the criteria that we were supposed to develop.

17 One of the things might be that is
18 there a concept of a standard value set or
19 standardized value set? What should it be
20 called? And -- because everything sort of
21 follows that concept.

22 Because, you can say something is

1 duplicated in reference to something that's the
2 standard perhaps going forward. Right now
3 everything is created de novo and there's
4 duplication, but if the concept is that this is
5 the standard, then everything is compared to
6 that.

7 And so, what do we call that and how
8 does that work? I think that's a very
9 fundamental type question in terms of what we're
10 trying to do in harmonization.

11 MR. GOLDWATER: So, I think that the
12 second part of this was actually, absolutely what
13 we needed to do, which is we sort of started off
14 with the larger concepts of value sets, the
15 issues with value sets. Delving somewhat into
16 the terminology, but also I think the more
17 practical.

18 The issues of value sets from both an
19 implementation and a development perspective.
20 And then we sort of got to the beginning of the
21 process of how we're going to at least try to
22 rectify this issue. And narrowed it down to

1 medications.

2 So I think we'll take a lunch break.

3 I know it's Chris' favorite time of the day.

4 And we will -- after lunch is over
5 with, then we need to start establishing the
6 criteria and building out the process for what we
7 would like to pilot test. And the measures
8 presumably where we would like to test this out
9 on.

10 And again, starting with the criteria
11 and the process, and some way that is operational
12 both for measures going forward and if possible,
13 measures that already exist.

14 So with that, let's take a break. And
15 we'll see everybody in half an hour. Or 45
16 minutes.

17 (Whereupon, the above-entitled matter
18 went off the record at 12:33 p.m. and resumed at
19 1:27 p.m.)

20 MR. GOLDWATER: All right, so let's
21 begin. I know we're almost at 1:30 p.m., we have
22 until 4:00 p.m., and I think, given the

1 discussions that have taken place this morning,
2 we should be able to get something down before we
3 adjourn at 4:00 p.m.

4 So after, I think, consolidating
5 information that we received earlier this
6 morning, I think what we want to do now, and what
7 we need to do before we do depart, is to come up
8 with a process and methodology that we can pilot
9 test against a set of measures that hopefully
10 you'll direct us to which ones those should be.

11 And what we want to do is to come up
12 with a process that will deal with the
13 harmonization of only medications, for now, and
14 try to start with crosscutting processes that go
15 with measures that are new and measures that are
16 existing.

17 And in the course of our discussion,
18 if there are times where we need to discriminate
19 between one or the two, then we'll deviate in
20 that way, as appropriate, but for now, I think we
21 want to start with a discussion about what
22 elements of this process would be applicable to

1 both de novo and to existing value sets, with
2 respect only to medications. So, Zahid, you want
3 to start off?

4 CO-CHAIR BUTT: So yes, I think, in
5 that same sort of framework, if you look at the
6 development of measures, you sort of start with
7 the intent of the measure and then from there,
8 you have a measure construct, which it kind of
9 follows the same process for most measures.

10 And so within that you have, sort of,
11 definition of the inpatient population, the
12 denominator population, and the exclusions, then
13 you, sort of, get into the numerator inclusion
14 criteria, exceptions, exclusion criteria, and
15 that's where, sort of, the value sets, sort of,
16 get plugged in and that's where issues of
17 workflow get plugged in.

18 So the they are, the two are very
19 closely related, because in the case of, for
20 example, medication, you could see where they are
21 used to define a denominator population, or where
22 they're used to find an exclusion, or they're

1 used to find a numerator inclusion, and an
2 exclusion, or exception. And so those sort of
3 components are all common to all measure
4 constructs.

5 And so that's where, I think, the
6 value sets get applied and that's where it's
7 going to be, sort of, what is the framework that
8 can be used as a use case for medications to, you
9 know, what part of that construct do we associate
10 with a specific workflow, realizing there are
11 different workflows in different settings.

12 But is there a, sort of, a common
13 workflow, for example, physician ordering, or
14 medication administration, some of those types of
15 things?

16 I think that's where we are going to
17 try to narrow this down, so that we can say okay,
18 for this harmonization, perhaps, it should be,
19 for this use case, this workflow, this component
20 of the measure, perhaps, it should be at a higher
21 level of granularity, as opposed to a lower,
22 because that's, kind of, where we'll have to

1 land.

2 What granularity makes sense? And
3 then, of course, you have to then decide which
4 one is the court standard value set and who gets
5 to, sort of, decide the variation and that sort
6 of thing.

7 MR. GOLDWATER: So if I'm hearing you
8 right, Zahid, do we want to start off with, and
9 somewhat being consistent with measure
10 development, measure evaluation, do we want to
11 start off with the intent and scope of the
12 measure first, what is the intent of the scope,
13 which gets back to an issue that the Ms. Martins
14 brought up earlier, and that Dr. McClure has also
15 brought up, do we want to start with that as,
16 like, step one?

17 CO-CHAIR BUTT: So I think each
18 component will have a reflection of what the
19 intent is to accomplish within that component.

20 MR. GOLDWATER: Yes.

21 CO-CHAIR BUTT: So there's an overall
22 measure intent, but our goal is more focused on

1 --

2 MR. GOLDWATER: Right.

3 CO-CHAIR BUTT: -- how, within let's
4 say you select stroke measures and pick, okay,
5 within this stroke measure the intent of the
6 measure is to define these and we will pick the
7 ones that has medications in it --

8 MR. GOLDWATER: Okay.

9 CO-CHAIR BUTT: -- what are the
10 components that the measure is trying to reflect
11 the intent of the measure for that piece of it
12 where the drug is used and what is the associated
13 workflow, if there is one, attached to it, and
14 what is the right granularity of that value set?

15 And then, of course, the content of
16 the value set itself, obviously, is also up for
17 discussion, as to how does it get captured, does
18 it get captured through some sort of a standard
19 process, like, if you're referencing a class, do
20 you need to define the components of the class in
21 a value set that too develops, or could you just
22 reference the MLM class and say, or just pull it

1 from there? So I think these are, sort of, the
2 basic concepts that will be repeated, I think, in
3 most situations.

4 MR. GOLDWATER: So we do have to
5 present a process to our Technical Expert Panel,
6 which actually will represent a group of people
7 that implement this on a fairly regular basis,
8 and so the reason we chose them is because of
9 their familiarity and experience with the
10 limitation, and that what we want to is to give a
11 process and a test measure and have them
12 implement the process against the measure for
13 medications, get results back from them, and then
14 report those results back to you, so we
15 understand whether what we are proposing is
16 working or where refinements need to be made.

17 So not that I want to overly simplify
18 this, but I do want to get a process in place
19 that when we talk to the TEP we have something to
20 say here's what you do. So with that in mind
21 then, step number one, again, not trying to
22 simply, but what would the first step be for them

1 to do?

2 Given that we are focusing on
3 medications, given that we are looking at trying
4 to come up with a pilot process for harmonization
5 of those medications, and given that we are, at
6 the moment, looking for, I guess, guidelines, or
7 approaches, that cut across both new and existing
8 measures. Ms. Martins.

9 MEMBER MARTINS: So I'm assuming that
10 the pilot is going to be focused on value sets
11 that exists, so the second part that we had
12 discussed, I will underline the importance of
13 having a process for the first, as well, so the
14 new, the moving forward path.

15 I would suggest that the first step
16 is, really, you need to understand what the value
17 sets are about, and that meaning that you have
18 informational gaps.

19 The people who are going to be doing
20 this don't know everything about the value set,
21 and so they may not have access to the purpose
22 statements, they may not know how the value set

1 is used in the context of how many measures, all
2 of that.

3 So I'd say that the first step is,
4 really, determining the gap in knowledge of the
5 two value sets that are being compared, as a
6 starting point to the determining whether they
7 are, and this, I would suggest, is probably the
8 second step, determining whether harmonization is
9 warranted.

10 MR. GOLDWATER: Dr. Chute.

11 MEMBER CHUTE: Perhaps I'm being a bit
12 provocative. I have that tendency. But I, the
13 fact is, when you harmonize historical existing
14 value sets, legacy value sets, the very act of
15 harmonizing them creates new value sets. I mean,
16 that's the inevitable consequence, the derivative
17 will be different, if it's harmonized, or, or,
18 and that really begs the question, why are you
19 bothering to do that?

20 Because the alternative, in my mind,
21 is to invoke what we talk about the way going
22 forward, you know, the new way, a more principled

1 way, ideally. Whether we invoke drug classes, or
2 not, remains to be seen.

3 But going forward, you're going to
4 create new value sets, so the obvious question in
5 my little mind is, heavens, if we're going to
6 create new value sets, in any event, why not just
7 create new value sets that are fit for purpose in
8 the context of those use cases and deprecate the
9 historical value sets?

10 Because, it's obvious, persons will
11 spend huge numbers of hours going through the
12 tedium of comparing legacy value sets, if only to
13 create a new value set in the end, anyhow, and
14 the alternative of saying okay, what are they
15 really trying to do in this measure and that
16 measure, are they the same?

17 If they are the same, then how do we
18 specify an intentional value set using drug class
19 level information that satisfies that use case
20 and move on?

21 MR. GOLDWATER: Mike.

22 CO-CHAIR LIEBERMAN: I was just going

1 to ask if, I mean, really, the first, so have we
2 already decided on the value sets that we're
3 going to use, or do we need to have that be part
4 of the process, as well?

5 MR. GOLDWATER: So no, we haven't
6 decided on the value sets, what we've decided on
7 is we're going to tackle medications, as a
8 subject area. The value sets we'll look at will
9 be largely determined by the, I think we have to
10 choose three measures we're going to pilot, so
11 those three measures, those will be the value
12 sets that we'll be looking at, again, only
13 focused on medication, though.

14 CO-CHAIR LIEBERMAN: Right, and how do
15 we choose the measure, sir, have we done that
16 already?

17 MR. GOLDWATER: No we have not done
18 that, so what we want to do is come up with a
19 process by which we can propose on how to
20 harmonize medication value sets.

21 And then, when we have all agreed, or
22 at least tried to come to some consensus on what

1 that process is, then to take recommendations,
2 especially from those of you that have developed
3 measures for a significant period of time, what
4 pre-measures you think we need to be focused on,
5 as part of the pilot.

6 DR. LARSEN: I'm going to have to run
7 to go speak at another meeting, but just a little
8 bit of sense of, kind of, what the ideal outcome,
9 at least to my mind, of this, kind of, process
10 is.

11 You know, again, this is trying to
12 pilot with something specific, so we can actually
13 know what we're doing, but use that in a
14 generalized way.

15 And as NQF is the privier of what
16 constitutes a good measure and convenes the
17 people that say yes this is a measure ready for
18 national scale, or not.

19 The goal here is to be able to provide
20 that kind of guidance around value sets, so when
21 NQF does an analysis, or litmus test, and brings
22 to a committee and says, here is new measure X,

1 or, here is old measure Y that's coming back to
2 get re-endorsed.

3 There's a value set domain in that
4 analysis, and that the output in the work of this
5 group can actually inform those kinds of
6 decisions, so that committee that's looking at
7 all the blood pressure measures could say, gee,
8 these five blood pressure measures really get
9 great scores, because they fulfill all the value
10 set criteria that has been set forward, but these
11 four, boy, we're just unhappy with what they did
12 with their value sets. The committee is not
13 impressed.

14 So that's the kind of frame that we
15 have for this. We don't know if it's a separate
16 process for measure endorsement, or if it's part
17 of measure endorsement that that's not yet worked
18 out, and you don't have to work that part out,
19 but that's the kind of frame this, eventually,
20 needs to rise to, that kind of high level of
21 non-value set technical people to be able to
22 point to Measure A, or Measure B, and say this

1 one got value sets right, this one didn't.

2 MR. GOLDWATER: Zahid.

3 CO-CHAIR BUTT: So I think that there
4 are pros and cons to picking the existing versus
5 new ones. If we go down the new path, then we
6 first have to select a new measure that has no
7 existing value set created. So no?

8 MEMBER CHUTE: If I may? When we talk
9 about the new path, it's a way of thinking about
10 and offering value sets. There's no reason why
11 existing measures that have legacy value sets
12 cannot be recast --

13 CO-CHAIR BUTT: Oh, okay.

14 MEMBER CHUTE: -- in the new way.

15 CO-CHAIR BUTT: Okay. So okay.

16 Thanks. I thought I misunderstood what you said
17 earlier. Because, I think that the existing
18 measures would be the ones that would, obviously,
19 be available now, and they would have more,
20 potentially, more than one value sets in
21 existence.

22 And so the process that needs to be

1 defined is that you take a measure and you start
2 to look at wherever the medications value sets
3 are used.

4 And, I suppose, a process needs to be
5 defined, whether you first look at the existing
6 ones and say what is missing, or you set yourself
7 up by saying, we're not going to look at the old
8 value sets and we'll create a new one and then,
9 we'll go back and see how that differs from the
10 ones. That that's, sort of, what I think Chris
11 is suggesting.

12 So that's certainly an approach. It
13 would include some of the concepts that we have
14 discussed that you first look at, potentially, a
15 class, if that can accomplish the goal, it would
16 still have to be applied to the different
17 components of where it was used and all the
18 workflows that are associated with it.

19 So I think that that's, I guess, one
20 sort of consensus, if we can agree, that that's
21 the approach that the work groups, the technical
22 experts.

1 And they may have to include some of
2 the measure developers. And I don't know whether
3 that's a good idea, or not, but, but it looks
4 like the task for that expert group would be
5 that, here are two measures that have medications
6 in them, and the task for them is to, first, come
7 up with the different value sets that are applied
8 to different components of the measure and the
9 intent of the measure that's applied to the
10 measure construct and then at some point they'll
11 have to see what they have created.

12 It might simply be a reference to a
13 class, and see if that, how does it differ from
14 what is there now and are there any
15 reconciliation issues involved and does it meet
16 the measure intent, in terms of what component of
17 the measure needs to be satisfied?

18 MR. GOLDWATER: Dr. McClure.

19 MEMBER McCLURE: Just a quick comment
20 on the, it's probably a more technical issue, but
21 it's important, I think, in our context of
22 deciding what we can and can't do.

1 So, Chris, you know, was noting that
2 we could just change the value sets and, in the
3 context of existing measures, and I want to
4 clarify that.

5 We can, technically. And the way that
6 we do it is similar to what you said, but not
7 exactly in that, because part of what folks would
8 be concerned about is, is that the measures,
9 themselves, in the context of the math, have
10 voids, you know, that identify the value sets.

11 And so changing, if we were to create
12 a completely new value set, and that means give
13 it a new void, a new identifier, it has
14 downstream ramifications.

15 And we don't have to do that, because
16 we can create a new definition for an existing
17 value set, and that new definition, you know, can
18 be whatever we want, as long as the intent of the
19 value set aligns with the intent of the original
20 value set, i.e., just like concepts, you can't
21 change the meaning of a value set willy nilly.

22 And so, as long as we are adherent to

1 the original intent, preferably as described by a
2 purpose, then we can make substantial changes in
3 who we define the content of the value set
4 without ruining anything.

5 MR. GOLDWATER: So let me have a
6 follow-up question to Dr. McClure, and then, Ms.
7 Martins. So with that in mind, if I were to say
8 give me the first two steps that somebody that's
9 going to implement this new process would have to
10 follow, what would you tell me?

11 MEMBER McCLURE: You're pre-supposing
12 I know what the new process is that we have to
13 define.

14 MR. GOLDWATER: A process for
15 harmonizing medications --

16 MEMBER McCLURE: Yes that was a very
17 --

18 MR. GOLDWATER: -- value sets --

19 MEMBER McCLURE: -- not very tricky
20 way of asking me, so it didn't work.

21 (Laughter)

22 MEMBER McCLURE: But, so sorry, are

1 you saying, because we can --

2 MR. GOLDWATER: So we're going to come
3 up with a --

4 MEMBER McCLURE: A new way of building
5 new value sets, or --

6 MR. GOLDWATER: Or a process --

7 MEMBER McCLURE: -- harmonizing?

8 MR. GOLDWATER: -- for building,
9 harmonizing medications value sets in either new,
10 or existing, measures.

11 MEMBER McCLURE: Well, I mean, you
12 know, so I'll put on my, I was a value set
13 developer at one point in my life, and so like
14 everyone here is kind of eluding to, the way that
15 you think about creating, really, any value set,
16 but it's very evident in a medications value set,
17 is to think about the class of concepts in the
18 class of medications. They're important.

19 There are occasionally value sets
20 where that's already clear and you're really just
21 going out to figure out what concepts represent
22 the idea that you already very much have in mind.

1 But often times, you're talking about
2 capabilities of medications that you need to
3 represent, and then you need to go and find all
4 of them and do a good job. And that's why it's
5 so important that we do have ways of being able
6 to do that.

7 And I'll just reiterate again, I feel
8 moderately confident in telling you that there is
9 no existing non-proprietary drug classification
10 system that we can just simply point to and use,
11 that is because of the complexities of multiple
12 code systems in play, and the fact that it has to
13 be high fidelity and updated on a regular basis.

14 This is, if we think that it is
15 critically important for the well-being of our
16 constituency, it's probably something that we're
17 going to actually have to ask people to do. But
18 it doesn't mean that all of the value sets are
19 that way, you know.

20 For example, some of the ones that
21 were shown in your examples where they're very
22 specific and they have very few concepts in them,

1 probably, because it was like the
2 Warfarin-specific, right? And that was
3 Warfarin-specific is exists so that you can say
4 I'm allergic to Warfarin, and you do that at an
5 ingredient level, and there's probably just one
6 concept in that value set.

7 And so those are pretty
8 straightforward. So there are some that are like
9 that, but I suspect we're going to have to take,
10 you know, kind of, say this is a need and then
11 move on, in order to be able to get to the
12 subsequent steps, which gets to this issue of
13 and, in fact, it's what Olivier did that was one
14 of the reasons that we're, you know, he went
15 through and did this analysis of value sets, as a
16 research project, he used your card stores, as
17 you know, and found all this overlap.

18 And so, you know, that's what we need
19 to do is that we probably need to have some way
20 of assessing the intent of the value set, and
21 then, and you have to describe that, and then
22 having then described that intent, then you can

1 begin to go and identify code system
2 characteristics that align with the
3 characteristics of your intent, and that's the
4 process of both, in my opinion, good value set
5 creation and good, you know, mining for
6 harmonization operations.

7 MR. GOLDWATER: Ms. Martins.

8 MEMBER MARTINS: So I do want to make
9 a comment about legacy value sets, because I
10 don't think we can really escape them, as much as
11 that saddens me, just because, if we think about
12 the path forward, if we think about new value
13 sets and how we're going to be developing them,
14 we're always going to be developing them against
15 those that are already out there, and seeing the
16 harmonization is always going to have to happen
17 with what already exists.

18 So if, well, if we have a new concept
19 and it's very similar to something that has
20 already been created, you're going to have to
21 deal with that legacy value sets and make a
22 decision on whether you're just going to create a

1 new one and replace that one, whether you're
2 going to use the one that already exists, so you
3 can't, really, escape the value sets that already
4 exists.

5 If we were starting from scratch, I
6 agree, we could, we didn't need to consider the
7 existing value sets. But because we are, there
8 are value sets that we have to live with, we're
9 going to have to make a decision.

10 It could be that we don't use the
11 existing value set and we just start anew, but
12 the fact that the value sets are already out
13 there, means that we have to deal with them.

14 So as far as steps are concerned, in
15 terms of this new process, I think that whether
16 we're talking about harmonizing existing value
17 sets, or creating new value sets, as Rob
18 indicated, we need to define what is it that
19 we're talking about?

20 And, to me, that goes back to the
21 intentional definitions, right? And it doesn't
22 have to be at a very terminological-specific

1 level.

2 Jim Shalaby, who taught me 80 percent
3 of what I know about terminology, he always
4 describes the definition in plain English, what
5 the nurse, to doctor, whatever, who is defining
6 this concept, what does it mean, and you put some
7 boxes around it. What is it that you want to do
8 with it? Or, what is it that you want to
9 encompass? And that, and to include in what, and
10 that means inclusions and exclusions, and then
11 you refine those, as you move along down to more
12 computable ways of defining that first plain
13 English.

14 So that would be the purpose
15 statements, I guess, that you would start with.
16 And once you have that then you can path one, new
17 value set, you can go to the existing value sets
18 and, really, search by name, codes that you think
19 could be included in that value sets to try to
20 identify what your legacy is, and see if they're
21 appropriate, or not, or if you do need to create
22 a new value set.

1 MR. GOLDWATER: Dr. Schneider, and
2 then --

3 MEMBER SCHNEIDER: Can I propose,
4 perhaps a five-point program? The --

5 MEMBER MARTINS: Yes.

6 MEMBER SCHNEIDER: I would pick up,
7 very much, on what we were talking about this
8 morning, which is, you really need to identify
9 what is a good value set, that's sort of, you
10 have to establish the gold standard so that as
11 whatever work out of the future fits that.

12 And I think that a group that is in
13 charge of that needs to be established and firmly
14 established and they need to be recognized as
15 such. It doesn't have to be the federal
16 government, in fact, if it wasn't it would be
17 even better. Once you've got that, I think they,
18 and sorry if I'm too naive in this, I think there
19 are what I would call disharmony candidates.

20 You, kind of, showed us some of these
21 here where it's like, yes, something's wrong
22 here, or maybe something's wrong here, and that

1 might be internal to single measure, for example,
2 it might be internally consistent, or it might be
3 we have two measures and the value sets from them
4 that are seemingly inconsistent with each other,
5 so identify several of those.

6 Then, the third piece would be, get
7 the intent from those stewards, steward owners,
8 because we established that they're the same
9 thing, get the intent of those clearly defined.

10 And then, the next step after that is,
11 get the steward owners together and say, you
12 either have to justify to our new organization
13 that we created that's, sort of, our governance
14 organization, why these should remain as
15 separate, the sets, or bring them together as a
16 single harmonized set.

17 And then, step five would be to, same
18 base idea, take that new, whatever that new thing
19 is that comes out of it, or the justification
20 that you have to have two, and gets some real
21 live implementers to try and actually implement
22 this thing to figure out whether it is usable.

1 And I just, that could be a, it, I
2 mean, I offer that as a framework to kind of run
3 things through that would help to deal with, it
4 deals with the old legacy stuff, because you're
5 kind of working it item by item, but it also
6 creates the framework of which new things must be
7 done.

8 CO-CHAIR LIEBERMAN: Yes, I think I
9 was coming up with many of the same ideas. And I
10 think the, there are a couple parts here. First
11 of all, if we think about the new measure
12 process, as opposed to an old, retooling old
13 measures, you would see that a developer that has
14 a concept that's thinking about something, they
15 need to be able to go out and find out if there
16 is an existing value set that meets their needs.

17 So you need a repository of these high
18 value sets and in that you need an arbiter to
19 decide what is a high value set and who's going
20 to collate that and organize that?

21 So that's, part of this would be who,
22 you know, who's going to do that work and it, you

1 know, it may be one group, it may be different
2 groups, based on the domain and that sort of
3 thing.

4 Then the developer can then either
5 decide to use one of these, or they may decide
6 that it doesn't meet their needs. Then there's
7 good reason why it doesn't meet their needs, and
8 so they can choose not to.

9 And then you also then, if they go
10 that route, probably, part of the measure
11 endorsement process has to be some sort of
12 determination whether that was the correct
13 choice.

14 So, you know, is there, again, you
15 need an organization that looks at that and says
16 yes that's reasonable, that is truly a different
17 concept, or no, you know, it's close enough, and
18 that may be, again, part of the, it would be nice
19 to be able to move that into the endorsement
20 process, but that might be a separate process, as
21 well.

22 And that's, I think, is going to be,

1 you know, one of the real sticky points here is
2 who is going to do that work of both, of making
3 those value judgments on those value sets, and
4 then, if you, so that's, kind of, from a new
5 measure perspective, and you can see the same,
6 similar thing what happened in this harmonization
7 process.

8 So it'll still be that you would,
9 basically, go through the same process, but you'd
10 have to figure out who's going to make those
11 decisions, as to whether there should be one, or
12 two, concepts in each of those cases, and if so,
13 what is the best definition for that one concept?

14 MR. GOLDWATER: Chris.

15 MEMBER CHUTE: I want to address the
16 question of legacy. And let's be clear about
17 what I mean by legacy versus non-legacy. For me,
18 legacy, or the old way, is essentially an
19 enumerated extensional value set.

20 And the new way would be a more
21 intentional, whether it's drug class, or
22 whatever, but some kind of intentional design.

1 But that's, so we're clear about what we need by
2 old and new.

3 When electric cars came on the market,
4 we didn't require immediately that all gas cars
5 get off the road. Both kinds of cars can share
6 the road.

7 And correspondingly, if we introduce
8 a new paradigm that is to say, an intentional
9 design principle for value set use in quality
10 metrics, or other use cases, it doesn't
11 necessarily mean that all legacy value sets have
12 to get off the road. They can continue to exist.
13 They will live in the VSAC, they can continue to
14 be used, it's just that we probably don't want to
15 mine them for creating a new paradigm of value
16 sets. Excuse me.

17 So the whole question of whether we
18 try to harmonize existing value sets, at least in
19 my simplistic world, goes out the window.
20 Because, what we would do is persist legacy value
21 sets and then going forward, focus on the quality
22 metrics and the use case it's trying to address

1 and create an intentional value set, that is to
2 say, a class level specification of what's
3 needed, and effectively ignore the enumerated
4 tedium of the existing extensional value sets.

5 MR. GOLDWATER: Rute.

6 MEMBER MARTINS: So I think we've
7 established a criteria, in terms of which value
8 set wins, and that is the intentional value set.
9 So as long as there are only extensional value
10 sets, as we move forward and create value sets
11 for new concepts, or existing concepts, if
12 someone goes through the work of creating an
13 intentional value set that actually produces a
14 lot of overlap with the extensional, then whoever
15 has the extensional is probably going to have to
16 work to use the new intentional value set.
17 Intentional beats extensional.

18 MR. GOLDWATER: So I think this is an
19 interesting process. It does bring up an
20 interesting point, which is, we do have to pilot
21 test something, so should the pilot test then be,
22 we choose three measures, we look at the existing

1 medications value sets, we map --

2 (Simultaneous speaking)

3 MR. GOLDWATER: You're saying no?

4 CO-CHAIR LIEBERMAN: No, go ahead.

5 MR. GOLDWATER: Again, I am not a
6 physician. I don't play one. I am just trying
7 to reconcile these various thoughts into a
8 process.

9 We take the existing value sets,
10 medications value sets, are we then looking to
11 try to map them to the classes that are, are they
12 in RxNorm now, or are they still in NDF-RT, or?

13 CO-CHAIR LIEBERMAN: So I think that's
14 the part that we're not quite sure, but I think
15 the idea behind it is, is that you take three
16 measures, you look at the medication groupers in
17 them, and you see if you can come up at the very
18 high level purpose statement, are they really the
19 same thing, are they trying, are they going after
20 the same concepts?

21 In the cases where they are, you then
22 create your intentional definition of that using

1 med classes and, hopefully, NDF-RT, or RxNorm has
2 the capability to that, you then write the
3 description using that, and then, again, using
4 the relationships within the terminologies.

5 You can then explode out a list of
6 RxNorm concepts that you could compare against
7 the previous sets, just for, kind of, an
8 informational perspective, so the people would
9 know what they're using.

10 And that, it may always be the more
11 the definition that's used, but that could change
12 over time as the relationships, or as the
13 terminologies change, but I think that would be
14 the general idea behind it would be to start with
15 that, that definitional, the intentional,
16 definition of it, and then explode that out to
17 determine what actually that encompasses.

18 MR. GOLDWATER: Dr. Heras, and then,
19 Chris.

20 MEMBER HERAS: Yes, when we say about,
21 to define intentional medicine, I just want to,
22 you know, make sure that we're actually, you

1 know, define a clear process, because I think,
2 previously, you know, for now, all the eQMs are
3 actually, is tied to a more static value set.

4 So if we're doing intentional value
5 set, then we have this different year of
6 reporting. I'm not quite sure, you know, how
7 we're going to do that, because we're always,
8 like, a one year behind, you know?

9 Like, this year we come out with the
10 2015 measure, which will be used for the 2016
11 reporting year, so if you're building, if you're
12 sending a report, creating reports during 2016,
13 and saying we are using intentional value set, at
14 that time, what exactly, you know, are you going
15 to always using the most up-to-date value set?

16 So I think that's kind the issue, not
17 just simply say intentional value set, but
18 actually we make this very clear and the
19 implications to eQM development.

20 MR. GOLDWATER: Chris, and then
21 Marjorie.

22 MEMBER CHUTE: I want to reiterate Dr.

1 Lieberman's point, because I agree with
2 everything he said, but I want to make some
3 points of emphasis.

4 The process is, as I see it, is we
5 would take three measures and we would look at
6 their purpose and scope, but I also think we have
7 to go back to the developers of those measures
8 and clarify with them, because the three, or
9 four, sentences that they wrote in purpose and
10 scope may not be as complete as necessary,
11 shockingly.

12 And therefore, I think we really have
13 to have a dialog with the developer of the
14 measures, what exactly was your intention here,
15 and have exquisite clarity, maybe, rewrite the
16 scope in more detail. Once we have done that,
17 then we can create an intentional value set.

18 The interesting question is whether
19 that intentional value set should be informed in
20 any way by the legacy extensional value set and
21 being, you know, a China-bashing-radical, trying
22 to, as in China sets, not the country, then I

1 would assert that it really serves no purpose to
2 examine the historical legacy value set, because
3 it was just an approximation of what, inevitably,
4 of what the measure developers had intended in
5 the first place.

6 And we would get much more value and
7 substance and reliability by going to the measure
8 developers and saying what did you mean, and
9 starting over again in an intentional context,
10 then we would by trying to peer into the tedious
11 detail of historical enumerated content.

12 MEMBER RALLINS: Chris took the words
13 out of my mouth. And I'd like to go a little bit
14 further and put a finer point on it and say that,
15 I think we need to involve the measure developer,
16 along with the committee that helped to do that,
17 but also, to recognize that this represents a
18 significant culture shift that we need to think
19 about.

20 I think I said that earlier in the
21 day, but it really does represent a culture
22 shift, because these measures, I don't know which

1 ones we select, but more than likely, these are
2 measures that are used to report on, right, in
3 programs. So that, I mean, there's another whole
4 community, or industry, that takes the next step.

5 DR. HIBAY: Yes I, not to sound
6 redundant, but perhaps some of this may be. So I
7 agree with Chris, there's a lot of great work
8 done with the work, you know, that we've already
9 done with these value sets that are existing in
10 the MU2 measures.

11 And my premise was always that you
12 cannot look at the content, the concepts, the
13 absolute details of these codes, without the
14 people who authored them and understanding what
15 their purpose was, and so they must be involved
16 with the process. I just don't see how we could
17 do that any other way.

18 And I agree with, also, just that
19 these concept, we can't throw the baby out with
20 the bath water, there's a lot of good intention
21 that went behind there.

22 And then, also, Dr. Heras, if I could

1 just comment to your, I think you were stating
2 some governance issues. So what do we do around
3 value sets and how do we keep these in and keep
4 these out and what's the process and how do we
5 inform and those kinds of things?

6 So I think the charge of this
7 committee is to imagine how we want the future to
8 be, and I think Jason very clearly articulated
9 this morning that we have some parking lot issues
10 that we need to be concerned with, and some of
11 those are: yes, we recognize there's going to be
12 governance issues that come out of this; yes, we
13 recognize that our process that we are going to
14 develop is going to ask us to look back at the
15 MU2 measures; and, yes, our process is also going
16 to ask us to look forward, not just at new
17 measures now, but, you know, additional measures,
18 too, because we also are working with other
19 groups, some of you may be involved with Rob
20 McClure's group, which is looking at when we have
21 to make substantive changes to a value set, you
22 know, midstream, or mid-implementation year. So,

1 you know, we can see the parallels that will go
2 with those three iterations, but, you know, we
3 want to think about those things that are
4 governance, but really are charges to be
5 innovative, bold, all those good things, and
6 create a process that works, if that's okay.

7 MR. GOLDWATER: Ms. Martins.

8 MEMBER MARTINS: So it seems to me
9 that we're really all saying, and going back to
10 the issue of legacy and comparing directly and
11 all of that, none of that can be done without
12 knowing what the intent is.

13 It's just a matter of how you're
14 asking the question. Are you asking, does this
15 belong, does this not belong, does this meet your
16 intent, does this not meet your intent, which is
17 really trial and error versus having the people
18 who established the value set articulate the
19 purpose, and that's hard and iterative, but it's
20 what should be done.

21 So really there is, it's a non-issue,
22 whether we're doing the extensional list

1 comparison versus the intent. The intent is
2 needed to do that extensional comparison, it's
3 just keeping it at that level to make it a
4 process, better process, moving forward.

5 And then, my second item, which I, of
6 course, forgot, is, oh, the issue of intentional
7 definitions versus the expansions. I agree with
8 you, Marjorie, it is a huge shift, but do we have
9 to, are we biting more off, more than what we can
10 chew, at this point?

11 So I would propose that there's a
12 happy medium. There's a happy medium of value
13 sets that have intentional definitions, and that
14 produce expansions that are frozen and used in a
15 program for a specific year. We don't lose the
16 intentional definition that will be key to
17 maintaining value sets harmonized, but we're also
18 not saying oh my God, everyone is going to have
19 to deal with dynamic value sets right now.

20 MR. GOLDWATER: Dr. Che.

21 MEMBER CHE: So I want you to look at,
22 a little bit, of end state of this work. After

1 we develop a set of, you know, wonderful
2 principles developing the value set, or
3 harmonizing the value sets, how we can, you know,
4 distinguish this set of value sets. Say, this
5 has been reviewed and applied it with this set of
6 rigorous principles, so other people, or a future
7 user, can see it and will trust that this set of
8 value sets.

9 I mean, literally, today in VSAC,
10 anyone can create a value set, whether it's, you
11 know, has a good intention, or a bad mistake, the
12 duplication will be created.

13 So for future user, if this set of
14 value set has been applied with the principle,
15 and so they will trust, they will trust that, you
16 know, all the maintenance, or all the good stuff
17 has been in place, then we will know this value
18 set is something we'd like to use. You know,
19 that certainly have higher score than the rest of
20 the value sets on there. So, I mean, this is
21 probably just some end state that we want to
22 apply, please.

1 MR. GOLDWATER: Dr. McClure.

2 MEMBER McCLURE: Thanks. So a couple
3 of things. The -- I'm going to mention it and
4 then I'll come back to it -- this issue of the
5 use of class, drug class, we need to be careful
6 about basing all of our, kind of, core work on
7 the assumed existence of a class system that we
8 can utilize, because I don't think it exists,
9 yet.

10 And so I think there's a lot of other
11 things we can do that isn't dependent on
12 literally getting an intentional definition,
13 based on a class, and doing analysis of the
14 actual expansions that are generated, based on
15 that, comparing against that sort of stuff. I
16 mean, that's part of it, but I think there's
17 other things that we can do that will be really
18 useful, also.

19 And so what are those other things?
20 So I think, we talked about this, and I think
21 there's a lot of value and we don't even have to
22 stay just on drugs, if we wanted to do this, and

1 that is getting clear scope, or purpose
2 statements.

3 So again, we talked about the need to
4 go back and work with the stewards of these value
5 sets, usually, steward of the measure that was
6 utilizing them, and work with them to understand
7 what is an extremely clear, concise, thorough,
8 purpose that is what we need in order to be able
9 to actually do harmonization. So establishing
10 the criteria by which that can be done and doing
11 it, as a part of the work that we need to do, it
12 doesn't have to be restricted to drugs and is no
13 small feat, having been struggling to get people
14 to do it.

15 So I think that that's one kind of
16 thing that's an important element of our work
17 that applies both in the harmonization process
18 going forward, process can be done right now, it
19 doesn't require anything more than what we
20 already have available to us.

21 Similarly, other things like that,
22 that are a part of what I would call value sets

1 metadata, you know, we could tackle, like, and
2 you had mentioned, and I actually liked this
3 idea, in that typing, I'll use this general
4 phrase, typing value sets, and by that, I mean
5 classifying, giving them a type, and thinking
6 that through, in the context of the sort of
7 things that I had talked about. And others have
8 talked about, like this idea that certain value
9 sets are in the context of use describing a
10 request that data be encoded, and that has
11 certain qualities, with regards to the concepts
12 that you want to put in there that are different
13 from, actually, drugs fall into this second
14 category more often, an exhaustive list of all
15 possibles that aren't traditionally captured, and
16 therefore, you need to be good about making sure
17 your definition really does get all of them.

18 You know, these other ones, that may
19 not be true. And so coming up with ways of
20 thinking about the types of value sets there are
21 that give clear guidance about differences in
22 approach is also something I think we can do and

1 that doesn't require, I mean, we have all the
2 tools available to us, I think, to do that.
3 Another element to this is, well, that's -- let
4 me just stop there, with regards to those things,
5 I just want to answer some other questions.

6 There is, once we really get going on
7 actual content, we step into some important
8 technical issues that everybody has to understand
9 in order to really, you know, I think,
10 participate in a valid way.

11 So we talked about some of them, like
12 the idea we can make suggestions with regards to
13 the definition of a value set. The whole idea of
14 value set definitions, and I'm so glad to hear
15 some of my colleagues using the words value sets
16 expansion, that there's a difference between a
17 value set definition and a value set expansion,
18 and I hope everybody understands that here, and
19 if you don't, it would be worthwhile to take a
20 little bit of time to clarify that, because value
21 set, the use of value sets uses value set
22 expansions. The creation of value sets at a

1 value set definition, and while many times they
2 are in many ways the two sides of the same coin,
3 they aren't always the same coin.

4 And the fact is, we can make changes,
5 as you were mentioning, once we get to the part
6 where we're really suggesting for a particular
7 value set a particular change, we can make those
8 suggestions without impacting regulatory
9 activities right now. That is an absolute fact.

10 Now, how we do that requires us
11 specifying things that, traditionally, people
12 haven't thought about. This idea that a value
13 set definition is one thing, and what regulations
14 use is another thing, it's a value set expansion.

15 And so I'm saying that as one example
16 of a number of things, where I wonder if the
17 committee, there are some places that we can
18 begin to do work that I think would be extremely
19 valuable work that doesn't get us into an area
20 that I have grave concerns about, with regard to
21 the medications example, specifically.

22 And that if we propose that our

1 deliverables are an exact analysis of specific
2 value sets, clearly part of what the charge was
3 that you were given to do work on harmonizing
4 value sets, but when we get to that point, if we
5 focus on medications, likely, we will want to use
6 drug classes as a way to support that, and I'm
7 telling you, that thing is not ready.

8 And so I don't want us to immediately
9 get to that door and give up. I want us, I think
10 there's other things that we can do before we get
11 to the point where we, then say okay, here's
12 exactly the qualities of a drug class system that
13 are needed, and where do we get that so that we
14 can actually make defensible, valid changes to
15 value sets based on that.

16 MR. GOLDWATER: Zahid.

17 CO-CHAIR BUTT: So yes, I think I
18 agree with Rob that we'll find many use cases in
19 which the existing classification will not
20 support the need for a specific use case in a
21 specific measure, so I guess, in terms of, since
22 we are sort of forward thinking and so forth, one

1 could enunciate some sort of ask that perhaps the
2 situation should be then handled by, obviously,
3 creating a value set that fits, fills a need now,
4 but then, whoever is, sort of, responsible for
5 that domain is then asked to fill the gap and
6 define what time frame it would be needed to fill
7 that gap.

8 Because, you know, we're going to have
9 to, sort of, you know, sort of, dance and chew
10 gum at the same time in many of these instances,
11 so there needs to be some guidance, in terms of,
12 you know, what are the couple of different things
13 that we would recommend, as a committee, that
14 need to be incorporated. And while there's, sort
15 of, a dual track that you just don't sit while
16 somebody is going to add a new class, or
17 whatever, but there's got to be some intermediate
18 way to handle the need, the immediate need.

19 MEMBER McCLURE: Just one quick
20 response. And, you know, I keep harping on this
21 drug class thing, but there are other things that
22 we can say about medications. You know, RxNorm

1 doesn't, people may disagree with this, but
2 RxNorm doesn't have drug classes in it.

3 It's extremely useful and it uses it
4 by the fact that it's not a hierarchy, it's a
5 series of attributes, and there's a lot of what's
6 done in creating the current drug value sets that
7 use those attributes in order to be able to
8 create the content. So there are some things,
9 again, getting to definitive suggested, what
10 appear to be disharmonies that could be resolved
11 by describing an intentional statement, with
12 regards to use of code systems that we can do.

13 CO-CHAIR BUTT: Right.

14 MEMBER McCLURE: We just can't do this
15 one, one other thing.

16 CO-CHAIR BUTT: Right, and -- the
17 other thing is this extensional versus
18 intentional. They're again, sort of, pros and
19 cons in terms of actual implementation, because
20 no matter how you look at it, an extensional is
21 obviously clear, because it's there.

22 Intentional needs translation and that

1 translation needs to happen either at the
2 implementation level within an EHR, or within the
3 data extraction process where there's a
4 transformation involved, or at the level of the
5 eCQM engine, somewhere along the line there has
6 to be a translation that needs to happen for it
7 to be reflected properly. So there is that level
8 of, in a sense, shifting of the overhead that
9 would be required.

10 And especially if, on the
11 implementation side, they have to incorporate
12 things that are captured within an EHR, and drugs
13 is probably not the best example of that. It's
14 much more when they have to capture things like
15 device applied, or those types of things that are
16 documented either by a nurse, or a physician,
17 then they would have to internally reference the
18 ontologies and maintain some level of that.

19 And knowing some of the hospital that
20 we run into, it's going to be a challenge for
21 them to manage that whole process. I'm just
22 putting on the table the reality of what's out

1 there in a lot of these hospitals where they are
2 just, basically, barely able to understand what
3 VSAC is.

4 DR. SKAPIK: So I think that, you
5 know, Rob's point is a good one and there are a
6 number of points that I think we've heard today
7 that are perceived this early on in the process
8 as potential, real limitations, or barriers to
9 this overall work.

10 I would suggest, and I think it would
11 be helpful to us to hear right now from you, not
12 right now, aloud, but perhaps for you to compile
13 this list of potential limitations and barriers
14 that you see today ahead of you. Because there
15 are potential streams of work, and there are
16 actually some ongoing streams of work to address
17 some of these problems.

18 And hearing from the Committee that
19 this is going to limit your ability to get the
20 job done on this specific project, I think you're
21 one of many groups of people who have faced these
22 limitations and been harmed by them, and so it

1 might help to encourage us to really push some of
2 this work forward, even as you continue to work
3 on this project.

4 MEMBER RALLINS: Just, we've just
5 covered a lot of ground. And I was wondering,
6 Jason, if we could summarize? Because in the
7 context of harmonization, what it sounds like to
8 me, and I could be wrong, is that we're not
9 necessarily harmonizing across, you know,
10 disparate value sets. What it sounds like is
11 we're taking various measures in looking at the
12 value sets that exists within each measure and
13 looking at it a different way.

14 So taking the extension and the
15 intentional, the extensional that already exists
16 and looking at how we can build an intentional
17 value set. That in and of itself gets you to
18 some type of harmonization. Is that where, is
19 that where we are?

20 MR. GOLDWATER: That's correct. Before
21 you speak, Julia, do you want me to, sort of,
22 summarize and talk about where we are?

1 (Off mic comments)

2 MR. GOLDWATER: Okay. So, and I'm
3 summarizing and compiling the many thoughts that
4 have circulated in the last hour, but it seems
5 that there was two trains of thought. The first
6 was to set up a pilot process by choosing three
7 measures. By then, engaging and, presumably,
8 that would be NQF that would take the lead on
9 those.

10 Engaging with the developer of the
11 value sets to specifically get at the purpose and
12 scope that is probably as, I think, there was
13 consensus maybe inadequately defined in the
14 documentation.

15 And that we need to then have a
16 conversation to get a much more expansive view of
17 what that scope is. Once we get a better
18 understanding of what scope is and we have
19 clarity over what that is, is then subsetting to
20 medications, which was the initial proposal, was
21 then to, sort of, create an intentional value set
22 based upon what that scope was defined as, and we

1 are informing from that intentional value set
2 what those medications would be, within each of
3 those three measures, Marjorie, that we are
4 discussing. And that would get us to some degree
5 of harmonization.

6 I do want to add that it's a pilot
7 test, so this is not something that we're going
8 to do and it's going to go live and then
9 everybody's using this, because, I think that
10 would be highly problematic, and given, sort of,
11 the issues surrounding medication intentional
12 value sets. That could be very problematic, to
13 some extent, so we don't want to be doing that.

14 But it was just a pilot process to see
15 if we are able to get to the actual purpose and
16 scope of the value sets, look at intentional
17 value sets and create them, are we able to get to
18 some degree of harmonization that would then be a
19 new path forward, and as Marjorie, I think, very
20 eloquently put, is a massive and significant
21 culture shift in the way we are doing things now.

22 The other train of thought is what Dr.

1 McClure was saying, which is in a nutshell, those
2 types of values, intentional value sets with drug
3 classes are not ready. They're not ready for
4 prime time. Perhaps, we should not be focusing
5 on medications exclusively, perhaps we should
6 either look at something else, or be more
7 expansive in what we are doing. But in reality,
8 before we get into any sort of pilot testing of
9 anything, that we should be examining more
10 specifically, you know, the issues that are
11 surrounding why harmonization is an issue in the
12 first place.

13 Getting, again, to the intent and
14 purpose of the value set, understanding why the
15 value set was created, potentially looking at a
16 way of typing quote, unquote value sets and
17 having, I guess, a classification scheme with a
18 different types of value sets that there are, and
19 that that's sort of may be the activity we
20 pursue, rather than pilot testing, which was the
21 initial goal. So, Marjorie, that's sort of the
22 two things that we were discussing. Go ahead.

1 DR. SKAPIK: Yes, so to the scope of
2 the project, I think, you know, sort of, there
3 were a lot of ideas back and forth as to whether
4 or not the scope should be related to specific
5 measures, or it should be related to domains that
6 exist across measures. I think that, you know,
7 as the client we would be very pleased if you
8 took on three domain concepts that exists across
9 measures, as much as if you looked at the entire
10 content of measure value sets, specific measure
11 value sets.

12 And I think that in terms of pilot
13 testing, I certainly agree, we don't expect
14 widespread implementation during the pilot phase.
15 You know, it may be that you decide that you're
16 going to get better information by doing
17 widespread community engagement and review of
18 content, as much as a single site implementing it
19 might give you less information. So I think
20 we're open to, you know, discussion about what
21 the most effective way of determining whether or
22 not a proposed solution is successful, and that

1 --

2 MR. GOLDWATER: Right.

3 DR. SKAPIK: -- the domain is still,
4 in my mind, on the table.

5 MR. GOLDWATER: Right. So before I
6 get to my goals, I mean, we may pilot the
7 process, it may fail miserably, we may, I mean --
8 usually failure's a harsh word, but it may not
9 be, it may not work. We may think, Dr. McClure's
10 totally right, we should have listened to him all
11 along. Why were we considering anything other
12 than his? So, I'm sorry, blah, blah, blah, blah.
13 But, I mean, that's the purpose of piloting
14 something is to see if it is going to be
15 successful. Dr. McClure.

16 DR. SKAPIK: And one more comment on
17 that.

18 MR. GOLDWATER: Sorry.

19 DR. SKAPIK: In the terms of
20 medications, I could see you doing the work in a
21 way that would set you up to put in the drug
22 class information that's appropriate and

1 reliable, in the future when that would be
2 available. If, you know, assuming that you, sort
3 of, the way that you go about the process leaves
4 you a space to plug that information later, if
5 need be.

6 CO-CHAIR LIEBERMAN: And I think it's
7 all related in that what we started with is that
8 we had these collections of values that seem to
9 mean the same thing but are different. And what
10 we've come up with is that we need to really
11 define well through the statement of purpose, or
12 whatever, what that concept is that we're
13 addressing, so that we can decide if in fact they
14 really are the same. And I think that's
15 absolutely the first thing to do.

16 But then, I think the second part is,
17 when you're trying to determine whether or not
18 they're the same, or whether or not this concept
19 meets what you want to do, that what would be
20 really useful is to have that, what we're calling
21 that intentional definition, or that logical
22 definition, using existing medical terminologies

1 that will allow us to do that.

2 So that it could be using drug
3 classes, if they're there and they work for that
4 concept, my guess is beta blocker, or ACE
5 inhibitor, or, you know, ARB, it's probably in
6 NDF-RT now, and probably would work well, and
7 there are lots of occasions where it wouldn't,
8 but I think there are occasions where it would.
9 And there might be other examples, maybe, SNOMED
10 and drug classes in SNOMED and concepts in SNOMED
11 would work well, as well, to define that concept
12 that you're going for.

13 But if you could put it in terms of a
14 standard terminology that we have, then that
15 gives you the ability, in theory, over time, to
16 be able to actually compute what that list looks
17 like, in terms of other, you know, other types of
18 information that might be collected. And it
19 makes it, it gives you the potential to have that
20 electronically presumable measure that we're
21 looking for that is easier to maintain over time,
22 as well.

1 MR. GOLDWATER: Dr. McClure.

2 MEMBER McCLURE: All right, just a
3 couple of things. One, I forgot, in terms of the
4 things that you were listing that I would
5 encourage us to consider for this additional
6 metadata of value sets, so one is this typing.
7 The other is, I think something that you
8 mentioned, and it's certainly an NQF thing,
9 quality, right? And so if there's a way that I
10 would encourage us to think about describing
11 quality of value sets and having some way of
12 being able to describe that.

13 And the other thing was, I forget. It
14 was some technical thing. But anyway, I forget.
15 Oh, I know what it now is. We've talked about
16 the importance of scope. There's another part of
17 this: the name of the value set. And so I think
18 we ought to tackle good naming practices, and we
19 suck at that.

20 (Laughter)

21 And so any, you know, good, I think,
22 if we can give really clear expectations with

1 regards to naming that would really be
2 beneficial, in terms of harmonization and
3 describing things. I would add to that, we need
4 to consider in the context of the way the VSAC
5 works and its use of grouping value sets and what
6 are called the numerating value sets, but grouped
7 value sets that those are qualities that are
8 different.

9 Those are different kinds of value
10 sets and we need to come up with guidance that
11 clarifies expectations with regards to the use of
12 grouping, right? I have some biases about that.
13 And then, how that applies to these things that
14 we just talked about, what do we expect to see in
15 the context of a good scope for a grouping value
16 set, versus the grouped value set, and similarly,
17 the naming conventions.

18 I think that would do a lot for our
19 core deliverables, which is make it clear when
20 things are the same, or not, when you just look
21 at lists.

22 MEMBER CHUTE: Very briefly. Many

1 artifacts, in terminology and elsewhere, have two
2 names, because if you make what's called a
3 fully-specified name, which is usually some long
4 run on sentence that nobody wants to use, it
5 doesn't get used, shockingly. But you need those
6 to disambiguate what the heck you're talking
7 about.

8 So I think we have to think about
9 this, in terms of having a fully-specified name
10 that is really almost a kind of documentation,
11 and then, maybe, a friendly name, or a common
12 name that references the same artifact. And you
13 have to separate those puppies, otherwise, you're
14 going to say oh that name's too long, we can't
15 use it. And it's okay for a fully-specified name
16 to be too long, because nobody's going to use it.

17 MEMBER MARTINS: So I just wanted to
18 go back to your summary, Jason. And, you know,
19 the notion of intentional definitions and how
20 that would provide harmonization in and of
21 itself, and how, and I think, Mike, you spoke a
22 little bit to more, how harmonization is going to

1 occur once we have determined what the intention
2 is, right, what the intentional definition is.

3 If the intentional definition matches,
4 then we have a problem with duplicate value sets,
5 really. We haven't gone into the weeds seeing
6 which particular codes are not aligning. Cool.
7 And so what I wanted to say, really, is that
8 that's an extremely iterative process, both
9 within, we each defining each value set and then
10 trying to identify where the mismatches are.

11 You don't know what you don't know
12 until you're faced with someone else's
13 intentional definition of something that may be
14 related, but not quite what you're trying to get
15 to. So just a cautionary comment there that
16 there are going to be some hurdles, I would say,
17 that you can't just really sequentially address
18 this and now we have definitions, so now we're
19 going to compare, we're probably going to have to
20 go back and forth.

21 And then, I really like the idea of
22 all of this quality criteria for quality of a

1 value sets, and I think we should build it in
2 into the intentional definitions. We should
3 build intentional definition templates for
4 certain types of value sets that can then be
5 populated with the domain-specific information,
6 but to have the terminological part figured out.
7 So that's, I think, a way to marry those two
8 approaches, or those two areas that were being
9 discussed.

10 (Off mic comments)

11 MR. GOLDWATER: Okay. Dr. Zahid, and
12 then, Marjorie.

13 CO-CHAIR BUTT: So I think Julia
14 mentioned, like, domains going across measures,
15 so I guess one definition might be domain might
16 be medications going across measures, or what I
17 was trying to define earlier was the concept of
18 each construct within a measure, like, you know,
19 the different populations and their use cases.

20 Because, I think, again, when we talk
21 about the quality of a value set, there may be
22 some qualities that can be defined in treating

1 the value set, simply as an isolated entity,
2 which has no relationship to anything else. You
3 could define some qualities, or attributes, or
4 best practice in creating a code set.

5 But, I think, in many cases, the use
6 of that value set in the context of an eMeasures
7 implementation, has other aspects that get into
8 play. For example, which component of the
9 measure construct is it going to be applied at?

10 Because your, you know, granularity,
11 or value, might vary, you know, where you apply
12 it. And the same thing might be true of how does
13 it impact the data capture work flow when it's
14 implemented?

15 So I think those need to be an
16 essential component, in addition to defining
17 whatever characteristics are defined off a good
18 value sets and isolation. And so I think,
19 somehow, we need to capture that sense that gets
20 communicated to whichever group that is going to
21 do this work.

22 MEMBER RALLINS: Mine was just a

1 follow-up question to Rute's. When you mentioned
2 about figuring out the terminological part, what
3 did you mean by that?

4 MEMBER MARTINS: So for instance, if
5 you're thinking about a RxNorm value set and it's
6 a value set that is supposed to capture
7 medications to be administered, defining which
8 term types you would want to include in the value
9 set. And that's the standardized way of making
10 it part of the intentional definition.

11 I mean, SNOMED would, if we went into
12 SNOMED it would get it, Rob's typing of values
13 sets, right, how are we going to develop? So I
14 don't know if we can fully develop intentional
15 rules for that sort of information, but we can
16 certainly try.

17 DR. SKAPIK: Yes, to Zahid's point.
18 I would consider medications an awfully huge
19 scope for a pilot. I think it might be nice to
20 try, maybe, a class of medications as a pilot.

21 I would hope that, you know, whatever
22 process the pilot works out is something that

1 with a significantly less effort could be scaled
2 up, so that if you were to take a single group of
3 medications and create a process that was
4 successful that it would be relatively less time
5 and labor intensive to repeat that process for
6 other classes of meds.

7 MR. GOLDWATER: Dr. Bregman.

8 DR. BREGMAN: I was just looking at
9 the agenda and it looks like we have an hour
10 until we're supposed to have public comment, if
11 we're still sticking to that?

12 And we have a lot of good ideas, I
13 just thought we should start writing them down.
14 I'm sure you're already writing them down, but
15 write them down in a place where we can see them,
16 and just to make sure that we agree and that
17 we're not getting too ambitious about what we're
18 proposing.

19 And I think Julia just suggested a way
20 to limit it so that we aren't going to get too
21 ambitious, but also that would be steps that
22 themselves aren't too ambitious.

1 MR. GOLDWATER: Here's what I think we
2 have so far, in terms of what we would do for the
3 pilot. And let's see if we can, do you want to
4 write them down?

5 (Off mic comments)

6 MR. GOLDWATER: Are we able to write
7 them down on a -- we you able to create a slide?

8 A white board? It's right there. So
9 we're going to go to rudimentary technology for
10 this one.

11 So I think there's going to be two
12 such of things we're going to do. Oh, one is
13 going to be the pilot test. Actually, I'm going
14 to say there's three things we're going to do.

15 So one is the going to be the pilot
16 test and we'll set that up. The second are going
17 to be some of these other issues that surround
18 value set harmonization that we will continue to
19 analyze throughout the course of the project that
20 may affect value set harmonization, but we don't
21 want it to interfere with our conducting of the
22 pilot test.

1 And then, the third are, these
2 wonderful ideas that we don't want to lose, that
3 we want a parking lot to go back to in the course
4 of these discussions we'll have with you and with
5 our technical expert panel.

6 So in terms of the pilot test, the
7 first thing we will do, and we'll have to do this
8 after we write this down, are three measure
9 domains. Julia, is that what you want, domains
10 that cut across measures? Okay. So we want to
11 identify three measure domains.

12 We then need to have, secondly,
13 conversations with the value set stewards to
14 identify the purpose and scope of the value sets
15 within these domains. And NQF will take the
16 responsibility of that, so that we are very
17 descriptive with the purpose and the scope.

18 We will select a class of medications,
19 rather than taking on medications as an entire
20 topic. So these are a couple of things we're
21 going to need to resolve in the next few minutes.

22 We will then go to our technical

1 expert panel and ask them, on three separate
2 occasions, to take one of those measure domains,
3 make sure we are explicit with the purpose and
4 scope of the value sets, what medication class we
5 are looking at, specifically, and ask them to
6 create an intentional value set, presumably,
7 using RxNorm, unless it's not, or -- Chris.

8 MEMBER CHUTE: You could use the
9 standard medical, standard medical terminology.

10 MR. GOLDWATER: Use the standard
11 medical terminology? What terminology should we
12 use?

13 MEMBER CHUTE: Yes, I don't have to
14 micro-specify that, but I'm getting tripped up on
15 this class bit. I didn't understand your point.
16 Because, quite frankly, the whole premise of
17 intentional value set definitions, particularly
18 in medications, is that you would use drug class
19 to specify what you mean.

20 So you wouldn't be focusing on a
21 class, you'd say, you know, I want an
22 antithrombotic, you know, that's a drug class.

1 You're done. That's the value set. Then you
2 leave it for one of these nomenclatures to do the
3 expansion.

4 And by the way, Rob just came over to
5 me with a news flash that yes indeed RxNorm does
6 have drug classes. We don't know their quality,
7 but they are, at least, begun in a more
8 comprehensive fashion.

9 MEMBER McCLURE: Yes. So he's right.
10 Made a couple, they added, this is new, but
11 there's something called ATC Codes. Now, ATC
12 Codes have been around a long time, they've
13 actually, they're used internationally. We won't
14 engage in a discussion about their quality.
15 There are very strong opinions about their
16 quality, but they are now in RxNorm.

17 And so I'll ask, there's actually two
18 now, they put in also links to match, which I
19 believe, probably, are coming through NDF-RT
20 there, and some of the other work that's being
21 done. And so that one also may be spotty, in
22 terms of it, but there are embedded now in RxNorm

1 ways of using drug classes.

2 You know, for example, Penicillin G,
3 using ATC, or is it MeSH, one of them doesn't
4 have beta-lactams as one of the classifications.
5 So there's that.

6 The other point, just, if I may, since
7 I've grabbed the mic that, you know, again, we're
8 focusing on medications, I think, for some
9 reasons that we've discussed.

10 But this idea, you know, kind of
11 jumping on what Chris was saying, of using
12 classes, let's be a little cautious about using
13 the word class, because what we're talking about
14 is hierarchies, right? And that applies
15 everywhere.

16 So it's a little wrong to say class
17 when you're talking about some of our other
18 terminologies, but it's always right to say
19 hierarchy, and that's what we're talking about.

20 And the point that Chris is making,
21 which I think is worthy of some discussion, maybe
22 not right now, but at some point, is this issue

1 of having then specified, you know, and you have
2 to do some analysis.

3 You have to say okay, I'm going to go
4 look. Oh that terminology has that
5 classification system, there's a concept that I
6 want. I'm going to say that concept, you can't
7 just walk away.

8 Now, you know, what Chris is saying is
9 it may be in some domains given the kind of trust
10 relationship that makes sense, in terms of the
11 process that you're describing.

12 You put any antithrombotics I'm done.
13 I don't care what's underneath there, because the
14 group that decided what's underneath there is
15 more reliable than I am and I'm ceding
16 responsibility, in a sense, to that process to do
17 that.

18 But that's going to be the kind of
19 thing, again, I want us to not skip over that.
20 That's exactly where we need to provide guidance
21 so that authors know when they can do that and
22 what that means to them versus when they

1 shouldn't.

2 So they, you know, and shouldn't
3 means, in this case, go and get it and look at it
4 make a change to it. Record that change as a
5 part of your definition, right?

6 Now you can't just say this thing and
7 all of its decedents, you can say this thing and
8 all its decedents, but now remove this, remove
9 this, and what are the consequences of that?
10 Guess what, now you're in the game, every single
11 time the thing is updated, right?

12 So these are all, I think, elements of
13 our process that would be wonderful to see
14 specified by an authoritative group and that
15 would then make the process of harmonization much
16 more clear, because you could almost, we could
17 almost get to the point, and I think Chris would
18 be in real support of this, where harmonization
19 is a mechanistic thing, right? Because you're so
20 well-specified in what you're doing --

21 MEMBER CHUTE: Right.

22 MEMBER McCLURE: -- that you'll let

1 the computers do it, and then you just kind of
2 review it.

3 MR. GOLDWATER: Julia, and then,
4 Howard, and then we need to get back to our --

5 DR. SKAPIK: Yes, and perhaps I should
6 have been a little more clear, in regards to my
7 use of the term class, because obviously there
8 are multiple ways to create classes with
9 medications.

10 Specifically, I was intending, and I
11 think antithrombotic is a good example, across
12 the measures there are a number of different,
13 sort of, groups of value sets that describe
14 things that are used for the purpose of
15 preventing, or treating, potential thrombotic
16 events.

17 However, across the entire set of
18 measures there's a very heterogeneous groups of
19 those things. And for some of those, there's
20 very intentional reasons. And for others of
21 those there are, and I mean intentional, the T,
22 and for others of those there's less clear as to

1 why there's lack of symmetry.

2 And I think, you know,
3 antihypertensives, antithrombotics, those are
4 good examples of where you quickly, sort of, find
5 yourself in this murky place and you need to
6 decide, you know, knowing how heterogeneous a
7 group of things like this are, that might all
8 satisfy the same criteria for some measures, but
9 not others, how do you harmonize, how do you
10 identify, where do you need to make those manual
11 decisions and where does an automotive process
12 meet the needs of the overall goal, just to make
13 the value sets reflect as perfectly as possible
14 the clinical intent without having any
15 unnecessary, like, whatever the term used at the
16 beginning, unjustified descendants, something
17 like that?

18 MR. GOLDWATER: So before I go to Dr.
19 Bregman. So, Julia, just let me be clear, what
20 is it exactly that you want us to be looking at,
21 is it medications, as a whole, is there a
22 particular type of medication, is it, you don't

1 have to do that, just speak your answer. It's
2 fine.

3 DR. SKAPIK: Well, Rob knows that one
4 of the items on my wish list was actually
5 encounters, but I'm not here to speak to the
6 group as to, you know, what you wanted to go
7 after.

8 Encounters is extremely challenging,
9 because it's present in a huge proportion of the
10 measures. So it may be to your benefit to go
11 after something like antithrombotics where can be
12 a little bit more, sort of, mechanized, as Rob
13 said, than something like encounters in which you
14 might experience a cat fight between measure
15 stewards over the exact definitions of what meets
16 the criteria to get into a measure population.

17 MR. GOLDWATER: Dr. Bregman, and then
18 we'll get back to this.

19 MEMBER BREGMAN: I just want to ask a
20 hypothetical. So suppose a value set,
21 essentially, was a list of penicillins, oral, not
22 in combination with other drugs. That's the

1 value set. What would the steward come back and
2 say if you asked them, just that?

3 MEMBER CHUTE: If I could try to
4 answer? And so I'm confused about stewards and
5 articulators and authors at this point. But
6 let's say that the value set, sorry, the quality
7 metric developer really intended oral penicillins
8 and wanted to exclude other kinds of penicillins.

9 I think an approach to that would be
10 for them to specify the drug class of penicillins
11 and ideally reference a terminology such as
12 RxNorm, assuming that it's satisfactory, we don't
13 know that yet.

14 And then, in this case, specify the
15 route, which would be oral, so it would be the
16 union of those two things. You'd need some logic
17 statement in your implementation.

18 Now you, as an implementer, at least
19 at the vendor level, and I assume you're
20 implementing on behalf of your clients, would
21 then have the chore of looking up what
22 penicillins mean, and the RxNorm thinks that you

1 could do the expanded list, just to make it
2 practical in your backyard, and I don't know an
3 epic, I should, because I'm at Hopkins now, but I
4 don't, I don't know if route is an explicitly
5 encoded variable, but let's assume that it is,
6 then the quality metric would be the union of
7 those two expanded lists.

8 MEMBER BREGMAN: Okay, so then our
9 specification the response -- yes, I'm just
10 looking at 4(b). So what we're asking the
11 measure author to come back with is, essentially,
12 a logical statement that defines the value set
13 using --

14 MEMBER CHUTE: And they have to draw
15 their logical statement predicates from an agreed
16 upon or -- this goes back to our first
17 conversation today. The principle of what
18 terminologies would we designate as acceptable
19 for the framework.

20 I mean, you couldn't have quality
21 metric developer A say well, I want NDF codes,
22 and then, you know, expand those. And then

1 another come back and say well, I want RxNorm
2 codes. And then you get another one come back
3 and say well I want First Databank codes. That
4 won't work.

5 We have to say up front, okay, if you
6 want to specify drugs, here's the menu. And
7 let's assume for the moment that it's RxNorm drug
8 classes, that they proved to be satisfactory
9 eventually.

10 Then the metric developer would have
11 to choose classes from the menu that exists. And
12 they may need to do some logic, you know,
13 excludes, includes, like the wonderful example of
14 ophthalmologic beta blockers.

15 MR. GOLDWATER: Okay, so I'm going to
16 go back, again, through the people that have
17 raised their hands. And I would, again, just ask
18 your comments to be brief, so that we can try to
19 finish up here before quarter of 4:00 p.m.
20 Zahid.

21 CO-CHAIR BUTT: So I would think, in
22 Howard's example, once they have selected

1 whatever class they were going to select, I would
2 think that they would then be required to see the
3 members of the class and see if they met the
4 intent of the measure. And if it didn't, then
5 they have to go the alternate path. I would
6 think that would be part of this exercise.

7 MR. GOLDWATER: Dr. McClure.

8 MEMBER McCLURE: Yes, so actually to
9 answer that question, I mean, I still think we
10 follow this process. There's some technical
11 nuances here, but we do have the ability, for
12 example, now in one place, to select things based
13 on classes and get the things that are
14 orderables, or things that you get exposed to, so
15 that's good.

16 But to this point, I think that there
17 will be many times where in fact given the way
18 that these value sets were originally created,
19 that the class ---- the available hierarchies in
20 the selectable code systems that we would specify
21 won't give you exact lists that you want. And so
22 the assumption would be that you would, in fact,

1 have to do some manipulations. We want to see if
2 that's truly true.

3 And I think that gets to the point as
4 to how we -- how we phrase the process -- you
5 know, create the process and phrase the question
6 so that we do at some point -- one, ask them,
7 start with this, and then, two, say isn't it good
8 enough, right? This whole issue of, yes, that
9 drug's not in there, and you would have to create
10 this one off thing, what should happen there?

11 Is it that they made a mistake and you
12 know better, that class drug belongs in that
13 class? Or is it that you really need to do two
14 things in your logic instead of one? You know,
15 that's a part of the process that we need to
16 clarify and engage them in, in order to be able
17 to see how the harmonization process can occur
18 down the road.

19 MR. GOLDWATER: Julia, then Rute.

20 DR. SKAPIK: Yes, and again, we didn't
21 set out to define what we thought you should
22 pilot. I do see that you have three domains

1 listed as possibilities. I think that's a good
2 number. I would encourage you to select
3 different data types for those three domains.

4 And it might be even helpful to pick
5 those three, sort of, domains today, so you can
6 decide which one makes the most sense to start
7 with, although, I think medications is a
8 perfectly good one to start with.

9 Because I think we'll learn some
10 interesting things, as you try to harmonize
11 different data types and different concepts in
12 the measures, how a process that works for one
13 thing might be problematic, or need tweaking for
14 a different kind of information.

15 MR. GOLDWATER: Rute, and then in the
16 back.

17 MEMBER MARTINS: So I just want to go
18 back to Zahid's point, in terms of the --
19 certainly, the expansion is a big part of making
20 sure that your intentional definition meets the
21 intent, really.

22 And that's what I mean when I say this

1 is an iterative process, because for sure your
2 first trial of expanding will -- surely, there's
3 some suppository that you haven't considered in
4 your logical definition that will make it into
5 your value set. Then you need to go back and
6 revise your rules to make sure that you're
7 excluding those ---- or strength, yes. So that's
8 the iterative nature of that.

9 I did want to point out that, from my
10 perspective, this whole movement to intentional -
11 - they don't have to be competing, necessarily.
12 And I would caution -- if we think about two
13 rafts, one is intentional, one is extensional,
14 we're on the extensional raft, let's put a foot
15 in the intentional raft without taking the other
16 foot from the extensional raft, is what I'm
17 proposing.

18 Because we don't want to jump ahead
19 and find that our intentional definitions really
20 hit the walls of the incomplete class ---- drug
21 classes in our RxNorm and that sort of thing.
22 Can we really fully define these things

1 intentionally at this point? I don't know what
2 the answer is to that.

3 So I would keep the extensional lists,
4 both from a consumption perspective. For
5 implementers it may be helpful, and once we see
6 those maturing and everyone gaining in confidence
7 in the intentional, then pull the plug on the
8 extensional.

9 MR. GOLDWATER: Dr. Heras, Dr.
10 McClure.

11 MEMBER HERAS: Yes, Rute just said
12 what I was going to -- you know. Yes, I don't --
13 -- I think we should keep the extension list
14 just, you know, even if you have an intentional
15 definition, we need to have the enumerative list
16 for the implementation. And also, to -- because
17 right now all the systems, they have been just
18 going through ---- taking the value set from the
19 VSAC directly. They don't have the engine to
20 actually process ---- to process the intentional
21 definition to gather exhaustive lists. So that's
22 one thing.

1 And also, the other one, I actually
2 really wanted to see encounter to be on our
3 catalog, as well. The reason is encounter has
4 been used in every single measure almost and
5 there are just inconsistencies there. And also,
6 the probably intentional definition might not use
7 very well for encounter.

8 So I don't think the medication -- you
9 take medication out, I mean, that's great, but
10 the process we define, can we generalize to other
11 data types easily? So that's why I would hope
12 that we have the encounter as another
13 alternative. Just in addition to medications, if
14 that's, you know --

15 MR. GOLDWATER: Dr. McClure, then
16 Michael.

17 MEMBER MCCLURE: So first I agree, I
18 think we need to do different domains. I think
19 that we're going to discover different things,
20 obviously, in different domains and that means
21 that we probably need to have our focus, to some
22 extent, in terms of what we can actually deliver

1 will be somewhat different in the different
2 domains. And so I think that's very reasonable
3 that that would be an outcome.

4 And I also would, third, the choice of
5 picking something like encounters. That ---- you
6 know, medications are going to be hard for one
7 set of things and this is going to be hard for
8 another. In particular, there's a real strong,
9 what I would call reach back, into the logic of
10 the measures.

11 And the whole idea of behind what it
12 is it that you're trying to accomplish in your
13 measure by this attribute using this value set
14 that becomes important in the context of creating
15 good value sets that is always there, but we can
16 ignore it in the medication pilot. We won't be
17 able to ignore it in something like the encounter
18 pilot. So that's one part.

19 And the second is that the just a kind
20 of a technical issue to describe our ability to
21 use ATC codes as class codes in association with
22 RxNorm.

1 So one of the reasons people don't
2 like that class system is it's a single hierarchy
3 system. And so I would encourage folks, as we
4 begin this process, that we'll clearly need to
5 understand the context of what it is we're doing
6 and understand that, as a pilot, the approach we
7 would take would be very influenced by -- in this
8 case, ATC codes and the craziness that's in ATC
9 codes and the arbitrary, I would say, decisions
10 that are made at WHO.

11 I don't even know that ATC codes have
12 been touched recently, and how it separates out
13 various, you know, ingredients. Remember,
14 because now you have the same ingredients going
15 to be in more than one code because there are
16 certain subcategories of that ingredient that
17 fall into one subcategory, ATC, whereas another
18 strength of that ingredient are used someplace
19 else, and it makes ATC problematic. So it's
20 good. Then we'll have those issues to address.

21 MR. GOLDWATER: All right, so before
22 I turn it to the last comments, and I can let

1 conversation go until about 3:15 and then I'm
2 going to have to stop it, so that we can finish
3 the task that we need to do, answer the questions
4 we need to answer, and then make sure we have
5 time for public comment.

6 There might be some leftover time to
7 address some remaining issues, but after the next
8 ten minutes, I do want to put a stop to the
9 conversation, as much as I'm enjoying this.

10 CO-CHAIR LIEBERMAN: Yes, so I think
11 just, when we say three measure domains, I don't
12 think we really mean three measure domains. I
13 think we mean data types, is that what we're
14 talking about? So kind of medications,
15 encounters, and perhaps one other?

16 CO-CHAIR BUTT: Diagnosis.

17 CO-CHAIR LIEBERMAN: Diagnosis. I
18 think diagnosis would be a good one as well,
19 because diagnosis has -- we have SNOMED for
20 diagnoses and that -- we should be able to
21 develop an intentional statement using SNOMED to
22 describe a concept. That's kind of the whole

1 idea behind it.

2 So I think that that's what I would --
3 -- I would move to include those three things,
4 which are -- and we talked about doing three
5 measures. So we look at problems, meds, and
6 encounters, over three measures to see how far we
7 can get with this intentional definition and the
8 meaning of that.

9 The other part of that is, you know,
10 I think for encounters, I don't know of a good
11 system to give intentional definition to
12 encounter. So we may end up with just lists of
13 codes and what the intent was, in terms of the
14 English description of what that concept is
15 supposed to be.

16 MR. GOLDWATER: Dr. Chute.

17 MEMBER CHUTE: Two comments. One,
18 RxNorm is not just ATC, it's also MeSH, which is
19 poly-hierarchical. How that's implemented in
20 RxNorm we'd have to look at.

21 Two, this multiple data types.
22 Realize, everybody, we've done a 180 degree

1 reverse from the morning and I want to speak
2 against that. Sorry, Julia.

3 I really think we should stick with
4 drugs and only drugs. It's supposed to be a
5 pilot. If we start bringing in other domains, I
6 think we will no longer have a pilot, we'll have
7 intractable issues. Diagnoses are a minefield.
8 I can say that with some authority.

9 And I would strongly urge that we not
10 expand to three data types, but stick to drugs,
11 learn what we can from it, and illustrate the
12 principle of hierarchical renderings and
13 representation, which I think will be at least
14 feasible in the drug space and then learn from
15 that.

16 MR. GOLDWATER: I'm going to take the
17 Senior Director position off for a comment, which
18 I haven't done today, but I will. Which is that
19 is exactly what we said this morning, which is if
20 we take on diagnoses and encounters and labs that
21 is far too much to do in a course of one summer
22 where we're supposed to be piloting this and it

1 is going to be almost impossible to try to get
2 some results.

3 Which is why we initially said let's
4 pick three measures and do medications under
5 those three measures, learn what we are able to
6 do, and think that that might translate into
7 something that we may be able to pilot later.

8 And so we do seem to be backtracking
9 against what we've just said and the moment that
10 somebody said diagnosis my skin turned, which is
11 like -- that is so much to do. I mean, we did
12 this -- Ann and I, did this on five measures. It
13 took a month to do, and we didn't do all of it.

14 And so we're asking three pilot tests
15 in the course of a summer over three different
16 domain areas. So I want to be conscience of,
17 this is a time-consuming activity to do and we do
18 need to gain lessons that we can translate into
19 an ability to do in other areas.

20 At the same point, there are things
21 we're going to be doing in parallel to this. So
22 if we are going to reverse and say we're going to

1 do three domains, I would ask that how do you
2 propose to do this in the time period that we
3 have, under the contract that we have, to do that
4 successfully?

5 I mean, I would go back and say -- and
6 I can't believe I'm saying this, I agree with
7 Chris completely, which ---- I'm kidding, I'm
8 kidding. Which is, I think we need to pick three
9 measures, because we have some very expert
10 measure developers here, we need to do
11 medications, and it's a lot easier to pilot with
12 less to do and there are lessons to be gained
13 from that. Does anyone object, I mean, Julia, if
14 you object to that --

15 DR. SKAPIK: I mean, if you're going
16 to limit your pilot to medications, then I would
17 expect that you would look over the entire
18 measure set with the medication and not just
19 three measures.

20 MEMBER CHUTE: I think that's
21 unreasonable.

22 MR. GOLDWATER: That's very

1 unreasonable.

2 MEMBER CHUTE: I think that's
3 extremely unreasonable.

4 DR. SKAPIK: I don't mean all
5 medications for all measures, I mean --

6 MEMBER CHUTE: That's what it comes
7 down to.

8 DR. SKAPIK: -- take a class of
9 medications and do them across the entire set of
10 the measures.

11 MEMBER CHUTE: That's the wrong way to
12 slice it, because we're trying -- intentional
13 definitions are premised on class. So if you're
14 working within a class, it's meaningless.

15 MR. GOLDWATER: Dr. Schneider, and
16 then Dr. McClure.

17 MEMBER SCHNEIDER: Yes, I'm also
18 agreeing with Chris here. Just a couple of quick
19 things. First of all medications, pretty clearly
20 defined NQF and the -- but even it has its fuzzy
21 edges like we talked about in terms of classes
22 and so on.

1 You get into diagnoses or problems, a
2 swamp. You get into encounters it's even more of
3 a swamp because as far as I know, there's no
4 authoritative group that says here's what
5 encounters are, and this group can't create that,
6 so I'm with you on that.

7 I would say we need to find a good old
8 fashioned Texas compromise between the do
9 everything and the do -- you know, do three
10 because we can't do what you're asking to do, so
11 let's find a way to do that.

12 One little minor technical thing, for
13 our scribe, a really good thought Chris put
14 forward was the long and short name, if we could
15 ask that to be part of our little pilot that
16 would be a good idea. And then, substituting the
17 word hierarchy for class, I think, is important
18 in there.

19 So again, just, you know, let's be
20 realistic. We'll swamp the boat if we go to the
21 three --

22 MR. GOLDWATER: I completely agree.

1 Dr. McClure, then Marjorie, then Dr. Che.

2 MEMBER MCCLURE: So this is where I'm
3 going to prove I don't have bias. I do think we
4 shouldn't just do medications. I think that
5 medications is -- won't prove enough of what we
6 need to deal with.

7 But I also think that this focus on
8 understanding the requirements that you've been
9 given with regards to this particular project,
10 the focus on actually harmonizing specific value
11 sets needs to be weighed against the value of
12 determining the right approach to clearly get
13 this -- what I call value set metadata specified
14 and with the very, I think, correct assumption
15 that in doing so, even if it doesn't fall within
16 the final deliverable of this activity ----
17 although I think it could, that will very much
18 inform ongoing work for, you know, someone else
19 to pick up, or just literally tell the developers
20 that they have to follow the approach.

21 And so because of that I think we
22 ought to actually tackle encounters and

1 medications, but I'm also saying that I'm not
2 convinced that means that we have to actually
3 come up with proposed value sets for any of these
4 particular things. I think that we should, but
5 it doesn't mean we have to.

6 I think that we could, you know, by
7 making sure that we clarify and work through how
8 the scope and purpose of a value set that's used
9 to describe encounters captures all of the
10 important nuances across the various places, you
11 know, a subset of the places that it's used, and
12 determining the right code system that would be
13 used in case to reference that.

14 How one decides that. This issue of
15 -- in this case maybe not typing, but quality,
16 whether that applies there. All of those things
17 can be done without then coming down with an
18 authoritative statement as to this is therefore
19 the value set. And ---- yes

20 MR. GOLDWATER: Okay, before I get to
21 the next commentary, can I propose a potential
22 compromise?

1 CO-CHAIR BUTT: Can I say something
2 real quick?

3 MR. GOLDWATER: Go ahead.

4 CO-CHAIR BUTT: Since I was the one
5 who blurted out diagnosis?

6 MR. GOLDWATER: Yes.

7 CO-CHAIR BUTT: I --

8 MR. GOLDWATER: I still like you, I
9 do.

10 CO-CHAIR BUTT: I wasn't proposing
11 that it be done -- that all three be done
12 together, at least that's not what I was
13 thinking.

14 MR. GOLDWATER: Right.

15 CO-CHAIR BUTT: I was thinking more
16 that if there were three domains that we had to
17 pick, those would be the three domains that would
18 be picked.

19 When they would be done was open, and
20 that had to do with a lot of your contract and
21 what was the deliverable within this defined
22 scope. I was thinking that, you know, this could

1 be another job that we could --

2 MR. GOLDWATER: So I really like the
3 way you think, in terms of contracting, but --

4 CO-CHAIR BUTT: -- in terms of going
5 forward, you know, that what we would do is --

6 MR. GOLDWATER: Right.

7 CO-CHAIR BUTT: -- start with
8 medication, learn from it, and potentially -- I
9 agree with Rob that we should start the pilot
10 with something that is, hopefully, easier to
11 tackle than those other things, but that doesn't
12 mean the other things don't have to be tackled.

13 MR. GOLDWATER: So no, so I don't
14 agree.

15 CO-CHAIR BUTT: Are we ---- do we seem
16 to be tackling hard things, is that kind of the
17 message?

18 MR. GOLDWATER: So here's, I guess,
19 the Texas compromise, also being from Texas,
20 which is, why don't we choose three measures?

21 One measure, the first one, why don't
22 we examine medications? And why don't we do that

1 with the second measure, as well? And the third
2 measure that we choose, then why don't we look at
3 encounters?

4 Rather than just choosing domains and
5 going across -- no, you don't like that idea?

6 CO-CHAIR LIEBERMAN: Can I? I mean,
7 I --

8 MR. GOLDWATER: Okay.

9 CO-CHAIR LIEBERMAN: So the work of
10 this technical expert panel is going to be
11 looking at specific value sets in trying to work
12 through the harmonization process.

13 And nobody said they have to do all
14 the value sets and the measures that we're
15 looking at, I mean, I think the process is
16 understanding the -- is looking at the
17 harmonization.

18 So the question is whether we'd be
19 better off having them do five medications, or
20 whether we'd be better off doing two medications
21 and two problems, or two medications and two
22 encounter definitions.

1 And I do think that -- I feel like we
2 would get more value by looking at two different
3 types of things, if there's enough time and
4 resources in the contract to do that.

5 You know, I have mixed emotions about
6 encounters. We can't do the type of intentional
7 definition that we are talking about here. So in
8 some ways it's not as interesting, or perhaps,
9 you know, not as useful in that respect, but it
10 does kind of get down to the more mundane work of
11 harmonization, which I think was part of the
12 intention of this as well.

13 Which is to look at a set of codes and
14 come up with an agreement on what we're actually
15 trying to define and what codes would be used for
16 that.

17 MR. GOLDWATER: Marjorie.

18 MEMBER RALLINS: So I'm glad we got to
19 the compromise, because that was kind of where I
20 was going. I will say that I think it's
21 important to know that when the committee made
22 recommendations as it relates to encounters, it

1 wasn't from the administrative sense, and because
2 of that, I believe -- I don't have them in front
3 of me, Ann might know, I'm told, as well, that we
4 use SNOMED for that. So there is a sort of a
5 hierarchal root.

6 I would also add that I do know that
7 the CPT folks are building some kind of data
8 model and anthology around CPT, which is a
9 transition vocabulary, so we might have something
10 to work with if we decide to go in that
11 direction.

12 But I do believe we need to -- I do
13 like the idea of doing two at the same time, but
14 not at the measure level, more at the concept
15 level, you know? So we do medications, or we do,
16 you know, diagnoses. Don't shoot me, but --

17 MEMBER CHE: So it's kind of similar
18 line, encounter we use SNOMED CT procedure code.
19 I mean, we started that same project, you know,
20 codes for the encounter and stuff.

21 So I mean, it's not really a
22 harmonization issue. I mean, if you're looking

1 to the encounter, probably, you want to make it
2 right, you know, look at it from what's the best
3 code system to start with.

4 DR. SKAPIK: Maybe I'm missing
5 something here, but I don't understand how we
6 would harmonize a single measure's content. The
7 harmonization goal is to make a cross the suite
8 of measures the content to match and align.

9 And Rob and I, with many of the people
10 on this committee, have been engaged in an
11 attempt to do that in a one-off fashion for
12 several years. And what we have found is, if you
13 are not inclusive of all of the related content,
14 then you just keep doing the harmonization
15 process over and over.

16 So that's my comment in regards to,
17 take a single concept domain and look across the
18 measures because otherwise you're going to be
19 doing this again.

20 MEMBER MARTINS: I was actually going
21 to suggest that we go back to the work that
22 you've done already in preparation of this

1 meeting.

2 There's a small set of measures, there
3 are a lot of value sets, but maybe we can choose
4 some value sets across several domains even
5 potentially. We already know that there are
6 harmonizations there, issues there that we can
7 play around with. So the scope may be
8 self-defined already, so why are we trying -- I
9 think we're trying to boil the ocean here, at
10 some level.

11 I think it's unreasonable to think
12 that we can look at one domain across all of the
13 measures. It's probably as unmanageable as
14 looking -- well, anyway.

15 So I would suggest that we choose a
16 few measures. I agree with Julia that you can't
17 harmonize with one measure and look at
18 medications at one measure, because that, we run
19 and look at medications across, we want to get
20 different stewards at the table. We want to see
21 those cat fights. That's what this is all about,
22 right? So I --

1 MEMBER CHUTE: I want to propose a
2 Maryland compromise, now residing in Maryland.

3 I actually agree with Julia.
4 Comparison across one measure is meaningless.
5 And I would even submit comparison across two
6 measures is trivial and not particularly
7 informative.

8 And the compromise I'm suggesting is,
9 you know, pick a round number, half a dozen, ten.
10 I don't know, but some finite number of measures
11 and look at medications and only medications, so
12 help me God, without overlaying it with other
13 domains at this time.

14 Because, one, I agree with Rob,
15 there's a lot to learn about how to specify those
16 value sets in a rigorous, interpretable,
17 transparent, machinable kind of way. We'd
18 exercise that.

19 Two, we'd have some scope in terms of
20 the kinds of hierarchical implications that we
21 would discover exercising hierarchy candidates,
22 whether it's RxNorm, or something else.

1 And three, and perhaps most
2 importantly, we bring together a larger number of
3 measure developers. In fact, if you want a
4 sampling strategy, I would say sample measures
5 that come from different measure developers
6 precisely so that you can look at these
7 cross-cultural notions of, okay, what do you mean
8 by this kind of drug class, for lack of a better
9 term. And see if there's dissonance among the
10 measure developers when we talk about an
11 antithrombotic, or whatever.

12 I think that would be a far more
13 trackable, much more informative process than two
14 of these, two of those, and two of something
15 else.

16 MEMBER McCLURE: So I almost agree
17 with Chris in that I would say we'd start with
18 medications. I do think that we ought to tackle
19 something else also.

20 I think that -- again, I want to
21 highlight that I don't think that that means we
22 have to come up with a final resolved solution

1 with regards to the content of the value sets, I
2 can't say that too strongly.

3 But I do think that having -- and I
4 would say we start with medications because I
5 think there is a lot to learn, but I would like
6 for us to then move to something like encounters
7 because I think encounters -- I know encounters
8 will bring other elements to this that by the
9 work we'll have learned we can apply there, and
10 then hopefully, address issues that, quite
11 honestly, just being able to solve the medication
12 problem will not give us the tools that we need
13 to solve a lot of other problems.

14 MR. GOLDWATER: Chris, quickly, and
15 then I'll --

16 MEMBER CHUTE: If I may? You know,
17 whether we do encounters or not, that's a
18 separate discussion. But I would strongly
19 advocate that if we're going to do medications,
20 we do it soup to nuts. That we actually bring it
21 to closure and we go all the way to specifying
22 the value sets --

1 MEMBER McCLURE: Yes, you know what --

2 MEMBER CHUTE: And here's why.

3 Because that last mile problem can usually get
4 you. And if we don't execute to the degree that
5 we go to that last mile, that is fully-specify
6 that enumerated value set from the intentional
7 definition, la-di-da-di-da. If we don't exercise
8 out the whole game, I don't think it's a pilot.

9 MR. GOLDWATER: Okay.

10 MEMBER McCLURE: Yes, let me -- I
11 absolutely agree with that. I think, in the
12 context of the medication ones, we need to go all
13 the way. Because that's really the meat of that
14 one, so I absolutely agree with that.

15 MR. GOLDWATER: Okay. Zahid, I'm
16 sorry, I'm going to have to stop here for a
17 second. So let me propose this, again. I feel
18 like I'm on the floor of the Senate.

19 So given what we have already done,
20 why don't we take -- now mind you, we are sub-
21 setting all -- the entire universe of measures
22 into those that are used in meaningful use

1 because we know those are electronic -- those
2 eCQMs.

3 So all the AMI measures, all of the
4 VTE measures that are in MU2, why don't we use
5 those for medications? What's that?

6 (Off mic comments)

7 CO-CHAIR BUTT: There is a total of 93
8 measures.

9 MR. GOLDWATER: Right. I understand
10 that, right. So I'm saying the subset of AMI
11 measures and VTE in Meaningful Use 2, we do those
12 for medications.

13 (Off mic comments)

14 MR. GOLDWATER: And Stroke. What's
15 that? I just added stroke.

16 MEMBER MARTINS: So can I --

17 MR. GOLDWATER: And then --

18 MEMBER MARTINS: So that's great, but
19 that's a lot, is what I would say.

20 MR. GOLDWATER: Okay, so --

21 MEMBER MARTINS: And I think there are
22 ways that we can -- we know which measures are

1 kind of using, sort of, the same medications, or
2 medication that may overlap, so we can do a
3 selection there.

4 MR. GOLDWATER: So Rute, I'm going to
5 stop you. Tell me which ones you think we should
6 do.

7 MEMBER MARTINS: Oh goodness.

8 MR. GOLDWATER: Offline? Okay. So do
9 we, Julia, we want to do two of the three, one of
10 --

11 MEMBER McCLURE: So --

12 MR. GOLDWATER: -- the three --

13 MEMBER McCLURE: Hold on, just one
14 thing about this, because I think in selecting
15 the advantages of some of these value sets are
16 used -- so to say a stroke measure, or a VTE
17 measure that doesn't -- the value sets are used
18 in measures other than VTE, they were just
19 originally defined in VTE.

20 MR. GOLDWATER: Right.

21 MEMBER McCLURE: So that's an element
22 that makes it a better choice in a sense that

1 you're getting, you know, more than one measure,
2 even though the measure steward originally
3 created it for one. That's exactly what you
4 want. It's already being used, so there's an
5 element. And some of them were already chosen
6 and there's some compromises already that have
7 occurred.

8 So the criteria should be multiple
9 measures, multiple measure stewards, and multiple
10 stewards, and, honestly, you know, multiple kinds
11 of measures. So not just multiple VTEs, but I do
12 like the idea of VTE and stroke, or something, so
13 that you get this --

14 MR. GOLDWATER: Right.

15 MEMBER McCLURE: -- dynamic process.

16 MR. GOLDWATER: Okay. So we'll look
17 at Cindy's spreadsheet, thank you, ahead of time,
18 for giving us that, and we'll choose two out of
19 the three, and we'll focus on medications for
20 those. And then, depression ---- what's that?

21 All -- soup to nuts, we're doing all
22 of them. And then, depression we will do for

1 encounters, which is where we found the issues.
2 And depression measures, I know, have many
3 different stewards. There's at least seven
4 different stewards that did the depression
5 measures in Meaningful Use. Who did the value
6 sets, I don't know, but we'll --

7 CO-CHAIR BUTT: And they're
8 ambulatory.

9 MR. GOLDWATER: They're ambulatory
10 that's correct. Is that acceptable to everyone?
11 I'm holding my breath. Great, the Chairs say
12 yes, fine. Good. Done.

13 All right, so other things we will
14 work on, in addition to the pilot, and NQF will
15 take this on working with Zahid and Michael, and
16 probably having ---- we'll set up conversations
17 with you all.

18 We may do some key informant
19 interviews, as well, but it would be looking at
20 Rob doing a sort of typology for value sets,
21 metadata typology.

22 Right, and then defining a criteria,

1 or establishing criteria for what constitutes a
2 good quality value set. Examining then
3 mechanisms as well, for governance of value sets.

4 CO-CHAIR LIEBERMAN: Yes, I would just
5 say on that, along those lines, I mean, I think a
6 criteria for defining a good value set, and then
7 also, we need to come up with some ideas about
8 who's going to assign those values and who's
9 going to maintain that.

10 MR. GOLDWATER: Right.

11 CO-CHAIR LIEBERMAN: Yes. Yes.

12 MR. GOLDWATER: So that's part of the
13 governance part.

14 CO-CHAIR LIEBERMAN: That's the
15 governance part, okay.

16 MR. GOLDWATER: Yes that's a very
17 extensive discussion.

18 CO-CHAIR LIEBERMAN: Yes.

19 MR. GOLDWATER: I expect that to be
20 up, probably ---- Julia, a full chapter in our
21 final report is here's what we learned about
22 governance and that's something when we convene

1 again in November, and I hope you all come back,
2 that we'll just -- that'll be part of our
3 discussion.

4 I mean that, Cindy, I hope you all
5 come back. So Cindy, did you want to say
6 something?

7 MEMBER CULLEN: What version of the
8 measures are you going to be working on?

9 MR. GOLDWATER: Meaning Use 2.

10 MEMBER CULLEN: Because the analysis
11 that was done is on --

12 MR. GOLDWATER: 2

13 MEMBER CULLEN: -- measures that have
14 -- no, what version of the measures? Because
15 you're using the 2014 version of the Meaningful
16 Use measures.

17 MR. GOLDWATER: Correct.

18 MEMBER CULLEN: The 2015 versions will
19 be coming out shortly. And some of this work --
20 some of the issues that you had identified may
21 have already been resolved --

22 MR. GOLDWATER: Okay.

1 MEMBER CULLEN: -- through work that
2 the --

3 MR. GOLDWATER: So --

4 MEMBER CULLEN: -- measure developers
5 have done. So my recommendation would be, wait
6 until the new ones come out --

7 MR. GOLDWATER: Great.

8 MEMBER CULLEN: -- and see what --

9 MR. GOLDWATER: Done.

10 MEMBER CULLEN: -- you've got there.

11 MR. GOLDWATER: All right.

12 MEMBER CULLEN: That gives you a
13 couple of weeks to catch your breath.

14 MR. GOLDWATER: See, this is no more
15 a democracy. It's finished. We're done, good.
16 Just don't say anything. Go ahead, Dr. McClure.

17 MEMBER McCLURE: Right, just a nuance
18 with regards to this quality thing, and most of
19 the things. I think we ought to have, as a goal,
20 that as much of the metadata that we would, you
21 know, seek to associate with value sets -- I'll
22 use my word again, would be mechanistic, you

1 know? This idea of having an entity assign
2 quality statements with regards to value set, not
3 a good solution.

4 Figuring out ways that we can say
5 something -- it may be that we don't call it
6 quality -- a quality measure at all, but they
7 provide one stop viewing of knowledge about
8 governance, right? I mean, that's actually been
9 a topic of discussion elsewhere.

10 Where the sort of things that are
11 important, particularly in a context of
12 harmonization, am I willing to concede
13 responsibility for some aspect of my value set to
14 somebody else, is going to be dependent on some
15 way of being able to assess governance and kind
16 of trustability. Those are the sorts of things
17 that we want to be able to characterize in a way
18 that just happens automatically.

19 MR. GOLDWATER: Okay. Great. Great.

20 So I think those are the issues that
21 -- so again, we'll do -- we'll work with
22 internally and we will discuss with Julia and

1 Kevin either AMI, VTE, or stroke, two of the
2 three, to focus on medications.

3 Depression, we will focus on
4 encounters. We will look at metadata typology,
5 the criteria for quality, for lack of a better
6 word, and also examine governance, which will be
7 a significant issue, and that will carry on
8 throughout the duration of the project.

9 And when we convene again in person --
10 now we will have phone calls with you and we'll
11 get over to what those schedules are going to be.
12 When we meet again in November where we fully
13 expect there are some people that were not here
14 today, in a way that's probably not a bad thing,
15 but they were -- when they arrive in November
16 what we will be doing is summarizing our results
17 from the three pilot tests, discussing our
18 findings on these types of issues that have come
19 up that Dr. McClure and others have mentioned.

20 And I am also thinking we might invite
21 somebody from the FDA to come give a small
22 presentation about policy in respect to

1 medications as well, I think that might be
2 helpful since we have NLM and we have ONC, and we
3 have -- Dr. McClure's giving me this look, which
4 --

5 (Off mic comments)

6 MR. GOLDWATER: Okay, well, then you
7 can tell them that they're wrong. I'm kidding.
8 Okay, I'm only ---- I'm only kidding. All right.

9 Okay. All right, so we are now at the
10 point for public comment, so we have to tell the
11 operator to open up.

12 MS. STREETER: Sure. Operator, could
13 you please open the line for public comment?

14 OPERATOR: Yes, ma'am. At this time,
15 if you would like to make a comment, please press
16 star then the number one.

17 There are no comments at this time.

18 MR. GOLDWATER: All right, so our next
19 steps. We'll have a post-meeting call in the
20 middle of May, from 1:00 p.m. to 3:00 p.m., and
21 then we'll start talking about the evaluation of
22 testing.

1 Right now the tentative dates are May
2 27, June 24, July 28, and October 19th, and we
3 will be meeting again on November 10th, right
4 before Veteran's Day here once again, in this
5 building.

6 And there may be interim calls that we
7 do with some of you individually, or as a group,
8 and Zahid and Michael will be setting up the
9 schedule of check-in calls with you independent
10 of this. Are there any last questions? Go
11 ahead. Or comments? Yes, Rute?

12 MEMBER MARTINS: So yes, my only --
13 and this is just informative, as you discussed
14 number one there, the Joint Commission is the
15 steward for VTE and Stroke.

16 MR. GOLDWATER: Yes, we know.

17 MEMBER MARTINS: Okay. So if you want
18 diversity in terms of stewards, that's something
19 to consider. And then, I see that the in-person
20 meeting doesn't have a time. I understand it's
21 in November, but my flight today leaves at 8:00
22 p.m., because the meeting was supposed to end at

1 5:30 p.m., rather than a quarter to 4:00 p.m.

2 MR. GOLDWATER: I would suspect that
3 our in-person meeting will be the same time from
4 8:00 a.m. to 4:00 p.m.

5 MEMBER MARTINS: Okay.

6 MR. GOLDWATER: Unless we feel that we
7 need to change it, but right now I think that's
8 probably workable --

9 MEMBER MARTINS: Okay.

10 MR. GOLDWATER: -- to give everyone
11 the opportunity to catch flights back to wherever
12 you're catching flights back to. Or, in our
13 case, drive you back to Howard County, which is
14 almost like taking a flight, to some of us
15 though.

16 Yes, Ann?

17 MS. PHILLIPS: So I have an
18 opportunity to set up a discussion board on our
19 SharePoint site to continue some of these
20 discussions, is this something you would all use?

21 So it would be like a regular bulletin
22 board, just for this group, and only accessible

1 for this group and we might be able to pose some
2 questions and engage in some discussion that
3 wouldn't be an email, but it would be on our
4 SharePoint site, is this of interest?

5 MEMBER SCHNEIDER: Can I say that
6 those sorts of things can be of interest. We
7 need stimulation to get us to go there and so on.
8 So it really comes down -- if you set it up and
9 expect us to just do something, it won't happen,
10 but if you sort of nurture and cultivate us,
11 there's a chance we will grow.

12 MR. GOLDWATER: Yes, Dr. McClure?

13 MEMBER McCLURE: So let me understand.
14 First off, full disclosure, I hate SharePoint.
15 So are you suggesting --

16 MR. GOLDWATER: You're not the only
17 one.

18 MEMBER McCLURE: I'm sure I am not.
19 But so it's one thing to actually create a
20 mailing list, that I'm all in support of. Where
21 I don't leave my mail environment, I just
22 communicate -- you know, I just send it and it

1 just goes out to the mailing list.

2 Is that what you're talking about? Or
3 are you talking about going to SharePoint and --
4 yes. No, I would not encourage that. I --
5 unless you don't want me to participate. That
6 could be actually a benefit, but I won't.

7 MR. GOLDWATER: Would a Google Hangout
8 work? As much as -- I know, right? I'm learning
9 these things from my 12 year old. I have no idea
10 what this stuff is, but we'll start an Instagram
11 page of some kind.

12 Unless there are any further comments,
13 I do want to thank all of you very, very much for
14 your time and for the very spirited and a highly
15 informative discussion. I thank all of you for
16 working towards consensus to get us to an end
17 process where we can be using a pilot process to
18 actually see if some of this work. There was
19 some concern that the time allotted for this
20 meeting would not allow us to do that.

21 My wife, who some of you know,
22 mentioned this -- yes last night when she heard

1 everybody that was going to be here, said man,
2 there are going to be some highly spirited
3 discussions with these people in this room. And
4 I went, oh come on, they're all developers,
5 there's not -- they're all developers and doctors
6 it's going to be fine.

7 And so I can actually say, Cindy, I
8 was right and she was wrong and I rarely get to
9 say that. So thank you all very much. I
10 appreciate it. Thanks so much.

11 (Whereupon, the above-entitled matter
12 went off the record at 3:37 p.m.)
13
14
15
16
17
18
19
20
21
22

A			
à 112:14	acknowledging 183:22	afternoon 4:22	ambitious 266:17,21,22
a.m 1:9 4:2 121:9,10 319:4	ACO 17:18	agencies 21:20	ambulatory 311:8,9
abandon 27:7 144:22	act 208:14	agenda 5:6,11 18:19	American 18:1 21:9
ABC 179:7	Acting 9:21	266:9	AMI 128:11,21 131:2
ability 38:10 60:9 74:20 86:3 146:4 195:21 250:19 258:15 280:11 286:20 291:19	action 175:16	agent 192:7 194:10	132:16 308:3,10
able 31:5 32:20 35:13	actively 23:8	agents 192:16	316:1
56:14 65:10 79:14	activities 7:21 8:11 9:6	aggregation 49:14	amount 5:3 169:2
85:13 86:14 101:19	activity 254:19 291:17	ago 79:18 98:20,20	analogy 90:18
107:7,7 134:4 152:10	67:10 245:9	109:9 132:18 137:14	analyses 67:3
154:10 188:9,15	actual 43:18,19 60:8	agonizing 164:6	analysis 3:7 6:6 22:18
190:9 195:14 201:2	114:6 241:14 244:7	agree 31:13 45:12 56:7	32:19 67:2 79:6 97:7
211:19 212:21 219:5	248:19 253:15	66:8 90:15 92:1	99:1 120:18 122:5,22
220:11 226:15 227:19	add 93:4 99:19 247:16	105:11 114:17 150:14	123:4,7 124:12 125:5
242:8 248:7 250:2	253:6 260:3 301:6	162:17 186:19 191:13	125:21 139:1 141:10
253:15,17 258:16	added 270:10 308:15	191:21 214:20 222:6	141:20 168:8 211:21
259:12 267:6,7	adding 95:12,13	234:1 236:7,18 239:7	212:4 220:15 241:13
281:16 286:17 288:20	addition 8:22 14:8	246:18 255:13 266:16	246:1 272:2 313:10
291:5,7 306:11	17:19 31:15 264:16	285:17 292:6 294:22	Analyst 2:8 16:22
315:15,17 320:1	285:13 311:14	298:9,14 303:16	analyze 267:19
above-entitled 121:8	additional 26:8 179:12	304:3,14 305:16	and/or 22:13
200:17 322:11	237:17 259:5	307:11,14	anew 222:11
absolute 236:13 245:9	additions 23:16,18	agreeable 156:10	Ann 1:20 2:6,8 5:15 7:8
absolutely 186:18	address 23:2,14 44:21	agreed 25:8 95:17	16:21 19:20 21:3
199:12 257:15 307:11	49:4 57:19 72:17	151:8 210:21 278:15	26:16 122:8 127:14
307:14	157:2 228:15 229:22	agreeing 53:8 293:18	153:14 154:7 291:12
absorption 164:13	250:16 262:17 287:20	agreement 66:7 300:14	301:3 319:16
abstraction 15:21	288:7 306:10	agrees 189:14	Anne 10:18
academic 30:3 92:10	addressed 69:21 140:3	ahead 4:4 5:6 94:4 98:9	Anne's 107:1
academically 94:9	140:9 157:17	130:10 231:4 250:14	announcement 98:19
accept 54:13 103:10	addressing 158:13,16	254:22 283:18 297:3	annual 109:13
acceptable 36:14 39:5	158:18 257:13	310:17 314:16 318:11	answer 45:2 56:2 77:2
49:13 75:15 104:19	adept 142:11	aim 21:10	86:12,17 89:15
127:10 143:12 153:16	adequate 49:18	air 78:3 96:7	144:11,16 244:5
156:5 167:3 278:18	adequately 132:6	algorithms 113:19	276:1 277:4 280:9
311:10	adhere 93:2	align 67:11 94:11 123:1	284:2 288:3,4
acceptance 104:17	adherent 216:22	186:18 221:2 302:8	answers 168:19,20
accepted 64:16 105:4	adjourn 3:21 6:16 201:3	aligned 160:6	anthology 301:8
access 86:14 207:21	administer 58:17	aligning 67:4 262:6	anticipating 50:14
accessibility 74:16 83:3	administered 265:7	alignment 39:7 66:22	anticoagulant 129:2,4
accessible 27:13 58:14	administrate 82:1	67:2,10 83:10 94:21	129:9 131:10 140:17
74:14 190:16 319:22	87:4,8	aligns 94:6 216:19	anticoagulants 196:12
accomplish 60:22	administration 150:2	alike 128:16 142:17	197:12
115:4 157:5 158:9	203:14	all-day 19:1	antigenic 163:19
204:19 214:15 286:12	administrative 41:10	Allen 1:13 13:10	antihypertensives
account 172:22 174:1	301:1	allergenic 188:21	275:3
accuracy 22:16	admit 85:9 142:10	allergic 189:4 220:4	antithrombolytic 129:4
accurate 83:11 149:4	advantage 92:14	allergies 163:5,6	130:4
accused 36:6	176:10	alligators 191:11	antithrombotic 269:22
ACE 258:4	advantageous 171:6	194:16	274:11 305:11
achieve 21:13 31:5	advantages 309:15	allotted 321:19	antithrombotics 197:11
114:7 151:19	advice 42:3	allow 258:1 321:20	272:12 275:3 276:11
achievement 145:15	advocate 77:7 101:13	allows 69:13	antithrombytic 131:6,7
acknowledge 36:11	145:21 193:11 306:19	alluding 55:12	131:9 140:16
	advocated 43:6	aloud 250:12	anybody 59:15,17
	affairs 32:2	alter 177:12	133:19 163:6,9
	affect 267:20	alternate 280:5	anymore 98:15 99:7
	affectionately 7:16	alternative 208:20	197:3
	afraid 144:11 181:16	209:14 285:13	anyway 29:15 66:16
		AMA-PCPI 13:2	118:15 259:14 303:14

Apologies 29:11
apparently 4:8 15:17
appear 27:20 173:2
 248:10
appears 88:18
applicable 23:5 39:10
 101:7 176:14 201:22
application 96:21
 114:11,11
applications 10:6
applied 203:6 214:16
 215:7,9 240:5,14
 249:15 264:9
applies 242:17 260:13
 271:14 296:16
apply 23:11 240:22
 264:11 306:9
appreciate 38:4 49:8
 71:14 322:10
approach 14:14 43:21
 43:22 109:3 155:11
 156:13 186:2 193:21
 214:12,21 243:22
 277:9 287:6 295:12
 295:20
approached 158:15
approaches 207:7
 263:8
appropriate 55:3 56:17
 56:19 109:10 196:9
 201:20 223:21 256:22
approval 22:15 23:11
 23:20 24:18 27:2
approve 181:13
approved 22:21 27:8,9
 27:10,15,18 45:9
approximation 235:3
APRIL 1:5
apt 49:4 75:18
ARB 258:5
arbiter 226:18
arbitrary 192:15 287:9
area 6:19 25:13 47:10
 132:17 149:13 156:16
 172:11 187:18 210:8
 245:19
areas 65:21 123:5
 159:22 171:8 263:8
 291:16,19
arguably 135:21
argue 46:10 58:1
argument 166:7
arising 161:14
arm's 183:21
arrive 95:22 316:15
arrived 4:6
arrogant 162:15
art 37:9 193:19
articulate 30:6,21

238:18
articulated 237:8
articulators 277:5
artifact 261:12
artifacts 261:1
aside 61:22
asked 7:20 25:14 26:18
 57:18 116:20 247:5
 277:2
asking 44:19 53:15,20
 67:7 123:20 217:20
 238:14,14 278:10
 291:14 294:10
aspect 315:13
aspects 264:7
aspirin 129:5,6 130:6
assert 235:1
asserting 193:20
assess 65:16 68:6
 97:16 105:14 315:15
assessed 106:2
assessing 220:20
assessment 123:13
assiduously 50:4
assign 312:8 315:1
associate 70:10 203:9
 314:21
associated 28:3 124:14
 126:15 128:10 131:1
 176:19 187:21 205:12
 214:18
association 12:10
 286:21
assuaged 85:20
assume 19:8 45:22
 76:7 165:10 173:6
 277:19 278:5 279:7
assumed 241:7
assuming 19:17 20:21
 207:9 257:2 277:12
assumption 105:17
 280:22 295:14
assurance 1:21 10:20
 194:7
assure 40:19
ATC 270:11,11 271:3
 286:21 287:8,8,11,17
 287:19 289:18
attach 69:15
attached 99:15 205:13
attainment 21:15
attempt 302:11
attempting 112:3
attended 16:3
attending 4:21
attribute 286:13
attributes 248:5,7
 264:3
audit 56:6,14 76:12

audit-based 56:5
auger 62:8
author 26:22 27:1,6
 77:15 100:10 182:21
 183:10 184:16 278:11
authored 236:14
authoring 27:13 73:11
 88:11 108:1 171:12
authoritative 136:7
 137:2 172:15 187:2
 190:20 191:19 273:14
 294:4 296:18
authority 35:20 147:3
 166:4 175:10 178:3
 179:20 181:10 290:8
Authorization 23:8
authors 23:15 63:20
 65:17 81:15 86:13
 136:5 142:3 159:3
 162:11 184:17 272:21
 277:5
automated 127:19
automatically 55:17
 315:18
automotive 275:11
available 35:2 69:12
 79:14 86:20 150:19
 159:3 162:10 195:6
 213:19 242:20 244:2
 257:2 280:19
avoid 189:20
aware 138:3 140:1
awful 155:19
awfully 265:18

B

B 80:8 212:22
babies 85:5 138:18
baby 139:19 236:19
back 15:15 17:15 24:19
 26:4 29:4 33:9 40:16
 42:13 45:17 52:17
 59:12 63:8 83:6 84:17
 87:3 107:3 109:18
 112:14 120:17 123:22
 125:4 127:10 129:18
 130:1,18 132:21
 133:10 139:4,19
 142:22 145:22 152:19
 154:19 161:10,15
 162:1 165:5 167:10
 169:12 170:6 181:15
 184:9 204:13 206:13
 206:14 212:1 214:9
 222:20 234:7 237:14
 238:9 241:4 242:4
 255:3 261:18 262:20
 268:3 274:4 276:18
 277:1 278:11,16

279:1,2,16 282:16,18
 283:5 286:9 292:5
 302:21 313:1,5
 319:11,12,13
backed 86:2
background 89:11
backlog 72:18
backtracking 291:8
backward 187:4
backwards 55:6
backyard 165:7 278:2
bad 105:1 163:10
 166:10 190:6 240:11
 316:14
balance 152:2,4
barely 250:2
barriers 250:8,13
base 99:22 225:18
based 52:21 122:12
 128:22 144:17 145:3
 154:9 182:10 191:15
 227:2 241:13,14
 246:15 252:22 280:12
basic 22:4 25:18 26:14
 91:3 206:2
basically 5:10 54:4,7
 90:5 95:11 141:10
 144:19 150:17 185:21
 228:9 250:2
basing 241:6
basis 22:18 39:8 123:8
 124:11 167:14 187:3
 206:7 219:13
basketball 121:13
bath 85:5 236:20
Baylor 1:19 12:6,7
beats 230:17
becoming 92:5 122:18
began 64:11
beginning 44:18 59:22
 133:18 182:7 199:20
 275:16
begins 28:4
begs 49:9 50:9 75:16
 208:18
begun 270:7
behalf 4:12 277:20
behaving 14:11
beings 100:6
believe 7:4 29:21 44:20
 60:21 62:21 71:14
 97:12 174:3 185:6
 270:19 292:6 301:2
 301:12
belong 136:1 192:13
 238:15,15
belongs 281:12
beneficial 260:2
benefit 91:18,19 105:12

276:10 321:6
benefits 6:2 105:3
best 4:6 6:21 38:7
 51:19 53:1 58:13 69:2
 70:14 73:11 87:17
 90:22 105:18 111:18
 113:7 132:6 175:17
 193:22 194:1 195:12
 195:20 228:13 249:13
 264:4 302:2
beta 147:17,20 148:13
 164:12,18 165:9
 171:13 258:4 279:14
beta-lactam 163:17,22
beta-lactams 271:4
better 42:12 50:18
 56:15,20 64:1 71:2
 77:5,19 79:18 109:9
 140:10 161:11 166:16
 187:6 224:17 239:4
 252:17 255:16 281:12
 299:19,20 305:8
 309:22 316:5
beyond 124:22
bias 44:6 295:3
biased 8:4 14:11,20
biases 50:2 260:12
big 35:11 61:8 119:6
 136:13 145:14 185:21
 188:11 282:19
bigger 55:7 84:7 139:19
bilingual 76:2
billing 64:16,16
bipolar 126:12,13
bit 22:6 26:5 42:21
 43:15 101:13 133:16
 146:17 155:14 158:4
 179:17 208:11 211:8
 235:13 239:22 244:20
 261:22 269:15 276:12
biting 239:9
blah 256:12,12,12,12
blame 77:18
blast 137:8
blocker 258:4
blockers 147:17,20
 148:13 164:12,18
 165:9 171:13 279:14
blocks 29:10 99:17
 197:14
blood 212:7,8
Bloomberg 10:11
blowing 178:19
blown 84:13
blurted 297:5
BMI 126:9 180:10,16
board 18:1 62:2 267:8
 319:18,22
boards 79:20

boat 294:20
Bodenreider 123:9
 125:5 136:9 163:13
body 153:10 174:21
boil 303:9
boiled 29:1
bold 99:14 181:16
 238:5
bolder 98:9
Booz 1:13 13:10
boss 18:14
bothering 208:19
bottom 126:11
boundaries 142:9
box 30:8 59:14 60:8
boxes 223:7
boy 60:6 185:12 212:11
brand 160:7
break 6:9,12,21 7:2
 68:4 107:10 112:8
 113:13 120:16 128:2
 135:18 200:2,14
breaks 6:22
breath 311:11 314:13
Bregman 1:13 13:14,14
 57:12,14 65:14 90:11
 90:12 142:21 143:13
 143:14 266:7,8
 275:19 276:17,19
 278:8
brick 189:7
brief 20:19 21:3 113:12
 175:21 279:18
briefly 260:22
bring 63:17 81:14 83:15
 140:19 161:10,14
 162:1 177:3 225:15
 230:19 305:2 306:8
 306:20
bringing 290:5
brings 102:13 211:21
broad 42:11 106:6
 196:17
broadest 149:12
broken 21:17
brought 41:19 45:9
 65:14 85:17 108:7
 132:1 137:21 159:16
 164:11 186:5 204:14
 204:15
BSN 1:20
BTE 127:15 131:2
buck 183:18
build 18:5 21:10 24:7
 31:8,14 73:14 95:2,11
 102:2 140:16 147:9
 154:6 170:21 171:15
 251:16 263:1,3
building 19:11 29:9,9

37:17 97:1 99:17
 169:6 172:16 174:9
 197:13,19 200:6
 218:4,8 233:11 301:7
 318:5
built 34:1 171:19
 176:11 182:2
built-in 34:11,19 36:1
bullet 82:17
bulletin 319:21
bunch 61:2 172:10
Burstin 2:3 28:20 29:3
 97:20 139:15
business 165:6
Butt 1:9,12 10:3,4 25:7
 38:16 51:9 54:16
 88:17 111:16 119:14
 122:17 134:17 149:11
 153:13 172:1 198:1
 202:4 204:17,21
 205:3,9 213:3,13,15
 246:17 248:13,16
 263:13 279:21 288:16
 297:1,4,7,10,15 298:4
 298:7,15 308:7 311:7
button 27:19,22

C

call 9:17 20:8 50:1 64:6
 135:20 177:9 199:7
 224:19 242:22 286:9
 295:13 315:5 317:19
called 59:14 67:1 77:17
 96:1 150:21 198:20
 260:6 261:2 270:11
calling 257:20
calls 29:1 54:12 316:10
 318:6,9
Canada 57:22
candidate 30:15
candidates 224:19
 304:21
canonical 36:9,20
 45:21 49:6,20 50:13
 50:22 51:7
canonically 37:8
cap 90:20,20,22
capabilities 124:22
 219:2
capability 232:2
capture 31:20 41:5
 46:21 48:8 63:15 82:8
 101:2,10 110:7,15
 116:11,12,15 117:21
 119:3 120:11 138:14
 146:4 156:20 249:14
 264:13,19 265:6
captured 46:4,11
 109:10,14,21 110:2

116:14 117:5,7
 118:20 119:17 120:13
 205:17,18 243:15
 249:12
captures 296:9
capturing 79:21 105:22
 113:7 117:9,14 118:1
car 90:19
card 220:16
care 1:16 12:18 97:6,7,8
 101:18 102:13 117:11
 135:3 163:16,17
 272:13
career 15:13 19:8
careful 173:20 241:5
carefully 178:19
cares 91:1
carry 316:7
cars 229:3,4,5
case 20:7 38:9 39:10
 42:13 52:11 119:18
 120:13 137:3 149:16
 162:18 165:14 166:5
 173:19 188:22 192:18
 202:19 203:8,19
 209:19 229:22 246:20
 273:3 277:14 287:8
 296:13,15 319:13
cases 39:3,14,17 55:16
 56:7 119:1 129:13
 134:20 135:1 149:21
 165:3,19 209:8
 228:12 229:10 231:21
 246:18 263:19 264:5
cast 175:9
cat 276:14 303:21
catalog 23:19 38:6
 285:3
cataloguers 190:13
catch 4:6 314:13
 319:11
catching 319:12
categories 32:13 164:8
categorizing 120:21
category 163:19 243:14
cause 93:22
causes 93:22
causing 4:10
caution 102:8 151:4
 170:13 283:12
cautionary 262:15
cautious 271:12
caveats 191:14
CDA 106:18
CDP 7:15
ceding 272:15
cement 184:11
center 15:18 23:9 28:13
 30:4 178:3

- central** 54:4 78:9 80:1
82:14 172:13
CEO 10:4
certain 34:19 39:4,8,11
39:14,16,18 46:22
54:14 103:18 151:8,9
157:1 175:5 185:7,9
188:13 196:11 243:8
243:11 263:4 287:16
certainly 49:13 61:20
76:22 114:20 125:1
132:19 155:19 157:3
167:8 177:3 180:3
214:12 240:19 255:13
259:8 265:16 282:19
cetera 156:5
chained 44:13
chair 10:14 12:9
chairs 44:7,20 45:1
86:9 311:11
challenge 72:6 249:20
challenges 72:3
challenging 92:17
276:8
chance 320:11
change 42:15 43:22
63:4 119:21 153:9
216:2,21 232:11,13
245:7 273:4,4 319:7
changed 9:12 15:18
changes 23:16,18
132:19 217:2 237:21
245:4 246:14
changing 99:2 185:1
216:11
chapter 312:20
characteristics 221:2,3
264:17
characterization
136:18
characterizations
135:20
characterize 36:15
86:17 114:18 116:5
315:17
characterized 126:22
characterizing 113:14
191:20
charge 24:21 45:6
158:5 166:14 167:1
224:13 237:6 246:2
charged 22:5
charges 238:4
chart 181:15
chatting 135:17 136:9
Che 1:13 13:9,9 40:2,3
100:5,6 137:11,12
239:20,21 295:1
301:17
check-in 318:9
checks 194:4
Cheng 13:10
Chengjian 1:13 13:9
chest 29:12
chew 239:10 247:9
CHF 99:6,6 103:19
Chief 2:3 9:21 10:13
12:5 28:17 29:3
child 176:1
children 101:8
chime 20:7
chiming 178:22
China 234:22
China-bashing-radical
234:21
choice 227:13 286:4
309:22
choose 31:4 176:13,13
210:10,15 227:8
230:22 279:11 298:20
299:2 303:3,15
310:18
choosing 62:9 69:11,11
73:20 252:6 299:4
chore 277:21
chose 206:8
chosen 310:5
Chris 10:11 16:8 31:9
51:10 55:12 66:6
98:11 114:18 137:7
147:9 150:14 159:16
162:13 167:2 170:16
174:13 186:22 191:9
194:20,22 200:3
214:10 216:1 228:14
232:19 233:20 235:12
236:7 269:7 271:11
271:20 272:8 273:17
292:7 293:18 294:13
305:17 306:14
Chris's 94:6
CHRISTOPHER 1:14
chronic 127:3,4
Chute 1:14 10:11,11
30:1,2 33:9 35:17,18
40:19,22 42:16,18
44:18 49:2 50:20 53:9
54:11 55:21 75:7,8
83:13 85:3,4,15 91:21
92:1 113:11,12
135:13,14 143:21
162:14 168:11 191:10
208:10,11 213:8,14
228:15 233:22 260:22
269:8,13 273:21
277:3 278:14 289:16
289:17 292:20 293:2
293:6,11 304:1
306:16 307:2
Chute's 31:9 38:4 54:2
Cindy 179:4 313:4,5
322:7
Cindy's 310:17
circulated 252:4
claim 122:9 178:7
claims 52:13,19
clarifies 260:11
clarify 54:17 62:15
63:19 166:14 216:4
234:8 244:20 281:16
296:7
clarifying 77:7
clarity 92:15 187:13
234:15 252:19
class 136:2,6 137:3
144:18 145:3 147:12
149:22 164:7 165:16
167:7 186:7,12,14
187:21 188:2,14
189:1 192:7,14,16
193:1 196:5 198:4
205:19,20,22 209:18
214:15 215:13 218:17
218:18 228:21 230:2
241:5,5,7,13 246:12
247:16,21 256:22
265:20 268:18 269:4
269:15,18,21,22
271:13,16 274:7
277:10 280:1,3,19
281:12,13 283:20
286:21 287:2 293:8
293:13,14 294:17
305:8
classes 135:21 136:12
136:14,19 147:10
148:7 160:6 163:3,13
164:2 165:1 167:22
168:16 170:9 178:6
178:12 188:6,7,18,18
190:19,21 191:21,22
193:18 195:17,18
196:4,15 197:17
209:1 231:11 232:1
246:6 248:2 254:3
258:3,10 266:6 270:6
271:1,12 274:8 279:8
279:11 280:13 283:21
293:21
classification 52:11
55:15 189:14 191:5
194:13 219:9 246:19
254:17 272:5
classifications 30:14
193:13 271:4
classified 192:10
classifier 52:18
classifying 243:5
classing 185:15
clean 174:16 175:18
clear 57:10 80:4 81:20
83:8,8 84:20 88:14
105:19 113:7 133:1
148:16 154:12 158:8
187:9 191:16 194:21
197:16 218:20 228:16
229:1 233:1,18 242:1
242:7 243:21 248:21
259:22 260:19 273:16
274:6,22 275:19
clearly 51:4 62:9 80:22
84:1 86:18 132:12
144:5 225:9 237:8
246:2 287:4 293:19
295:12
clearly-defined 92:20
98:12
client 19:16 20:15
255:7
clients 25:21 37:18
277:20
clinical 11:2 13:15
15:17,19 22:11 23:1
34:22 41:5 51:18
64:18 65:20 68:12
77:21 97:6,7,8 100:21
101:16,21 111:18
113:14,17 114:10,12
117:11 122:12 132:7
275:14
clinician 69:9 99:4,11
120:7 126:4
clinician-based 99:1
clinicians 51:20 54:18
145:16 151:7
close 96:18 101:14
102:8 227:17
closely 174:6 202:19
closest 51:21 161:21
closure 306:21
CMS 11:22 15:14,21
17:17,22 25:22 42:9
43:22 52:19 110:22
125:14 183:12
co-chair 1:12,12 9:20
10:3 11:15 31:22
38:16 45:4 51:9 54:16
68:8 87:2 88:17
102:11 111:16 119:14
202:4 204:17,21
205:3,9 209:22
210:14 213:3,13,15
226:8 231:4,13
246:17 248:13,16
257:6 263:13 279:21
288:10,16,17 297:1,4

297:7,10,15 298:4,7
 298:15 299:6,9 308:7
 311:7 312:4,11,14,18
CO-CHAIRMAN 122:17
 134:17 147:8 149:11
 153:13 170:15 172:1
 175:21 198:1
co-chairs 1:9 3:2 9:19
 14:15 25:7,9,14 26:7
co-existing 45:18
Coast 5:2
code 30:18 55:19 69:7
 69:11 70:21 72:5,5
 100:18,20,20 101:3,5
 101:9 102:3,3,3
 109:22 110:12 111:8
 111:8,12 116:11
 119:5 126:9 137:18
 159:15 176:14 219:12
 221:1 248:12 264:4
 280:20 287:15 296:12
 301:18 302:3
coded 55:6,8 69:4
codes 34:2,5,7 37:3
 48:14,15 49:12,16,22
 51:4 52:14 64:15 82:2
 82:4 87:10 88:5 94:10
 94:11 97:9 102:19
 110:10 111:2 112:15
 114:1 119:19 124:18
 125:19 126:8 128:15
 223:18 236:13 262:6
 270:11,12 278:21
 279:2,3 286:21,21
 287:8,9,11 289:13
 300:13,15 301:20
codified 42:6 68:22
codifier 110:12
coding 53:21 55:18
 57:10
coffee 19:2
coin 245:2,3
collaboration 96:2,2
collate 226:20
colleague 5:8
colleagues 244:15
collect 90:2
collected 36:13 49:7
 50:8 90:2 258:18
collection 78:1 88:4,5
 165:1
collections 257:8
collectively 179:3
collector 160:16
College 121:15,16
combination 276:22
combinations 148:8
come 24:13 38:20 40:7
 75:2 79:22 104:8

108:8 120:17 133:1
 145:6,11 146:15
 150:10 155:16 170:2
 177:20 182:4 201:7
 201:11 207:4 210:18
 210:22 215:6 218:2
 231:17 233:9 237:12
 241:4 257:10 260:10
 277:1 278:11 279:1,2
 296:3 300:14 305:5
 305:22 312:7 313:1,5
 314:6 316:18,21
 322:4
comes 12:8 102:16
 104:17 120:5 147:19
 149:16 183:10 225:19
 293:6 320:8
coming 8:7,9 29:4
 34:15 157:2 166:20
 170:8 175:15,18
 212:1 226:9 243:19
 270:19 296:17 313:19
comment 3:16 6:13
 37:20 57:4 59:7,9
 60:20 68:9 71:18
 80:11 86:7 102:12
 103:1 105:8 106:13
 109:7 110:16 112:21
 114:16 137:12 152:13
 175:22 196:3 215:19
 221:9 237:1 256:16
 262:15 266:10 288:5
 290:17 302:16 317:10
 317:13,15
commentary 168:12
 296:21
commenting 110:8
comments 15:1 20:10
 20:18 31:9 38:5 42:3
 47:16 72:13 101:14
 105:9 109:21 122:19
 252:1 263:10 267:5
 279:18 287:22 289:17
 308:6,13 317:5,17
 318:11 321:12
Commission 1:17
 13:19 128:13,20
 129:21 318:14
committed 67:4
committee 1:3,8,20 3:3
 3:6,12,14 5:16,21 6:7
 8:3,13,16,19,21 9:5,7
 9:9 10:15,17,20 13:5
 13:8 14:2,10 24:21,21
 24:22 25:10 26:9
 31:17 42:5,14,20 43:1
 43:6,9 44:15,21 56:17
 62:21 63:16 91:4 92:9
 95:22 97:14 115:3

134:7 155:21 157:16
 161:9 211:22 212:6
 212:12 235:16 237:7
 245:17 247:13 250:18
 300:21 302:10
committees 29:5 144:9
common 22:11 35:19
 50:1 203:3,12 261:11
commonality 89:6
commonly 103:19
communicate 64:3
 97:17 118:15 320:22
communicated 264:20
communicating 116:16
 117:19 118:9,19
communities 31:2
community 21:20 56:1
 108:18 140:12,20,22
 155:6,8 165:21 194:8
 236:4 255:17
compare 232:6 262:19
compared 124:18 199:5
 208:5
comparing 125:2
 209:12 238:10 241:15
comparison 127:13
 137:22 141:22 239:1
 239:2 304:4,5
compensation 167:14
compete 52:8
competing 22:13 24:4
 52:3 283:11
compile 250:12
compiling 252:3
complement 159:9
complete 39:7 76:13
 79:11 94:21 108:21
 129:2,14 178:11
 234:10
completed 28:4
completely 76:14
 112:10 130:8 216:12
 292:7 294:22
completeness 123:14
complex 114:19
complexities 72:1
 219:11
compliment 122:21
comply 175:7
component 76:5 193:1
 203:19 204:18,19
 215:16 264:8,16
components 23:10
 76:19 203:3 205:10
 205:20 214:17 215:8
comprehensive 270:8
compromise 90:16
 91:12 93:19 105:8,10
 294:8 296:22 298:19

300:19 304:2,8
compromises 310:6
computable 223:12
compute 258:16
computers 274:1
concede 315:12
concept 40:8,9 51:21
 54:2 58:7,8 65:21
 68:12,22 70:17 71:9
 73:5,19 87:18 88:6,6
 89:2 100:16 104:1
 108:22 111:18,20
 112:3 113:14 118:6
 145:13 151:1 152:19
 154:1 160:17,19
 171:15 176:1 180:5
 189:3,17,21 198:18
 198:21 199:4 220:6
 221:18 223:6 226:14
 227:17 228:13 236:19
 257:12,18 258:4,11
 263:17 272:5,6
 288:22 289:14 301:14
 302:17
concepts 33:1,6 71:7
 71:20 73:20 78:2
 84:21 88:12 95:5
 108:10 116:17 117:6
 117:20 119:2 122:13
 161:2 170:22 171:18
 174:13,19 179:22
 181:13 199:14 206:2
 214:13 216:20 218:17
 218:21 219:22 228:12
 230:11,11 231:20
 232:6 236:12 243:11
 255:8 258:10 282:11
conceptualization
 26:20
conceptually 153:15
 198:2
concern 96:8 98:5
 321:19
concerned 85:2 190:5
 216:8 222:14 237:10
concerns 56:13 85:20
 245:20
concert 151:7
concise 68:16 242:7
conclusion 142:13
 166:9
condition 129:17
 196:12,13
conduct 13:3
conducting 267:21
conference 1:8 6:19
confidence 284:6
confident 44:1 117:4
 119:3 189:20 219:8

conflict 8:5 9:1 14:6,9
 14:11,18
conflicting 106:20
conflicts 13:21
conform 65:18
confused 277:4
connected 36:13
connecting 7:3
cons 213:4 248:19
conscience 291:16
consensus 16:17 19:11
 21:7,10 172:16 174:9
 210:22 214:20 252:13
 321:16
consequence 208:16
consequences 273:9
consider 38:5 44:7,13
 51:12 52:3 94:2,13
 95:3 112:5 140:14
 167:9 222:6 259:5
 260:4 265:18 318:19
considerable 137:4
consideration 40:4
 41:21 45:12 51:5
 54:22
considerations 179:13
 181:21
considered 50:11 51:6
 78:3 178:19 283:3
considering 94:13
 95:15 256:11
consistency 22:16 61:6
consistent 50:2 56:5
 64:10 133:2 146:7
 147:4 182:22 204:9
 225:2
consistently 64:15
consolidating 201:4
Consortium 1:18
constituency 219:16
constitute 68:5 132:5
 143:7
constitutes 65:15 75:11
 89:1 154:2 211:16
 312:1
constraints 33:12
 177:18
construct 26:2 202:8
 203:9 215:10 263:18
 264:9
constructed 133:6
constructs 118:17
 203:4
consultant 11:7,10,20
Consulting 1:16
consumable 101:17
 148:22
consume 101:19
consumer 21:18

consumption 284:4
contain 120:2
contemplate 41:14
 71:17
contemplating 41:15
content 13:5,7 23:18
 78:10 79:12 85:16
 102:7 108:16,19,21
 124:18 160:3 162:5
 183:5 184:14,15,18
 186:12 205:15 217:3
 235:11 236:12 244:7
 248:8 255:10,18
 302:6,8,13 306:1
CONTENTS 3:1
context 44:11 63:18
 76:11 81:16 95:2 97:2
 97:11,13 106:16
 114:19 115:6 116:6
 117:11,22 119:9
 136:3 141:5,20
 150:11 157:2,8,22
 160:19 161:10 162:16
 164:7 172:19 183:1,3
 183:3,12 184:10
 185:4,14 190:21
 208:1 209:8 215:21
 216:3,9 235:9 243:6,9
 251:7 260:4,15 264:6
 286:14 287:5 307:12
 315:11
continually 166:16
continue 134:10 170:19
 229:12,13 251:2
 267:18 319:19
continuing 29:8
contract 5:11 15:6 24:3
 167:2 292:3 297:20
 300:4
contracting 17:22
 183:12 298:3
contractor 17:17
control 175:17 194:3
convene 194:13 312:22
 316:9
convenes 211:16
conventions 260:17
conversation 72:9
 191:15 252:16 278:17
 288:1,9
conversations 34:8
 97:22 268:13 311:16
conversion 50:15,17
convert 52:17 53:16,18
convinced 296:2
cool 163:22 262:6
coordinating 24:8
Coordinator 2:17,21
 25:22

core 123:10 197:1
 241:6 260:19
correct 25:19 32:5
 37:12 75:12 102:6,7
 133:2 227:12 251:20
 295:14 311:10 313:17
correctness 123:14
correlating 169:8
correlation 126:10
correspondingly 49:15
 49:17 229:7
corticosteroid 194:10
corticosteroids 192:5
 192:10 194:9
cost 91:18 105:11
 140:11,19 141:2
Council 12:9
councils 21:18
Counsel 2:6 5:15
count 58:18,20
counter 126:8 166:7
country 50:8 234:22
County 5:3 319:13
couple 4:4 24:16 32:21
 70:20 79:8 94:5 98:20
 109:9 110:22 128:3
 156:18 226:10 241:2
 247:12 259:3 268:20
 270:10 293:18 314:13
course 13:2 20:6 41:3
 54:7 79:12 89:17
 201:17 204:3 205:15
 239:6 267:19 268:3
 290:21 291:15
court 204:4
cousin 114:6
cover 149:12
covered 251:5
covers 161:4
CPT 125:16 301:7,8
craziness 287:8
crazy 53:22
create 45:12 47:14 48:5
 59:15 60:4,9,13 61:19
 62:16,17 72:14 91:9
 95:16,20 108:2,16
 115:7 117:16,18
 119:11 140:14 152:6
 153:2,4 159:9 175:1
 188:15 190:18 197:10
 198:8 209:4,6,7,13
 214:8 216:11,16
 221:22 223:21 230:1
 230:10 231:22 234:17
 238:6 240:10 248:8
 252:21 253:17 266:3
 267:7 269:6 274:8
 281:5,9 294:5 320:19
created 44:9,18 59:13

61:2,18 74:20 77:13
 78:16 83:9 91:7 108:4
 130:1 132:10 133:21
 139:9 144:10 167:6
 167:20,21 177:6
 178:9,10 180:9,13
 188:8 199:3 213:7
 215:11 221:20 225:13
 240:12 254:15 280:18
 310:3
creates 26:22 45:20
 208:15 226:6
creating 35:3 62:5,19
 72:2 73:21 78:15
 86:13 97:12 105:12
 118:18 140:10 158:21
 160:2 161:5 183:11
 184:8 185:5 186:4
 190:14 191:8 193:18
 218:15 222:17 229:15
 230:12 233:12 247:3
 248:6 264:4 286:14
creation 11:13 60:8
 80:5 83:5 108:19
 161:11 169:17 221:5
 244:22
creator 74:11
creators 190:12
criteria 3:9 6:8 23:4
 25:3 33:11 60:16 78:7
 106:1 185:7 198:16
 200:6,10 202:14,14
 212:10 230:7 242:10
 262:22 275:8 276:16
 310:8 311:22 312:1,6
 316:5
criterion 105:20
critical 29:14 47:3 77:9
 107:13
critically 219:15
cross 302:7
cross-cultural 305:7
crosscutting 201:14
CT 40:8 301:18
CTS-2 76:8
Cullen 1:15 10:22,22
 176:15,16 313:7,10
 313:13,18 314:1,4,8
 314:10,12
cultivate 320:10
culture 235:18,21
 253:21
curate 193:22 195:21
cure 90:10
curious 30:10 111:10
current 32:1 54:8 56:2
 96:11 109:1 145:1
 153:8 170:19 186:15
 248:6

currently 11:21 12:19
28:6 32:4 34:6 55:22
76:10 79:7 109:8
168:4 179:5,14
cut 51:2 105:1 207:7
268:10
cutting 158:7
CV 8:14
CVX 82:2
cycle 26:15 113:1
176:22 177:5,10,13
Cynthia 1:15 10:22

D

D 179:7
D.C 1:9
Dallas 121:22
dance 247:9
dancing 179:21
dangerous 189:6
dark 189:8
darn 136:6 192:9 193:7
data 32:12,14 36:12
46:4,11 49:7 50:8
52:21 75:12 78:6,22
79:10,15 83:4 86:1
93:13 97:7 98:6,7
100:13 106:1 111:1,4
111:6 112:11,12
115:1 119:17 123:21
130:1 154:15 186:5
243:10 249:3 264:13
282:3,11 285:11
288:13 289:21 290:10
301:7
Databank 279:3
date 54:11,14
dates 41:13,16 318:1
daughter 29:13
daunting 163:8
day 18:20 27:21 29:16
46:22 52:13 71:2
145:7 175:15 177:22
200:3 235:21 318:4
day-to-day 5:10 51:22
days 15:16 54:8
de 199:3 202:1
deal 26:13 54:19 55:1
96:21 106:18,18
157:14 160:22 171:10
201:12 221:21 222:13
226:3 239:19 295:6
deal-killer 57:21
dealing 128:10 129:16
187:5
deals 226:4
dealt 128:6
dear 175:6 194:20
195:2

debate 40:20 41:1
decedents 273:7,8
decide 104:6 105:20
146:22 148:2 204:3,5
226:19 227:5,5
255:15 257:13 275:6
282:6 301:10
decided 29:12 210:2,6
210:6 272:14
decides 90:19 296:14
deciding 215:22
decision 34:22 35:1
42:10 114:13 158:1
179:19 221:22 222:9
decisions 192:15 212:6
228:11 275:11 287:9
deductions 122:12
deeply 11:6
default 105:17,17
153:21,22
defective 89:14 152:18
defensible 246:14
define 36:21 73:14
100:15,20 101:3
111:11 112:2,3
202:21 205:6,20
217:3,13 222:18
232:21 233:1 247:6
257:11 258:11 263:17
264:3 281:21 283:22
285:10 300:15
defined 11:18 19:14
36:8,20 37:8 50:4
58:12 60:16 111:20
198:12 214:1,5 225:9
252:13,22 263:22
264:17 293:20 297:21
309:19
defines 11:17 278:12
defining 22:8 39:5,11
39:17 84:12 223:5,12
262:9 264:16 265:7
311:22 312:6
definitely 171:17
definition 39:15 40:12
84:7,18 93:6 148:11
171:11 202:11 216:16
216:17 223:4 228:13
231:22 232:11,16
239:16 241:12 243:17
244:13,17 245:1,13
257:21,22 262:2,3,13
263:3,15 265:10
273:5 282:20 283:4
284:15,21 285:6
289:7,11 300:7 307:7
definitional 232:15
definitions 84:16 98:16
163:2 168:17 169:8

222:21 239:7,13
244:14 261:19 262:18
263:2 269:17 276:15
283:19 293:13 299:22
definitive 248:9
degree 143:9 253:4,18
289:22 307:4
degrees 33:5 127:10,22
128:8
delays 4:10 43:15
delighted 29:10
deliver 136:12 285:22
deliverable 295:16
297:21
deliverables 24:1 246:1
260:19
Delivery 10:9
delve 124:15 125:20
delving 123:4 199:15
demand 175:16
democracy 314:15
demonstrate 23:7
demonstration 75:8
denominator 126:8
202:12,21
depart 201:7
Department 2:18,22
16:14
depend 146:2
dependent 107:5
241:11 315:14
depends 119:18 120:12
deprecate 170:20 209:8
deprecated 76:18
168:13
depression 33:4 125:9
125:9 126:5,6,7,22
127:1,3,5,6 142:14,15
154:20 155:4 310:20
310:22 311:2,4 316:3
depressive 127:4
derivative 76:7 186:13
186:15 208:16
derivatives 92:6
derive 30:22 31:3
derived 196:19
descendants 275:16
descendent 189:19
describe 22:2 81:16
87:15 93:12 220:21
259:12 274:13 286:20
288:22 296:9
described 41:10 68:13
83:19 217:1 220:22
describes 77:20 223:4
describing 70:17 88:12
243:9 248:11 259:10
260:3 272:11
description 21:3 59:2

68:16 69:4,5,12 76:1
87:19 141:21 232:3
289:14
descriptive 268:17
design 90:22 228:22
229:9
designate 36:15 50:21
174:21 278:18
designated 137:2
designation 37:4 49:20
76:11
designed 189:2
desirable 64:19 136:4
desire 162:4
detail 32:12 41:5 72:4
110:13 134:6 234:16
235:11
detailed 117:11
details 7:20 20:20
67:12 109:20 110:1
160:21 236:13
determination 227:12
determine 138:12
143:10 150:10 166:21
172:18 232:17 257:17
determined 169:15
210:9 262:1
determines 172:17
determining 56:19
106:3 148:19 208:4,6
208:8 255:21 295:12
296:12
develop 10:20 11:3
13:3,4,19,20 22:15
24:17 40:6,18 45:8
65:19 66:9 83:10 91:5
177:21 181:2 198:16
237:14 240:1 265:13
265:14 288:21
developed 31:11,17
32:10,14 40:17 46:19
47:12,13 73:4 83:22
93:9,10,12,17 100:11
123:8 128:20 130:19
137:17 140:4,4 151:6
178:1,3 182:3 211:2
developer 13:11 75:5
100:9 116:9 145:22
146:22 171:6 176:5
180:4,10 218:13
226:13 227:4 234:13
235:15 252:10 277:7
278:21 279:10
developers 23:6 24:6
31:16 35:1 40:18
47:12 74:19 75:13
82:21 88:19,21 89:4
91:20 97:15 99:21
103:3 108:14 116:21

138:1 146:8 161:18
 179:18 182:8 215:2
 234:7 235:4,8 292:10
 295:19 305:3,5,10
 314:4 322:4,5
developing 3:9,11 6:8
 6:10 13:4,12 33:11
 35:8 71:15 88:10
 99:11 109:7 120:22
 121:2 155:22 179:9
 184:9 221:13,14
 240:2
development 11:3,11
 11:14,17 12:2 16:17
 23:4,10 25:1 33:13
 48:2,8 83:6 86:20,21
 92:18 93:6 109:11
 136:3 146:14 182:2
 184:10 199:19 202:6
 204:10 233:19
develops 205:21
deviate 201:19
deviations 124:5
device 249:15
devil's 101:13 145:21
devise 25:19
devising 123:11
diabetes 103:19 146:17
 146:17 147:1 180:22
 181:1,4,5,6
diabetics 113:21
diagnoses 47:20 70:5,9
 145:13 156:4 288:20
 290:7,20 294:1
 301:16
diagnosis 33:21 69:2
 69:14 70:3 100:18
 101:5 126:5,13 149:9
 181:2 288:16,17,18
 288:19 291:10 297:5
diagnostic 37:4,12
 49:21 50:8 51:4,19
 52:14 114:1 155:7
diagram 92:12
dialog 234:13
die 187:22
differ 96:19 215:13
difference 97:9 111:9
 127:2 151:2 158:12
 158:16 159:5 244:16
differences 84:5,6
 126:20 142:14,16
 243:21
different 16:17 18:3
 33:2 37:14 47:3,6,11
 47:12 48:11,21 55:19
 57:6 59:21 61:14,17
 64:2,4,5 65:9 73:3,4,5
 80:10 82:12 88:21,22

89:5 98:2,16,17 99:7
 103:21 104:9,15
 106:19 108:3,11
 111:7 119:9 122:15
 130:15 132:11 135:11
 140:5,5 150:21,22
 153:1 157:9 160:1
 162:3,6,7 164:15
 167:6,22 179:3,17
 180:9 181:21 182:12
 182:19 184:4 188:22
 189:5 203:11,11
 208:17 214:16 215:7
 215:8 227:1,16 233:5
 243:12 247:12 251:13
 254:18 257:9 260:8,9
 263:19 274:12 282:3
 282:11,11,14 285:18
 285:19,20 286:1,1
 291:15 300:2 303:20
 305:5 311:3,4
differentiation 155:7,9
differently 179:15
differs 214:9
difficult 57:7
diligence 191:16 193:8
dip 114:9
direct 201:10
direction 54:9 133:5
 301:11
directly 8:2 9:6 14:16
 55:10 238:10 284:19
Director 2:5,7,16 3:8
 4:17 10:19 12:13,19
 13:15 15:8 17:22
 290:17
Directors 17:7
disagree 248:1
disambiguate 261:6
disassemble 182:11
disclaimer 122:7
disclose 7:13 8:1,4,18
 9:17 10:10 13:13,17
 13:21 50:2
disclosed 9:13
disclosing 14:8
disclosure 3:3 5:18
 8:11,15 9:18 12:3,8
 154:1 320:14
disclosures 7:17 9:2,15
 10:2,7,14 12:22 14:4
 50:3
discover 164:22 285:19
 304:21
discovered 56:10
discrete 115:13
discriminate 201:18
discuss 5:7 29:21
 61:17 144:2 168:3

315:22
discussed 69:1 83:12
 123:6 207:12 214:14
 263:9 271:9 318:13
discussing 6:2 19:9
 253:4 254:22 316:17
discussion 3:6 4:15
 5:22 19:1 20:6 22:7
 25:11 26:11 28:16
 29:18 64:9 65:3,9
 71:12 82:18 97:21
 121:5 122:4 123:2
 128:4 133:10 134:9
 170:6,7 177:5 201:17
 201:21 205:17 255:20
 270:14 271:21 306:18
 312:17 313:3 315:9
 319:18 320:2 321:15
discussions 29:14
 72:19 201:1 268:4
 319:20 322:3
disease 172:3,4,7
disharmonies 248:10
disharmony 224:19
dislike 77:19
disorder 126:12,22
 127:2
disparaging 193:16,17
disparate 251:10
display 138:19
dissonance 35:21
 49:10,19 51:3 305:9
distinct 71:9 144:4,5
distinction 31:21
distinguish 152:22
 240:4
Distinguished 10:12
dive 5:22
diversity 125:3 318:18
divided 124:10
Division 12:6
DNP 2:7
doctor 29:13 223:5
doctor's 47:15
doctors 322:5
document 48:6 61:18
 73:12
documentation 51:20
 51:22 55:9 74:22
 139:5,20 169:5
 252:14 261:10
documented 84:2
 96:19 97:8 153:17
 159:3 173:12 249:16
documenting 63:5 97:6
doing 5:14 11:14 16:9
 35:15 53:20,21 56:11
 57:9 60:15 62:7,21
 66:21 67:14 82:14

88:21,22 89:5 94:18
 97:6,7 98:4 101:20
 118:19 124:20 127:15
 127:19 156:21 165:22
 166:1,2,2,3 183:20
 207:19 211:13 233:4
 238:22 241:13 242:10
 253:13,21 254:7
 255:16 256:20 273:20
 287:5 289:4 291:21
 295:15 299:20 301:13
 302:14,19 310:21
 311:20 316:16
domain 30:21 212:3
 227:2 247:5 255:8
 256:3 263:15 291:16
 302:17 303:12
domain-specific 263:5
domains 195:17 255:5
 263:14 268:9,9,11,15
 269:2 272:9 281:22
 282:3,5 285:18,20
 286:2 288:11,12
 290:5 292:1 297:16
 297:17 299:4 303:4
 304:13
Don 136:8
door 246:9
dorky 194:9
dosage 131:7,11
dosages 131:5
doses 101:6
doubt 44:7
downloadables 79:14
downstream 119:11
 152:9 216:14
dozen 304:9
DPM 1:18
Dr 9:17,19 14:1,1 17:6
 18:9 25:7,7 28:20
 30:1 31:7,9 33:9
 35:17 37:21 38:4 40:2
 40:14,18 41:15,18
 42:16,16 43:8 44:4,18
 45:15 47:7 53:9 54:1
 54:11 55:20,21 57:12
 57:13 59:6,10 60:18
 65:13,14 66:13,13,19
 68:2,2 71:19 75:7
 76:21 79:7 83:7,12
 85:3,15,15 86:8 87:1
 89:8 90:11,17 91:21
 91:21 94:4 97:20
 100:5 107:14 109:5
 113:5,10,11 114:14
 121:13 133:11,16
 135:13 137:11 139:15
 142:7,21 143:13,21
 145:20 147:7 154:5

154:17,19,22 156:6
 156:10 167:10 170:14
 171:21 175:20 178:22
 191:10 194:17 197:21
 204:14 208:10 211:6
 215:18 217:6 224:1
 232:18 233:22 236:5
 236:22 239:20 241:1
 250:4 253:22 255:1
 256:3,9,15,16,19
 259:1 263:11 265:17
 266:7,8 274:5 275:18
 276:3,17 280:7
 281:20 284:9,9
 285:15 289:16 292:15
 293:4,8,15,16 295:1,1
 302:4 314:16 316:19
 317:3 320:12
draconian 90:9 175:12
draft 24:17 27:11,14
 73:10

drafted 27:1

Drago 185:15

dragon 185:15

dragons 159:18 160:7
 185:13,13 191:11
 194:15

draw 278:14

drawing 159:11

drawn 30:12

drive 319:13

driving 53:22

drop 73:22 188:10,15

DrPH 1:14

drug 49:16 113:22

135:20 136:2,5,12,14
 136:18 137:3 148:7
 160:6 163:1,2 164:2,7
 165:1,16,21 167:22
 168:16 170:9 178:6
 178:11 185:14 186:7
 187:21 188:2,6,7,9,17
 188:18 189:1,2,13
 190:19,21 191:5,21
 191:22 192:6,14
 193:1,13,18 194:2,12
 195:17,18 196:4,5,14
 197:17 205:12 209:1
 209:18 219:9 228:21
 241:5 246:6,12
 247:21 248:2,6 254:2
 256:21 258:2,10
 269:18,22 270:6
 271:1 277:10 279:7
 281:12 283:20 290:14
 305:8

drug's 281:9

drugs 129:8,14 130:15
 131:15 135:22 145:9

145:15 162:16,18
 163:17,22 187:20
 188:13,14 189:16,18
 190:2 192:10 196:4
 241:22 242:12 243:13
 249:12 276:22 279:6
 290:4,4,10

dry 105:1

dual 43:4 247:15

due 191:16 193:8

duplicate 24:4 262:4

duplicated 199:1

duplication 198:14

199:4 240:12

duplications 138:4

duplicative 131:6,11

134:22 173:3

duration 316:8

duties 16:1

dynamic 239:19 310:15

E

earlier 55:21 135:15

179:18 192:3 201:5

204:14 213:17 235:20

263:17

early 70:1 250:7

easier 56:8 93:6 96:5

258:21 292:11 298:10

easily 95:17 186:22

285:11

easy 24:10 53:19 91:6

195:10

eat 28:22

echo 47:15

eCQM 13:19,20 22:17

23:4,10 28:3 39:9,13

48:10,22 70:2 106:20

158:13 233:19 249:5

eQCMs 28:5,8 34:10

38:21 39:3 45:19

51:17 78:21 84:11

106:16 167:11 177:21

183:12 233:2 308:2

edges 293:21

education 21:16

effect 39:12 47:2 152:9

effective 143:22 255:21

effectively 230:3

efficiencies 146:12

efficient 131:20

effort 35:19 137:17

266:1

efforts 107:21 135:21

135:21 137:13 175:13

193:17

egg 29:1

EH 13:11

EHR 40:11 249:2,12

eight 4:16 20:13 21:17

65:6

eighth 130:12,13

either 42:10 70:11

92:11 111:20 112:3

150:16 152:10 182:12

194:10 218:9 225:12

227:4 249:1,16 254:6

316:1

electric 229:3

electronic 13:16 22:11

22:22 101:17 149:1

308:1

electronically 148:22

258:20

elegantly 187:1

element 93:20 242:16

244:3 309:21 310:5

elements 32:13 78:14

93:13 135:22 158:2

159:11 168:1 190:6

201:22 273:12 306:8

elevators 6:20

eligible 124:10,10

125:7 127:14

eliminate 59:3,3

eliminated 22:10

eliminating 123:16

eloquently 253:20

else's 262:12

eluding 218:14

elusive 36:2

email 7:6 320:3

embedded 270:22

embrace 51:6 99:13

118:12

eMeasure 12:2 109:13

eMeasures 12:15 17:3

29:10 98:7,17 264:6

emerge 162:19

emerged 99:10

emotions 300:5

emphasis 234:3

employee 195:3

employer 8:20

EMR 147:19

encode 118:22

encoded 243:10 278:5

encompass 63:13

223:9

encompasses 232:17

encounter 126:9 165:3

285:2,3,7,12 286:17

289:12 299:22 301:18

301:20 302:1

encountered 70:5

encounters 276:5,8,13

286:5 288:15 289:6

289:10 290:20 294:2

294:5 295:22 296:9

299:3 300:6,22 306:6

306:7,7,17 311:1

316:4

encourage 38:12

182:15 251:1 259:5

259:10 282:2 287:3

321:4

encouraged 38:17

95:19 108:14 162:11

187:15

ended 41:8 43:4

endorse 108:18 157:16

181:12

endorsed 24:6 43:10

57:1

endorsement 16:18

18:11 22:22 23:21

212:16,17 227:11,19

endorsing 21:13 90:13

90:14

ends 113:2

engage 137:5 270:14

281:16 320:2

engaged 302:10

engagement 255:17

engagements 8:12

engaging 252:7,10

engender 30:8

engine 249:5 284:19

engineer 170:1

engineering 84:19

English 76:1 223:4,13

289:14

enjoying 288:9

ensure 50:4

entered 28:16 37:17

66:15

entertain 136:4

entertaining 4:15

entire 117:6 120:1

130:13 255:9 268:19

274:17 292:17 293:9

307:21

entirely 128:14 131:10

entities 183:19 184:13

entity 103:15 183:17

185:9 264:1 315:1

entry 46:13 74:5 135:7

135:10

enumerate 135:22

enumerated 164:20

165:6 169:4 228:19

230:3 235:11 307:6

enumeration 165:21

enumerative 284:15

enunciate 247:1

environment 95:16,20

96:4 114:13 118:2
189:2 320:21
environments 136:15
epic 1:13 13:15 278:3
episode 99:6
episodes 98:21
equal 58:8
equivalent 78:4 84:1
119:8
erected 182:10
errand 49:5
error 91:15 238:17
errors 135:1
ersatz 193:13
escape 221:10 222:3
especially 42:1 45:9
101:15 111:7 146:9
149:6,17 172:13
211:2 249:10
essence 117:7 184:19
194:22
essential 264:16
essentially 59:1 78:21
90:16 228:18 276:21
278:11
establish 224:10
established 224:13,14
225:8 230:7 238:18
establishing 200:5
242:9 312:1
et 156:4
etcetera 41:11
evaluate 101:4 133:4
evaluated 115:5
evaluating 12:15 25:3
134:13
evaluation 11:8 16:9
193:6 204:10 317:21
event 151:12 209:6
events 274:16
eventually 124:9
147:18 148:17 150:12
212:19 279:9
everybody 21:1 29:2
115:2 154:4 189:14
200:15 244:8,18
289:22 322:1
everybody's 253:9
evidence 44:2 97:5
194:1
evidence-based 105:20
evident 218:16
evolve 134:10
evolved 132:21
exact 49:12 71:5 98:11
147:16 246:1 276:15
280:21
exactly 26:18 63:20
88:2,15 98:11 102:6,7

103:8 111:1,2,11,12
128:15 193:14 197:2
216:7 233:14 234:14
246:12 272:20 275:20
290:19 310:3
examination 22:19
examine 235:2 298:22
316:6
examined 128:9 131:3
examining 254:9 312:2
example 30:11,16
36:21 37:11 58:13,14
75:21 77:5 81:21,22
87:3 109:15 119:18
134:2 141:18 144:16
158:1,12 160:4,5
163:4 164:11 176:3
190:18 191:5 192:3,5
196:20 202:20 203:13
219:20 225:1 245:15
245:21 249:13 264:8
271:2 274:11 279:13
279:22 280:12
examples 134:9 135:19
219:21 258:9 275:4
Excel 124:22
exception 50:10 51:5
153:17,18 203:2
exceptions 202:14
excited 29:7
exclude 164:18 277:8
excludes 279:13
excluding 283:7
exclusion 100:15
202:14,22 203:2
exclusions 164:10
202:12 223:10
exclusive 37:3
exclusively 254:5
excuse 13:7 28:19
229:16
execute 43:20 109:4
307:4
execution 43:16
exemplar 162:19
exercise 5:18 6:5 92:10
136:22 163:12 280:6
304:18 307:7
exercises 165:13
exercising 304:21
exhaustive 243:14
284:21
exist 35:5,6,15 46:7
76:6 164:2 165:1,10
165:16 167:12 191:6
193:2 200:13 229:12
255:6
existence 56:21 168:21
195:4 198:10 213:21

241:7
existing 23:19 45:6,10
47:19 86:15 106:4
134:20 158:13,21
159:4 167:16 169:3
172:19 198:5,13
201:16 202:1 207:7
208:13 213:4,7,11,17
214:5 216:3,16
218:10 219:9 222:7
222:11,16 223:17
226:16 229:18 230:4
230:11,22 231:9
236:9 246:19 257:22
exists 46:7 73:2 84:2
91:17 105:15,16
163:12 172:3 207:11
220:3 221:17 222:2,4
241:8 251:12,15
255:8 279:11
expand 278:22 290:10
expanded 278:1,7
expanding 283:2
expansion 244:16,17
245:14 270:3 282:19
expansions 239:7,14
241:14 244:22
expansive 252:16
254:7
expect 88:15 108:21
255:13 260:14 292:17
312:19 316:13 320:9
expectation 95:18
expectations 5:21
114:22 159:22 160:2
161:1,17 162:1
259:22 260:11
expected 43:12 56:3
57:4 116:19
expecting 81:15
experience 47:9 102:16
174:5 187:1 206:9
276:14
expert 24:15 53:12
67:19 91:4 178:7
206:5 215:4 268:5
269:1 292:9 299:10
expertise 25:13 29:20
41:22 122:13 137:5
experts 7:19 19:6 42:11
151:7 214:22
expiration 41:13,16
expiring 43:13
explicit 164:10 180:14
269:3
explicitly 51:6 169:14
278:4
explode 232:5,16
exposed 190:2 280:14

express 88:5 108:22
148:15 170:22
expressed 33:2
exquisite 234:15
extend 15:6 142:9
extended 124:21
extension 251:14
284:13
extensional 228:19
230:4,9,14,15,17
234:20 238:22 239:2
248:17,20 251:15
283:13,14,16 284:3,8
extensive 25:13 177:4
312:17
extent 66:2 112:13
198:13 253:13 285:22
external 42:2
extraction 15:20 249:3
extreme 26:5
extremely 242:7 245:18
248:3 262:8 276:8
293:3
eyeballs 14:19
eyes 94:17

F

FAAP 1:19
face 22:19 155:3
faced 89:13 250:21
262:12
faces 7:10 17:9
FACG 1:12
facilitate 25:14 26:7
facilities 12:16
FACP 2:3
fact 61:13 62:20 79:4
80:9 81:22 85:11
86:12 94:14 95:18
96:6 98:18,22 99:4,16
113:15 115:10,10
116:13 117:2 157:6
160:15 175:13 184:7
185:6 192:22 194:3
195:20 208:13 219:12
220:13 222:12 224:16
245:4,9 248:4 257:13
280:17,22 305:3
factor 129:7 140:13
171:20
fail 256:7
fails 136:19
failure's 256:8
fairly 18:18 24:10 64:10
83:11 92:16 143:4
206:7
fall 78:7 115:17 243:13
287:17 295:15

familiar 7:10,11 25:15
familiarity 206:9
family 150:9
fan 121:14
far 64:17 85:1 168:13
 222:14 267:2 289:6
 290:21 294:3 305:12
fashion 30:19 270:8
 302:11
fashionable 113:17
fashioned 294:8
favorite 76:9 200:3
FDA 185:21 193:2
 316:21
feasible 64:21 290:14
feat 242:13
fed 112:14
federal 28:6,8,11 31:11
 42:14 224:15
feed 112:19
feedback 108:18 109:3
 123:3
feeding 52:4
feel 19:3 28:19 44:1
 101:19 157:19 179:21
 219:7 300:1 307:17
 319:6
feels 140:22
fell 125:13 188:14
felt 149:15,19
fidelity 118:13 119:4
 219:13
field 29:8 34:4 56:10
 76:4 77:13 78:16
 108:20
fight 276:14
fighths 303:21
figure 44:14 67:13 84:5
 96:10 100:7,10
 106:21 146:16 172:9
 174:8 218:21 225:22
 228:10
figured 263:6
figuring 265:2 315:4
fill 247:5,6
filled 79:10
filling 89:18
fills 247:3
final 63:17 295:16
 305:22 312:21
finally 159:13
find 53:2,8 79:9 113:21
 124:6 129:13,15
 133:7 135:3 171:13
 172:4 178:12 194:8
 202:22 203:1 219:3
 226:15 246:18 275:4
 283:19 294:7,11
finding 110:12 147:20

findings 141:6 316:18
fine 29:14 276:2 311:12
 322:6
finely 123:5
finer 235:14
fingers 133:19
finish 190:3 279:19
 288:2
finished 314:15
finite 304:10
firm 11:2
firmly 60:21 224:13
first 5:21,22 15:14
 18:22 26:12 44:19,22
 45:2 59:14 73:10
 95:11,13,14 102:11
 106:13 110:9 111:5
 117:16 122:3 123:19
 137:7 138:3 146:11
 155:17 156:14 169:11
 170:16 178:4,9
 182:18 195:12 198:4
 204:12 206:22 207:13
 207:15 208:3 210:1
 213:6 214:5,14 215:6
 217:8 223:12 226:10
 235:5 252:5 254:12
 257:15 268:7 278:16
 279:3 283:2 285:17
 293:19 298:21 320:14
fit 180:19 197:13,17
 209:7
fits 60:15 91:1 224:11
 247:3
five 124:9 128:18,18
 130:22 155:19 212:8
 225:17 291:12 299:19
five-point 224:4
fix 72:19,21
fixed 194:12
fixing 72:15,22
flash 270:5
flat 188:11
flight 318:21 319:14
flights 319:11,12
floor 1:8 307:18
Florida 189:22
flow 110:15 264:13
flu 58:12,15,16,18
 61:11 63:10,11,14
 80:7,8 81:21 82:11
 87:3,4,7,10,14
focus 25:20 68:3 71:15
 142:22 155:22 158:2
 168:8 186:20 229:21
 246:5 285:21 295:7
 295:10 310:19 316:2
 316:3
focused 99:6 170:5,7

 204:22 207:10 210:13
 211:4
focuses 156:1
focusing 143:6 145:8
 156:15 162:18 167:7
 186:20 191:3 207:2
 254:4 269:20 271:8
folks 29:6 117:19 216:7
 287:3 301:7
follow 32:10 51:9 90:7
 153:14 168:12 180:10
 180:16 217:10 280:10
 295:20
follow-up 217:6 265:1
following 23:3 36:7
follows 198:21 202:9
food 28:19
fool's 49:5
foot 178:15 283:14,16
force 25:8
forced 81:6
forceful 42:13
forcefully 81:9
forces 150:7
forcing 75:14
foremost 18:22
forest 189:8
forever 52:12
forget 83:15 144:13
 259:13,14
forgettable 18:10
forgot 18:8 239:6 259:3
form 7:19 36:9,13,20
 37:2 45:21 50:13 51:7
 144:21
formal 110:7
formalize 53:2
formalized 52:6 121:2
 180:1
formally-endorsable
 108:9
format 175:8
forming 172:8
formulation 131:16
forsaken 84:11
forth 130:2 173:1
 246:22 255:3 262:20
forum 1:1,8 4:13,18
 16:15 21:6 136:7
forward 29:9,16 66:4
 99:12,13 107:21
 133:8 155:14 159:10
 166:22 179:6,10
 181:14,19 184:21
 193:21 199:2 200:12
 207:14 208:22 209:3
 212:10 221:12 229:21
 230:10 237:16 239:4
 242:18 246:22 251:2

 253:19 294:14 298:5
forwards 48:10
found 33:4,7 64:11
 126:1,5,7,12,18,19,20
 127:22 128:22 129:4
 129:6,7,9 220:17
 302:12 311:1
founders 35:18
four 16:15 78:12 112:12
 130:14 212:11 234:9
frame 212:14,19 247:6
framework 52:5 54:21
 65:18 66:10 73:7
 111:19 112:2 153:20
 177:22 202:5 203:7
 226:2,6 278:19
framing 133:17
frankly 193:13 269:16
free 19:3 28:19 31:3
frequency 101:2 112:16
 173:7,7,10 176:2
frequent 160:14
frequently 94:16
 123:22 124:7 143:5
friend 194:20 195:2
friendly 261:11
front 60:8 279:5 301:2
front-end 78:20
fronts 140:5
frozen 239:14
fruit 62:11
frustration 58:10
fulfill 212:9
full 3:10 5:6 77:18
 89:14 154:1 312:20
 320:14
fully 44:21 63:13 90:14
 140:1 150:2 265:14
 283:22 316:12
fully-populated 76:18
fully-specified 75:22
 261:3,9,15
fully-specify 307:5
fun 16:5
function 96:3
functionality 162:2
fundamental 80:4,5
 199:9
fundamentally 177:12
funding 19:16
further 4:11 72:16
 154:7 235:14 321:12
furthermore 163:14
future 19:22 22:19 40:1
 76:11 96:13 98:8
 110:3,17 158:15,22
 159:6 163:1 172:21
 187:7 224:11 237:7
 240:6,13 257:1

fuzzy 293:20

G**G** 271:2**gain** 291:18**gained** 292:12**gaining** 284:6**game** 160:8 273:10

307:8

gap 22:18 208:4 247:5

247:7

gaps 207:18**gas** 90:20,20,22 229:4**gasp** 50:14**gated** 198:12**gather** 47:17 284:21**gauge** 54:3,8**gee** 212:7**general** 2:6 5:15 38:8

45:14 81:2 85:18

86:16 95:6 157:9

183:14 232:14 243:3

generalist 155:2,8**generalizable** 92:7

162:20 170:12

generalization 168:16**generalize** 285:10**generalized** 93:2

163:19 211:14

generate 38:21 194:2**generated** 241:14**generation** 30:7**genuinely** 49:7**gestational** 181:5**getting** 68:17 69:9

82:13,22 101:14

102:5,7,8 106:12

115:20 132:21 241:12

242:1 248:9 254:13

266:17 269:14 310:1

giant 181:1,7**gigantic** 117:3**give** 21:3 56:2 81:6 82:4

119:1 133:5 161:17

175:18 185:5,9 192:2

206:10 216:12 217:8

243:21 246:9 255:19

259:22 280:21 289:11

306:12 316:21 319:10

given 37:9,10 43:15

57:17 61:11 117:1

184:7 200:22 207:2,3

207:5 246:3 253:10

272:9 280:17 295:9

307:19

gives 61:5 258:15,19

314:12

giving 116:12 153:6

243:5 310:18 317:3

glad 145:8 244:14

300:18

global 92:7**go** 4:4 5:11 7:12,12

13:10 18:15 26:4 36:4

38:12 40:15 47:22

50:15 55:6 59:11 62:6

73:15 82:3,6 86:9

87:3,11 91:16 94:3

95:10 109:16,18

122:5,21 130:10,18

134:4,18 138:10

139:19 144:8 145:1

146:16,21 151:5

152:19 154:19 158:10

165:5 168:13 169:3

175:19 183:17 188:18

193:9 195:13 197:2

198:6,13 201:14

211:7 213:5 214:9

219:3 221:1 223:17

226:15 227:9 228:9

231:4 234:7 235:13

238:1 242:4 253:8

254:22 257:3 261:18

262:20 267:9 268:3

268:22 272:3 273:3

275:18 276:6,10

279:16 280:5 282:17

283:5 288:1 292:5

294:20 297:3 301:10

302:21 306:21 307:5

307:12 314:16 318:10

320:7

goal 36:2 38:6 58:19

80:19 101:15 114:6

135:2 162:17 204:22

211:19 214:15 254:21

275:12 302:7 314:19

goals 21:11,15 30:5

256:6

God 84:10 160:15

239:18 304:12

goes 69:3 84:17 125:4

129:18 139:4 147:1

167:10,18 222:20

229:19 230:12 278:16

321:1

going 5:17 23:2 25:10

26:3,15 28:12 29:18

30:17 32:17 33:9,13

35:7 37:18 42:18

46:10,13 50:17 52:11

52:20 54:3,5,10,10

56:13 60:4 61:1 63:16

65:5,6,10 72:9 77:4

78:3 79:20,22 82:6,9

83:1,6 85:9 90:22

95:9,10 96:5 99:3,11

99:12 100:2 107:3,10

107:12 114:15,17

115:3,11 116:22

117:22 118:2 119:5

120:16 121:6,17

122:2 131:13 134:4

136:12,21 141:16

143:20 144:8,22

145:1,21 152:6,10

156:13 158:1 159:5

159:10,17 160:10

165:12 166:13 167:5

169:12 170:6 172:12

177:4 179:6,9 181:14

181:19,20 185:22

188:19,20 190:2

192:3 196:6 199:2,21

200:12 203:7,16

207:10,19 208:21

209:3,3,5,11,22 210:3

210:7,10 211:6 214:7

217:9 218:2,21

219:17 220:9 221:13

221:14,16,20,22

222:2,9 226:19,22

227:22 228:2,10

229:21 230:15 231:19

233:7,14 235:7

237:11,13,14,15

238:9 239:18 241:3

242:18 244:6 247:8

247:16 249:20 250:19

253:7,8 255:16

256:14 258:12 261:14

261:16,22 262:16,19

262:19 263:14,16

264:9,20 265:13

266:20 267:9,11,12

267:13,13,14,15,16

268:21 272:3,6,18

279:15 280:1 284:12

284:18 285:19 286:6

286:7 287:14 288:2

290:16 291:1,21,22

291:22 292:15 295:3

298:4 299:5,10

300:20 302:18,20

306:19 307:16 309:4

312:8,9 313:8 315:14

316:11 321:3 322:1,2

322:6

gold 224:10**Goldwater** 2:5 3:8 4:3

4:17 15:2,8 18:6,13

22:1 28:15 29:17 31:7

32:16 35:17 37:16

38:15 40:2,14 42:16

44:4 45:1,15 47:7

51:8 57:12 59:6,10

60:18 64:6 68:1 72:11

75:7 76:21 82:15 85:3

86:8 87:1 88:16 89:8

90:11 91:21 94:3

97:19 99:18 100:5

101:11 102:10 105:5

109:5 111:14 112:6

113:10 114:14 119:12

120:15 121:11,16,21

122:20 130:17 131:19

134:16 135:13 137:7

137:11 138:17 141:7

142:1,5,7 145:19

147:7 149:10 152:11

153:12 154:5,17,21

155:13 156:9 162:13

166:6 170:14 171:21

175:20 176:15 177:2

178:21 191:9 194:17

197:21 199:11 200:20

204:7,20 205:2,8

206:4 208:10 209:21

210:5,17 213:2

215:18 217:5,14,18

218:2,6,8 221:7 224:1

228:14 230:5,18

231:3,5 232:18

233:20 238:7 239:20

241:1 246:16 251:20

252:2 256:2,5,18

259:1 263:11 266:7

267:1,6 269:10 274:3

275:18 276:17 279:15

280:7 281:19 282:15

284:9 285:15 287:21

289:16 290:16 292:22

293:15 294:22 296:20

297:3,6,8,14 298:2,6

298:13,18 299:8

300:17 306:14 307:9

307:15 308:9,14,17

308:20 309:4,8,12,20

310:14,16 311:9

312:10,12,16,19

313:9,12,17,22 314:3

314:7,9,11,14 315:19

317:6,18 318:16

319:2,6,10 320:12,16

321:7

Goldwater/Full 3:12,14**good** 5:12 10:3 12:12

13:1 15:13,15 17:6

26:13 29:2 61:1,18,19

62:4 65:15,16,19 68:5

68:6 71:10 72:15 73:9

75:11 81:22 84:12

89:20,22 91:8 97:10

97:18 101:2 104:14

105:1,13 115:7 118:9

124:2 143:8 149:6
 151:14 152:7,17,21
 157:1 161:7 163:11
 166:2 170:17 173:3
 174:18 176:3 177:3
 182:22 211:16 215:3
 219:4 221:4,5 224:9
 227:7 236:20 238:5
 240:11,16 243:16
 250:5 259:18,21
 260:15 264:17 266:12
 274:11 275:4 280:15
 281:7 282:1,8 286:15
 287:20 288:18 289:10
 294:7,13,16 311:12
 312:2,6 314:15 315:3
good-quality 72:14
 74:6
goodness 309:7
Google 321:7
gosh 136:11 162:8
governance 172:22
 225:13 237:2,12
 238:4 312:3,13,15,22
 315:8,15 316:6
governing 174:21
government 42:14
 194:6 195:3 224:16
grabbed 271:7
gracious 123:21
graciously 25:8
grand 114:10 164:16
grants 8:11
granular 51:18 145:4
granularity 52:16
 149:14 173:8,11,16
 203:21 204:2 205:14
 264:10
grave 245:20
great 77:7 79:17 80:19
 97:21 107:14 110:20
 118:8 121:4 147:10
 161:6 181:17 196:17
 212:9 236:7 285:9
 308:18 311:11 314:7
 315:19,19
greatest 17:12
grew 99:8
grossly 93:1
ground 5:19 18:21 24:5
 25:17 187:12,15
 195:19 251:5
group 19:12 42:11 90:3
 106:14 108:11 109:3
 112:4 113:8 115:10
 115:12 147:6 155:1
 155:10 169:22 179:2
 181:15 182:15 206:6
 212:5 215:4 224:12

227:1 237:20 264:20
 266:2 272:14 273:14
 275:7 276:6 294:4,5
 318:7 319:22 320:1
grouped 260:6,16
grouper 102:4
groupers 231:16
grouping 48:11 111:22
 260:5,12,15
groups 16:4 108:11
 123:16 214:21 227:2
 237:19 250:21 274:13
 274:18
grow 62:10 320:11
guess 14:2 30:4 54:3
 68:9 73:10 77:7
 101:15 155:14,15
 160:14 207:6 214:19
 223:15 246:21 254:17
 258:4 263:15 273:10
 298:18
guesses 80:7
guessing 116:10
guidance 22:14,20 24:7
 24:22 56:15,16 57:2
 57:10 97:15 110:14
 116:13 161:18 184:8
 185:6,9 211:20
 243:21 247:11 260:10
 272:20
guide 11:22 22:7
guidelines 31:15,17
 32:9 33:19 74:5 207:6
gum 247:10
guys 122:18 136:12
 156:7

H

half 16:16 17:5 122:4
 192:6,9 200:15 304:9
Hamilton 1:13 13:11
Hammersmith 2:6 5:16
 7:9 13:22
hand 72:20 111:5
handed 190:5
handle 247:18
handled 247:2
hands 9:12 144:13
 182:4 279:17
handy 162:18 165:1,8
Hangout 321:7
happen 55:16 72:19
 118:13 149:1 151:12
 165:20 221:16 249:1
 249:6 281:10 320:9
happened 31:12 86:22
 228:6
happening 117:3 197:7

happens 26:20 37:18
 143:4 315:18
happy 18:4 67:14
 140:21 177:15 178:13
 239:12,12
hard 28:22,22 190:18
 238:19 286:6,7
 298:16
harder 189:12
harken 181:15
harm 250:22
harmonizable 180:18
harmonization 1:3 3:6
 3:10,12,14 4:19 6:1,3
 6:9,11 7:14 10:17
 11:8 16:5 17:4 19:13
 22:9,15 23:3 24:3,9
 24:18 30:8 31:6 34:18
 35:12 36:2 44:11,15
 53:3 61:16 62:3 63:19
 65:1 71:16 75:1 80:6
 80:18 82:14 92:22
 96:8 106:16 107:3,18
 107:20 115:21 118:18
 123:6,15 137:15
 158:15 159:8,22
 196:9 197:7 199:10
 201:13 203:18 207:4
 208:8 221:6,16 228:6
 242:9,17 251:7,18
 253:5,18 254:11
 260:2 261:20,22
 267:18,20 273:15,18
 281:17 299:12,17
 300:11 301:22 302:7
 302:14 315:12
harmonizations 72:17
 303:6
harmonize 23:9 38:10
 45:6 51:16 52:9 66:10
 82:13 98:15 99:15
 103:3,13 115:8,14
 170:2 182:9 187:6
 208:13 210:20 229:18
 275:9 282:10 302:6
 303:17
harmonized 22:17 24:6
 64:1 65:20 80:9 98:18
 99:17 103:11 106:4
 115:9,15 127:12
 129:3 143:11 158:18
 158:20 169:1,10,13
 208:17 225:16 239:17
harmonizing 97:1,13
 98:1 105:10 146:13
 158:14 168:6 208:15
 217:15 218:7,9
 222:16 240:3 246:3
 251:9 295:10

harmony 51:14
harping 247:20
harsh 256:8
hat 161:21 162:6
hate 66:16 320:14
hats 155:5 161:20
havoc 117:18 119:11
HCFA 15:14
head 66:3
health 1:16,20,21 2:18
 2:18,21,22 9:21,22
 10:12,13,15 12:6,14
 12:14,18 13:16 15:9
 16:20 17:1 21:18,18
 21:20
healthcare 21:9
hear 109:2 117:2 155:1
 157:11 244:14 250:11
heard 4:9 85:7 103:6
 152:16 156:19 250:6
 321:22
hearing 89:20 204:7
 250:18
hearsay 191:16 192:19
heavens 209:5
heck 79:17 191:12
 261:6
Helen 2:3 29:2 94:3
 97:19 108:7
Helen's 107:16 181:15
Hello 12:17
help 7:8 14:6 22:7
 25:10,14 26:9 32:19
 35:14 56:22 74:17
 78:13 100:15 148:18
 160:8 226:3 251:1
 304:12
helped 235:16
helpful 57:3,6 105:21
 113:9 250:11 282:4
 284:5 317:2
helping 11:7
hemorrhagic 39:19
Heras 1:16 11:19,19
 45:16 47:7,8 109:5,6
 232:18,20 236:22
 284:9,11
heterogeneous 274:18
 275:6
hey 117:8 118:20
HHS 42:9 43:3 57:1
 66:22
Hi 9:20 16:12,21 18:9
Hibay 2:7 17:6,7 145:20
 146:21 178:22 236:5
hidden 85:8
Hiding 75:12
hierarchal 301:5
hierarchical 170:22

290:12 304:20
hierarchies 271:14
 280:19
hierarchy 117:12 248:4
 271:19 287:2 294:17
 304:21
high 71:15 86:21 108:9
 113:17 119:3 126:14
 126:14 127:8 134:14
 160:14 173:6,10
 176:1 180:16 196:16
 197:1 212:20 219:13
 226:17,19 231:18
high-quality 62:22 63:1
 63:3,6 108:13
high-value 108:9
higher 52:1 147:3
 151:20 203:20 240:19
highlight 81:11 116:2
 191:1 305:21
highlighted 142:19
highlighting 120:19
highlights 22:5 159:14
highly 137:2 192:15
 253:10 321:14 322:2
HIPAA 15:10
historical 82:5 164:5
 208:13 209:9 235:2
 235:11
history 42:21 46:18
 74:21 141:8 143:15
 143:18 146:4 169:5
hit 13:6,8 17:3 42:19
 177:22 283:20
hits 28:10,10
HITSP 34:3 84:11 85:1
 85:5 135:15
HL-7 11:15,16
HL7 16:4
hobby 76:9
Hofner 1:16 12:17,18
hold 26:3 182:4 309:13
holding 311:11
home 26:4 36:4 38:12
 99:5
honest 79:4
honestly 26:6 116:18
 116:22 161:6,13
 187:18 306:11 310:10
hook 104:4
hope 95:22 99:13
 113:13 114:4 131:22
 189:4 244:18 265:21
 285:11 313:1,4
hopefully 4:7,14 24:13
 79:13 107:20 135:8
 145:6 162:20 172:6
 201:9 232:1 298:10
 306:10

hoping 67:20 134:8
Hopkins 1:14 10:13,14
 278:3
horizontally 52:10
horrible 138:19
horse 76:9
hospital 12:2 53:15
 99:5 124:11 127:14
 249:19
hospitals 167:15 250:1
hour 200:15 252:4
 266:9
hours 4:16 20:13 65:6
 128:3 155:20,20
 209:11
house 11:12
Howard 1:13 5:2 13:14
 61:5 77:10 96:20
 147:9 152:13 274:4
 319:13
Howard's 60:20 105:8
 279:22
huge 34:4 73:22 74:17
 92:14 209:11 239:8
 265:18 276:9
human 2:18,22 75:22
 100:6
Humphrey 1:17 10:8,8
 15:22 101:12
hurdles 262:16
hypothetical 276:20

I

i.e 117:14,22 159:10
 185:8 187:5 190:14
 190:21 216:20
ICD 10:16 17:19 35:20
 37:3 47:20 50:6 52:11
 53:9 64:15 69:7,11
 117:14
ICD-10 12:11 33:8 34:2
 34:9 46:16,20 50:14
 50:15,16 51:7 53:21
 64:18 111:8
ICD-11 10:15 50:3,4,17
ICD-9 17:20 33:8 34:2,9
 41:10 46:1,16,20,21
 47:20 48:4 51:13,22
 53:10 55:3 111:8
ICDs 125:17,20
idea 39:21 40:10 61:6,9
 65:8 70:7 77:21 78:4
 78:5,17 80:3,17 96:17
 98:20 101:2 108:6
 112:10 141:8 143:3
 159:19 160:6 177:17
 183:9 196:16 215:3
 218:22 225:18 231:15
 232:14 243:3,8

244:12,13 245:12
 262:21 271:10 286:11
 289:1 294:16 299:5
 301:13 310:12 315:1
 321:9
ideal 40:7 148:22 211:8
ideally 42:1 209:1
 277:11
ideas 99:14 157:1 166:8
 167:2 170:8 226:9
 255:3 266:12 268:2
 312:7
identical 37:7 128:14
identification 25:2
 187:20
identified 33:19,22
 81:18 95:17 313:20
identifier 216:13
identify 24:16 25:18
 26:8 32:21 35:14
 62:22 63:6,9 157:16
 193:21 216:10 221:1
 223:20 224:8 225:5
 262:10 268:11,14
 275:10
identifying 97:4 130:22
 156:22 158:17,19
 187:6 188:21
ignore 230:3 286:16,17
ignoring 115:10
Illinois 54:4
ills 90:10
illustrate 290:11
illustrated 84:6
illustrative 73:7
imagination 155:18
imagine 57:22 62:1
 161:13 165:19 237:7
immediate 247:18
immediately 33:12
 229:4 246:8
impact 23:21 44:10
 111:11,13 264:13
impacting 245:8
imperfect 135:21
 178:16,17
implement 48:13 53:8
 120:10 148:19 206:7
 206:12 217:9 225:21
implementation 11:22
 117:1 119:17,20
 139:9 140:11,19,22
 149:4 150:13 154:14
 199:19 248:19 249:2
 249:11 255:14 264:7
 277:17 284:16
implemented 15:12
 38:21 120:14 264:14
 289:19

implementer 74:14,17
 75:5 77:10 102:13
 117:8 277:18
implementers 57:8
 61:8 72:20 74:9 82:20
 83:2 88:20,22 89:3
 92:14 93:7 101:19
 106:17 108:12,20
 148:18 154:4 174:3
 225:21 284:5
implementing 255:18
 277:20
implication 164:4
implications 162:22
 233:19 304:20
implicit 37:11 53:3
imply 54:17
importance 207:12
 259:16
important 4:14 19:5,10
 19:21 25:21 31:21
 37:5 46:16 61:11
 67:13 75:1 80:14
 83:17 92:2 95:1 97:2
 97:9,11,13 116:4,14
 118:14,16 150:12
 157:12 184:1 187:14
 196:1 215:21 218:18
 219:5,15 242:16
 244:7 286:14 294:17
 296:10 300:21 315:11
importantly 305:2
impose 92:16
impossible 36:3 37:9
 291:1
impressed 212:13
improper 118:5
improve 21:8 38:2
improvement 1:19
 21:12,21 70:16
 105:21
in-person 318:19 319:3
inadequately 252:13
incentive 56:14 104:2
 107:2 167:14
incentives 103:4,5,9
incidentally 162:17
 194:12
include 38:13 73:18
 101:5 125:13 131:11
 139:8 214:13 215:1
 223:9 265:8 289:3
included 34:7 78:19
 100:19 176:8 223:19
includes 79:15 279:13
including 15:21 16:7
 108:11 126:7 154:4
 186:18
inclusion 100:14

202:13 203:1
inclusions 223:10
inclusive 302:13
incomplete 192:1 195:7
 283:20
inconsistencies 285:5
inconsistency 188:1
inconsistent 56:11
 192:15 225:4
incorporate 249:11
incorporated 247:14
incredible 169:2
incredibly 19:5
incredulity 86:19
incredulous 85:14
indefinitely 166:17
independent 11:20
 193:1,17 318:9
Index 125:4,8
Indexes 127:7
indicate 133:5
indicated 142:20
 173:18 222:18
indicates 126:14
indicating 127:8 142:18
indication 198:7
indications 164:14
individual 8:18 111:21
 112:4 138:12
individually 318:7
induced 181:6
industry 21:22 236:4
inevitable 166:9 208:16
inevitably 235:3
infinite 194:5
influenced 287:7
inform 96:1 134:10
 135:9 212:5 237:5
 295:18
informant 311:18
informaticists 64:20
Informatics 10:12
 13:15
information 9:22 10:13
 12:5 26:8 34:6 35:2
 63:16 69:9,18,22 70:4
 74:2 75:4,19 76:14,15
 76:19 78:18 83:17
 84:15 112:14 113:6
 116:15,19 131:7,12
 133:3 159:2,7 171:14
 176:10 186:7,13,14
 194:2 201:5 209:19
 255:16,19 256:22
 257:4 258:18 263:5
 265:15 282:14
informational 207:18
 232:8
informative 182:17,18

304:7 305:13 318:13
 321:15
informed 234:19
informing 253:1
ingredient 131:14
 149:20 220:5 287:16
 287:18
ingredients 139:8
 287:13,14
inherent 159:20 186:8
inhibitor 258:5
initial 59:2 69:4,4 85:21
 252:20 254:21
initially 34:3 70:7 85:16
 124:6 130:19 140:3
 180:7 291:3
initiates 28:13
injectable 129:7
innovative 181:16
 238:5
inpatient 39:6 202:11
input 25:1 106:6 136:20
 180:3
ins 19:9
inside 61:7 94:10
Instagram 321:10
instance 139:6 197:10
 265:4
instances 247:10
integrate 23:20
integrated 22:21 23:19
integration 22:12
intellectual 85:10,18
intend 107:9
intended 63:12 78:2
 82:8 235:4 277:7
intending 77:21 274:10
intensive 266:5
intent 31:18 56:12
 73:19 129:19 132:7
 183:16 202:7 204:11
 204:12,19,22 205:5
 205:11 215:9,16
 216:18,19 217:1
 220:20,22 221:3
 225:7,9 238:12,16,16
 239:1,1 254:13
 275:14 280:4 282:21
 289:13
intention 134:1 234:14
 236:20 240:11 262:1
 300:12
intentional 84:16,18
 135:15 168:17 169:7
 169:8 209:18 222:21
 228:21,22 229:8
 230:1,8,13,16,17
 231:22 232:15,21
 233:4,13,17 234:17

234:19 235:9 239:6
 239:13,16 241:12
 248:11,18,22 251:15
 251:16 252:21 253:1
 253:11,16 254:2
 257:21 261:19 262:2
 262:3,13 263:2,3
 265:10,14 269:6,17
 274:20,21 282:20
 283:10,13,15,19
 284:7,14,20 285:6
 288:21 289:7,11
 293:12 300:6 307:6
intentionally 284:1
interest 3:4 9:1 14:6
 122:1 143:16 166:3
 176:17 320:4,6
interested 8:10 9:2,5
 89:3 109:2 110:19
 113:6 143:15 155:9
 188:12
interesting 34:1 64:9
 65:4 73:3 92:8 126:19
 128:22 139:1,3,22
 140:13 155:1 169:20
 170:3 186:1 230:19
 230:20 234:18 282:10
 300:8
interests 5:18 7:17 9:3
interface 121:21
interfere 267:21
interference 46:2,5
interim 36:1 318:6
interject 64:7 86:9
intermediate 247:17
internal 18:2 225:1
internally 225:2 249:17
 315:22
internationally 270:13
interpret 75:4 154:10
interpretable 304:16
interpreted 57:15
interpreting 154:15
interrupt 141:16
intersect 189:6
interviews 311:19
intimately 17:19
intolerable 192:17
intractable 290:7
introduce 5:14 15:4
 28:18 37:19 66:15,17
 91:14 229:7
Introduction 3:2
introductions 3:3 5:14
 5:17 15:3
invariably 166:12
inventory 18:3
investigating 16:9
 127:20

investing 137:4
invite 57:17 316:20
invoke 113:19 208:21
 209:1
involve 36:19 66:1
 235:15
involved 8:1 11:6,7,16
 15:9 16:19 38:11 61:4
 107:17 111:22 169:21
 170:5 172:14 173:9
 173:20 179:18 215:15
 236:15 237:19 249:4
involvement 146:3
involves 12:1 113:18
irrelevant 164:6
isolated 264:1
isolation 93:10,17
 94:15,16 115:5
 264:18
issue 33:14,17 35:12
 50:20 58:21 61:5,8,15
 63:9 64:13 66:5 70:21
 71:3,6 91:3 93:19
 94:19,22 95:15 96:15
 107:17 115:2 118:11
 120:1 127:10 135:4
 140:6 159:1,10,14
 161:16 166:21 167:4
 167:4 172:2 173:8,19
 182:20 184:15,22
 185:16 199:22 204:13
 215:20 220:12 233:16
 238:10 239:6 241:4
 254:11 271:22 281:8
 286:20 296:14 301:22
 316:7
issues 3:6 5:7 6:1 7:3,7
 19:22 23:3 25:18
 29:22 34:18 47:9 49:1
 49:3 57:19 58:5 62:2
 62:3 64:9,11,22 65:7
 65:12 66:3 76:2 79:1
 82:17 83:1,2 85:18
 88:18,19 89:6 98:5
 102:20 115:11 117:1
 120:19,22 132:1
 149:13 155:5,11,15
 172:22 182:19 187:5
 197:7 199:15,18
 202:16 215:15 237:2
 237:9,12 244:8
 253:11 254:10 267:17
 287:20 288:7 290:7
 303:6 306:10 311:1
 313:20 315:20 316:18
it'll 228:8
IT-related 16:20
item 226:5,5 239:5
items 108:13 276:4

iterations 238:2
iterative 24:19 25:4
 238:19 262:8 283:1,8

J

Jaccard 125:3,8,12
 126:14 127:7 142:18
Jaguar 90:19
Jaguar's 91:2
January/February 28:3
Jason 2:5 3:8,12,14
 4:16 15:8 59:2 71:13
 237:8 251:6 261:18
JD 2:6
Jim 223:2
job 219:4 250:20 298:1
Joe 12:4 152:11
Johns 1:14
Joint 1:17 10:16 13:19
 128:13,20 129:21
 318:14
JOSEPH 1:19
journey 67:21
judgments 228:3
Julia 2:20 37:19,21 79:6
 105:6 123:20 251:21
 263:13 266:19 268:9
 274:3 275:19 281:19
 290:2 292:13 303:16
 304:3 309:9 312:20
 315:22
July 318:2
jump 283:18
jumping 271:11
June 318:2
justifiable 59:4 96:7
justification 138:7,9
 225:19
justify 56:3 108:15
 225:12

K

Kaiser 37:1 196:21
 197:3
Kathryn 2:9 3:19
Katie 5:8,11 7:9 16:11
 16:13 19:20 122:8
keep 8:14 18:19 20:10
 26:9 31:21 56:14 62:5
 70:18 79:19 177:17
 237:3,3 247:20 284:3
 284:13 302:14
keeping 153:8 239:3
kept 89:18 124:8
Kevin 2:16 66:16,19
 123:20 129:11 133:15
 154:18 156:5 316:1
key 29:9 67:12 239:16

311:18
kick 176:17
kicking 176:21
kidding 292:7,8 317:7,8
kind 28:2,14 40:9 42:6
 67:9 68:20 69:17 70:2
 70:9 71:3 72:8 78:18
 78:20 82:16 88:4,13
 91:12 93:3 98:9
 104:22 116:19 117:1
 117:11 118:14 120:5
 120:12 134:12 137:21
 137:22 145:5 147:5
 150:4 155:2,11
 157:10 158:7 159:2,7
 159:21 184:11 189:4
 192:9,14,17 195:16
 202:8 203:22 211:8,9
 211:20 212:14,19,20
 218:14 220:10 224:20
 226:2,5 228:4,22
 232:7 233:16 241:6
 242:15 261:10 271:10
 272:9,18 274:1
 282:14 286:19 288:14
 288:22 298:16 300:10
 300:19 301:7,17
 304:17 305:8 309:1
 315:15 321:11
kinds 134:13,14 155:10
 212:5 229:5 237:5
 260:9 277:8 304:20
 310:10
knew 141:9,11
know 4:4 8:7,8 9:11
 14:18 18:14 20:2,21
 20:22 21:1 22:3 25:11
 25:12 26:12,13 30:9
 30:10 31:12,20 33:15
 34:21 38:18 39:11
 40:5,6,22 41:10,15,19
 41:21 42:4 43:9 44:12
 45:19 47:1 48:4,7,9
 48:13,18,19,21 50:20
 53:20 56:13,20 57:9
 61:9,22 62:1,8,11,16
 64:17 66:20 67:18
 68:4,16 69:1 70:1,10
 70:20 71:6,19 72:13
 73:13,21 74:2 76:8,17
 78:18 79:4,5,19 80:7
 81:5 82:10 85:16,21
 87:5,17,19,22 88:20
 89:10,19 90:21 91:6
 92:12 93:2,15,18
 96:20 100:2,8,13,14
 100:17 101:2,4,4,7,8
 101:8,9 103:3,5,7,14
 103:17 104:3,10,13

104:18,20 109:14,16
 109:17,20,22 110:4,8
 110:9,11,13,14 111:2
 111:4,5,13,17 112:15
 114:19 116:20 117:14
 119:8 121:17 125:1
 129:12,21 131:20
 133:20 134:5,6,21
 135:5 136:11 137:20
 138:4,6,9,10,11,13,15
 138:16 139:10 142:15
 142:17,19,22 143:3
 144:6,16 146:12,15
 146:19 147:2,10,11
 148:2,5,8,13,17,21
 149:6 150:7,22
 151:13 152:14 154:8
 154:15 156:21 157:11
 159:4,15 161:7,15
 163:18 164:14,16,18
 165:8,12 166:8
 167:18 168:5 169:16
 169:21 171:2 172:3
 172:10,15 174:13
 177:11 178:11 179:15
 179:21 180:8,9,22
 181:9 182:1,7 183:22
 185:5,12,18 186:22
 188:3 189:17 190:17
 194:6,9 195:21 196:5
 196:8 197:1 200:3,21
 203:9 207:20,22
 208:22 211:11,13
 212:15 215:2 216:1
 216:10,17 217:12
 218:12 219:19 220:10
 220:14,17,18 221:5
 223:3 226:22 227:1
 227:14,17 228:1
 232:9,22 233:1,2,6,8
 233:14 234:21 235:22
 236:8 237:17,22
 238:1,2 240:1,3,11,16
 240:17,18 243:1,18
 244:9 247:8,9,12,20
 247:22 250:5 251:9
 254:10 255:2,6,15,20
 257:2 258:5,17
 259:15,21 261:18
 262:11,11 263:18
 264:10,11 265:14,21
 269:21,22 270:6
 271:2,7,10 272:1,8,21
 273:2 275:2,6 276:6
 277:13 278:2,4,22
 279:12 281:5,12,14
 284:1,12,14 285:14
 286:6 287:11,13
 289:9,10 294:3,9,19

295:18 296:6,11
 297:22 298:5 300:5,9
 300:21 301:3,6,15,16
 301:19 302:2 303:5
 304:9,10 306:7,16
 307:1 308:1,22 310:1
 310:10 311:2,6
 314:21 315:1 318:16
 320:22 321:8,21
knowing 34:18 126:19
 160:15 178:13 238:12
 249:19 275:6
knowledge 29:20 82:13
 139:2 146:3 159:9,19
 161:15 187:2 190:8
 190:12,12,14,15
 193:22 195:22 208:4
 315:7
known 80:16
knows 21:1 34:12 77:16
 163:7 276:3
Kumbaya 182:5

L

la 112:14
la-di-da-di-da 307:7
lab 69:15 156:4
labor 266:5
laboratory 49:11
 113:22 145:12
labs 290:20
lack 73:7 91:12,14 96:7
 122:12 139:4,20
 166:15 188:1 275:1
 305:8 316:5
lagging 178:5
land 204:1
landed 41:9
language 42:7 43:19
 53:16 58:3 68:13 76:1
 180:7,18
languages 58:1,4
Lantana 1:16 128:21
large 39:17 106:10,10
 155:17
largely 210:9
larger 115:19 164:17
 196:19 199:14 305:2
Larsen 2:16 66:19,19
 133:16 154:19,22
 156:6 211:6
lastly 6:12 74:8
late 29:11 140:8
latest 66:22
Laughter 50:19 131:18
 137:10 138:21 139:17
 142:4 197:4 217:21
 259:20

lay 143:1
layers 150:8
lead 5:16 29:19 75:19
 166:13 252:8
leading 11:21
learn 282:9 290:11,14
 291:5 298:8 304:15
 306:5
learned 41:3 306:9
 312:21
learning 321:8
leave 14:5 270:2 320:21
leaves 257:3 318:21
leaving 169:14
led 172:4
left 71:2
leftover 288:6
legacy 107:17 135:3
 140:6 143:2,5 167:18
 168:4 172:2 187:5
 208:14 209:12 213:11
 221:9,21 223:20
 226:4 228:16,17,18
 229:11,20 234:20
 235:2 238:10
lend 60:19
length 183:21
lens 99:7
lessons 162:19 291:18
 292:12
let's 9:14,18 26:11
 45:22 54:1 55:8 68:3
 121:11,18 156:12
 161:15 163:4,5
 165:10 172:10 173:5
 188:21 193:17 200:14
 200:20 205:3 228:16
 267:3 271:12 277:6
 278:5 279:7 283:14
 291:3 294:11,19
level 39:4 41:21 48:12
 49:18,19 52:1 55:15
 74:14 99:1 101:3,9
 104:11,12,15,16,19
 104:20 105:4 106:8
 110:13 111:21 112:1
 112:4,5 124:16 134:5
 137:18 146:2 149:21
 149:22 150:3,7 164:1
 173:13 198:7 203:21
 209:19 212:20 220:5
 223:1 230:2 231:18
 239:3 249:2,4,7,18
 277:19 301:14,15
 303:10
levels 104:9,19 105:2
 149:14
leverages 167:22
leveraging 29:20 167:6

Library 11:11
Lieberman 1:9,12 9:19
 9:20,21 25:7 31:22
 45:4 66:14 68:2,8
 71:19 87:1,2 102:11
 147:7,8 170:14,15
 175:20,21 209:22
 210:14 226:8 231:4
 231:13 257:6 288:10
 288:17 299:6,9 312:4
 312:11,14,18
Lieberman's 234:1
lies 49:10
life 26:15 113:1 218:13
light 45:9
like-minded 123:16
liked 243:2
likes 138:16
limit 250:19 266:20
 292:16
limitation 206:10
limitations 86:3 177:22
 178:14,17 179:12
 250:8,13,22
limited 32:4 88:7
 143:16
limiting 171:20
limits 38:10
Lindberg's 136:8
line 24:12 68:21 69:6,18
 98:10 99:15 141:10
 141:10 249:5 301:18
 317:13
lines 103:14 104:8
 105:7 107:11 119:15
 134:11 312:5
links 270:18
list 19:21 42:7 63:14
 70:5,8 86:21 119:21
 119:22 120:6,9 130:5
 130:6 131:4 147:18
 157:13 158:11 163:10
 165:6,9 188:11,16
 189:19 196:21 232:5
 238:22 243:14 250:13
 258:16 276:4,21
 278:1 284:13,15
 320:20 321:1
listed 27:12 128:17
 282:1
listened 256:10
listening 6:16
listing 259:4
lists 7:5 70:12 169:4,9
 188:10 260:21 278:7
 280:21 284:3,21
 289:12
literally 54:7 185:19
 240:9 241:12 295:19

litmus 211:21
little 22:6 32:18 43:15
 59:12 101:13 133:16
 155:14 158:3,4
 179:17 209:5 211:7
 235:13 239:22 244:20
 261:22 271:12,16
 274:6 276:12 294:12
 294:15
live 36:11 51:14 58:3
 96:6,10,11 222:8
 225:21 229:13 253:8
loading 78:20
local 46:8 48:14 55:11
 118:2
locally 60:11,12
log-in 7:5
logic 87:19 102:6
 113:20 114:19 115:13
 148:12,15 149:5
 154:9 277:16 279:12
 281:14 286:9
logical 102:1 118:4
 257:21 278:12,15
 283:4
logins 184:3
logistics 18:22
LOINC 49:12 71:22 72:5
 112:15 125:16
long 5:1 7:19 11:15
 16:2 17:10 35:22 93:1
 98:4 119:19,22 120:9
 141:14 153:16 185:17
 216:18,22 230:9
 261:3,14,16 270:12
 294:14
longer 153:8 175:10
 290:6
longest 195:3
look 14:5 40:8 47:13
 64:4 74:6,18 82:10
 93:21 94:1,8,9,9
 98:19 104:7,17 106:7
 113:21,22 114:1,1,2
 115:8 122:14 124:3
 125:17 134:11 138:11
 141:17,21 142:17
 144:3 146:6 147:16
 147:18,21 152:8
 155:4 158:20 159:13
 163:15 172:2 174:22
 175:22 179:8,13
 180:22,22 181:4,4,5
 181:18 188:18 202:5
 210:8 214:2,5,7,14
 230:22 231:16 234:5
 236:12 237:14,16
 239:21 248:20 253:16
 254:6 260:20 272:4

273:3 289:5,20
 292:17 299:2 300:13
 302:2,17 303:12,17
 303:19 304:11 305:6
 310:16 316:4 317:3
looked 28:11 41:6
 122:13 123:13,15
 125:11,15,20 126:21
 127:13 147:11 255:9
looking 6:3 7:22 22:14
 29:15 47:11 68:15
 71:20 80:16 94:17
 98:21 126:3 130:12
 147:17 166:19 167:7
 177:15 187:4,7
 189:16 196:7 198:15
 207:3,6 210:12 212:6
 231:10 237:20 251:11
 251:13,16 254:15
 258:21 266:8 269:5
 275:20 277:21 278:10
 299:11,15,16 300:2
 301:22 303:14 311:19
looks 73:9 95:6 215:3
 227:15 258:16 266:9
lose 69:17 239:15 268:2
loses 69:5
lost 157:10
lot 4:22 5:7 15:16,19
 16:5,6 19:9,22 20:11
 20:12,22 26:12 33:7
 45:5 55:22 57:7 62:8
 65:2 79:18 85:20
 96:22 100:16 103:5
 109:8,11,15 113:20
 116:3 130:16 138:8
 143:2,6 145:16,17
 155:19 157:9 159:5
 191:12 197:6 230:14
 236:7,20 237:9
 241:10,21 248:5
 250:1 251:5 255:3
 260:18 266:12 268:3
 292:11 297:20 303:3
 304:15 306:5,13
 308:19
lots 17:14 67:18 94:12
 103:20 133:21 137:1
 194:14 258:7
love 87:5 180:11
low-loan 97:1
lower 141:1 203:21
lunch 6:9,21 7:1 121:2
 166:5 200:2,4

M

MA 2:5 3:8
ma'am 317:14

- machinable** 304:17
machine 72:16 101:20
machine-readable
 101:17 102:14
made-up 81:21
madness 90:5 174:14
mail 320:21
mailing 320:20 321:1
main 6:19
maintain 19:21 87:9
 102:21 103:21 104:4
 144:18 176:13 249:18
 258:21 312:9
maintained 104:5,11
 145:2 177:7,11
maintaining 103:16
 239:17
maintenance 112:20
 113:3 141:2 184:14
 240:16
major 29:22 47:8 49:1,3
 51:3 57:19 107:20
 126:6 127:1,4,5,6
 142:14,15 192:11
making 20:9 83:16
 90:20 143:4 157:22
 165:6 174:14 179:19
 184:18 187:15 228:2
 243:16 265:9 271:20
 282:19 296:7
man 322:1
manage 71:7 87:10
 249:21
manageable 71:3
Management 12:9
Manager 2:9 5:9 10:9
 16:13
mandated 23:7
manipulations 281:1
manipulators 190:13
 190:13
manner 14:11 32:2
 68:22
manual 15:20 48:5
 102:15 127:13 137:17
 275:10
manually 35:16 124:19
manufacturers 90:19
manufacturing 89:10
 89:11,12 90:18
map 7:15 48:14 59:12
 118:6 231:1,11
mapping 36:19 37:13
 39:20 46:6 48:1,3,5,6
 48:12 49:11 55:4,11
 56:2,4,8,11,18,19
 102:15,18 117:12
 118:3,10,13,13
 133:12
- mappings** 37:10 49:15
 56:6 74:21 119:4
Marcia 2:10 18:8,9,14
Marjorie 1:18 13:2
 41:18 73:15 94:7 99:9
 105:9 135:16 233:21
 239:8 253:3,19
 254:21 263:12 295:1
 300:17
market 229:3
marry 263:7
MARTIN 139:11,14,18
Martins 1:17 13:18,18
 33:18 45:15,17 46:3,6
 49:4 72:11,12 83:13
 83:14 102:10 105:5,7
 112:6,9 138:17,18,22
 168:10,15 177:19
 194:18 196:2 197:5
 204:13 207:8,9 217:7
 221:7,8 224:5 230:6
 238:7,8 261:17 265:4
 282:17 302:20 308:16
 308:18,21 309:7
 318:12,17 319:5,9
Maryland 304:2,2
Maserati 90:20
massive 253:20
match 270:18 302:8
matches 262:3
material 78:20
math 216:9
Mathematica 1:15 11:1
Matt 1:17 10:8 15:22
 101:11 111:14
Matt's 105:9
matter 7:19 8:3,13,15
 9:7 11:6 49:11 121:8
 143:17,18 190:1
 193:11 200:17 238:13
 248:20 322:11
matters 121:20
maturation 41:7
matured 80:22
maturing 284:6
Mavericks 121:17
MBA 1:15,19 2:10
McCLURE 1:18 11:5,5
 44:4,5 60:18,19 65:14
 76:21,22 79:16 83:7
 86:8,11 94:4,5 113:11
 114:14,15 141:14
 142:2,6,7 156:10,11
 167:10 174:12,17
 182:17 191:10 194:17
 194:19 197:22 204:14
 215:18,19 217:6,11
 217:16,19,22 218:4,7
 218:11 241:1,2
 247:19 248:14 254:1
 256:15 259:1,2 270:9
 273:22 280:7,8
 284:10 285:15,17
 293:16 295:1,2
 305:16 307:1,10
 309:11,13,21 310:15
 314:16,17 316:19
 320:12,13,18
McClure's 133:11
 237:20 256:9 317:3
MD 1:12,12,13,13,14,18
 1:18,19 2:3,16,20
mean 7:16 8:4 9:12
 56:20 57:15 60:1,12
 61:19 63:12,21 64:14
 67:6 68:10,13 69:20
 76:6 77:3 81:17 86:18
 100:11 102:12,16
 115:6 138:6,19
 140:10 141:8 147:15
 152:3 154:12 156:6
 161:4,8,12 163:12
 176:4,9 177:2 178:2
 184:6 188:3 193:15
 195:12 208:15 210:1
 218:11 219:18 223:6
 226:2 228:17 229:11
 235:8 236:3 240:9,20
 241:16 243:4 244:1
 256:6,7,13 257:9
 265:3,11 269:19
 274:21 277:22 278:20
 280:9 282:22 285:9
 288:12,13 291:11
 292:5,13,15 293:4,5
 296:5 298:12 299:6
 299:15 301:19,21,22
 305:7 312:5 313:4
 315:8
meaning 61:6 71:21
 77:8 78:9 83:8 207:17
 216:21 289:8 313:9
meaningful 2:16 12:19
 17:14,16,18 30:16
 31:6 32:6,9,21 38:22
 42:22 43:12 50:10
 51:5 100:1 105:22
 123:19 124:1 307:22
 308:11 311:5 313:15
meaningless 293:14
 304:4
means 14:7 63:5 93:21
 111:21 176:21 183:2
 188:2 216:12 222:13
 223:10 272:22 273:3
 285:20 296:2 305:21
meant 74:12 82:5
 144:20,21 151:16
 163:21
measure 10:19 11:3
 12:21 13:3,11 18:11
 18:11,12 23:5,21 24:5
 31:16 34:15,22 40:17
 47:10 48:4,17 58:7,8
 58:15,16 61:7 66:21
 71:4 74:18 79:15
 88:12 91:5,11,19 97:3
 97:15 98:2 99:10,21
 100:9 101:18,22
 102:5,14,19,22
 103:2,7,10 104:17
 107:10,22 108:13
 111:13 115:16,21
 116:9,18,21 126:1
 131:8 132:3,5 133:12
 133:13 136:3,5
 144:19 145:22 146:8
 146:14,21 147:16
 149:1 151:10,22
 171:6,11,11,16 176:4
 177:12 179:18 180:4
 180:10,19 181:3
 182:2,8 197:20 202:7
 202:8 203:3,20 204:9
 204:10,12,22 205:5,6
 205:10,11 206:11,12
 209:15,16 210:15
 211:16,17,22 212:1
 212:16,17,22,22
 213:6 214:1 215:2,8,9
 215:10,16,17 225:1
 226:11 227:10 228:5
 233:10 235:4,7,15
 242:5 246:21 251:12
 255:10,10 258:20
 263:18 264:9 268:8
 268:11 269:2 276:14
 276:16 278:11 280:4
 285:4 286:13 288:11
 288:12 292:10,18
 298:21 299:1,2
 301:14 303:17,18
 304:4 305:3,5,10
 309:16,17 310:1,2,9
 314:4 315:6
measure's 302:6
measure-authoring
 88:9
measurement 2:11
 10:5 16:14 17:11
 21:21 67:20 87:10
 88:13 98:22 134:12
measures 10:21 11:9
 13:3 15:21 16:18
 17:15,16,18 18:1,3
 22:12 23:1 24:7,16
 31:19 32:8,22 33:4

- 45:22 46:18,19,20
47:4,11,22 52:19,20
56:12 58:11,22 61:10
61:14 67:5,12,17 73:4
86:5 88:9 93:14,16
94:15 97:3 98:1,15
99:3,16 101:16 103:3
108:5 110:21 111:1,3
123:18,19 124:1,9,11
124:19 125:7,8 126:2
127:14,16,21 128:6
128:10,16,21 131:1
131:15 132:8,12,14
134:14,15 135:6
150:9 151:6 155:3,12
167:5 170:19 171:4
176:18,19,21 177:6,6
177:9,10 179:4,6,14
181:21 182:3 196:7
196:10,18 198:13
200:7,12,13 201:9,15
201:15 202:6,9 205:4
207:8 208:1 210:10
210:11 211:3 212:7,8
213:11,18 215:5
216:3,8 218:10 225:3
226:13 230:22 231:16
234:5,7,14 235:22
236:2,10 237:15,17
237:17 251:11 252:7
253:3 255:5,6,9
263:14,16 268:10
274:12,18 275:8
276:10 282:12 286:10
289:5,6 291:4,5,12
292:9,19 293:5,10
298:20 299:14 302:8
302:18 303:2,13,16
304:6,10 305:4
307:21 308:3,4,8,11
308:22 309:18 310:9
310:11 311:2,5 313:8
313:13,14,16
measuring 21:14 88:11
146:8 147:4
meat 307:13
mechanisms 121:1
312:3
mechanistic 273:19
314:22
mechanized 276:12
med 232:1
median 177:15
medical 2:16,20 12:5
12:10 37:22 257:22
269:9,9,11
medication 30:17 101:6
120:2,4 131:5 147:10
147:12 149:15 172:11
202:20 203:14 210:13
210:20 231:16 253:11
269:4 275:22 285:8,9
286:16 292:18 298:8
306:11 307:12 309:2
medications 128:7
130:5,6 149:12 156:1
156:16 158:2 167:7
185:14 186:21 191:3
195:10,11 197:16
200:1 201:13 202:2
203:8 205:7 206:13
207:3,5 210:7 214:2
215:5 217:15 218:9
218:16,18 219:2
231:1,10 245:21
246:5 247:22 252:20
253:2 254:5 256:20
263:16 265:7,18,20
266:3 268:18,19
269:18 271:8 274:9
275:21 282:7 285:13
286:6 288:14 291:4
292:11,16 293:5,9,19
295:4,5 296:1 298:22
299:19,20,21 301:15
303:18,19 304:11,11
305:18 306:4,19
308:5,12 309:1
310:19 316:2 317:1
medicine 11:11 18:2
137:14 232:21
Medisolv 10:4
medium 173:7 178:13
239:12,12
meds 266:6 289:5
meet 35:6 73:18 147:13
171:9 215:15 227:6,7
238:15,16 275:12
316:12
meeting 5:20 6:14 7:11
7:14 9:5 14:9 19:15
19:18 20:3,4,19 24:11
24:13 75:17 122:6
139:16 211:7 303:1
318:3,20,22 319:3
321:20
meetings 20:1 157:10
meets 78:6 226:16
257:19 276:15 282:20
member 10:8,11,18,22
11:5,19 12:4,12,17
13:1,9,14,18 30:2
31:8 32:7 33:18 35:18
40:3,15,16,22 41:2
42:18,19 44:5 45:17
46:3,6 47:8 49:2
50:20 53:7 57:14 59:8
59:11 60:19 71:13
72:12 75:8 76:22
79:16 83:14 85:4
86:11 89:9 90:12 92:1
93:8 94:5 99:19 100:6
101:12 105:7 109:6
112:9 113:12 114:15
121:15,19 135:14
136:1 137:12 138:18
138:22 139:11,14,18
141:14 142:2,6
143:14 151:3 152:12
154:6 156:11 162:14
168:11,15 174:11
176:16 177:19 182:17
191:10 194:19 207:9
208:11 213:8,14
215:19 217:11,16,19
217:22 218:4,7,11
221:8 224:3,5,6
228:15 230:6 232:20
233:22 235:12 238:8
239:21 241:2 247:19
248:14 251:4 259:2
260:22 261:17 264:22
265:4 269:8,13 270:9
273:21,22 276:19
277:3 278:8,14 280:8
282:17 284:11 285:17
289:17 292:20 293:2
293:6,11,17 295:2
300:18 301:17 302:20
304:1 305:16 306:16
307:1,2,10 308:16,18
308:21 309:7,11,13
309:21 310:15 313:7
313:10,13,18 314:1,4
314:8,10,12,17
318:12,17 319:5,9
320:5,13,18
members 6:15,15,15
14:3,10 20:17 63:16
280:3
membership 21:17
mention 39:2 241:3
mentioned 15:7 71:19
74:21 85:21 116:3
135:14 243:2 259:8
263:14 265:1 316:19
321:22
mentioning 245:5
menu 108:13 279:6,11
mere 37:2
merely 42:7
MeSH 271:3 289:18
message 298:17
met 1:8 32:20 280:3
meta 75:12 79:10,15
83:4 86:1 100:13
metadata 151:1 243:1
259:6 295:13 311:21
314:20 316:4
method 69:2 125:2
methodology 26:2
123:10 166:20 167:22
201:8
methods 25:19
metric 36:16,22 37:2,6
37:8,14,15 49:6,14
163:15 277:7 278:6
278:21 279:10
metrics 30:11 36:17
50:14 51:1,7 114:8
229:10,22
MHA 1:21 2:8
mic 122:19 252:1
263:10 267:5 271:7
308:6,13 317:5
Michael 1:9,12 29:19
285:16 311:15 318:8
micro 49:19 67:1
micro-education 75:17
micro-specify 269:14
microphone 20:4
mid-implementation
237:22
middle 317:20
midnight 27:21
midstream 237:22
Mike 9:20 209:21
261:21
Mike's 107:2
mildly 35:22
mile 307:3,5
milestones 24:12
mind 31:21 101:22
107:18 117:17 142:6
177:17 206:20 208:20
209:5 211:9 217:7
218:22 256:4 307:20
mine 95:7 99:22 139:12
229:15 264:22
minefield 290:7
mining 221:5
minor 294:12
minus 164:19
minute 45:22
minutes 64:8 68:3
122:3 200:16 268:21
288:8
mis 72:16
miserably 256:7
mismatch 48:19
mismatches 262:10
missed 30:5
missing 24:4 79:9
129:5,8 130:8,16
131:14 162:9 214:6
302:4

mission 21:8
misstate 160:11
misstep 169:18
mistake 240:11 281:11
misunderstood 213:16
mixed 300:5
MLM 205:22
modality 37:4
model 32:14 75:20 76:6
 76:14,15,19 115:16
 301:8
models 76:8
moderately 219:8
modicum 166:4
modifications 43:18
moment 165:11 207:6
 279:7 291:9
moments 4:21 15:4
 18:7,17 22:2
monetary 9:3
money 9:11 190:7
mono-hierarchy 192:12
month 66:12 98:20
 291:13
months 79:18 98:20
 125:10
morning 4:22 5:13 10:3
 12:12 13:1 17:6 29:2
 201:1,6 224:8 237:9
 290:1,19
mortals 37:2
mother 29:12
mouth 235:13
mouthful 28:19
move 19:19 47:3 57:18
 66:4 68:10,21 69:5
 71:21 75:9 91:13
 155:14 178:15 209:20
 220:11 223:11 227:19
 230:10 289:3 306:6
movement 283:10
moving 52:20 90:13
 98:21,22 107:21
 133:7 178:20 193:21
 198:3 207:14 239:4
MPA 2:5 3:8
MPH 2:3,20
MSHA 1:20
MU 99:10
MU2 236:10 237:15
 308:4
mud 115:20
multiple 38:11 59:20
 112:1 114:3 141:3,4
 150:7 177:21 191:21
 219:11 274:8 289:21
 310:8,9,10,11
mundane 300:10
murky 275:5

N
N.W 1:9
naive 30:9 224:18
naivety 85:9
name 4:16 9:15 11:19
 12:17 13:9 15:7 75:22
 77:18,19 139:6
 223:18 259:17 261:3
 261:9,11,12,15
 294:14
name's 261:14
named 63:10,11
names 17:9 131:5
 261:2
naming 259:18 260:1
 260:17
Nancy 1:21 12:13
 145:10
narrow 54:3 59:22
 151:11 203:17
narrowed 199:22
nasty 165:5
national 1:1,8,20 2:17
 2:21 4:12,18 10:19
 11:10 16:14 21:5,11
 21:13,15 25:22
 155:11 211:18
nationally 60:3 167:13
natural 90:21
naturally 108:2
nature 9:3 87:20 283:8
NCQA 10:19
NDC 30:18
NDF 30:19 190:21
 278:21
NDF-RT 136:15 186:6,8
 188:8 191:21 192:6
 192:11 193:4 231:12
 232:1 258:6 270:19
nebulous 43:15
necessarily 36:12
 43:18 63:4,12 64:20
 67:6 81:9 90:1 108:8
 148:1 170:12 229:11
 251:9 283:11
necessary 39:7,15
 60:17 75:4 78:21
 101:10 153:19 159:8
 234:10
necessity 108:4
need 19:3,11 20:15
 35:1 45:11,11 47:16
 47:20 52:18 53:5 55:2
 58:2 63:18 66:9 68:20
 69:14 71:9,15 72:19
 73:15 75:2 81:12
 83:14 88:13,20 91:12
 91:13 94:13 96:9

98:10 100:2,3 104:14
 104:20 105:11,14
 106:17 107:6,7,20
 108:16 117:5 134:15
 134:18 140:14 148:1
 148:6,9 150:20 152:2
 153:22 156:20 157:19
 158:8 161:22 168:17
 171:17 172:4,9 176:4
 178:12,18 179:13
 181:4,5 187:14 191:7
 193:9 195:15,18
 198:9 200:5 201:7,18
 205:20 206:16 207:16
 210:3 211:4 219:2,3
 220:10,18,19 222:6
 222:18 223:21 224:8
 224:14 226:15,17,18
 227:15 229:1 235:15
 235:18 237:10 241:5
 242:3,8,11 243:16
 246:20 247:3,14,18
 247:18 252:15 257:5
 257:10 260:3,10
 261:5 264:15,19
 268:12,21 272:20
 274:4 275:5,10
 277:16 279:12 281:13
 281:15 282:13 283:5
 284:15 285:18,21
 287:4 288:3,4 291:18
 292:8,10 294:7 295:6
 301:12 306:12 307:12
 312:7 319:7 320:7
needed 39:16 52:15,16
 55:16 65:4 105:10
 108:22 149:15,20
 151:8 188:15 199:13
 230:3 239:2 246:13
 247:6
needs 47:15 60:1 77:15
 83:19 84:2 99:22
 111:20 115:15 120:7
 127:11 143:8,11
 147:13 150:21 154:1
 157:7 168:9 169:3
 171:9 187:15 191:17
 192:20 193:6,8
 194:14 198:12 212:20
 213:22 214:4 215:17
 224:13 226:16 227:6
 227:7 247:11 248:22
 249:1,6 275:12
 295:11
negate 173:15,17
negated 150:1
negation 39:12 149:17
 149:19
nesting 92:4

never 31:5 100:21
 113:2 140:2,9,18
 142:6 162:14
nevertheless 92:17
new 26:17,22 28:16
 29:6,7 40:10 45:8,12
 64:14 83:22 90:6
 105:12 108:16,19
 120:3 126:8 132:18
 135:6,6 143:4 146:13
 154:9 158:22 160:2
 168:19 172:8 174:15
 178:2 181:19 192:22
 201:15 207:7,14
 208:15,22 209:4,6,7
 209:13 211:22 213:5
 213:5,6,9,14 214:8
 216:12,13,13,16,17
 217:9,12 218:4,5,9
 221:12,18 222:1,15
 222:17 223:16,22
 225:12,18,18 226:6
 226:11 228:4,20
 229:2,8,15 230:11,16
 237:16 247:16 253:19
 270:10 314:6
newly-submitted 23:12
news 270:5
NextGen 1:16 12:18
nice 17:8 49:2 186:9
 227:18 265:19
night 321:22
nightmarish 4:9
nilly 216:21
nine 125:10
NLM 25:22 26:18 32:19
 77:16 113:5 125:15
 136:20 137:3 144:17
 145:2 150:16 161:19
 161:20 162:1,6
 164:18 165:2,7,14
 166:10 185:20 190:4
 190:4,9,11 194:1,4
 317:2
NLM's 195:21
noble 65:8
nobody's 261:16
noise 73:21
nomenclatures 270:2
nominated 8:21
non 81:9
non-harmonization
 73:2
non-issue 238:21
non-legacy 228:17
non-overlapping 30:13
non-proprietary 219:9
non-reusable 81:8,10
non-value 212:21

nonprofit 21:6
North 12:5
note 25:6 125:18
noted 18:14 86:19
noting 216:1
notion 35:21 261:19
notions 305:7
November 313:1
 316:12,15 318:3,21
novice 146:14
novo 199:3 202:1
NQF 2:1 3:8 6:15 14:15
 14:16 15:9 16:22 17:1
 17:8 20:3,22 21:2,4,7
 22:8 25:15 50:11,14
 67:5,14,19 76:11
 134:13 165:12 166:14
 193:11 194:8 211:15
 211:21 252:8 259:8
 268:15 293:20 311:14
NQM 132:15
nuance 182:13 314:17
nuanced 97:8 155:6,8
nuances 280:11 296:10
number 33:3 46:8 81:6
 106:10,11 108:11
 120:19 179:1 206:21
 245:16 250:6 274:12
 282:2 304:9,10 305:2
 317:16 318:14
numbers 209:11
numerating 260:6
numerator 202:13
 203:1
nurse 223:5 249:16
nurses 57:9
nursing 99:5
nurture 320:10
nuts 306:20 310:21
nutshell 254:1

O

object 50:16 292:13,14
objectives 19:15,18
observations 129:1
obsession 49:18
obvious 30:15 209:4,10
obviously 44:10 78:8
 118:7 135:8 136:20
 172:21 205:16 213:18
 247:2 248:21 274:7
 285:20
occasionally 218:19
occasions 258:7,8
 269:2
occur 117:2 262:1
 281:17
occurred 149:17 310:7

occurring 150:5 172:7
 172:21
ocean 303:9
October 318:2
odds 80:17
offer 22:20 226:2
offering 213:10
Office 2:17,20 15:16
 25:22
Officer 2:4,20 9:22
 10:14 12:5 28:17 29:3
 37:22
official 58:1
Offline 309:8
oh 14:17 18:8 109:19
 112:18 113:19 121:16
 121:19 139:14 142:2
 163:21 188:19 213:13
 239:6,18 259:15
 261:14 267:12 272:4
 309:7 322:4
OHSU 9:22
OID 124:14
OIDs 128:18
okay 4:3 13:22 14:2,3
 15:1,2 18:6 26:17
 29:17 92:21 94:3,4,5
 96:18 105:5 119:7,12
 120:15 121:11 131:17
 147:19 154:18 158:1
 163:21 180:16 181:3
 188:19 203:17 205:4
 205:8 209:14 213:13
 213:15,15 238:6
 246:11 252:2 261:15
 263:11 268:10 272:3
 278:8 279:5,15
 296:20 299:8 305:7
 307:9,15 308:20
 309:8 310:16 312:15
 313:22 315:19 317:6
 317:8,9 318:17 319:5
 319:9
old 12:7 15:15 29:12
 165:5 212:1 214:7
 226:4,12,12 228:18
 229:2 294:7 321:9
Olivier 136:9,11,17
 165:8 186:3,3 191:18
 192:21 220:13
Olivier's 164:22
ONC 11:7 13:8 16:6
 37:21 41:15 42:9 43:3
 43:22 66:20 122:6
 125:14 317:2
once 27:9,17 28:10
 55:7,12 89:13 172:6
 172:18 177:9,9 196:5
 223:16 224:17 234:16
 244:6 245:5 252:17
 262:1 279:22 284:5
 318:4
one's 182:18 193:20
one-off 302:11
ones 65:13 82:21
 103:18 105:3 126:18
 131:3 141:18 148:14
 150:18 164:19 173:9
 201:10 205:7 213:5
 213:18 214:6,10
 219:20 236:1 243:18
 307:12 309:5 314:6
ongoing 34:7 184:14
 250:16 295:18
ontological 92:5
ontologies 249:18
ontology 35:19 50:1
ontology-based 40:20
 41:4,8
onus 176:12
oops 86:18
open 6:14 8:6 189:12
 255:20 297:19 317:11
 317:13
operates 21:8
operational 200:11
operations 5:10 221:6
operator 317:11,12,14
ophthalmic 148:14
ophthalmologic 164:12
 164:19 165:9 171:13
 279:14
opinion 169:18 221:4
opinions 270:15
opportunities 98:8
 123:15 158:17
opportunity 20:18
 62:17 74:4 181:17
 319:11,18
opposed 35:15 52:8
 71:4 126:1 143:8
 171:7 203:21 226:12
opposing 12:11
option 146:1
oral 276:21 277:7,15
order 21:12 32:20 69:15
 72:19 78:13 81:11
 82:3,7 89:16 90:6
 91:16 95:8 108:4
 127:4 144:10 158:4
 159:8 173:15,16
 188:9 189:16,18
 190:9 195:14,15,18
 220:11 242:8 244:9
 248:7 281:16
orderable 190:2
orderables 280:14
ordering 149:19 188:9

 189:2 203:13
ore 102:1
Oregon 9:22 190:1
organization 10:16
 21:7 27:3,4 59:17
 95:9 104:5,7 165:22
 193:12,22 225:12,14
 227:15
organizations 21:19
 31:2 36:22 37:2 41:6
 137:1,2
organize 226:20
orientation 22:3
original 46:20 71:10
 100:19 138:14 216:19
 217:1
originally 77:12 78:11
 78:15 107:22 121:22
 280:18 309:19 310:2
ought 90:2 144:5
 259:18 295:22 305:18
 314:19
out-of-scope 19:21
outcome 211:8 286:3
outcomes 52:20
outcry 34:4
output 212:4
outreach 21:16
outs 19:10
outset 70:16
outside 26:20 27:4
 28:13 80:16 109:12
 109:14 176:22
outsource 165:20
overall 23:21 42:9
 124:13 134:12,12
 171:15 204:21 250:9
 275:12
overarching 30:5 51:11
overhead 249:8
overlap 33:5,7,22 35:15
 35:21 36:1 39:4 46:7
 46:14 60:14 61:20
 65:22 93:15 94:12,20
 124:16 125:19 126:15
 127:9,11 128:1,8
 130:15 135:8 140:2,9
 142:18 143:12 220:17
 230:14 309:2
overlapping 22:13
 32:22 35:4 47:19 93:1
 160:1 168:2 197:8
overlaps 124:5
overlying 304:12
overload 88:14
overly 206:17
overnight 54:5
overridden 43:3
oversaw 18:2

oversee 18:11
overseeing 4:18
owner 152:20 180:2
 183:7
owners 79:11 153:1
 225:7,11
ownership 153:6 185:8
owns 94:22

P

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

4:1
p.m 200:18,19,21,22
 201:3 279:19 317:20
 317:20 318:22 319:1
 319:1,4 322:12
pacemaker 175:4
pacemakers 89:14,16
packed 18:18
page 321:11
pages 73:13
paid 9:8
pain 29:12 187:18
palatable 103:12
panel 3:10 24:15 206:5
 268:5 269:1 299:10
paper 48:4 123:8
paradigm 229:8,15
parallel 291:21
parallels 238:1
parent 124:15 126:16
 128:19
parental 129:10
parking 19:22 237:9
 268:3
parsimonious 30:13
 73:20 120:8
part 7:11 8:5 14:7 32:6
 33:18 34:10 38:13
 41:1 44:8 45:7 48:8
 54:20 55:9 62:20
 63:15,17 65:1 66:21
 68:10 87:5,22 93:13
 96:17 98:4 100:7
 104:6 110:18 118:10
 156:12 157:20,21
 160:21 162:7,10
 171:1 186:13 187:13
 195:8,8 196:1 199:12
 203:9 207:11 210:3
 211:5 212:16,18
 216:7 226:21 227:10
 227:18 231:14 241:16
 242:11,22 245:5
 246:2 257:16 259:16
 263:6 265:2,10 273:5
 280:6 281:15 282:19
 286:18 289:9 294:15
 300:11 312:12,13,15

313:2
partial 127:5,6 195:6
participate 161:14
 244:10 321:5
participated 16:4
participating 12:1
 67:22
particular 4:10 33:7,14
 65:18,20 111:3
 117:19 118:17 128:12
 132:8 136:2 156:15
 185:4 187:21 245:6,7
 262:6 275:22 286:8
 295:9 296:4
particularly 8:10 33:4
 33:16 38:9 61:8 65:13
 95:1 115:7 117:21
 119:6 128:6 183:11
 184:7 188:3 269:17
 304:6 315:11
parties 137:8
Partners 1:18
partnerships 21:12
parts 77:1 122:3 226:10
party 104:12 136:8
 191:19 192:21 195:2
pass 56:14 60:7 114:12
passionate 40:19
password 7:6
path 41:7 42:12 164:21
 207:14 213:5,9
 221:12 223:16 253:19
 280:5
pathway 67:21
pathways 82:19
patient 17:3 69:16
 70:10 78:6 90:10 99:5
 189:4,17 190:1
patient's 78:6
patients 140:17 187:22
payment 56:15
payments 167:15
pediatrician 12:7
peer 235:10
penicillin 163:5,8 271:2
penicillins 163:10,16
 276:21 277:7,8,10,22
people 4:5 7:7 20:22
 48:13 56:3,4,9,22
 73:4 78:13 84:3 86:13
 100:17 101:4 103:12
 103:21 107:9 109:17
 110:11,16 111:2,7
 116:10 120:8 140:5
 151:4,8,11,16,19,21
 161:5,6 169:15 179:1
 181:11 184:12,17
 206:6 207:19 211:17
 212:21 219:17 232:8

236:14 238:17 240:6
 242:13 245:11 248:1
 250:21 279:16 287:1
 302:9 316:13 322:3
perceived 250:7
percent 79:17 91:9
 150:14 151:19,21
 152:10 223:2
percentage 79:2 81:5,7
 116:21 117:3
perfect 99:9
perfectly 36:14 91:11
 167:3 186:17 275:13
 282:8
performance 1:19
 16:18 18:1,15 21:11
 21:14 111:9
performed 6:6 173:12
perinatal 129:3,9
period 50:11 175:7,18
 211:3 292:2
permutations 114:2,3
persist 36:3 52:12
 229:20
persistent 65:7
persists 51:1
person 53:7 82:4 183:4
 316:9
person's 82:8
personally 126:19
persons 209:10
perspective 199:19
 228:5 232:8 283:10
 284:4
perspectives 182:16
pertain 67:17
pertains 51:17
pervasive 33:15
pharmaceutical 144:18
 145:3
pharmaceuticals
 145:11
pharmacopeia 163:7
pharmacy 119:22
phase 157:4 255:14
PhD 1:16 2:10
phenotyping 113:18
Phillips 2:8 16:21,21
 21:5 26:17 127:14
 130:11 319:17
phone 14:1,3 316:10
phrase 94:22 113:17
 243:4 281:4,5
phrases 88:10
physician 1:18 53:14
 54:18 55:1,2,9,13,13
 129:11 149:19 152:9
 173:14 203:13 231:6
 249:16

physicians 55:18 57:8
 122:9,10,10 151:18
 167:15
PI 16:9
pick 30:20 58:13 111:7
 111:12 120:6 152:13
 174:12 189:1,17,21
 205:4,6 224:6 282:4
 291:4 292:8 295:19
 297:17 304:9
picked 297:18
picking 195:9,11 213:4
 286:5
picture 84:20 197:16
piece 113:3 116:14
 117:16 150:6 187:11
 205:11 225:6
pieces 40:11 62:14
 84:13 146:5
pilot 3:13 22:15 24:15
 25:4 66:11 134:1
 155:22 156:7 169:20
 200:7 201:8 207:4,10
 210:10 211:5,12
 230:20,21 252:6
 253:6,14 254:8,20
 255:12,14 256:6
 265:19,20,22 267:3
 267:13,15,22 268:6
 281:22 286:16,18
 287:6 290:5,6 291:7
 291:14 292:11,16
 294:15 298:9 307:8
 311:14 316:17 321:17
piloting 256:13 290:22
pipe 20:6
pizzas 31:5
placard 20:8
place 31:2 54:2 61:12
 67:8 68:16 75:13
 112:2 119:4 171:18
 174:20,22 181:22
 183:6 189:6,13
 195:12 201:1 206:18
 235:5 240:17 254:12
 266:15 275:5 280:12
places 5:1 62:8 119:2
 245:17 296:10,11
plain 223:4,12
plan 7:1 21:18 148:16
play 90:17 101:13
 102:16 122:10 145:21
 219:12 231:6 264:8
 303:7
players 185:19,20
playing 121:18
plays 159:21
please 8:13 20:2,4,10
 54:1 180:12 240:22

317:13,15
pleased 255:7
plentiful 19:2
plenty 38:17
plug 34:9 257:4 284:7
plugged 202:16,17
PMP 1:15
point 19:17 27:6 32:16
 33:16 34:13 39:2 42:8
 42:20 44:19 46:12
 49:4 71:12 72:9 74:4
 77:9 81:10,19 83:16
 84:9 92:3 93:8 94:6
 102:21 107:1,2,15,16
 107:16 118:5 124:2
 127:20 133:11,18
 135:7,10 136:10,21
 139:22 141:15 149:17
 150:1 157:17 160:4
 166:22 168:22 170:16
 173:4 175:5 177:3
 187:12 191:3 208:6
 212:22 215:10 218:13
 219:10 230:20 234:1
 235:14 239:10 246:4
 246:11 250:5 265:17
 269:15 271:6,20,22
 273:17 277:5 280:16
 281:3,6 282:18 283:9
 284:1 291:20 317:10
pointed 79:13 122:15
pointed-headed 94:8
pointing 18:16
points 75:10 77:4 83:15
 94:6 107:15 154:7
 228:1 234:3 250:6
pointy-headed 30:3
 113:16
poised 42:1
policies 24:8
policy 1:15 11:1,2
 316:22
political 94:21
poly-hierarchical
 289:19
poly-hierarchy 193:5
pony 76:9
pool 113:21
poor 113:15 114:6
populated 76:14 77:3
 263:5
population 39:6,18
 202:11,12,21 276:16
populations 46:22
 263:19
portion 15:13
portions 39:8
pose 320:1
position 290:17

possess 110:8
possibilities 282:1
possible 20:11 28:21
 28:21 59:21 70:19
 87:21 132:7 158:9
 196:11 200:12 275:13
possibles 243:15
possibly 53:15 152:18
post-meeting 317:19
potential 52:7 106:11
 120:22 185:20 250:8
 250:13,15 258:19
 274:15 296:21
potentially 25:19 34:14
 38:10 39:2 51:13,19
 55:17 56:22 70:22
 74:1 91:15 149:21
 166:20 173:9 187:4
 213:20 214:14 254:15
 298:8 303:5
PQRS 17:18
practical 38:20 49:11
 53:11 188:4 199:17
 278:2
practically 58:6
practice 12:9 62:4
 264:4
practices 38:7 73:11
 259:18
practicing 12:7
pragmatic 36:6 192:2
pragmatics 80:15
pragmatism 38:19
pragmatists 38:17
prattle 136:16
pre-measures 211:4
pre-standard 33:11
pre-supposing 217:11
pre-work 32:19 120:18
 122:5 123:3,7
preamble 187:2
precise 39:9,14
precisely 305:6
precision 39:6,20 69:5
 69:17 70:19 102:21
preclude 197:6
predicates 278:15
predict 164:22
predominates 116:7
preexisting 92:2
preferably 76:1 217:1
preferred 104:10
prejudice 93:4
preliminary 6:6
premise 236:11 269:16
premised 293:13
premises 146:10
preparation 302:22
present 1:11 2:14 206:5

276:9
presentation 19:19
 316:22
presenting 167:3
President 2:10 18:10
presiding 1:9
press 27:21 317:15
pressing 27:19
pressure 212:7,8
presumable 258:20
presumably 137:1
 150:8 200:8 252:7
 269:6
presumption 63:1
pretend 116:7 119:10
pretending 118:12
pretty 5:6 29:13 52:1
 142:10 175:16 184:20
 220:7 293:19
Prevailing 3:6 5:22
prevent 172:7,20
preventing 72:16
 274:15
previous 232:7
previously 180:18
 193:2 233:2
primarily 16:16
prime 254:4
principals 166:2
principle 30:11,20 31:1
 39:12 50:21 51:11,16
 93:3 229:9 240:14
 278:17 290:12
principled 208:22
principles 30:7 31:10
 31:14 34:20 240:2,6
prior 29:5 50:5 60:13
 122:6 139:2
priorities 21:11
prioritizes 171:3
priority 86:21 157:13
 158:10
private 21:6
privier 211:15
privileges 27:13
probably 5:3 12:8 17:12
 32:17 40:9 43:17,21
 44:1,3 52:12,15 58:13
 60:2 73:13 77:6 79:3
 88:7 91:15 102:6
 106:12 118:9 130:12
 134:3 140:8 163:11
 166:13 167:8 168:9
 169:17 175:14 182:21
 194:5 208:7 215:20
 219:16 220:1,5,19
 227:10 229:14 230:15
 240:21 249:13 252:12
 258:5,6 262:19

270:19 285:6,21
 302:1 303:13 311:16
 312:20 316:14 319:8
problem 46:18 54:21
 55:5,7 70:4,8,12
 72:20 74:16 77:15,16
 96:13 115:19 139:9
 166:15,16 172:19,20
 177:1 185:1 189:10
 196:21 262:4 306:12
 307:3
problematic 24:5 70:12
 191:22 253:10,12
 282:13 287:19
problems 25:20 45:20
 52:7 59:16 67:16,17
 136:14 192:11 196:6
 250:17 289:5 294:1
 299:21 306:13
procedure 301:18
procedures 24:8 114:2
proceeding 20:14
process 3:11,13 6:11
 14:7 18:5 20:3 22:9
 22:16,22 23:11,13,20
 23:22 24:3,14,17,18
 25:1,4 28:4 33:11
 44:6 45:7 47:14,16
 48:2,7 52:22 59:19,20
 60:5 63:22 66:11 69:3
 69:21 70:1,2,3,19
 72:21,22 77:17 79:8
 80:1 86:20 89:11
 95:10 96:5,22 97:5
 100:8,11 107:13
 108:17 109:7 110:7
 110:16 112:20 119:20
 121:3 134:11,18
 135:9 137:5 138:10
 150:10 155:22 158:21
 168:5 171:1,18
 172:16,20 174:8
 177:8 179:4,9,19
 183:11 185:5 196:8
 198:3,12 199:21
 200:6,11 201:8,12,22
 202:9 205:19 206:5
 206:11,12,18 207:4
 207:13 210:4,19
 211:1,9 212:16
 213:22 214:4 217:9
 217:12,14 218:6
 221:4 222:15 226:12
 227:11,20,20 228:7,9
 230:19 231:8 233:1
 234:4 236:16 237:4
 237:13,15 238:6
 239:4,4 242:17,18
 249:3,21 250:7 252:6

253:14 256:7 257:3
 262:8 265:22 266:3,5
 272:11,16 273:13,15
 275:11 280:10 281:4
 281:5,15,17 282:12
 283:1 284:20,20
 285:10 287:4 299:12
 299:15 302:15 305:13
 310:15 321:17,17
processes 9:1 18:12
 38:2 134:13 201:14
produce 239:14
produces 190:15
 230:13
product 63:17
production 89:16
productive 62:10
products 129:5 192:6
professional 7:20 9:10
 125:7
professionals 21:19
Professor 10:12
program 12:21 21:16
 28:12 67:7 224:4
 239:15
programs 28:6,7,9
 31:11 109:1 167:13
 176:20,22 236:3
project 2:8,9 4:19 5:9
 6:4 7:15,15 16:13,22
 17:4 19:16 20:16 22:3
 23:2 26:10 38:6 64:12
 107:19 147:13 166:9
 220:16 250:20 251:3
 255:2 267:19 295:9
 301:19 316:8
projects 16:7,8,17,20
 17:1
proliferation 163:7
promote 22:16
promoted 81:2
promoting 21:15
pronounce 129:12
 131:14 160:12
properly 249:7
properties 47:5 163:20
property 85:10,18
prophylaxis 129:8
proportion 276:9
proposal 60:3 146:11
 179:8 180:8 252:20
propose 36:8 168:5
 196:14 210:19 224:3
 239:11 245:22 292:2
 296:21 304:1 307:17
proposed 25:20 26:2
 27:5,11,15 143:21
 153:4 255:22 296:3
proposing 157:4

206:15 266:18 283:17
 297:10
proprietary 49:16
proprietary/non-prop...
 46:9
pros 213:4 248:18
protected 97:16
protective 56:6
prove 295:3,5
proved 279:8
provenance 75:14 83:5
 94:19 96:9 132:9
provide 20:18 22:18
 24:22 25:1 42:2 48:12
 97:14 104:21 108:18
 123:21 138:7,8,15
 188:10 211:19 261:20
 272:20 315:7
provided 56:4
provider 21:19 124:10
providers 34:22 58:11
 61:9
providing 170:10
provocative 208:12
prudent 76:12 146:1
psychiatry 155:6
public 3:16 6:12,14,16
 8:8 20:17 21:19 166:3
 266:10 288:5 317:10
 317:13
publication 86:4
publicly 21:14 27:12
publish 27:10,18,21
published 26:19 27:16
 27:20 50:13 53:17
 86:1 113:2 123:12
 178:4 196:21
publishes 28:1
publishing 27:18
pull 34:8 205:22 284:7
punting 177:11
puppies 114:3 261:13
purchasers 21:20
purpose 20:16 64:4
 74:13 77:18 79:9 85:8
 88:2,3 91:8 93:11
 100:14 101:22 141:19
 142:20 169:16 180:5
 180:19 207:21 209:7
 217:2 223:14 231:18
 234:6,9 235:1 236:15
 238:19 242:1,8
 252:11 253:15 254:14
 256:13 257:11 268:14
 268:17 269:3 274:14
 296:8
purposes 49:13,14
 86:15 87:16 141:18
 180:14

pursue 254:20
pursues 164:21
pursuing 89:15
push 29:8 98:9 251:1
put 17:9 35:22 66:17
 68:18 73:8 78:3 90:3
 110:9,12 118:5
 130:14 147:5 174:20
 176:12 193:18 218:12
 223:6 235:14 243:12
 253:20 256:21 258:13
 270:18 272:12 283:14
 288:8 294:13
puts 73:22 157:13
putting 33:12 51:2
 249:22

Q

QA 110:15
QDM 17:2
QRDA 11:21
quaint 164:5
qualified 142:10
qualities 243:11 246:12
 260:7 263:22 264:3
quality 1:1,8,21 2:11
 4:12,18 10:4,20,21,21
 11:2,9 12:13,21 15:17
 15:19,21 16:14,15
 18:10 21:5,9,20 22:11
 23:1 30:11 31:19
 32:14 35:7 36:15,17
 36:22 37:1,6,7,14,15
 51:7 58:11 61:7,10
 62:4 65:15,17,19
 71:16 91:5 93:13,16
 97:3,3,5,8 101:16,21
 105:21 108:10 111:5
 114:7,11,12 115:16
 163:15 193:6 194:3,4
 194:7 196:17 197:1
 229:9,21 259:9,11
 262:22,22 263:21
 270:6,14,16 277:6
 278:6,20 296:15
 312:2 314:18 315:2,6
 315:6 316:5
quarter 279:19 319:1
question 32:1 44:6
 45:18 49:9 50:9 51:15
 60:6 75:16 76:20 78:8
 85:6 86:12 87:17 92:8
 94:12 115:3 143:19
 167:5 168:19,20
 169:11 170:3 172:11
 196:3 199:9 208:18
 209:4 217:6 228:16
 229:17 234:18 238:14
 265:1 280:9 281:5

299:18
questions 15:1 44:8
 55:22 244:5 288:3
 318:10 320:2
quick 215:19 247:19
 293:18 297:2
quickly 90:3 110:6
 113:11 164:22 275:4
 306:14
quite 23:6 26:5 75:12
 87:22 91:8 105:13
 116:17 139:3 147:1
 161:12 180:1 187:18
 197:15 231:14 233:6
 262:14 269:16 306:10
quote 254:16
quotes 78:3 96:7

R

radical 143:22 162:15
 166:7
raft 283:14,15,16
rafts 283:13
railways 54:4
raise 58:5 77:4
raised 44:18 64:10
 65:13 279:17
raising 134:8
Rallins 1:18 13:1,2 31:7
 31:8 32:7 40:14,15
 41:2 42:17 57:13 59:6
 59:8 66:13 68:2 71:13
 91:22 93:8 154:5,6
 235:12 251:4 264:22
 300:18
ramifications 216:14
ran 78:22
ranked 112:16
rapid 175:16
rapidly 174:19
rare 75:8
rarely 322:8
rate 111:9
rates 34:15
raw 36:13
re-do 109:19
re-endorsed 212:2
re-institute 86:6
re-use 35:13 80:18 92:2
 106:11
re-used 81:9
reach 107:8 286:9
read 163:6
reading 72:4
ready 27:10,18 211:17
 246:7 254:3,3
real 36:12 58:10 96:21
 97:5 99:21 111:13
 225:20 228:1 250:8

273:18 286:8 297:2
real-time 14:13
realistic 294:20
reality 40:11 64:21 77:5
 183:10 249:22 254:7
realize 4:22 18:22 20:11
 28:22 66:1 113:13
 114:4 157:12 189:9
 191:6 289:22
realized 67:2
realizing 203:10
really 4:20 14:20 19:11
 29:7 35:5 38:4 42:1
 44:5 46:13 47:3,11,15
 48:16 49:9,21 51:15
 55:14 56:4 57:18,21
 58:1,21 66:8 67:14,20
 68:11,17 69:16 70:8
 71:13,15 72:15,18
 73:1,6,14 77:9 78:13
 80:15,21 81:11 82:18
 83:17 84:12 88:3,19
 89:6 92:5,19 97:11,15
 98:1 99:2,13 103:20
 103:22 105:19 106:6
 110:19 113:1,16
 115:15,18 116:4,6,10
 116:12,21 117:22
 119:20 135:19 140:3
 140:18 143:17 144:3
 151:10,15 152:1
 154:13 156:22 157:13
 157:15 159:14 161:4
 163:21 165:8 168:17
 174:18 176:4,9
 182:19 187:11 188:8
 198:2 207:16 208:4
 208:18 209:15 210:1
 212:8 218:15,20
 221:10 222:3 223:18
 224:8 231:18 234:12
 235:1,21 238:4,9,17
 238:21 241:17 243:17
 244:6,9 245:6 251:1
 257:10,14,20 259:22
 260:1 261:10 262:5,7
 262:17,21 277:7
 281:13 282:21 283:19
 283:22 285:2 288:12
 290:3 294:13 298:2
 301:21 307:13 320:8
realm 101:16,22 103:17
realtime 14:21
reason 8:5 64:3 85:10
 85:11 102:1 104:21
 107:18 122:1 142:8
 144:6 149:14 173:3
 206:8 213:10 227:7
 285:3

reasonable 156:16
 227:16 286:2
reasoning 138:2,5
reasons 70:13 96:19
 133:21 195:12 220:14
 271:9 274:20 287:1
recast 164:7 168:14
 213:12
receive 151:16
received 152:1 201:5
receiver 13:20
receiving 154:8,14
recognition 179:12
recognize 37:5 54:12
 176:16 181:20 235:17
 237:11,13
recognized 175:10
 224:14
recollection 82:9
recommend 90:16 92:9
 124:20 247:13
recommendation 71:1
 90:3,4 168:3 173:22
 314:5
recommendations
 23:16,17 32:14 38:8
 38:14 40:17 41:12,16
 42:4,8 43:1,2 44:17
 96:11 162:15 170:11
 184:9 186:21 211:1
 300:22
reconcile 198:10 231:7
reconciliation 22:12
 215:15
reconvene 121:12
 144:9
record 12:10,14 13:16
 15:20 43:5 50:15
 69:13 121:9 200:18
 273:4 322:12
recorded 78:5 157:7
recording 20:2
records 82:5
recover 84:21
rectify 199:22
recurrent 126:21 127:1
 127:4,6 142:14
redraft 27:7
reduce 96:12
reduced 91:18
redundancies 123:16
redundancy 127:11
redundant 236:6
reference 199:1 205:22
 215:12 249:17 277:11
 296:13
referenced 61:7
references 195:1
 261:12

referencing 205:19
referred 32:5 163:13
refine 223:11
refinement 143:9
refinements 130:20
 206:16
reflect 193:19 205:10
 275:13
reflected 249:7
reflecting 186:3
reflection 204:18
reflects 190:15
regard 245:20
regards 62:3,4,14 63:17
 77:2 115:4 119:4
 159:1 161:2 162:2,4
 243:11 244:4,12
 248:12 260:1,11
 274:6 295:9 302:16
 306:1 314:18 315:2
regular 206:7 219:13
 319:21
regulations 90:7
 245:13
regulatory 176:22
 177:8,18,20 245:8
reinforce 75:10
reiterate 219:7 233:22
reject 27:6 177:16
rejects 175:5
relate 9:6 197:17
related 76:4 163:1
 179:13 186:12 202:19
 255:4,5 257:7 262:14
 302:13
relates 8:2,12 300:22
relationship 16:2 53:2
 53:13 83:19 92:12
 98:12 264:2 272:10
relationships 57:5 76:3
 92:15,20 232:4,12
relatively 65:20 92:10
 266:4
relevant 9:10 17:13
 52:18 192:4
reliability 235:7
reliable 49:17 56:5
 92:20 98:12 119:3
 147:4 257:1 272:15
reluctantly 43:10
rely 136:13
remain 225:14
remainder 15:5
remaining 288:7
remains 209:2
remarks 20:19
remember 15:15 16:8
 46:17 79:22 84:10
 287:13

remind 6:13 8:17,22
 14:5
reminded 54:3
reminder 6:18 151:5
reminds 59:15
reminiscent 97:22
remiss 115:18
remission 126:7 127:5
 127:6
remove 273:8,8
removed 110:1
rendering 50:12
renderings 290:12
repeat 110:15 266:5
repeated 206:2
repeating 98:5
repetitive 109:15
replace 98:2 222:1
replaced 106:5
replacing 64:18
report 24:19 31:18 37:1
 37:6 38:14 59:18,18
 151:22 206:14 233:12
 236:2 312:21
reported 36:18 49:7
 123:22 124:4,7
reporting 15:22 21:14
 34:14 45:20 48:18,20
 58:11 233:6,11
reports 13:6,8 56:9
 59:16 106:18 233:12
repository 226:17
represent 40:9 77:22
 82:5 87:18 100:16
 111:18 189:3 206:6
 218:21 219:3 235:21
representation 68:21
 83:12 290:13
represented 33:6 73:5
 122:14
representing 8:19,20
 132:7
represents 235:17
reproduce 148:6
request 125:14 165:14
 243:10
require 28:7 63:4 75:21
 75:22 76:3 93:5
 102:15 106:6 169:6
 182:12 184:3 229:4
 242:19 244:1
required 39:20 76:4
 78:16 108:14 149:15
 249:9 280:2
requirement 76:17
 85:22 165:15 170:21
requirements 82:12
 89:22 165:19 295:8
requires 43:18 48:20

191:4 245:10
requiring 92:10
research 1:15 8:11
 10:13 11:1,2 21:21
 195:4 220:16
residing 304:2
resolve 33:14 65:5,6
 268:21
resolved 248:10 305:22
 313:21
resolving 24:3 25:4
 82:17 83:1,2 121:1
resource 164:2
resources 56:20,21
 137:5 194:5 300:4
respect 202:2 300:9
 316:22
responding 23:15
response 194:19
 247:20 278:9
responses 45:3
responsibilities 184:4
 184:13
responsibility 166:11
 268:16 272:16 315:13
responsible 24:2 56:18
 183:5,15,20 186:10
 247:4
rest 156:2 240:19
restricted 242:12
restrooms 6:18
result 137:21 152:5
 184:8
resulting 169:9
results 24:20 38:22
 113:22 139:3 145:12
 206:13,14 291:2
 316:16
resumed 121:9 200:18
retain 47:4,5
retirement 136:8
 191:19 195:2
retooling 17:15 226:12
reusable 81:2,7 106:9
 108:10 152:3
reuse 151:15 152:8
 153:21
reverse 170:1 290:1
 291:22
reverse-engineer 74:9
 74:10 84:4
reverse-engineered
 75:15
reverse-engineering
 75:3 84:17
review 18:15 23:11 27:5
 60:5 109:16,18 171:1
 255:17 274:2
reviewed 28:8 240:5

reviewing 68:14
revise 283:6
revisit 72:10
rewrite 234:15
RHIA 1:21
rid 112:18
ridiculous 112:13
right 6:20 41:2,2 44:2
 45:19 50:18 62:20
 68:16 72:18 73:2,7
 74:16 78:4 79:2 91:2
 93:10,11 96:17 97:4
 105:13 106:12 107:3
 109:8,10 113:10
 118:10 122:2 131:20
 131:22 142:5 156:9
 159:12 162:11,12
 169:11 172:3 174:15
 174:17 177:2 191:6
 194:20 195:18 197:3
 199:2 200:20 204:8
 205:2,14 210:14
 213:1 220:2 222:21
 236:2 239:19 242:18
 245:9 248:13,16
 250:11,12 256:2,5,10
 259:2,9 260:12 262:2
 265:13 267:8 270:9
 271:14,18,22 273:5
 273:11,19,21 281:8
 284:17 287:21 295:12
 296:12 297:14 298:6
 302:2 303:22 308:9
 308:10 309:20 310:14
 311:13,22 312:10
 314:11,17 315:8
 317:8,9,18 318:1,3
 319:7 321:8 322:8
rights 153:6
rigor 93:5
rigorous 92:16 93:3
 240:6 304:16
rise 212:20
risk 44:12 92:4 170:10
RN 1:16,20 2:7
road 189:7 229:5,6,12
 281:18
Rob 11:5 72:13 75:18
 76:20 79:13 83:16
 85:21 86:7 99:20
 119:15 173:4 222:17
 237:19 246:18 270:4
 276:3,12 298:9 302:9
 304:14 311:20
Rob's 250:5 265:12
ROBERT 1:18
Robert's 87:3
robust 49:17 50:12
 64:17 92:20 98:12

136:18,20
rock 191:4
Rockets 121:18
role 23:14
roles 57:5 184:4
room 1:8 28:16 42:1
 44:13 66:15 70:16
 89:13,18 185:19
 322:3
root 93:22,22 301:5
round 67:9 304:9
route 171:14 227:10
 277:15 278:4
RT 190:22
rub 49:21
rudimentary 267:9
ruining 217:4
rule 42:6 43:19,19
rules 5:20 18:21 24:5
 25:17 56:1 73:8
 182:13,13 265:15
 283:6
run 120:17 166:6
 169:20 170:10 171:8
 211:6 226:2 249:20
 261:4 303:18
runs 5:10
Rute 1:17 13:18 108:7
 135:14,17 230:5
 281:19 282:15 284:11
 309:4 318:11
Rute's 107:16 265:1
RxNorm 30:18 49:16
 71:22 73:17 119:19
 120:1 125:16 135:22
 136:17 139:8 147:11
 150:3 162:8,9 163:12
 164:3 165:2,17 167:8
 168:16 170:6,7,11
 178:7,7,9 186:5,7
 190:14,14 192:22
 194:12 231:12 232:1
 232:6 247:22 248:2
 265:5 269:7 270:5,16
 270:22 277:12,22
 279:1,7 283:21
 286:22 289:18,20
 304:22

S

saddens 221:11
sadly 85:6
safety 17:3
sample 305:4
sampling 305:4
sat 9:9
satisfactory 114:8
 165:2 277:12 279:8

satisfied 215:17
satisfies 209:19
satisfy 275:8
save 59:8
saved 156:11
saw 59:13,13
saying 17:20 33:10
 50:16 53:4 62:21 66:7
 83:7 94:7 96:17,20
 116:9 144:16 153:14
 158:14 167:11 194:22
 209:14 214:7 218:1
 231:3 233:13 235:8
 238:9 239:18 245:15
 254:1 271:11 272:8
 292:6 296:1 308:10
says 59:14 60:14 95:6
 102:3 147:19 174:22
 211:22 227:15 294:4
scale 211:18
scaled 266:1
scan 137:18
scenes 55:17
schedule 318:9
schedules 316:11
scheme 254:17
schizophrenic 186:11
Schneider 1:19 12:4,4
 53:7 59:10,11 89:8,9
 121:13,15,19 152:11
 152:12 154:17 171:22
 174:11 224:1,3,6
 293:15,17 320:5
Schneider's 90:18
science 10:1 28:17
 49:12
Scientific 2:3 29:3
scope 30:6 45:5,13
 77:20,20 78:7,8 81:12
 81:17 83:8,11 85:8
 88:1 89:1 100:14
 117:6 129:19 132:2,4
 133:12,13 135:11
 180:6 204:11,12
 234:6,10,16 242:1
 252:12,17,18,22
 253:16 255:1,4
 259:16 260:15 265:19
 268:14,17 269:4
 296:8 297:22 303:7
 304:19
score 240:19
scores 212:9
Scott 1:19 12:6
scouring 79:9
scratch 222:5
screening 125:9 126:8
scribe 294:13
search 223:18

sec 154:20
second 47:18 75:10
 84:9 90:15 95:8 96:14
 112:10 116:1 122:4
 199:12 207:11 208:8
 239:5 243:13 257:16
 267:16 286:19 299:1
 307:17
secondary 121:19
secondly 268:12
secretary's 98:19
secretive 182:7
see 7:10 24:10 27:14
 32:20 33:15 47:4,10
 48:16 49:1 52:12 74:5
 74:20 79:13 85:13
 89:12 104:22 107:7
 108:1 109:21 110:11
 110:20 111:1,4,5,10
 112:13,17,18 124:4
 124:16 125:22 128:5
 129:11 130:3 131:22
 154:13 156:12,22
 160:8 168:22 169:9
 170:2 186:2 188:13
 197:12 200:15 202:20
 214:9 215:11,13
 223:20 226:13 228:5
 231:17 234:4 236:16
 238:1 240:7 250:14
 253:14 256:14,20
 260:14 266:15 267:3
 273:13 280:2,3 281:1
 281:17,22 284:5
 285:2 289:6 303:20
 305:9 314:8,14
 318:19 321:18
seeing 69:17 112:10
 221:15 262:5
seek 314:21
seemingly 225:4
seen 209:2
sees 74:15
segments 78:12
select 55:3,19 108:15
 205:4 213:6 236:1
 268:18 280:1,12
 282:2
selectable 280:20
selected 110:10 279:22
selecting 55:10 309:14
selection 3:7 6:7 18:12
 309:3
self-defined 303:8
semantic 35:21
semantics 50:5
Senate 307:18
send 7:6 320:22
sending 233:12

Senior 2:5,7,9,10 3:8
 4:17 5:9 15:8 16:13
 17:7 18:10 290:17
sense 35:10 42:11 52:2
 74:10 93:7 98:16 99:7
 99:9 101:18 103:20
 106:13 135:12 156:8
 184:21 204:2 211:8
 249:8 264:19 272:10
 272:16 282:6 301:1
 309:22
sensing 189:5
sent 111:2,3
sentence 156:12 261:4
sentences 234:9
sentiments 179:1
separate 39:3 54:19
 82:19 84:4 108:17
 118:17 212:15 225:15
 227:20 261:13 269:1
 306:18
separates 287:12
sequence 42:19
sequentially 262:17
series 113:18 116:17
 188:13 248:5
serve 8:21
served 7:1 91:5
serves 101:22 235:1
Services 2:19,22 12:20
serving 195:3
session 26:8 75:17
 135:15
set 1:3 3:6,7,10,12,14
 4:18 6:1,2,7,8,11 7:14
 11:8,8,14 12:1 13:13
 15:11 17:4 18:7,17
 19:12 22:8,21 23:8,15
 23:18 26:15,18,22
 27:1,2,5,9,17,20,20
 28:1,10,13 30:7,13
 31:13 32:3 34:19 35:3
 35:8,9 36:9 40:5,6,12
 44:9 45:8 47:14 48:15
 53:17 54:9 57:17
 59:15 60:5,10 61:17
 61:18,19,22 62:16
 63:19 64:22 65:16,17
 65:19 67:16,17 68:6,7
 68:11 72:14,15 73:9
 73:19,22 74:6,11,20
 74:22 75:11,20 76:3,5
 76:8 77:21 78:1,9,10
 78:12,17 80:5,8,8,18
 80:18 81:12,18 83:5,9
 83:10,18,22 84:1,8
 85:12,22 87:7,9,13,18
 88:3,14,15 89:22 90:6
 90:8 91:7,17 93:5

95:1,4,5,13,13,14
 98:3 99:11,22 100:19
 100:21 101:3,6,21
 102:7 103:16,18
 104:3,10,14 105:12
 105:15,16,18 106:4
 106:15 107:5,6,8,17
 108:15,21 109:16
 110:9 111:19,21
 112:4 113:1 114:22
 115:7,17 117:7,17,20
 118:6 119:1,6,19
 120:2,6 124:13,15
 126:5,6,9,12 129:6,14
 129:15 130:4 131:4
 133:2,13,14 134:13
 136:7,22 137:22
 138:6,12 143:8 145:1
 145:2 148:3,6,11
 151:7,14,16 153:2,5
 159:12 160:2 161:11
 163:2 164:1,9,17
 166:7 169:16,17,22
 170:1 171:3 175:7,11
 178:3,16 180:2,6,17
 180:20,21 181:13
 183:5,16 185:4,16
 186:16 196:21 197:6
 197:10,11 198:8,18
 198:19 201:9 204:4
 205:14,16,21 207:20
 207:22 209:13,18
 212:3,10,10,21 213:7
 214:6 216:12,17,19
 216:20,21 217:3
 218:12,15,16 220:6
 220:20 221:4 222:11
 223:17,22 224:9
 225:16 226:16,19
 228:19 229:9 230:1,8
 230:8,13,16 233:3,5
 233:13,15,17 234:17
 234:19,20 235:2
 237:21 238:18 240:1
 240:2,4,5,7,10,13,14
 240:18 244:13,14,17
 244:17,21,21 245:1,7
 245:13,14 247:3
 251:17 252:6,21
 253:1 254:14,15
 256:21 259:17 260:16
 260:16 262:9 263:21
 264:1,4,6 265:5,6,9
 267:16,18,20 268:13
 269:6,17 270:1
 274:17 276:20 277:1
 277:6 278:12 281:21
 283:5 284:18 286:7
 286:13 292:18 293:9

295:13 296:8,19
 300:13 303:2 307:6
 311:16 312:2,6 315:2
 315:13 319:18 320:8
sets 4:15 10:6,21 11:4
 11:13,18 12:15,20
 13:4,12,20 16:3 17:13
 19:1,5 22:11,13,17,17
 22:20 23:4,10,12,17
 24:5,7 25:2,3,18
 26:13 27:11,11,15
 28:5,7 29:22 30:12,22
 31:3,10 33:1,13 34:21
 35:4,6,12 36:8 38:3,8
 40:18 41:17,22 44:17
 45:7,10 47:9,17 48:11
 48:17,22 57:20 58:6
 59:1,12 60:6 61:2,13
 62:5,19,19,22 63:2,3
 63:6,9 67:18 68:15,18
 69:7 71:16 73:2 74:9
 74:10,12,19 75:3 76:4
 76:12,15,17 77:3,8
 78:17,19 80:16,20
 81:1,3,4,7,8,10,10,15
 82:11,20,21 83:3,5,19
 84:4,13,15,16,19 85:1
 85:19 86:13,15 92:4,6
 92:7,11,13,18,21 93:9
 93:11 94:7,10,11,14
 94:20 95:2,3 96:16,18
 97:1,2,12,14 98:13,17
 101:20 103:18 104:8
 104:9,11,13,16 105:2
 105:2,11 106:6,9,12
 106:19,20 108:1,3,4
 109:7 111:6,11
 112:17 113:13,20
 114:5,20,21 115:5
 116:5,9 117:17
 118:11,18 123:14,17
 124:16,21 125:11,22
 126:15,16,21 127:17
 128:2,9,12,19 130:7
 131:1 132:5,6,10,20
 132:22 134:5,21
 135:6,16 137:19,19
 139:5,6,7 140:2,11,15
 141:4 143:2,4,5,15,19
 144:4,17 146:19
 150:8 151:5 152:3,7
 152:16 154:9,14
 158:13,19,21,22
 159:4,10 161:2,6,7
 164:5 167:17,19,19
 168:4,18,20,21,22
 169:3,7,7 172:8,11
 175:2 176:18 177:12
 178:4,9,16,17,20

180:9,13,15 181:22
 182:2 183:11 185:2,7
 193:14 196:17,18,19
 197:9,20 199:14,15
 199:18 202:1,15
 203:6 207:10,17
 208:5,14,14,15 209:4
 209:6,7,9,12 210:2,6
 210:8,12,20 211:20
 212:12 213:1,10,11
 213:20 214:2,8 215:7
 216:2,10 217:18
 218:5,9,19 219:18
 220:15 221:9,13,21
 222:3,7,8,12,17,17
 223:17,19 225:3,15
 226:18 228:3 229:11
 229:16,18,21 230:4
 230:10,10 231:1,9,10
 232:7 234:22 236:9
 237:3 239:13,17,19
 240:3,4,8,20 242:5,22
 243:4,9,20 244:15,21
 244:22 246:2,4,15
 248:6 251:10,12
 252:11 253:12,16,17
 254:2,16,18 255:10
 255:11 259:6,11
 260:5,6,7,10 262:4
 263:1,4 264:18
 265:13 268:14 269:4
 274:13 275:13 280:18
 286:15 295:11 296:3
 299:11,14 303:3,4
 304:16 306:1,22
 309:15,17 311:6,20
 312:3 314:21
setting 3:5 5:20 18:21
 38:1 99:1 100:22
 307:21 318:8
settings 106:10 203:11
seven 311:3
severely 191:22
Shalaby 223:2
shalt 30:17,18,19
share 18:4 163:19
 229:5
shared 30:6
SharePoint 319:19
 320:4,14 321:3
Sharon 2:7 17:6 18:16
 145:19 146:21 178:21
Sharon's 152:13
SHARP 16:7
shift 235:18,22 239:8
 253:21
shifting 249:8
ships 194:6
shockingly 234:11

261:5
shoot 178:14 301:16
short 23:9 24:11 85:6
 112:7 119:21 294:14
shortage 162:14
shorten 120:9
shortly 4:8 313:19
show 77:1 195:16
showed 193:14 224:20
showing 168:8
shown 197:9 219:21
shows 140:8 189:21,22
side 12:2 38:20 75:5,6
 110:19 185:16 249:11
sides 89:7 245:2
significant 10:1 25:12
 33:5 64:13 94:20
 113:4 127:22 128:7
 191:2 211:3 235:18
 253:20 316:7
significantly 19:7
 152:18 266:1
signs 7:4
silos 182:3
similar 33:1,6 60:7 71:4
 71:7,9 108:4 122:14
 131:15 137:14,22
 149:8 216:6 221:19
 228:6 301:17
similarity 125:3
similarly 57:6 242:21
 260:16
simple 27:19 86:16
simplify 206:17
simplistic 229:19
simply 122:13 193:20
 195:10 206:22 215:12
 219:10 233:17 264:1
Simultaneous 139:13
 231:2
sing 182:4
single 36:9 40:20 43:2
 43:6 45:21 54:2 57:16
 58:7 59:18 84:7
 111:22 175:15 193:12
 225:1,16 255:18
 266:2 273:10 285:4
 287:2 302:6,17
singular 39:15 53:5,5
sir 191:10 210:15
sit 8:18 10:16 13:5
 14:17 193:6 247:15
site 255:18 319:19
 320:4
situation 89:13 161:13
 247:2
situations 117:15,18
 119:10 135:9 206:3
six 79:18 155:20

size 89:14
Skapik 2:20 37:21,21
 41:15,18 43:8 55:20
 79:7 85:15 107:14
 113:5 250:4 255:1
 256:3,16,19 265:17
 274:5 276:3 281:20
 292:15 293:4,8 302:4
skill 146:3
skin 291:10
skip 272:19
slice 293:12
slide 125:6 126:17
 127:12 128:8,17
 130:2,21 131:16
 267:7
slides 112:22
slightly 52:1 179:17
small 79:2,3 242:13
 303:2 316:21
smaller 81:7 114:21,21
 140:15,15 181:8
smallest 185:20
smile 180:11
Smith 1:20 10:18,18
 99:18,19 151:3
SNOMED 10:16 16:4
 17:20 33:8,20 35:19
 36:13,22 40:8 46:4
 47:1,21 49:22 50:5
 51:13,17 52:14 53:9
 53:21 55:1,7,8,10
 64:17,19 69:1 71:22
 72:5 87:6 111:8
 125:16,19 145:13
 160:17 193:3 196:22
 258:9,10,10 265:11
 265:12 288:19,21
 301:4,18
SNOMED-based 87:19
so-and-so 14:18
social 11:1
society 9:10
software 10:5 15:20
 174:4
solid 187:12,16,22
 191:5 195:19
solution 25:20 118:8
 143:22 144:1 145:5
 145:11 146:7 191:4
 255:22 305:22 315:3
solutions 10:9 96:12
 165:4
solve 65:11 66:5 67:15
 67:16 139:9 166:14
 166:16,20 196:6
 306:11,13
solved 77:16
solving 77:17

somebody 28:16 29:1
 37:16 64:7 66:14
 150:16 176:12 183:15
 217:8 247:16 291:10
 315:14 316:21
someday 149:2
Someone's 146:20
someplace 287:18
something's 224:21,22
somewhat 33:15
 104:15 118:5 135:10
 146:13 164:15 199:15
 204:9 286:1
soon 114:9
sorry 18:8 42:18 83:13
 83:14 129:10 133:17
 160:10 217:22 224:18
 256:12,18 277:6
 290:2 307:16
sort 5:11 17:21 22:4
 29:8,9 33:10,14 38:18
 38:19 39:21 52:9 53:2
 53:13 56:6 57:2,10
 59:19 60:17 66:4,9
 69:12 71:19 74:5 81:1
 82:15 85:18 88:18
 93:2 108:8,20 119:15
 120:6,8,21 122:11
 123:5,10 124:5
 129:18,22 132:6,11
 132:21 133:1,11
 134:8,18 135:11
 142:12,13,22 143:1,7
 149:12 150:6 153:20
 155:9,16 157:7 168:1
 168:7 172:2 173:21
 174:17 177:5,15,17
 179:22 197:5 198:3
 198:11,11,20 199:13
 199:20 202:5,6,10,13
 202:15,15 203:2,7,12
 204:5,5 205:18 206:1
 214:10,20 224:9
 225:13 227:2,11
 241:15 243:6 246:22
 247:1,4,9,9,14 248:18
 251:21 252:21 253:10
 254:8,19,21 255:2
 257:2 265:15 274:13
 275:4 276:12 282:5
 283:21 301:4 309:1
 311:20 315:10 320:10
sorts 54:6 84:15 315:16
 320:6
sound 43:21 236:5
sounds 90:13 251:7,10
soup 306:20 310:21
source 49:19 50:22
 51:3 70:9 98:7 172:16

- 190:20
sources 98:6 187:2
 193:4 195:22
Southwestern 12:8
space 17:11 30:9
 146:14 181:19 257:4
 290:14
speak 14:12 20:4 35:20
 53:15 58:2 211:7
 251:21 276:1,5 290:1
speaking 8:12 58:6
 139:13 231:2
speaks 161:16
special 87:15
specialist 155:2
specific 22:6 42:3 82:7
 82:9 85:7 87:21 88:3
 131:4,6,8,9,10 134:19
 135:2 139:7 141:19
 151:6 160:20 168:1
 180:20 192:16 196:8
 196:18 197:20 198:7
 203:10 211:12 219:22
 239:15 246:1,20,21
 250:20 255:4,10
 295:10 299:11
specifically 67:19 75:19
 75:21 156:1 170:9
 196:3 245:21 252:11
 254:10 269:5 274:10
specification 42:22
 50:10 51:1,6 137:4
 164:1 230:2 278:9
specifications 13:4
 34:3 67:6 84:11 85:1
specificity 91:14
specified 30:13 92:11
 136:18 150:3,15
 272:1 273:14 295:13
specify 30:17 108:5
 136:5 198:4 209:18
 269:19 277:10,14
 279:6 280:20 304:15
specifying 165:13
 245:11 306:21
spectrum 149:13
spend 62:11 65:2
 209:11
spending 19:9
spent 15:13,16 16:6
 61:2
spirited 321:14 322:2
spoke 186:3 261:21
spoken 179:1
spot 62:10 66:17
spotty 270:21
spreadsheet 109:14,18
 109:21 130:13 310:17
staff 2:1 3:2 5:14 6:5
 14:15,16 19:20 20:20
 123:21
stage 3:5 5:20 18:7,18
 43:16 60:7,14
stakeholders 42:2
 97:17
stand 109:17
standard 11:17 20:3
 33:20 46:12 150:16
 198:18 199:2,5 204:4
 205:18 224:10 258:14
 269:9,9,10
standard-setting 21:7
standardization 34:13
standardize 58:2 74:4
standardized 150:19
 198:19 265:9
standards 13:5,6,7,8
 15:11,17,19 16:3,4
 21:13 31:17 35:7 42:5
 42:13,20 43:1,6,9
 48:18,20 59:21 60:16
standardsville 54:15
standpoint 53:11,15
star 317:16
start 9:14,18 24:14
 28:15 29:18 48:3
 63:15 66:11 67:10,21
 68:14 87:6,13 88:6
 120:22 121:2,3 123:4
 133:9 148:7 155:15
 200:5 201:14,21
 202:3,6 204:8,11,15
 214:1 222:11 223:15
 232:14 266:13 281:7
 282:6,8 290:5 298:7,9
 302:3 305:17 306:4
 317:21 321:10
started 15:14 16:19
 17:2 84:14 123:20
 132:14 170:8 199:13
 257:7 301:19
starter 197:6
starting 5:13 15:10
 68:12 124:2 132:17
 168:21 191:3 200:10
 208:6 222:5 235:9
starts 26:19
state 32:1 37:9 40:1
 179:17 193:19 239:22
 240:21
stated 180:8
statement 109:11
 148:12,16 164:17
 180:5 192:8 231:18
 248:11 257:11 277:17
 278:12,15 288:21
 296:18
statements 74:13 79:10
 154:10 207:22 223:15
 242:2 315:2
static 233:3
statin 131:4 145:3
stating 237:1
statins 144:21
statistical 49:14
status 22:21
stay 28:12 138:5 241:22
steer 25:11
step 48:9 92:18 102:17
 204:16 206:21,22
 207:15 208:3,8
 225:10,17 236:4
 244:7
steps 3:18 70:15 217:8
 220:12 222:14 266:21
 317:19
steward 27:3,4,6,7
 95:14 128:14 129:21
 138:1 141:9 152:20
 152:20 153:7 166:15
 172:14 181:6 182:21
 183:4,8,9 184:15
 185:3 225:7,11 242:5
 277:1 310:2 318:15
steward's 27:2
stewards 23:15 63:20
 65:18 144:19 152:22
 169:21 170:4 172:12
 174:2 175:6,19
 184:12 225:7 242:4
 268:13 276:15 277:4
 303:20 310:9,10
 311:3,4 318:18
stewardship 185:1,8
stick 6:21 146:8 147:4
 290:3,10
sticking 266:11
sticky 228:1
stimulation 320:7
stint 17:21
stop 75:3 90:4 162:12
 174:14 244:4 288:2,8
 307:16 309:5 315:7
stops 183:18
stores 220:16
straight 184:20
straightforward 220:8
strategy 134:12 305:4
streams 250:15,16
Street 1:8
Streeter 2:9 3:19 5:9,12
 16:12,13 317:12
strength 283:7 287:18
stretch 155:18
string 72:5
stroke 39:18,19 127:15
 128:5,11,22 131:2
 132:16 140:17 197:9
 205:4,5 308:14,15
 309:16 310:12 316:1
 318:15
strong 42:11 270:15
 286:8
strongly 157:19,19
 290:9 306:2,18
structured 23:13 34:5
 74:3 110:14
struggle 145:18
struggles 77:10
struggling 158:3
 242:13
stuck 115:20
stuff 17:21 79:21 226:4
 240:16 241:15 301:20
 321:10
sub 307:20
sub-concepts 176:7
subcategories 287:16
subcategory 287:17
subdiagnosis 146:18
subject 7:18 8:2,13,15
 9:7 11:6 210:8
subjective 56:9
submit 31:1 153:5
 304:5
submits 27:2
submitted 20:20 52:21
 110:22 177:10
submitting 52:13
subsequent 220:12
subset 87:7,15,15
 181:2 182:12 296:11
 308:10
subsets 92:6,11 181:8
subsetting 252:19
substance 235:7
substances 188:21
substantial 217:2
substantive 237:21
substituting 294:16
subvalue 124:16
 126:15,21
succeed 195:14
successful 255:22
 256:15 266:4
successfully 190:9
 292:4
succinct 20:10
suck 259:19
sudden 178:15
Suffice 136:16
sufficient 83:18 118:9
sufficiently 136:19
suggest 60:4 89:19
 96:12 207:15 208:7
 250:10 302:21 303:15

- suggested** 108:12
145:9 248:9 266:19
suggesting 54:22
214:11 245:6 304:8
320:15
suggestion 175:3
suggestions 113:8
244:12 245:8
suite 155:12 302:7
suited 51:19 91:11
summarize 6:5 8:14
82:16 112:7 119:13
251:6,22
summarizing 252:3
316:16
summary 49:3 71:14
131:21 261:18
summer 290:21 291:15
supplier 21:21
support 11:12 34:22
35:1 44:3 57:16 60:20
72:13 83:21 95:20
110:5 114:13 156:15
161:11 185:10 187:8
188:9 189:2 191:2
246:6,20 273:18
320:20
supporting 149:7 151:1
155:5
suppose 198:15 214:4
276:20
supposed 4:5 99:12
173:14 198:16 265:6
266:10 289:15 290:4
290:22 318:22
suppository 283:3
sure 20:13 43:8 63:6
66:19 71:8,20 76:2
101:1 117:5 127:2
154:21 184:18 195:19
198:9 231:14 232:22
233:6 243:16 266:14
266:16 269:3 282:20
283:1,6 288:4 296:7
317:12 320:18
surely 283:2
surfaced 155:16
surprise 85:7
surrogate 37:7 113:15
surrogates 36:16,18,19
46:11 54:12
surround 267:17
surrounding 25:18 56:1
85:19 253:11 254:11
suspect 220:9 319:2
suspects 30:16 36:20
swamp 294:2,3,20
sweeping 173:21
switch 54:5
- symmetry** 275:1
sync 59:5
synonymous 144:4
183:8
synthetic 191:20 193:2
193:3,3
system 43:4 52:11
69:10,19 74:1 86:2
102:20 104:22 119:5
119:22 120:3 147:12
148:20 219:10 221:1
241:7 246:12 272:5
287:2,3 289:11
296:12 302:3
systemic 164:13
systems 55:19 74:3
159:15 176:11 219:12
248:12 280:20 284:17
-
- T**
-
- T** 274:21
table 3:1 7:5,13 38:18
51:2 140:7,8 174:3
249:22 256:4 303:20
tables 53:18
tackle 58:22 115:19
145:12,15 210:7
243:1 259:18 295:22
298:11 305:18
tackled 19:22 298:12
tackling 298:16
take 4:20 15:3 18:7,17
22:1 40:4 68:4 69:3
71:11 77:18 89:21
95:11 103:15 110:22
112:7 118:4 120:9,16
122:20 135:3 149:3
166:21 172:22 173:22
176:10 200:2,14
211:1 214:1 220:9
225:18 231:9,15
234:5 244:19 252:8
266:2 268:15 269:2
285:9 287:7 290:16
290:20 293:8 302:17
307:20 311:15
taken 45:11 46:1 201:1
takes 166:11 189:7,8
236:4
talk 19:18 32:17 40:3
45:5 47:18 71:3 88:2
90:18 103:2 141:12
151:13,18 155:1
162:4 163:4,5 178:6
184:15,16 185:11
206:19 208:21 213:8
251:22 263:20 305:10
talked 70:1 111:17
120:20 158:6,17
159:17 241:20 242:3
243:7,8 244:11
259:15 260:14 289:4
293:21
talking 5:19 6:8,10 44:8
55:21 61:3 62:18 71:5
106:8,15 114:5,5
137:9 145:9 170:8
184:7 192:18 219:1
222:16,19 224:7
261:6 271:13,17,19
288:14 300:7 317:21
321:2,3
tape 30:3
targeted 114:22 151:15
task 127:15 165:21
166:11 197:15 215:4
215:6 288:3
tasked 104:6
tasks 190:5
taught 223:2
Tcheng 9:17 14:1,2
teams 53:20,21
technical 24:15 32:12
95:10 178:13 206:5
212:21 214:21 215:20
244:8 259:14 268:5
268:22 280:10 286:20
294:12 299:10
technically 43:20 216:5
technology 267:9
tedious 235:10
tedium 209:12 230:4
Telephonic 46:2,5
tell 9:15,15 14:20 74:12
80:14 161:5 183:2
190:11 217:10 295:19
309:5 317:7,10
Telligen 1:17 10:9
telling 117:8 191:7
219:8 246:7
templates 263:3
ten 35:4 173:6 188:11
288:8 304:9
tend 164:12
tended 188:5
tendency 100:7 208:12
tends 163:19
tenet 80:19
tension 154:22 155:3
tentative 318:1
TEP 206:19
term 55:11 73:16 265:8
274:7 275:15 305:9
terminological 263:6
265:2
terminological-speci...
222:22
terminologies 19:6
30:14 32:3,5 34:10
36:1,10 37:12 38:11
40:1 43:11 47:19
50:22 51:18 57:6,21
61:3 62:9 112:1
125:15 148:12 171:1
196:16 232:4,13
257:22 271:18 278:18
terminology 19:5,10
31:4 39:16 43:2,7
53:6 57:16 58:9,21
64:12 65:1,7 66:2,5
73:6,16 102:18
111:22 148:4 149:7
159:20 162:4 171:9
171:19 176:11 198:15
199:16 223:3 258:14
261:1 269:9,11,11
272:4 277:11
terms 34:17 36:22
38:19 39:5,10 41:21
45:20 46:16 50:5
51:18 57:4 59:17 61:6
61:15 62:4,14 70:16
72:22 81:15 83:6
85:13 88:8 97:4 105:8
105:9 107:2 111:16
114:22 119:16,16
120:13 134:17 137:21
143:5 153:7 155:7
160:2 161:5 163:2
168:21 170:4 182:22
186:20 187:5 196:8
198:15 199:9 215:16
222:15 230:7 246:21
247:11 248:19 255:12
256:19 258:13,17
259:3 260:2 261:9
267:2 268:6 270:22
272:10 282:18 285:22
289:13 293:21 298:3
298:4 304:19 318:18
test 22:15 24:16,19
69:15 173:10,11,17
181:11 200:7,8 201:9
206:11 211:21 230:21
230:21 253:7 267:13
267:16,22 268:6
tested 40:6,10,13 46:21
testing 3:13 6:11 13:3
66:12 121:3 160:13
160:16 173:5 254:8
254:20 255:13 317:22
tests 51:19 156:4
291:14 316:17
Texas 12:6,10 294:8
298:19,19
thank 4:21 5:12 7:9
13:22 14:4 15:1,2

16:12 18:12,16 66:20
 67:21 121:4,6,12
 160:15 174:11 310:17
 321:13,15 322:9
thanks 29:4,5,15 41:18
 54:15 68:1,8 97:20
 213:16 241:2 322:10
theory 258:15
therapeutic 164:14
therapy 128:7 129:2,4
 130:4 131:7
thing 39:1 46:17 59:13
 60:17 62:13 63:8 73:3
 80:12 88:21,22 93:21
 96:14 107:15 116:1
 117:21 120:1 149:8
 156:17 162:3 175:5
 185:11 195:16 204:6
 225:9,18,22 227:3
 228:6 231:19 242:16
 245:13,14 246:7
 247:21 248:15,17
 257:9,15 259:8,13,14
 264:12 268:7 272:19
 273:6,7,11,19 281:10
 282:13 283:21 284:22
 294:12 309:14 314:18
 316:14 320:19
things 8:17 11:14 24:10
 38:20 53:8,14 54:6,19
 55:20 61:17 62:1
 66:22 67:3,19 72:1
 79:22 87:11 94:17
 95:21 116:8 117:5
 118:21 119:7 133:7
 133:20,22 150:4,15
 152:14 156:19,20
 157:1,8,16 158:9,10
 174:6,15 175:1,14
 176:17 180:12 184:3
 186:17 187:7,17,19
 188:6,11 189:6,10
 194:9 195:15 198:17
 203:15 226:3,6 237:5
 238:3,5 241:3,11,17
 241:19 242:21 243:7
 244:4 245:11,16
 246:10 247:12,21
 248:8 249:12,14,15
 253:21 254:22 259:3
 259:4 260:3,13,20
 267:12,14 268:20
 274:14,19 275:7
 277:16 280:12,13,14
 281:14 282:10 283:22
 285:19 286:7 289:3
 291:20 293:19 296:4
 296:16 298:11,12,16
 300:3 311:13 314:19

315:10,16 320:6
 321:9
think 14:9,10 15:22
 17:20 22:7 25:11
 31:20 34:12 36:5,7
 38:18 39:22 41:14,19
 41:20,22 42:8,10
 43:17,20 44:15 45:4
 47:3,14 48:1,7 49:2,6
 49:10,15 50:17 51:1
 51:10 53:1 54:1,9,19
 54:21 55:11,13 56:16
 57:2,3,4,7,20 58:9,20
 60:22 61:16,21 63:14
 64:8,9,12,22 65:2,3
 65:12 66:3,4,9,20
 67:11 68:20 69:8,20
 70:7,15,20,21 71:11
 71:17 72:6,8,18 73:1
 73:15 77:6,9,10 78:14
 79:5,19 80:3,13,19
 81:1 82:16 83:16,17
 83:20 84:21 85:19
 88:4,17 89:5,20 91:3
 91:12 92:1,22 93:18
 93:19 94:17 95:21
 96:1,9,22 98:3,4,10
 100:13,17 103:4,9,11
 104:5 105:14,19
 106:1 107:12 110:3
 114:8 115:2,6 116:7
 116:10 118:16 119:11
 119:14 120:16,19
 122:22 131:21,21
 133:9,10 134:3,3,17
 134:19 138:9 139:20
 141:2 144:1 145:14
 145:16 147:1,8,9
 148:9,17 149:11
 150:9 152:2,4,21
 153:13,14 154:22
 155:13 156:7,16,20
 158:7,9 159:8 166:8
 166:10,12,18,19
 167:2,4,6,17,21 168:7
 168:8,15 169:19
 170:3,5,16,16 171:20
 172:1,9 173:2 174:17
 175:13 177:4,14,19
 178:8,12,18,19,22
 179:2 182:16 184:5
 184:20,21 188:5
 191:2 192:4 193:9,10
 194:11 195:3 196:2
 196:22 197:8 198:1,2
 199:8,11,16 200:2,22
 201:4,6,20 202:4
 203:5,16 204:17
 206:1,2 210:9 211:4

213:3,17 214:10,19
 215:21 218:15,17
 219:14 221:10,11,12
 222:15 223:18 224:12
 224:17,18 226:8,10
 226:11 227:22 230:6
 230:18 231:13,14
 232:13 233:1,16
 234:6,12 235:15,18
 235:20 237:1,6,8
 238:3 241:8,10,16,20
 241:20 242:15 243:22
 244:2,9 245:18 246:9
 246:17 250:4,6,10,20
 252:12 253:9,19
 255:2,6,12,19 256:9
 257:6,14,16 258:8
 259:7,10,17,21
 260:18 261:8,8,21
 263:1,7,13,20 264:5
 264:15,18 265:19
 266:19 267:1,11
 271:8,21 273:12,17
 274:11 275:2 277:9
 279:21 280:2,6,9,16
 281:3 282:1,7,9
 283:12 284:13 285:8
 285:18,18 286:2
 288:10,12,13,18
 289:2,10 290:3,6,13
 291:6 292:8,20 293:2
 294:17 295:3,4,7,14
 295:17,21 296:4,6
 298:3 299:15 300:1
 300:11,20 303:9,11
 303:11 305:12,18,20
 305:21 306:3,5,7
 307:8,11 308:21
 309:5,14 312:5
 314:19 315:20 317:1
 319:7
thinking 14:17 26:3
 79:19 80:21 84:22
 88:8 124:1 196:20
 213:9 226:14 243:5
 243:20 246:22 265:5
 297:13,15,22 316:20
thinks 155:10 277:22
third 48:16 82:17
 104:12 225:6 268:1
 286:4 299:1
thorough 242:7
thoroughly 177:16
thou 30:17,18,18
thought 26:5 30:5
 46:15 100:8,11 116:3
 121:5 127:18 138:15
 213:16 245:12 252:5
 253:22 266:13 281:21

294:13
thoughts 68:5 83:2
 231:7 252:3
thousand 188:11
thousands 127:16,16
 127:17
three 48:10,22 49:3
 104:16,20 112:11
 130:14 177:10 210:10
 210:11 230:22 231:15
 234:5,8 238:2 252:6
 253:3 255:8 267:14
 268:8,11 269:1
 281:22 282:3,5
 288:11,12 289:3,4,6
 290:10 291:4,5,14,15
 292:1,8,19 294:9,21
 297:11,16,17 298:20
 305:1 309:9,12
 310:19 316:2,17
three-page 73:12
three-part 21:8
threshold 125:12
thrilled 161:8,9
thrombotic 39:18
 274:15
Thrones 160:8
throughput 113:17
throw 106:22 141:5
 144:13 179:8 180:12
 236:19
thrown 188:11
tied 174:6 233:3
ties 96:15
tighter 194:6
tightness 188:4
time 5:4 6:21 11:15
 15:16 16:6 17:10 19:9
 24:12 26:1 41:20
 42:20 44:2 50:9,12
 61:3,22 62:12 65:2
 72:21 80:22 85:19
 98:10 99:14 103:22
 104:17 117:2 127:20
 141:14 146:9 147:14
 170:21 171:5,19
 175:7,9,18 178:17
 185:17 197:8 200:3
 211:3 232:12 233:14
 244:20 247:6,10
 254:4 258:15,21
 266:4 270:12 273:11
 288:5,6 292:2 300:3
 301:13 304:13 310:17
 317:14,17 318:20
 319:3 321:14,19
time-consuming
 291:17
timeliness 103:7

times 94:14,15 96:6
 100:17 116:16 138:8
 141:3 151:6 157:12
 168:2 177:21 201:18
 219:1 245:1 280:17
timing 28:21 79:1 86:3
 99:21
to-one 39:8
today 5:7,13 8:1 9:11
 14:5 15:5 24:13 25:17
 32:20 37:9 38:21
 54:20 65:5 90:2,6
 145:10 156:3 157:3
 157:20 240:9 250:6
 250:14 278:17 282:5
 290:18 316:14 318:21
today's 5:20
toes 114:10
told 4:8 192:21 301:3
tolerable 49:20
tolerance 93:20
tomorrow 90:7
ton 140:2
tonight 121:18
tool 15:22 78:13 88:9
 88:11 96:2 108:1
 137:18 141:12 161:18
 161:22 162:2 171:12
 184:2,9,19 185:10
 186:4 190:16
tooling 107:12 110:4
 178:5
tools 35:14 83:21 88:10
 107:3 155:12 162:10
 171:10 178:2 184:2
 244:2 306:12
topic 9:10 42:3 57:11
 124:19 268:20 315:9
topical 192:5,7 194:9
 194:10
total 66:6 308:7
totally 99:8 256:10
touch 145:14
touched 70:21 287:12
trace 130:18
tracing 129:20,22
track 26:10 62:5 115:1
 247:15
trackable 305:13
tracking 107:4
tradition 78:17
traditionally 243:15
 245:11
traffic 4:9
train 57:8 253:22
trains 252:5
transaction 15:11
transcribing 156:21
transcript 139:15

transferred 185:8
transformation 249:4
transition 17:2 39:22
 41:9,13 54:6 301:9
transitional 33:21 34:9
 43:10
translate 291:6,18
translation 248:22
 249:1,6
transparency 90:14
 188:1
transparent 8:6 153:18
 189:13 304:17
transparently 166:1
treat 138:13
treating 263:22 274:15
treatment 151:17 152:1
 172:5
treatments 151:9
trial 238:17 283:2
tricky 217:19
tried 182:4 210:22
Trinity 1:21 12:14
tripped 269:14
trivial 304:6
true 62:15,18 72:4 92:5
 183:14 192:7 194:4
 243:19 264:12 281:2
truly 82:3 227:16 281:2
trust 35:9 40:4 66:6
 75:2 95:14,17 99:20
 240:7,15,15 272:9
trustability 96:9 315:16
trusting 35:5,12
truth 70:9
try 20:13 44:14 54:6
 58:21 66:9,10 68:3
 81:14 84:5 135:2
 136:6 153:21 155:5
 157:4 163:9 190:18
 198:4 199:21 201:14
 203:17 223:19 225:21
 229:18 231:11 265:16
 265:20 277:3 279:18
 282:10 291:1
trying 6:20 38:2 52:7,8
 53:10 67:15,16 68:17
 70:17 74:8 87:9
 100:10,15 102:21
 103:2,21 114:7
 115:20 118:15 151:10
 153:15 155:14 182:9
 182:11 199:10 205:10
 206:21 207:3 209:15
 211:11 229:22 231:6
 231:19 234:21 235:10
 257:17 262:10,14
 263:17 286:12 293:12
 299:11 300:15 303:8

303:9
TUESDAY 1:5
tune 123:5,5
turn 5:8 20:7 21:2 26:15
 68:1 80:12 85:11,12
 163:14 287:22
turned 189:11 291:10
TV 122:10
tweaking 282:13
two 6:22 8:17 25:7
 54:19 55:19 57:22
 58:3 61:10,13,14
 62:14 63:9 64:7 67:9
 72:18 82:18 89:7
 90:19 94:20 104:12
 104:19 116:6,8
 122:14 123:19 125:11
 127:3,9 128:12
 134:19 137:14 155:5
 155:15 159:21 165:4
 167:21 182:16,19
 186:17 188:6 189:5
 190:5,8 201:19
 202:18 208:5 215:5
 217:8 225:3,20
 228:12 245:2 252:5
 254:22 261:1 263:7,8
 267:11 270:17 277:16
 278:7 281:7,13
 283:12 289:17,21
 299:20,21,21,21
 300:2 301:13 304:5
 304:19 305:13,14,14
 309:9 310:18 316:1
tympanometry 160:11
 160:12,13,14,16,19
 173:5,17 175:22
 176:2,6
type 39:18 129:8 149:5
 150:17 151:17 175:12
 199:9 243:5 251:18
 275:22 300:6
types 69:6 73:17 126:2
 151:8 203:14 243:20
 249:15 254:2,18
 258:17 263:4 265:8
 282:3,11 285:11
 288:13 289:21 290:10
 300:3 316:18
typically 113:18
typing 243:3,4 254:16
 259:6 265:12 296:15
typology 311:20,21
 316:4

U

ultimate 179:19 180:2
ultimately 183:4

umbrella 146:17 181:1
 181:7,9
umbrellas 146:18
unbelievably 131:19
uncontrolled 59:20
uncovering 133:20
underestimated 113:3
undergo 28:2
underline 207:12
underneath 181:9
 272:13,14
understand 5:4 19:4
 38:7 53:19 64:1 71:21
 80:13 81:11,13 99:8
 104:13 114:9 130:19
 132:10,16 133:12
 158:4 206:15 207:16
 242:6 244:8 250:2
 269:15 287:5,6 302:5
 308:9 318:20 320:13
understanding 7:18
 26:14 57:5 83:4,7
 96:16 115:4 132:22
 159:15 180:5 236:14
 252:18 254:14 295:8
 299:16
understands 115:2
 244:18
understood 115:12
undertaken 43:17
undertaking 155:18
unfolding 89:12
unfortunately 77:14
 102:14 187:11
unhappy 212:11
unified 114:10
union 277:16 278:6
unique 128:15 160:7
units 140:15
universe 307:21
University 1:14 10:1
unjustifiable 22:10 59:3
unjustified 275:16
unknown 46:8
unmanageable 303:13
unnecessary 22:9
 65:22 275:15
unquote 254:16
unreasonable 292:21
 293:1,3 303:11
unsure 95:16
up-to-date 233:15
update 28:14 79:15
 107:6 109:13
updated 100:1,3,3
 219:13 273:11
updates 28:2
urge 102:8 290:9
usable 225:22

usage 150:17
use 2:17 10:5 11:3
 12:14,19,20 17:14,16
 17:18 24:6,16 30:7,16
 30:18,19 32:4,6,9,21
 34:7 39:3,9,14,16
 42:22 43:10,12 47:6
 48:1 50:10 51:5 52:10
 55:16 58:22 69:6 71:8
 80:16 81:17 82:2,6
 88:5 91:16 94:22
 100:1,4 101:5 102:1
 104:3 106:19 112:16
 114:12 116:6,11
 119:5,18 120:12
 123:19 124:1 134:19
 140:16 148:2,3,17
 149:16 150:18 153:22
 159:20 161:3 162:11
 162:18 164:14 165:3
 165:14,18 168:4
 170:19 171:15 172:19
 173:19 179:5,14
 182:20,22 188:17,20
 188:22 189:3 190:22
 192:18 193:7 203:8
 203:19 209:8,19
 210:3 211:13 219:10
 222:2,10 227:5 229:9
 229:10,22 230:16
 240:18 241:5 243:3,9
 244:21 245:14 246:5
 246:18,20 248:7,12
 260:5,11 261:4,15,16
 263:19 264:5 269:8
 269:10,12,18 274:7
 285:6 286:21 301:4
 301:18 307:22 308:4
 308:11 311:5 313:9
 313:16 314:22 319:20
useful 26:9 44:3 60:22
 68:19 92:18 147:22
 148:10 160:18 163:11
 171:18 188:17 241:18
 248:3 257:20 300:9
useless 100:22 115:6
user 13:13 100:9,9
 138:15,16 184:3,19
 240:7,13
users 64:3 75:13 85:13
 86:16 105:22 106:10
 107:22
uses 244:21 248:3
usual 36:19
usually 29:13 48:3
 93:11 242:5 256:8
 261:3 307:3
UT 12:8
utilization 113:22

utilize 158:20 186:22
 187:1 241:8
utilized 23:8 146:12
utilizes 186:4
utilizing 242:6

V

VA 190:21
vaccinations 87:14
vaccine 58:12,15,16,18
 61:11 80:7,8 82:4,6
 82:11 87:10
vaccines 63:10,10,11
 63:14 81:21 82:2,2
 87:3,4,7
valid 244:10 246:14
validated 76:19 192:20
Validation 10:19
validity 22:19
valuable 140:22 188:8
 195:16 245:19
value 1:3 3:6,7,10,11,14
 4:15,18 6:1,2,6,8,11
 7:14 10:5,21 11:3,8,8
 11:13,14,18 12:1,15
 12:20 13:4,12,13,20
 16:3 17:4,13 19:1,4
 19:12 22:8,11,13,17
 22:17,19,21 23:4,8,9
 23:12,14,16,18 24:5,7
 25:2,3,18 26:13,15,18
 26:22 27:1,2,5,9,11
 27:11,15,17,19,20
 28:1,5,7,10,13 29:22
 30:7,12,22 31:3,10
 32:22 33:13 34:21
 35:3,4,6,8,9,12 36:8
 38:2,8 40:5,12,18
 41:17,22 44:9,17 45:6
 45:8,10 47:9,10,14,17
 48:11,15,17,21 57:17
 57:19 58:6 59:1,12,15
 60:4,6,9 61:2,13,18
 61:19 62:5,16,19,19
 62:22 63:2,3,6,9,19
 64:22 65:15,17,19
 67:3,15,17,18 68:5,6
 68:11,15 71:16 72:14
 72:15 73:2,9,19,22
 74:6,9,10,11,12,19,20
 74:22 75:3,11,20 76:4
 76:5,8,12,15,17 77:3
 77:8,21 78:1,9,10,17
 78:17,19 80:4,8,8,16
 80:18,18,20 81:1,2,4
 81:7,8,10,10,12,15,18
 82:11,20,21 83:3,4,5
 83:9,10,18,19,22 84:1
 84:4,8,12,15,16,19

85:1,12,19,22 86:13
 86:15 87:13,18 88:3
 88:14,15 89:22 90:6,8
 90:12,15 91:7,17,19
 91:20 92:4,6,7,11,13
 92:18,21 93:5,9,11
 94:7,10,11,14,20 95:1
 95:2,3,4,5,14 96:16
 96:18 97:1,1,12,14
 98:2,13,17,21 99:22
 100:19,21 101:3,6,20
 101:21 102:5,6,7
 103:16,18 104:3,8,9
 104:11,13,14,16,18
 105:1,2,10,12,15,15
 105:16,18 106:4,6,8
 106:11,15,19,20
 107:5,6,8,17 108:1,3
 108:4 109:7,16 110:9
 111:6,11,19,21 112:4
 112:17 113:1,13,19
 114:5,20,21 115:5,7
 115:16 116:5,9 117:7
 117:17 118:6,11,18
 119:1,6,19 120:2,5
 123:14,17 124:13,15
 124:21 125:11,22
 126:5,6,12,16 127:17
 128:2,9,12,19 129:6
 129:14,15 130:4,7,22
 131:4 132:5,6,10,20
 132:22 133:2,13,14
 134:5,14,21 135:6,16
 136:7,22 137:19,22
 138:6 139:5,6,7 140:1
 140:11,15 141:4
 143:2,4,5,8,15,19
 144:3,17 145:1,2
 146:19 148:3,6,11
 150:8 151:5,14 152:3
 152:7,16 153:2,5
 154:9,14 158:13,19
 158:21,22 159:4,10
 159:11 160:2 161:2,6
 161:7,11 163:2 164:1
 164:5,9,17 167:16,19
 167:19 168:4,18,20
 168:20,22 169:3,7,7
 169:16,17,22 170:1
 172:8,10 175:1,7,10
 177:12 178:3,4,9,16
 178:17,20 180:2,6,9
 180:13,15,17,20,21
 181:13,22 182:2
 183:5,11,16 185:1,4,7
 193:14 196:17,18
 197:9,10,11,19 198:8
 198:18,19 199:14,15
 199:18 202:1,15

203:6 204:4 205:14
 205:16,21 207:10,16
 207:20,22 208:5,14
 208:14,15 209:4,6,7,9
 209:12,13,18 210:2,6
 210:8,11,20 211:20
 212:3,9,12 213:1,7,10
 213:11,20 214:2,8
 215:7 216:2,10,12,17
 216:19,20,21 217:3
 217:18 218:5,9,12,15
 218:16,19 219:18
 220:6,15,20 221:4,9
 221:12,21 222:3,7,8
 222:11,12,16,17
 223:17,17,19,22
 224:9 225:3 226:16
 226:18,19 228:3,3,19
 229:9,11,15,18,20
 230:1,4,7,8,9,10,13
 230:16 231:1,9,10
 233:3,4,13,15,17
 234:17,19,20 235:2,6
 236:9 237:3,21
 238:18 239:12,17,19
 240:2,3,4,8,10,14,17
 240:20 241:21 242:4
 242:22 243:4,8,20
 244:13,14,15,17,17
 244:20,21,21,22
 245:1,7,12,14 246:2,4
 246:15 247:3 248:6
 251:10,12,17 252:11
 252:21 253:1,12,16
 253:17 254:2,14,15
 254:16,18 255:10,11
 259:6,11,17 260:5,6,7
 260:9,15,16 262:4,9
 263:1,4,21 264:1,6,11
 264:18 265:5,6,8
 267:18,20 268:13,14
 269:4,6,17 270:1
 274:13 275:13 276:20
 277:1,6 278:12
 280:18 283:5 284:18
 286:13,15 295:10,11
 295:13 296:3,8,19
 299:11,14 300:2
 303:3,4 304:16 306:1
 306:22 307:6 309:15
 309:17 311:5,20
 312:2,3,6 314:21
 315:2,13
value-set 80:5
values 68:18 106:2
 112:19 119:16 138:12
 149:20 176:18 254:2
 257:8 265:12 312:8
variable 85:8 278:5

variance 22:10 25:2,3,5
124:5
variation 34:11,19 59:3
59:4 89:2 153:16
204:5
variations 132:11,20
variety 16:7 195:11,22
various 19:6 40:1 57:20
58:22 106:9 115:11
158:6 231:7 251:11
287:13 296:10
vary 264:11
varying 105:2 181:20
vendor 10:5 13:16
277:19
vendors 56:11 174:4
Venn 92:12
Verbal 20:19
verified 40:10 192:19
versa 101:9
version 313:7,14,15
versions 50:5 132:11
313:18
versus 82:4 111:8,8
114:11 119:2 140:16
140:17 148:3 155:2
158:14,20 159:9
213:4 228:17 238:17
239:1,7 248:17
260:16 272:22
vertically 52:10
vet 181:11
Veteran's 318:4
vetted 40:5,13 55:18
vice 2:10 18:10 101:8
view 86:14 252:16
viewing 315:7
virtual 79:20
virtually 50:7
visible 75:13 77:14
154:3
vision 98:11
visit 46:3
vital 26:1 180:4
vocabularies 33:20,21
34:20 41:4,8,9,13
45:18 46:9,12 47:4,6
71:18,22 72:2
vocabulary 11:16 40:21
46:21 64:18 76:8
301:9
void 216:13
voids 216:10
voluntary 21:6
VSAC 11:12 23:9,19
24:9 26:19,21 27:10
27:12 28:1,11 32:2
38:1 59:14 60:2 62:15
62:16 63:4,5 73:10

74:13 75:20 76:10
77:1,12 78:11 85:17
85:22 90:9 93:12 96:1
96:2,2 109:8,12
112:14 153:5,10,10
161:10,22,22 183:3,4
184:10 229:13 240:9
250:3 260:4 284:19
VSAC's 103:17
VTE 132:16 140:17
308:4,11 309:16,18
309:19 310:12 316:1
318:15
VTEs 310:11

W

wait 4:11 314:5
walk 26:16 272:7
Walker 1:21 12:12,13
walking 117:12
walls 182:10,11 283:20
want 4:11,13,20 5:8
8:17,22 14:5,14,17,20
17:8 18:6,17,19 19:8
19:14 20:6,13 21:2
22:1,6 26:12,13 28:18
29:17 30:4 32:11,16
34:22 49:3 53:16
54:17 60:4,11,12,19
62:13 65:2 66:16
70:18 71:8 72:7,12
75:9 76:2 80:20 82:1
87:11 91:16 96:14
102:2 107:15 109:18
113:15,21 116:13
117:21 118:22 119:1
122:4,7,21 133:9
137:12,16 138:1,5,13
142:8,21 151:3,4
152:21 155:21 156:7
156:18,22 157:18
161:5 173:15,16,17
176:9 177:16 179:16
180:3,21 181:4
182:15 186:19 187:9
187:10 188:5 189:16
191:1 201:6,11,21
202:2 204:8,10,15
206:10,17,18 210:18
216:3,18 221:8 223:7
223:8 228:15 229:14
232:21 233:22 234:2
237:7 238:3 239:21
240:21 243:12 244:5
246:5,8,9 251:21
253:6,13 257:19
265:8 267:3,21 268:2
268:3,9,10 269:21
272:6,19 275:20

276:19 278:21 279:1
279:3,6 280:21 281:1
282:17 283:9,18
288:8 290:1 291:16
302:1 303:19,20
304:1 305:3,20 309:9
310:4 313:5 315:17
318:17 321:5,13
wanted 31:8 40:15 41:4
44:1 87:2 93:8 99:19
101:12 103:1 106:14
106:21 109:6 112:9
112:22 116:1 142:12
152:12 174:12 185:11
188:12,13 241:22
261:17 262:7 276:6
277:8 285:2
wanting 103:7 176:17
wants 92:9 143:1
145:14 261:4
Warfarin 131:11 139:18
220:4
Warfarin-specific 220:2
220:3
warranted 208:9
Washington 1:9
wasn't 78:19 133:17
224:16 297:10 301:1
water 85:5 236:20
way 14:14 33:16 42:5
42:10 44:21 50:7,16
51:10,11 53:2 57:1
60:2 65:5 69:18 81:16
87:12,17 88:17 90:9
94:8 97:16 111:18
113:7,14,19 124:8
127:19 129:20,22
130:17,18 133:6,18
133:22 134:6 135:3
138:5,13 144:15
147:21 153:18 154:11
161:18 167:6 171:3
172:1 174:8 175:15
175:17 177:15 188:15
188:20 193:18 200:11
201:20 208:21,22
209:1 211:14 213:9
213:14 216:5 217:20
218:4,14 219:19
220:19 228:18,20
234:20 236:17 244:10
246:6 247:18 251:13
253:21 254:16 255:21
256:21 257:3 259:9
259:11 260:4 263:7
265:9 266:19 270:4
280:17 293:11 294:11
298:3 304:17 306:21
307:13 315:15,17

316:14
ways 33:2 56:17 73:6
88:11 97:21 116:5
122:15 158:7 180:9
219:5 223:12 243:19
245:2 271:1 274:8
300:8 308:22 315:4
we'll 5:13,17,19 6:1,10
7:13 15:3,4 24:18
45:2 79:14 91:8 93:20
107:20 121:2 141:12
200:2,15 201:19
203:22 210:8,12
214:8,9 246:18
267:16 268:4,7
276:18 282:9 287:4
287:20 290:6 294:20
306:9 310:16,18,19
311:6,16 313:2
315:21,21 316:10
317:19,21 321:10
we're 9:2,5 11:1 13:20
17:20 24:13 29:7 35:7
42:8 44:8 46:10,13
48:1 53:10 54:2,5,10
54:10 57:18 60:15,22
62:18 65:4,6,10 67:1
67:7,14 68:11 70:17
71:5 72:3,9,16 79:11
79:20 82:22 86:6
90:13,22 96:5 99:10
104:6 106:8,15 114:4
114:5,7 119:2,5
120:16 122:2 131:17
133:7 134:4,8 140:21
142:10 143:6 145:1
152:6 153:15 156:6
157:4 158:1 159:17
164:5 170:8 177:4
182:9,11 184:7
192:18 195:9,11
196:7 198:2,2 199:9
199:21 200:21 209:5
210:2,7,10 211:13
212:11 214:7 218:2
219:16 220:9,14
221:13,14 222:8,16
222:19 229:1 231:14
232:22 233:4,7,7
238:9,22 239:17
245:6 247:8 251:8,11
253:7 255:20 257:12
257:20 258:20 262:18
262:19 266:10,11,17
266:17 267:9,12,14
268:20 271:7,13,19
278:10 283:14 285:19
287:5 288:13 290:22
291:14,21,22 293:12

299:14 300:14 303:9
 306:19 310:21 314:15
we've 29:4 32:12 53:9
 53:20,21 61:2 67:2,4
 69:1 70:1,20 79:7
 103:6 112:11 116:3
 118:12 120:20 140:2
 152:16 158:6 159:16
 174:7 175:13 177:14
 177:20 179:2 189:11
 210:6 230:6 236:8
 250:6 251:4 257:10
 259:15 271:9 289:22
 291:9
wear 155:5
website 195:6
weeds 72:8 73:15 262:5
week 75:20 136:9
weeks 79:8 314:13
weigh 105:11
weighed 295:11
welcome 3:2 4:13 17:8
 136:20
well-being 219:15
well-specified 273:20
Wendy 1:16 12:18
went 22:4 54:8 84:22
 85:5 121:9 146:11
 200:18 220:14 236:21
 265:11 322:4,12
West 5:1
whatsoever 107:4
whichever 264:20
white 1:20 12:6 62:1
 79:20 267:8
Wi-Fi 7:4
widespread 255:14,17
wife 321:21
willing 75:9 76:22
 315:12
willy 216:21
Wilson 2:10 18:9,9
window 229:19
wins 230:8
wish 19:15 66:6 77:4
 84:13 141:11 160:22
 276:4
Wittenberg 123:9 125:4
wonder 44:12 245:16
wonderful 110:5 240:1
 268:2 273:13 279:13
wondering 75:18
 162:16 251:5
word 53:3 77:19 78:4
 91:16 98:2 116:11
 119:13 166:16 182:21
 183:1,7 186:9 256:8
 271:13 294:17 314:22
 316:6

words 129:12 165:20
 179:22 235:12 244:15
work 9:4 10:9 11:15,22
 13:6,10 14:7,15,16
 16:22 17:2,3,13 19:11
 19:14 24:9 29:8 44:16
 66:21 70:11 82:14
 86:4 89:4,21 92:2
 99:4 103:16 107:13
 109:11,13,15 132:17
 134:15 135:15 146:20
 149:5 157:4,9,20,21
 161:9 165:7 166:19
 169:2 171:7 183:20
 184:18 186:4,8,14,16
 186:19 187:3,15
 190:17 191:8,20
 194:14 195:1,4,20
 199:8 212:4,18
 214:21 217:20 224:11
 226:22 228:2 230:12
 230:16 236:7,8
 239:22 241:6 242:4,6
 242:11,16 245:18,19
 246:3 250:9,15,16
 251:2,2 256:9,20
 258:3,6,11 264:13,21
 270:20 279:4 295:18
 296:7 299:9,11
 300:10 301:10 302:21
 306:9 311:14 313:19
 314:1 315:21 321:8
 321:18
workable 319:8
workarounds 36:5,7
worked 16:16 17:17,19
 25:16 37:22 122:8
 189:11 212:17
workflow 149:16 150:3
 150:11 202:17 203:10
 203:13,19 205:13
workflows 203:11
 214:18
workgroup 11:16 13:7
 40:16
working 11:21 15:19
 16:6 17:10,14 19:4
 21:12 49:22 50:3 67:1
 86:6 95:20 112:11
 124:8 187:19 206:16
 226:5 237:18 293:14
 311:15 313:8 321:16
works 184:5 238:6
 260:5 265:22 282:12
world 10:15 36:12 58:3
 67:16 96:10,11
 114:10 154:16 162:7
 229:19
worry 117:8,10 176:5

188:19
worse 31:4 75:14
worst 28:20,21
worth 91:18
worthwhile 65:9 244:19
worthy 61:21 271:21
wouldn't 52:15,16
 55:18 148:1 160:22
 258:7 269:20 320:3
write 232:2 266:15
 267:4,6 268:8
writing 266:13,14
wrong 79:3 224:21,22
 251:8 271:16 293:11
 317:7 322:8
wrote 180:7 234:9

X

X 175:6 211:22
X12 15:10
X12/HL7 16:5

Y

Y 212:1
Yan 1:16 11:19
Yan's 112:10
year 15:6 17:5 18:16
 29:11 34:8 43:11
 177:10 233:5,8,9,11
 237:22 239:15 321:9
yearly 28:8
years 15:10 16:16 38:1
 62:7 65:8 109:9
 112:12 132:18 137:14
 302:12
yellow 189:7
yeoman's 127:15

Z

Zahid 1:9,12 10:4 29:19
 38:15 51:8 88:16
 111:14,15 119:12
 134:16 143:1 149:10
 153:12 167:18 171:21
 197:21 202:2 204:8
 213:2 246:16 263:11
 279:20 307:15 311:15
 318:8
Zahid's 57:3 154:7
 265:17 282:18
zinger 113:12

0

0018 67:5

1

1 17:16 42:22
1,500 152:16 175:14

1:00 317:20
1:27 200:19
1:30 200:21
10 17:20 41:11 47:21
 51:13 52:1 53:10 55:3
 55:6
10:45 6:22
10:49 121:9
100 150:14 151:19
 152:10
1030 1:8
10th 318:3
11 51:13
11:10 121:10
12 321:9
12:30 6:9 7:1
12:33 200:18
121 3:7
1300 18:2
15 122:3 157:11 176:7
15-minute 120:16
15,000 134:5
15th 1:8
18 3:5
180 289:22
185 3:9
19th 318:2

2

2 17:14 308:11 313:9,12
20 15:10 65:8 132:17
200 3:11
2000 17:12
2011 31:12
2012 140:8
2014 79:12 109:13
 313:15
2015 1:5 79:15 233:10
 313:18
2016 233:10,12
21 1:5
22 3:6
24 318:2
25 95:8
266 3:13
27 318:2
28 318:2

3

3 43:12,16
3:00 317:20
3:15 288:1
3:30 6:22
3:37 322:12
30 62:7 65:8 68:3 73:13
30-minute 7:2
317 3:16,18
322 3:21

4

4 3:2**4(b)** 278:10**4:00** 6:17 26:1 200:22
201:3 279:19 319:1,4**45** 200:15**49** 125:12,13 128:1**4ONC** 123:8

5

5 120:10**5,000** 119:1,7**5:30** 319:1**50** 79:16 95:5,7 120:10**50-percent** 79:11

6

7

7 3:3

8

8:00 29:12 318:21 319:4**8:38** 1:9 4:2**80** 151:20 223:2**84** 29:11

9

9 55:6**93** 308:7**98** 91:9**9th** 1:8

C E R T I F I C A T E

This is to certify that the foregoing transcript

In the matter of: Value Set Harmonization Committee

Before: NQF

Date: 04-21-2015

Place: Washington, D.C.

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

(202) 234-4433

www.nealrgross.com