THE NATIONAL QUALITY FORUM

$$
+++++
$$

PEDIATRIC CARDIAC SURGERY STEERING COMMITTEE

NATIONAL VOLUNTARY CONSENSUS STANDARDS FOR
PEDIATRIC CARDIAC SURGERY
OPEN SESSION
$++++$
WEDNESDAY
OCTOBER 21, 2009

$$
+++++
$$

The Pediatric Cardiac Surgery
Steering Committee met in Congressional A in the Hyatt Regency Washington Hotel, 400 New Jersey Avenue, N.W., Washington, D.C., at 9:30 a.m., Howard Jeffries and Lisa Kohr, CoChairs, presiding.

STEERING COMMITTEE MEMBERS PRESENT:
HOWARD JEFFRIES, MD, MPH, MBA, Co-Chair LISA M. KOHR, MS, MPH, RN, CPNP, Co-Chair SCHONAY BARNETT-JONES, MBA
PATRICIA A. GALVIN, RN, BSN, CNOR
NANCY GHANAYEM, MD
DARRYL GRAY, MD, ScD
ALLEN J. HINKLE, MD
MARK HOYER, MD
SYLVIA LOPEZ, MD
CONSTANTINE MAVROUDIS, MD
JOHN E. MAYER, MD
LISA NUGENT, MFA
Neal R. Gross \& Co., Inc.

## NQF STAFF PRESENT:

HELEN BURSTIN
SARAH FANTA
TINA GRANNIS

LISA HINES
CHRISTINA TSIATIS
ASHLIE WILBON

ALSO PRESENT:

DR. KATHY JENKINS
DR. KIMBERLEE GAUVREAU
DR. MARSHALL JACOBS
DR. JEFFREY JACOBS

## TABLE OF CONTENTS

Welcome, Introductions, Disclosure of
Interest . . . . . . . . . . . . . . 4

Audience Introductions. . . . . . . . . . . . 12
Project Overview. . . . . . . . . . . . . . . 13
Measure Developer General Comments. . . . . . 33
Workgroup Description . . . . . . . . . . . . 53

Break for Workgroup Discussions . . . . . . . 56
Reconvene Open Session. . . . . . . . . . . . 57
Outcome Measure 18
Measure Developer comments, Primary and
Secondary Reviewer Presentation of Measure, Steering Committee Discussions, Steering Committee Vote . . . . . . . . 60

Outcome Measure 21
Measure Developer Comments, Primary and Secondary Reviewer Presentation of Measure, Steering Committee Discussions, Steering Committee Vote . . . . . . . . 68

Public Comment. . . . . . . . . . . . . . . . 96
Outcome Measure 12
Measure Developer Comments, Primary and Secondary Reviewer Presentation of

Measure, Steering Committee Discussions, Steering Committee Vote . . . . . . . . 98

Adjourn

1

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

10:04 a.m.

CO-CHAIR KOHR: At this time since we're all face to face, we'll go around the room and introduce ourselves and also disclose any conflicts of interest that you have. And
then we'll have the measure developers introduce themselves.

I'm Lisa Kohr, and I'm a nurse
practitioner currently working at Children's Hospital of Philadelphia. And I don't have anything to disclose.

CO-CHAIR JEFFRIES: My name is
Howard Jeffries. I'm a pediatric cardiac intensivist at Seattle Children's Hospital. And I don't have anything to disclose.

DR. MAYER: I'm John Mayer. I'm a pediatric cardiac surgeon at the Children's Hospital in Boston. I suppose I have a few things to disclose.

One of which is that I'm a past president of the Society of Thoracic Surgeons.

1 I was actually part of the original group that
2 came down to Washington to meet with Ken
3 Kaiser in those days. And we were one of the
4 first professional organizations to put a set
5 of measures through the NQF process for adult
6 cardiac surgery. 13 ago.

8 you'll hear about later that was involved in

9 developing the first risk adjustment for
10 congenital heart surgeries called RACHS 11 Scores. I was on the expert panel for that 12 undertaking, now, at least ten or more years

15 to disclose.

21 I was not involved in the development of this
I also was part of the group that

I think that's all I should need

DR. BURSTIN: John, it would also
just be helpful if you could emphasize that you were not involved, though, in the development of these measures beyond DR. MAYER: Right. That's correct. set -

1
2 why you're here.

21 other bodies and helps, actually, formally get
DR. BURSTIN: Thank you. That's DR. MAYER: - of measures that's being put forward. Thank you for reminding me of that.

DR. GRAY: Darryl Gray. I'm a medical officer with the Center for Quality Improvement and Patient Safety at the Agency for Healthcare Research and Quality.

My background actually involves a doctorate in epidemiology with a project on patent ductus closure which John actually helped me with, now, almost 20 years ago.

And I've maintained an interest in this area of - I'm also involved at AHRQ with the Performance Management Advisory Group of the American Medical Association.

Which I think it's important to
disclose that because PMA actually reviews measures after they've been approved by NQF or them into a form where they can actually be

1 implemented.

21 Medicaid agency. I have nothing to disclose.
And that's, I think, not a conflict, but something that's important to disclose.

Also, I was not involved in the development of any of AHRQ's pediatric quality improvement measures. However, I was asked to review them.

The other thing which I should
also disclose is that I started working with Jeff Jacobs and Marshall Jacobs and others developing a crosswalk between ICD-9 procedure codes and diagnosis codes and STS diagnosis and procedure codes with the goal of doing a project to actually assess the concordance between STS data and administrative data that are actually based on the ICD-9 codes.

DR. LOPEZ: I'm Sylvia Lopez. I'm
a pediatrician. I work with the Oklahoma Healthcare Authority, which is a State DR. HINKLE: My name is Dr. Allen

1 Hinkle. I'm a pediatrician and
2 anesthesiologist and chief medical officer at
3 Tufts Health Plan in Massachusetts.

4
5 Galvin. I'm a nurse, a clinical coordinator
6 in the cardiac operating room at Children's
7 Hospital of Boston.

9 there - well, it's not a disclosure, but even
MS. GALVIN: My name is Patty

The only disclosure I have is that though I work at Children's, the measure that was submitted by Children's I had no part of and have nothing else to disclose.

DR. HOYER: I am Mark Hoyer. I'm a pediatric cardiologist. I direct the cath lab at Riley Hospital for Children in Indianapolis.

I don't think I have any specific disclosures. I was nominated for this committee by the president of the Society for Cardiac Angiography and Intervention.

And obviously I work very closely with the surgeons and have an interest in the

1 way things kind of unfold because we're so
2 closely allied with the patients that we take
3 care of, but I don't think I have any other 4 specific disclosures.

6 better scoot closer here.

MS. BARNETT-JONES: I guess I

Good morning. My name is Schonay
Barnett-Jones. I chair the Patient and Family
Advisory Council here at Children's National Medical Center in Washington, D.C.

I have a five-year-old who had a heart transplant when she was 17 months. She is a thriving kindergartner today, and I'm very happy to be here.

I am a managing director for Visa, managing US and Canadian client testing for all end points here. Thank you.

DR. MAVROUDIS: Good morning. I'm Gus Mavroudis. I'm a congenital heart surgeon at the Cleveland Clinic.

I was involved in the inauguration of the Society of Thoracic Surgeon's

1 congenital database 21 years ago. I chaired
2 that committee for a long time, after which it 3 was transferred to Jeff.

4

5 involved in some of the risk stratification 6 projects. However, I was not involved in any

7 of these scores or these indicators that are
8 being presented today. Thank you.
I'm still on that committee, been

DR. GHANAYEM: Good morning. I am Nancy Ghanayem. I am a cardiac intensivist at the Children's Hospital of Wisconsin, Medical College of Wisconsin in Milwaukee.

I was nominated to this committee by NACHRI. I have participated in the multisocietal organization that has been overseen by Jeff. And I have not participated - I have not been involved with the development of these measures, however I do work with a surgeon who is on the task force.

MS. NUGENT: My name is Lisa Nugent and I work for Johnson \& Johnson. I'm a creative director in the Global Strategic

1 Design Office and I work with the medical
2 devices and diagnostic operating companies and
3 franchises in that sector.

4

5 experiences and tools to empower patients to
6 better manage their own care, and I have
7 nothing to disclose. Thank you.

9 Tsiatis. I'm NQF staff and I have nothing to
My focus has been on designing

MS. TSIATIS My name is Christina disclose.

MS. FANTA: Hi, I'm Sarah Fanta, research analyst at the National Quality Forum, and I have nothing to disclose.

MS. GRANNIS: I'm Tina Grannis, and I'm project manager at National Quality Forum with nothing to disclose.

MS. WILBON: Hi. Good morning. Ashlie Wilbon, also a project manager at the National Quality Forum, and no disclosures. DR. BURSTIN: Good morning. Hi. Helen Burstin, senior vice president, NQF for performance measures and nothing to disclose.

MS. GRANNIS: Can we just have the audience members stand up by the microphone and just introduce yourselves, please?

DR. GAUVREAU: I am Kim Gauvreau.
I am a biostatistician at Children's Hospital in Boston, and also at the Harvard School of Public Health.

DR. M. JACOBS: Good morning. I'm
Marshall Jacobs. I'm a congenital heart surgeon and the director of clinical research for congenital heart surgery at the Cleveland Clinic.

I'm a member of the Society of
Thoracic Surgeon's Task Force for the national database.

I have been involved with
evaluation of the Aristotle Complexity Score as a measure, and I have been a member of the expert panel not that created the first iteration of RACHS-1, but has worked on further development.

DR. J. JACOBS: Good morning. I'm

1 Jeff Jacobs. I chair the STS Congenital Heart
2 Surgery Database Task Force, and I have all
3 the same disclosures that Marshall just had,
4 including the same last name.

21 have already seen. We reviewed many of them
(Laughter.)
MS. GRANNIS: Great. Thank you, everyone, and I'm going to be turning this meeting over to Ashlie Wilbon.

MS. WILBON: Good morning. We're just going to go over - I'm going to switch seats here to get to the computer.

We're just going to go over a few slides just to get everyone back in the mindset and review the projects, our goals today, and talk a little bit about the breakout groups a little bit more and get everyone ready to start the discussion. So, bear with me briefly while I relocate.

So, some of these slides you guys during orientation.

1
2 project scope and the list of measures. And
3 we're going to have Helen go over the
4 evaluation criteria again just in case you
5 guys have any additional questions.
6
7 reviewed the measures since orientation, so 8 there may be some questions about the

9 evaluation criteria that came up as you were 10 reviewing the measures. So, we will have an 11 opportunity to talk a little bit about that if 12 you have any questions and before we go into 13 the breakout groups.

21 general.

We just wanted to go back over the

Most of you have probably since

So, again, project staff, I think we've all introduced ourselves at this point, and Helen has given a pretty good overview already during the executive session. But in the interest of our audience members that are in attendance, I'll go ahead and kind of skim through these slides just about NQF in
We're a 400-plus-member

1 organization organized into eight stakeholder
2 councils including supplier industry,
3 purchasers, consumers, health plan providers,
4 quality measurement and research. And I'm
5 sure I'm missing at least one, but we've been
6 through that already.

9 recommend your measures, your recommendations 10 then get forwarded to the CSAC and they review

11 the measures that you've recommended and make
12 their recommendations based on your 13 recommendations for endorsement. And then 14 they go on to the board of directors for a 15 final endorsement.

The NQF structure includes a board of directors, the CSAC. Which once you

Strategic goals, again, that
standards endorsed here become the primary standards used for measuring the quality of healthcare in the United States, that we are the principal body that endorses national healthcare performance measures and quality indicators, that NQF will increase the demand

1 for high-quality healthcare and be recognized
2 as a major driving force for facilitator of
3 continuous quality improvement in American
4 healthcare quality.

21 representation are on the governing board.
So, we went through a little bit with the diagram, I believe, that was in your packet about the consensus development process which is a process that we go through to ensure that it's transparent and open to the public, but allows experts to weigh in on standards that are submitted to the NQF for review.

We want to make sure that we have
attention to overall strategy for measuring and reporting healthcare quality, including the establishment of national goals, that we represent on the committee that we have represented multi-stakeholder membership including, again, here at the eight councils, and that public and private sector

So, here is a condensed version of

1 the CDP schema. You have a much more detailed
2 one in your packet, I believe. And again, we
3 are at the yellow area where the Steering
4 Committee is reviewing. And again, once you
5 review, they'll go to the CSAC, we'll draft
6 your recommendations and they'll go for public
7 comments and then on to the board.

8

11 on pediatric cardiac surgery, there are the
12 two AHRQ measures already endorsed for 13 pediatric cardiac heart surgery, which are 14 PDI-17 and PDI - I'm sorry - PDI-7 and PDI-6

15 that were endorsed in May of last year. And
16 there are also some similar adult cardiac
17 surgery measures that are endorsed.

21 together so you can kind of get an idea of how
So again project information, you guys are all again familiar with this. This is project focused. Our first project focus

And I believe also in your
materials that we had distributed to you, there's a table that lists similar measures they're grouped. And as you're reviewing

1 those measures, you can compare in contrast
2 based on what was submitted and what is
3 already endorsed.
4
5 the Pediatric Cardiac Surgery Coalition which
6 is comprised of several hospitals and
7 organizations. And we had 21 measures
8 submitted from both STS and the Children's
9 Hospital of Boston.
And again, because of the lack of field testing for these measures, you'll only be eligible to recommend them for time-limited endorsement.

Project goals, to review the submitted measures, recommend qualified measures for endorsement to the CSAC, and to hopefully eventually provide pediatric cardiac surgery community patients/consumers with measures for reporting.

Your role today is to discuss the measures and have a healthy discussion on the evaluation criteria to ultimately make

1 recommendations to NQF on how the measures
2 should move forward.

4 here, we put them out for public comment. And
5 then we'll have - there will be an opportunity
6 for the committee to respond to any comments
7 that the public may have maybe based on the
8 way you voted, what was not recommended, what
9 was recommended, and based on your discussion
10 here. So, that will be in a subsequent
11 conference call following this meeting.

Also, once your recommendations are submitted to CSAC, which either Lisa and/or Lisa and Dr. Jeffries will attend to represent the discussions on behalf of the Steering Committee here, CSAC may have questions for you that they want you to respond to and so forth, which they would do on your behalf.

Here is the general timeline for the remainder of the project. The comment period is expected to begin November 6th.

1 Comments should end around November 30th for 2 the public, and December 7th for the members.

4 around December 18th, and it would end around 5 January 16th. We're hoping that we'll have

6 the measures along with the public comments
7 and recommendations to go for the CSAC meeting
8 that will happen in February of next year, and
9 then on to the board of directors for their

11 year as well.

13 NQF website. For those of you that have not 14 had an opportunity to look at the website, we

This is just a screen shot of the just did a whole revamp of the website and have added some features that allow you to follow a project along the course of the consensus development process.

On the Project page, you'll notice we're on the Details tab of the Pediatric Cardiac Surgery Project, and each step of the process has a plus sign next to it. And you

1 can click on the plus sign and it will list
2 any materials or documents that you can
3 download for that step of the process and kind
4 of give you a little bit of text around what
5 was going on during that step of the process.

7 beyond this meeting if you want to know the
8 status of what's going on, we keep this site
9 very up to date.

11 something from us, because everything is

16 hand it over to Helen. I'm not sure if you
17 want to just go from there or - okay.

19 have all had the orientation session. It's

21 quickly of our criteria. So, this is really what your evaluation is grounded and your

1 evaluation forms are grounded on the criteria
2 and the sub-criteria.

So, just briefly to highlight some of the key features here, we updated evaluation criteria just about a year ago and specifically did that for several reasons.

One of which, we wanted to clarify what some of those terms actually meant and get more specificity.

And secondly, we really felt there was an opportunity to kind of raise the bar a bit, make sure we're bringing in measures that are actually achieving the goals or hoping to achieve in terms of better healthcare quality.

So, we specifically put a link in to the national priorities that NQF has been working with, a coalition called the National Priorities Partnership, to put forward, as well as specifically saying we wanted to get at measures in high-impact areas.

There was also a strong emphasis on measure harmonization. If you just look at

1 the cardiac measures alone within NQF, it is
2 frightening how many beta blockade measures
3 there are around cardiac surgery and
4 cardiology.

6 begin thinking about how we bring those
7 measures together especially as we start
8 thinking about care across the full continuum
9 from outpatient to inpatient and beyond.

So, for example, we had measures submitted to us that said did you consider

1 whether the patient needed a flu shot? Did
2 the patient get a flu shot, is really
3 ultimately what you want to know. Did you
4 consider whether the patient needed one
5 probably isn't proximate enough to the outcome
6 that it's adding much to what we really want
7 to get at.
8
9 for consideration in these measures. The
10 measure either has to be in the public domain
11 or an intellectual property agreement or
12 measure steward agreement if signed. This is
13 still in process with at least on the STS
14 side, but we have no issues, I think,
15 proceeding.

21 years.

We have to have a steward who

1 agrees to do the maintenance on it, keep up
2 the evidence base, update the measure as 3 needed.

4

5 occasionally will do what's called ad hoc
6 reviews. If we hear from the field that
7 there's untoward consequences related to the
8 use of a measure, we will feed that back to
9 the measure developer and ask for their
We also not very often, but

112 to 24 months the developer will return with
2 our testing results.

7 report is sort of foundational. We really

21 as well, the evidence to support the measure
Those testing results go to our CSAC for review that the measure has in fact fulfilled the testing requirements.

So, importance to measure and consider all outcome measures essentially meeting this, so that's not a problem. We want to make sure, essentially, are the resources expended to collect these data to do the measure worth it, we're getting something out of it in terms of impact.

And specifically here we're thinking about is it related to one of those National Priorities Partnership goals? And certainly many of these are; patient safety, care coordination. I don't think there's much of an issue for these measures today. And specifically thinking about, focuses under importance.

2 This is a change from when we updated the 3 criteria last year.

4
5 important, it doesn't matter if it's
6 scientifically acceptable, usable and
7 feasible. It's out. So, that has actually
8 been a change in our process.
This is a must-pass criteria.

If a measure is not judged to be

Scientifically acceptability of
the measurement properties is obviously critical. We want to ensure that the specifications are precise, that they are reliable and valid and can discriminate between providers.

I mean if the ultimate goal here is public reporting and quality improvement, you want to be sure that as you aggregate these data for providers or clinicians that you're getting a reasonable estimate of their performance and can be compared to others. And you want to make sure at least in the part of the work we've done, and this

1 has been an issue we've had discussing with
2 STS over the years, our preference is not to
3 control for issues that could be related to
4 disparities like race, ethnicity, language,
5 insurance status, and then set to stratify by
6 those variables so we can actually see
7 disparities as opposed to having them control
8 for in a risk model.
And exclusions is the other big
issues, next slide there. We are increasingly
having trouble with measures just loaded down with exclusions.

This is especially important as we envision moving many of the measures to an electronic platform. The more exclusions, the more difficult it is to collect the data.

So, we are requiring that it's
fine to have exclusions. Things that are medical contraindications or relative contraindications should absolutely be exclusions.

What we don't want is things that

1 are really excluded and the reality is they
2 contribute very, very little to the overall
3 distortion of the measure if you actually
4 didn't have them in there. So, this is
5 definitely a work in progress.

1 without undue burden. Being able to go into
2 charts to pick up these kind of measures is,
3 I think, fallen away.
4 Increasingly we're seeing lots of
5 measures come in, which we are delighted with,
6 off clinically registries. I think it's the
7 right way to go for many of our clinical
8 specialties.

It just doesn't make sense that you're going to kind of do this on paper or that you're going to be able to get the clinical richness you need off administrative data. So, we fully expect a lot of these measures will come forward off of clinical registries.

> As much as possible as time goes
forward, we would also like to ensure that in our work we're doing in the health IT sphere, we work to make sure that whatever these registries are ultimately interoperable with the electronic health records where perhaps not the ones we have now, but the ones we

1 should have in the next few years where you've
2 pulling in the key pieces of clinical data
3 from the EHR and supplementing it with the
4 required pieces of data through a clinical
5 registry that you wouldn't otherwise have in
6 your EHR, so very much we're hoping to go.

8 measure developers at this point on that path
9 forward, to indicate which of the data
10 elements within those measures could be
11 captured electronically and which ones can't 12 and what's the path going forward here.

A particularly exciting time. I mean there's actually a meeting next week that I'm presenting at for the Health IT Policy Committee completely focused on specialty measures and the use to clinical registries as we envision this health IT-enabled world.

So, quite optimistic. This is an exciting opportunity for us, but we still need to have the measures based on the registries as that starting point.

1
2 there are any questions.

4 the measure developers at this time, just if
5 you have any general comments, if you would
6 just step up to the microphone and you can
7 present your comments to the Steering
8 Committee. 21 you'll see in the two workgroups, they'll be

And I'll stop there and see if

MS. GRANNIS: We're going to ask Committee.

And this would probably be an excellent opportunity maybe to explain the book, Dr. Jacobs, that you have brought along. DR. BURSTIN: And also just to put this in context, it's also very helpful since we, as you heard from our introductions, we can't allow those who have been involved in the development of the measures to sit at the Steering Committee table.

But we've tried to build into our process the opportunity to both hear from the measure developers up front, and also as with us. I assume we'll have a Dr. Jacobs in

1 each room for the two workgroups. This is
2 quite simple.

And so feel free to interact with the measure developers, get their input. We don't want to exclude them from the process, but at the same time need to be able to ensure we don't have conflicts at the table.

I'm sorry. Go ahead.
DR. JENKINS: All right. Well, it's nice to be here, and it's been exciting to see this field actually move forward so far in the last ten years.

I would just like to give a little bit of background to the measure that we're proposing form the Children's Hospital in Boston.

> It's called or we refer to it as the RACHS-1 Methodology. And the measure that we're proposing is a standardized mortality ratio using the RACHS-1 Methodology in its full form.

As John mentioned, this work

1 actually started around ten years ago. And
2 cardiac surgeons and cardiologists together
3 provided the judgment to the derivative
4 methodology.

6 originally in two large data sets and has been
7 used - it was published in January of 2002 and
8 has been used really widely both nationally
9 and internationally since that time. We found 10 over 39 publications that have relied in some 11 manner on RACHS-1.

It was also empirically tested

One of the points that I would like to emphasize to the Steering Committee, is that the measure we're proposing is for the full standardized mortality ratio using RACHS1.

And I emphasize that because there have been applications that have used only the categories that are a fundamental part of the procedural adjustment for RACHS-1. But the additional clinical variables for the full model which is relatively parsimonious, just

1 includes age, prematurity and other major
2 cardiac anomalies, also are important
3 components to an overall assessment.

The primary reason that we developed the measure was to provide an overall assessment of risk for short-term mortality for the core pediatric component of a cardiac surgeon's caseload.

It doesn't include the adult congenital heart population. It's limited to patient's less than 18 years of age.

It actually can be used in a variety of data sources, both administrative data and prospectively collected data.

And I do provide information in
the packet that I submitted, of really
widespread variation in the United States using this measure. It's definitely one that does show center-specific differences.

The data that I showed, showed variation in standardized mortality ratios from . 54 to 3.01 in a set of children's

1 hospitals that submit data to the Pediatric
2 Health Information System's database.

4 actually the one that we use at the Children's
5 Hospital in Boston to benchmark our own
6 performance using a one-year outcome and a
7 three-year rolling average.

21 that process was done, so the measure we're
So, I really just wanted to give you that introduction to our methodology.

And as Marshall mentioned, I know that you now have a three-year rule for revising these measures. RACHS-2 is in process.

It's been a little bit more complicated this time because there's a lot more data to use to revise the methodology, but both Jeff and Marshall and a number of other surgeons have participated in that process.

But your time frame came in before proposing is based on the RACHS-1 original

1 methodology.

7 is the largest congenital hearty surgery
8 database in the world. And a group of
9 surgeons from the STS spent about the last 10 year-and-a-half developing these 20 measures

11 that we've proposed.

DR. J. JACOBS: Good morning, and thank you for giving me the opportunity to come and talk with you all this morning about the STS measures.

The Society of Thoracic Surgeons

To understand those measures, I think the first step is to give a little background about the STS database.

So, the STS congenital heart
surgery database, like I said, is the largest
database in the world. Right now 85 of 122
hospitals that do pediatric heart surgery in
the United States participate in the STS database.

More importantly, 19 of the 20
largest hospitals participate, and we think

1 that 28 of the 30 largest hospitals
2 participate. The non-participants are some of 3 the smaller hospitals.

The STS database has worked over
5 the last 15 years to create a platform for 6 data entry that can work across the country

7 and is harmonious with international centers
8 in Europe and Asia and Australia as well.
So, there's really six principles
within the STS database that establish the platform for the creation of these quality improvement/quality assessment metrics.

And just to quickly go through these six principles, first of all, we've since the 1980s worked to standardize the nomenclature and terminology used in our database so that the same words/names for diseases, names for operations that are used in the STS database are used in the American College of Cardiology Impact database, are used in the Pediatric Cardiac Intensive Care Society database, are used in the Congenital

1 Cardiac Anesthesia Society database, and are
2 used in the equivalent databases of
3 cardiology, cardiac surgery, anesthesia and
4 critical care in Europe as well, and in some
5 developing databases in Asia.

7 harmonized now with SNOMED and ICD-11, and the
8 committee that developed the STS nomenclature
9 has representatives sitting on SNOMED and ICD-
1011 committees. So, I think that's very
11 important when you think about electronic
12 medical record, which you were talking about 13 before.

These metrics will work in the electronic medical record because it's going to be based on the same terminology.

Beyond nomenclature, the second part is harmonizing database standards. So, over the last decade we published a series or rules to define "mortality" and "morbidity" within our database, rules that have been adopted in the surgical databases in six

1 continents, and that have also been
2 implemented in cardiology, cardiac surgery,
3 anesthesia and critical care databases across
4 the United States.

6 develop these metrics is tools for
7 stratification of complexity. And what I mean
8 by that is that we have to have a way within
9 the database to be able to separate out
10 operations that have a very high risk of dying
11 versus a low risk of dying, and operations
12 that have a high risk of complications versus

21 subjective probability and expert opinion.
22 And that's kind of where we get to some of

1 these books.

4 half of that big book is divided into the six
5 points that I'm talking about now; the
6 nomenclature, database standards,
7 stratification of complexity, data
8 verification, sub-specialty collaboration and
9 longitudinal follow-up, and there's between 10 one and several articles on each of those 11 areas.

21 we're discussing different methods to stratify
In the smaller book, there's four more recent publications. One on defining mortality, one on defining morbidity, one on the application of the basic forms of RACHS and Aristotle within the STS database, and then the last one is on the newer stratification methodology that we've developed on objective data.

And this can provide a source as complexity and how we're going to apply that

So, the big book is a book that was published last December. And the first

1 within our quality improvement metrics.

4 verification. We have an active system in
5 place to verify the completeness and accuracy
6 of the data so that there is really three
7 levels of data verification.

11 the data.

21 provides a third method for verifying the
22 accuracy of the mortality data.

The fifth topic is sub-specialty collaboration. And although we're talking about congenital heart surgery outcomes, the care of a patient with pediatric congenital heart disease is a team sport. It's not just the surgeons. It's surgeons, cardiologists, anesthesiologists and intensivists.

And when we look at the blue book that I've handed out, this blue book has been written by surgeons, cardiologists, anesthesiologists, intensivists, profusionists, nurses, respiratory therapists, the full spectrum of the team that cares for these patients.

And the standards for
nomenclature, database, complexity
stratification and data verification have been
harmonized across all these sub-specialties so that what the STS database is doing is what the American College of Cardiology database is doing and what the Congenital Cardiac Anesthesia Society database is doing.

2 these six components is longitudinal follow3 up.

5 major efforts to become a tool for
6 longitudinal follow-up because what parents 7 really want to know is not is my baby going to

8 go home alive from the hospital, but how is
9 the baby going to be doing in six months or a 10 year or two years or ten years and can they go

11 to college and have children?

Briefly, the last component of

And the STS database is making So, we're implementing methods within the STS database, to make the database function as a tool for longitudinal follow-up. So, that's the background on the STS database. When John Mayer was president of the STS, a committee was established within the STS to develop pediatric and congenital heart surgery quality indicators. And this committee was made up of a group of surgeons really representing small hospitals, large hospitals, academic hospitals and private

1 practice hospitals.

And over the course of a year through bi-weekly phone conferences, the 20 metrics were developed. And as you go through them, you'll see some are structure metrics, some are process metrics, some are outcome metrics.

A hundred percent of them can be tracked within the STS database, a hundred percent of them can eventually be in an electronic medical record that could communicate with the STS database, and I think also as you go through them you'll see that they build on one another.

So, several of the structure metrics provide the foundation for the subsequent outcome metrics.

And as one goes through these metrics, the definitions used to define some of the structure metrics about volume are then applied in the outcome metrics.

The two books will provide a lot

1 of source material, charts, graphs and data
2 that support how we came up with these metrics
3 and also document some of the testing these 4 metrics have had so far.

6 since 2006. The Aristotle score since 2002.
7 There is over a hundred thousand operations
8 between the STS and the EACTS that have been
9 scored with these complexity stratification

They're using the STS database right now, as Kathy said, not in the full form, but in a form that is a group of categories to categorize operations.

But within the last year, the STS has started to develop ways to use complexity stratification tools in a more complete form that also takes into account patient variables like prematurity and associated anomalies. And that's being implemented now within the

So, I think I'll stop talking now.

1 That provides a little information about why 2 everybody has this big book to carry home on 3 the airplane and a little bit of background 4 about how we got to where we are now.

And Jacobs and Jacobs will be here all day and we're happy to help in any way we can. Thank you.
(Off the record comments.)
DR. J. JACOBS: That's a good point, Marshall.

So the big blue book, the first half talks about those six areas I talked about; nomenclature, database, complexity stratification, data verification, subspecialty collaboration and longitudinal follow-up.

The second half of this book is a group of definitions that are consensus-based definitions that were developed by a group called the Multi-Societal Database Committee for Pediatric and Congenital Heart Disease.

This multi-societal group had, on

1 the average, three three-day meetings a year
2 over a four-year period. And a large portion
3 of that was centered on developing these
4 definitions.

6 are used in all of the sub-specialty
7 databases; cardiology, cardiac surgery,
8 anesthesia, critical care, both in Europe and
9 North America.

11 definitions, I think, is very, very important 12 as we start discussing some of these metrics, 13 because some of the metrics talk about things 14 like stroke or renal failure. And there's a 15 very clear, concise, consensus-driven

21 this blue book. That's the other reason we 22 brought the blue book.

1
2 developed with experts in pediatric and
3 congenital heart disease, though. Experts in
4 the organ system involved with the
5 complication were also consulted.

7 you'll see that the chapter on neurologic
8 complications and stroke is authored by a
9 group of cardiologists and cardiac surgeons, 10 but also has a co-author that's a pediatric

11 neurologist that specializes in the neurologic

21 harmonize the stroke definitions with the
The definitions were not just

So when we worked on stroke, complications after heart surgery, from Children's Hospital of Philadelphia. And that applies to all of the organ system complications.

So, we consulted infectious
disease experts for the infectious complications, we consulted pulmonary experts for the pulmonary complications. That also allowed us then to definition of "stroke" that's used by

1 neurology societies.

It allowed us to harmonize our infectious definitions with the infection definitions used by the Center for Disease Control.

So what we call mediastinitis in the Congenital Heart Surgery database is what mediastinitis is called in the Adult Heart Surgery database, and is what the CDC calls mediastinitis. And that's clearly pretty important for metric development.

DR. BURSTIN: Can I just ask one general question?

Some of these measures look incredibly interesting, while some of them look very similar. We've seen these obviously on the adult side.

I mean ultimately is there a thought that there could be a cardiac surgery measure that could be stratified depending on the age group of the patient?

DR. J. JACOBS: It's really a

1 totally different science operating on
2 children versus operating on adults. And I
3 think that if we want to do this right, we
4 have to develop metrics specifically looking
5 at - what we focused on was children, and then
6 adults with congenital heart disease.

21 one set of metrics.
DR. BURSTIN: I was actually

1 thinking more of - I should be more specific -
2 some of the structural measures, for example.
3 So, the participation in our database, for
4 example, seems to me well, we've now got one
5 for thoracic, one for cardiac surgery, now one
6 pending for cardiac surgery.

It seems like one of those ones ultimately you want to know is your provider part of a systematic risk-adjusted database that provides feedback to them.

DR. J. JACOBS: Absolutely.
DR. BURSTIN: I'm just saying it's just something to think about whether it needs to be that.

And I was especially excited to see the one about the time out, you know, the actual - and that, to me, seems like one, again, doesn't seem unique to cardiac surgery.

Would love to see that one potentially
expanded to other kinds of surgery.
DR. J. JACOBS: I think that's an excellent point.

DR. BURSTIN: Yes.
DR. J. JACOBS: I think the one
that we wrote about time out could be applied to all forms of intervention. It's just that it was the right time for us to do it whereas maybe someone else two years ago or three years ago it might not have been the right time.
(Off-the-record comment.)
DR. J. JACOBS: Thanks.
MS. WILBON: Thank you. So, we're at about 10:45, running a little bit ahead of schedule. And Tina is just telling me that it takes them a little bit of time to set up for the breakout groups, which is going to be our next phase of the meeting.

So, I'll talk a little bit more about the breakout groups, and then we'll kind of break for a few minutes and let them set up, and then we'll kind of have you guys migrate to your groups.

So everyone is aware, I'm sure, at

1 this point, which group they've been assigned
2 to. We divided you up by process and
3 structure measures for one group, which Lisa
4 Kohr will be facilitating, and then an
5 outcomes group which Dr. Jeffries will be
6 facilitating.

9 drive will be the blank document that Sarah 10 showed earlier where you can take notes within 11 that.

21 during the full Steering Committee meeting to
Within your group, we'll be giving each group one thumb drive. And on that thumb that.

So, however that group decides to take notes, if you want one person to be the note taker for your group and just take notes into that document and then save it on the thumb drive. And then when your group is complete, you will hand it to us and we will be able to download it to our computer.

And then potentially that same person may want to continue to take notes add any additional notes for that measure, or

1 you may want to have the secondary reviewer
2 for that measure just use the thumb drive for
3 that measure and then pass it on when the next
4 measure is discussed, and then have that
5 secondary reviewer take notes.

7 do it, we just need to make sure that
8 everything is typed and saved onto the thumb
9 drive at the end and that notes - that blank
10 document for the notes.

21 you're presenting your measure. anything else? I believe the breakouts are going to be in this room. and Group $B$ once we have the room set up a little bit more. about the groups or - I think we have some notes in one of the documents we sent, about things you might want to think about when

I'm trying to think is there

So, we'll kind of direct Group A

Does anyone have any questions

So, if everyone is comfortable

1 with that and the process for the breakout
2 groups, then - you look like you have a
3 question, Dr. Hinkle.

4

7 For the developers, we will have one of each,
8 I guess, in each of our rooms. That's why
9 there's four people here. 21 then to get set up. Thank you.

DR. HINKLE: Yes, just real quick.
MS. WILBON: Okay.
DR. HINKLE: I think I understand.

That's all. Just for
clarification purposes.
MS. WILBON: Yes. And they may want to rotate or what have you, but it is a public meeting.

And Lisa and I will also be rotating the room. If you guys have any logistical questions or questions about the process, we'll be here to answer those for you as well.

Okay. We'll go ahead and break
(This portion of the meeting

1 adjourned at 10:51 a.m. for Workgroup
2 Discussions.)
(Meeting reconvened at 3:47 p.m.)
4 OPEN SESSION RECONVENED
5 3:47 p.m.

11 bit with their discussions, which is good
12 because everyone wanted to be very thorough in
13 their discussion of the criteria and making
14 sure that they had all their bases covered.

21 during the discussion for each measure in
22 So, sounds like everyone had a really good discussion.

So, the way we're going to move forward with this is both groups were given the USBs labeled "Group A" and "Group B" where you were tasked with recording the notes there so that there would be some record of

MS. WILBON: So, just a brief
overview of what we're going to do for the rest of the afternoon.

We were a little bit off schedule.
I think both groups actually ran over a little

1 the group's discussion for each measure for
2 each of the criteria, and the group's vote on
3 whether they would recommend it, and their
4 ratings for high, medium, low.
So, once we get the USBs from both
6 groups, we will put that up on the screen so
7 that everyone can kind of read a little bit
8 visually as the primary reviewer presents that 9 measure.

So, we'll only have the primary reviewer present that measure. If you could give a recap of the measure itself and a little bit of the discussion that went on within your individual group so that the other group has an idea of what went on and what the group's recommendations were, and then we will open it up to the entire group for discussion.

Sarah Fanta from NQF, will be
taking notes on a separate version not directly into the one that you guys did, but a separate version of the discussion of the entire group.

1
2 back out to the group after the meeting
3 tomorrow so that anything we missed, you guys
4 will have the opportunity to add any
5 additional notes if she missed something or we
6 missed something.
And what we'll do is send that

So, we'll have a really
comprehensive record of the discussion that happened both in the individual group, as well as the entire group sitting down together.

So that being said, does anyone have any questions about how that's going flow?

So primary reviewer presents, discuss the measure and what happened in your smaller group, and then open it up to the larger group for discussion, and then the vote and so forth.

So, I'll hand it over to Lisa and Howard to take over from there. I believe we plan to start with 18 and 21 , which was the Children's Hospital of Boston measure, along

1 with one of the, I believe, STS outcome
2 measure as well.

So, I'll go ahead and hand it over and we will go from there.

CO-CHAIR JEFFRIES: Okay. So, we'll start with Measure 18. And the primary reviewer was Dr. Mavroudis.

MS. WILBON: Just a quick reminder to turn your mics on. That's what records thank you.

DR. MAVROUDIS: The measure deals with the three different metrics for measuring risk stratification/risk complexity - or complexity analysis for mortality.

The group had a good discussion on this issue. Basically the metric-- it was noted that all three metrics are noted in the STS database and are given to every program that's a participating program as part of their report and it can be easily gleaned from the database process.

I think like I said before, the

1 discussion was a good discussion and it was,
2 I believe, unanimously approved, and it
3 obviously is a very important metric.

4
5 than I have to, but I think that, Mr.
6 Chairman, I think, or, Ms. Chairman, I think
7 that does it.

They all measure classifications within close proximity. They are based on different units of -- metric units, more or less, data, some all opinion, expert opinion. But the classifications that have been presented in the literature are relatively close, and we feel that if they all are used, sooner or later the new upscaled versions of each of them will eventually come to pass. And we hope, we expect that within

1 a few years or so these metrics will meld into
2 one and that we'll eventually have one metric.
CO-CHAIR JEFFRIES: That was the
4 essence of the discussion. We had talked a
5 bit about the need for - well, was there - is
6 there a need to pick one? And the feeling of
7 the workgroup was that we did want to pick
8 one, and that three would be looked at and
9 would there be some ability at least within
10 the STS data set, if not within other data
11 sets, to look at all three measures for a 12 center.

14 the Steering Committee? Anybody.

Any comments from other members of

DR. GRAY: Something came up in our group when I was actually looking at the codes here, was the issue that there -- this one sort of come up with a lot of them, but that it's listed with CPT codes. And we're not sure exactly why that is given the fact that the hospitals are going to be reporting using ICD-9 codes, and obviously the STS has its own

1 separate set of codes.

3 CPT codes, that's not going - we're not sure
4 exactly how that is that that would actually 5 work.

7 looking at some of the codes, I noticed that 8 you might want to include diagnosis codes for

9 adults with congenital heart disease because 10 you can't otherwise determine on the basis of 11 a procedure that's done in adults, whether 12 it's done for acquired or congenital heart 13 disease.

21 debridement, which I don't know that you'd
And so, you'd need to be able to make sure that the centers are if they're including adults, that they're including only the ones that are basically with congenital heart disease.

And then also some of the codes that are in there, like there's sternal necessarily want to include as a cardiac

And in addition when I was just

1 procedure, there are a couple of
2 interventional cardiology codes as well, and
3 I'm not sure if you necessarily wanted to
4 include those as well. 21 database and would want to define those fields

CO-CHAIR JEFFRIES: So, Jeff, do you have a comment about that? Marshall?

DR. M. JACOBS: I will just share with you what I shared with our sub-group.

When we initially prepared these measures, inclusionary or exclusionary criteria when applicable were derived from STS database terminology and codes.

My understanding is that a dialog took place between STS staff and NQF staff, and the NQF had specifically requested that we include the CPT codes.

And I imagine that was in
allowance for the possibility that in the future a center could comply by participating in a registry database that was not the STS by other widely applicable codes.

2 to leaving those CPT codes in the measure 3 descriptions if it's confusing, which I think 4 it is.

19 know, with what began as facility level adult 20 measures, also using them as individual

21 levels.

Do you agree with that, Jeff?
DR. J. JACOBS: 100 percent.
DR. GRAY: So again, I guess you just might want to include some list of ICD-9 diagnosis codes for capturing the adult cases because just even the STS procedure codes are not necessarily going to capture that, I guess.

CO-CHAIR JEFFRIES: Is there rationale from NQF for the inclusion of the CPT?

MS. HINES: That probably was your discussion with Helen way back at the probably because we ended up, as you well

I think we're not in any way wed .

So my guess, and I wasn't part of

1 the conversation, was just to allow for that 2 to happen.
(Off the record comments.)
DR. J. JACOBS: We can submit these
measures with ICD-9 codes, we can submit them with CPT codes or we can submit them just with the appropriate list of diagnostic or procedural terminology, however you guys want. We submitted them with CPT codes this time because that's the instructions that we received.

And as far as Darryl's question regarding adding additional ICD-9 codes to cover adults -

DR. GRAY: The diagnosis codes.
DR. J. JACOBS: Diagnosis codes.
Again, the codes that would apply
to adults can also be submitted as ICD-9 codes, as CPT codes or from the STS nomenclature list, because the STS nomenclature list also applies to adults.

So, codes for adults with

1 congenital heart disease and codes for
2 children can be submitted in any way that the
3 NQF desires and we'd be happy to send it that
4 way.

6 all those ways anyway, so just let us know.
We have it at the STS office in

CO-CHAIR JEFFRIES: Other comments?
DR. MAVROUDIS: Does the process
require that we vote again on this?
CO-CHAIR JEFFRIES: Yes.
DR. MAVROUDIS: And does the process allow me as the lead discussant to make a motion?

MS. GRANNIS: No, I'm sorry. Actually, it's the co-chairs who make the motion.

CO-CHAIR JEFFRIES: So, I'll ask
for a motion for a recommendation vote on this.

DR. MAYER: So moved.
CO-CHAIR JEFFRIES: Okay. So, there are three ways that we can vote on any

1 measure. And that is recommend for time-
2 limited endorsement, recommend for time-
3 limited endorsement with conditions, and the
4 final one was do not recommend for time-
5 limited endorsement.

21 an indicator to introduce the RACHS-1 model
So, can I get a show of hands who recommends for a time-limited endorsement?

Okay. So, we have a vote of 12 for that measure.

So, if we can move now to Measure 21?

MS. HINES: Just for the record, there were no no's. We have 12 members here.

CO-CHAIR JEFFRIES: There were no no's.

Measure 21, standardized mortality
ratio for congenital heart surgery, risk adjustment for congenital heart surgery. And the primary reviewer is Dr. Mavroudis. DR. MAVROUDIS: Thank you. This is that has been expanded to include four other

1 categories which include weight, number of
2 operations - number of procedures that are
3 done on one patient and age, so that the
4 metric can measure observed and expected
5 mortality.
6 And, please, if I'm getting any of
7 this wrong, don't wait until the end. Raise
8 your hand. It's a rather complex issue and I
9 don't want to understate it or even overstate

The reason I believe why this was
12 brought into - why it was introduced is
13 because there was no other metric, including
14 no other metric extant in the STS database,
15 and that the idea being that this was
16 something new and that the data has been
17 verified by the Boston group.

21 approach to the three different metrics for
22
The discussion during this time period centered around the idea that in 18, Category 18, there was more of an inclusive the measurement of death. Not observed death

1 and expected death, but the calculations of
2 risk stratification, and that it was
3 recognized that different groups around the
4 country used different metrics.

6 the RACHS-1 not associated with SMR, but the
7 RACHS-1 are part of the reporting structure of 8 the STS.

Included also in 18, was the new metric which was based on empiric data of 80,000 congenital cases that had a better C statistic than the other two. That is to say the STS-EACTS had a better C statistic of correlation than STS and RACHS.

In any case, since that was, that 18, Indicator 18, allowed for choice of any of those three, the discussion centered around perhaps there could be a choice for this SMR metric.

To that end, Jeff stated that this is being looked at now in the STS database and will be available in the next couple of

1 months, whereas the SMR equivalent or the SMR
2 - not equivalent, but the SMR calculation is 3 ready to go now.

4 6 discussion, mainly because we were interested
7 in a fair approach, perhaps, or an inclusive 8 approach like we chose in Category 18.

So, the conclusion that was never met, we never had a conclusion on this

And there were some suggestions, one by Jeff, that Number 21 be melded into 18 so that the SMR can be calculated not only by the RACHS method, but also by the Aristotle method and also by the EACTS-STS method.

The objection to that on the other side, was that this hasn't been done yet by the STS or the EACTS-STS method. And since there are no data, there are no calculations, then how could the Boston group understand what they are being put into and how that is going to compare.

The tenor of the discussion was, I believe, free from contention. And the import

1 was also free from contention.

3 for a way to do this in an ecumenical way, if
4 you will. We never arrived there.

6 stopped the discussion and I think that the 7 idea was to bring it back here.

The idea was that we were looking

And we didn't only because we

Now, I'm sure that in my description of all this that $I$ didn't consider all the sides equally, although I tried to and it was my intention.

My personal thought was that the SMR ought to be moved from 21 into 18 so that it would be part of the overall system of mortality expression, for instance. 18 had risk stratification and that this is a subset of risk stratification. After all, we're talking about observed mortality and expected mortality.

And it could be and that the RACHS could be one way of dealing with it, and then STS would come up with another way, and the

1 EACTS-STS would come up with another way and
2 that would be in that - however, since this
3 was already proposed as 21 , it would be maybe

So, right now we are at a little
bit of a standstill here or standoff what to do about this.

We considered tabling it, we considered having the two parties perhaps talk

1 about it.

And we also considered the
ramifications of allowing a 21 to exist, and also another one, a 22 to exist. That means 21 would have an SMR based on the RACHS classification, and 22 would have an SMR based on the STS and EACTS-STS calculation.

The problem with that is, is that it would allow the insurers, the government, whoever else is interested in this, to pick out one of those and that it would be sort of a - they would be doing the picking out of what is the right metric and not us.

Furthermore in complicating that is that we really all agreed that we didn't know, and we still don't know, what is the best metric.

This is a procedure in motion.
This is something that in one or two or four years, or who knows what, the science alone will determine which system is better.

It could be that RACHS-2 when it

1 comes out, will be better. It could be that
2 the EACTS-STS combination will be better. And
3 to allow someone to pick something a priori
4 and not have the benefit of a natural
5 selection, is probably wrong. We didn't want
6 that.

9 all, but what would be the best for this

11 reporting.

21 That's great.
We wanted a natural selection to
take place. Not so much as the winner take metric, and what would be best for public

So in a very long-winded way, which I was trying to be careful not to add any kind of gasoline to the fire - although we haven't had any fire yet, I just didn't want to even start it. And I don't think we need to because people who are disagreeing here are disagreeing from virtuous positions.

People believe in what they are doing, and what else do we want except that?

But we should continue this. We

1 should continue to have people believe in what
2 they're doing which eventually will probably
3 come into an understanding of what we should
4 do moving forward.

So it's wrong, I think, to make a decision on this now to sort of embrace one over another even though that one is existing and the other one is four weeks away.

And so if I have to make a
decision here, I would say that we should table this and not approve it as it is right now.

But if there is any other way, any
other more diplomatic way of doing it, I'd love to see that as well.

We're faced with one of three
choices. I don't like any of them. But if I had to vote, I would say that we should table this and try to see if we can move in a more Venus way than a Mars way.

I'm finished.
(Laughter.)

CO-CHAIR JEFFRIES: Okay. Is there anybody who was part of the workgroup want to add anything to what Dr. Mavroudis said, though I think he summarized the discussion very nicely?

DR. MAVROUDIS: Long winded.
CO-CHAIR JEFFRIES: Kathy.
DR. JENKINS: I would just like to weigh in and be sure that - Gus, I actually thought you described that very, very well. And I think you did take - it was a really nice summary of the discussion that we had.

The only thing, I guess, that wasn't clear to me, but hearing you explain it again, why it is that you want the SMR either part of 18 or you want all of the methodology incorporated in 21 a little bit as a strategy that won't allow picking of one measure over another by the insurance companies, I'm not sure that that's true.

But if there's a concern that that's true, it would be fine with me to have

1 the three SMRs proposed under 21 as long as 2 it's the STS that's proposing the other two.

Because I'm just finding myself in this difficult position about being the sponsor of a measure who's responsible for its scientific content, who's approving it and making it better in three years, for a measure that I just don't have my hands around the science for.

So, my only objection is being the individual proposing the additional SMRs and taking responsibility for it.

However, the language was about putting it with 18 or keeping it separate or putting it together with 21, I really have no objection to.

I want to be sure that's clear. It's only having it be my responsibility as the proposer. That's my only objection. CO-CHAIR JEFFRIES: Marshall. DR. M. JACOBS: Well, I think that that was a very appropriate, informative,

1 terse response after Dr. Mavroudis' soliloquy.

6 related to a calculated ratio of observed to
7 expected mortality, which is a very useful
8 tool and a very informative tool. It's used
9 in the STS adult database.
I didn't have the advantage of
sitting in on that group and I see there being three issues.

One is a measure of performance

And in fact since two reports ago in the fall of 2008, it's used for neonatal and infant mortality reporting in the STS congenital database.

So, at least to the extent that I can speak on behalf of the STS, we have no negative or contentious issues with regard to expression of observed to expected mortality or a derived ratio or index from that and I think it's an excellent idea. That's Issue Number 1.

Issue Number 2 is the issue of whether outcome reporting by complexity

1 stratification for the NQF should rely on one
2 stratification tool, two or three.

6 is and I think it was important. work together and accomplish what Kathy mentioned in her last discussion. I don't see very much challenging about calculating a comparable ratio based on observed and expected mortality using the Aristotle Score and STS data or using the STS-EACTS Score and STS data.

I think the quandary or the conundrum to be resolved if I understand correctly, is the reference data set from which the expected mortality is derived. the SMR, is one particular multi-institutional data set which is different from the STS data set.

I think it's entirely possible to Which for your preliminary work on

So, insofar as one can make preliminary proposals not speaking on behalf of an entire organization, $I$ think if we can sort out the question of the reference data set from which the expected mortality is derived, then it ought to be very possible for the STS to work with Dr. Gauvreau and Dr. Jenkins to create something very much SMR-like using all three complexity stratification measures.

DR. MAVROUDIS: If I may, the power of discussion is overwhelming. It sounds like we have a very nice resolution, I think, to this problem, to this conundrum.

And that is that perhaps this could be a hybrid 21, that in fact the Boston group represents the SMR within 21. The STS can take control of their own metric and that it can be put together in the same kind of way, in the same spirit as 18 . That's what it looks like to me.

MS. HINES: Just to recap on that,

1 though, you have to have a measure steward
2 responsible for each measure. So, if Kathy
3 wants to maintain Boston's measure as it
4 stands and STS is going to make a
5 complementary measure with the other
6 databases, that's still two metrics because
7 STS would own one, and one Kathy would own.

9 that case on the measure in front of us, and
So, we would still need to vote in then STS could submit a second measure.

DR. MAVROUDIS: On the other hand, the Measure 21 could be temporarily tabled to give the particulars with the people in - who are approaching unity on this to develop a metric that would include all three. That's the other way of looking at it as well, I think, although not knowing the process as well as you do.

MS. HINES: Right. And I think we have a measure on the table that we're going to have to deal with, and it sounds like the development of that measure could be a new

1 measure that has all three versus one.

I'm not seeing tabling because we're not combining the two and we're not going to have one owner, so it - I'm still DR. J. JACOBS: So, I think that Kathy's idea was a brilliant idea. And what her original concern about combining these two metrics with hers, the measure steward, was how could she be responsible to write about the other two metrics.

I think what we could do is Kathy could continue to be the measure steward and she could have substantial help from me, Marshall and Sean O'Brien at DCRI to write the components relating to the other metrics. And a revision of this metric could be submitted with Kathy still as the primary steward, but with the support of us to fill in the remaining piece. And then it would be a metric that would be supported by all groups. So, the process might be that it has to be tabled now and resubmitted with the

1 revised version. But we could help do our
2 piece, and then we could come back with
3 something altogether that would be harmonious.
4
5 your opinion on that?

7 Seriously, I think that quite frankly an SMR
8 is a very, very useful measure for centers,
9 provided it covers a reasonable component of 10 the case mix and really does give centers a

11 very good sense of how they're doing as long 12 as the risk adjustment is at a reasonable

And I think it would be a shame to not have an SMR endorsed because of this issue about what's the best way to categorize the patients and incorporate the additional variables.

I'm a little confused about the NQF process about how's the best way to do it. It's not possible, you know, the STS database process doesn't allow a lot of other people to

1 see their data and evaluate their data, modify
2 their data. They make changes through a very
3 hierarchical surgeon-driven process.
So, it probably does make more
5 sense to retain flexibility, for us to do it
6 Jeff's way rather than in the other direction.
7 But seriously, whatever works best for the 8 process.

21 suggestions for modifications to add in the
CO-CHAIR JEFFRIES: Thanks. So, would this fall under the endorsement with conditions?

MS. HINES: Kathy, I mean if you we can table it if you two want to talk and come up with a solution or proposed solution to--I just want to - we have a measure on the table to consider as is to vote. We've had other two data sources. If -

9 it's an SMR derived by four Aristotle
10 categories and the variables, I assume, that
11 are currently part of RACHS. And then the
DR. JENKINS: No, not data sources.
MS. HINES: Well, the different models.

DR. JENKINS: We've had the suggestion to propose three SMRs.

MS. HINES: Right.
DR. JENKINS: One, the SMR that we proposed. One, if I understand correctly, five STS categories and the variables that are currently a part of RACHS.

And I think that that's a very
reasonable suggestion. I don't have any objections to proposing those SMRs.
(Off-mic comment.)
DR. JENKINS: For the RACHS
Methodology as we outlined in our proposal, RACHS can be used within various types of data sets. So, it could certainly be generated within the STS database. It can also be

1 generated in other ways.

I'm not as certain about the other two just because I'm less familiar with the details. But that's the measure that we proposed, and that's the measure that we are still willing to put forward.

So, the reference for RACHS changes based on the user. It's not exclusively a reference set from the STS database.

But it certainly can be used within the reference set of the STS database once the database has the variables that are part of RACHS, which I understand will be true soon. And then data will accrue and that will be able to happen every quarter or every six months or -

MS. HINES: So conversely, the STS measure or the STS modification would be purely from the STS database, or you're going to add the additional data sources.

DR. JENKINS: Well, the other

1 categories can also - it's a methodology. So,
2 presumably it will be used in the EACTS
3 database and other databases, but -

4
5 what Kathy said. The methodologies that we're
6 proposing to add to this metric can be applied
7 to any data set that exists.
8
9 Aristotle and STS-EACTS tools, all three have 10 been used in the STS database and the full

11 RACHS can be applied to the STS database. And
DR. J. JACOBS: I would agree with

So, Kathy's RACHS tool and our conversely, all three tools could be applied to any other data set, including administrative data sets.

I think that this process has led to a very good ending conclusion of a way to solve this problem in that we could team up together and revise this metric in such a way that it deals with all three complexity stratification tools equivalently and that it would have the full support both of the team from Boston and of the STS.

2 suggestion -

4 flexibility -

6 into your categories of what we should do, but
7 I don't know why we couldn't: We can table
8 this for the moment and ask Jeff and Kathy and
9 Marshall to look at this a little further and
10 then come up with another proposal, which
11 would be 21 . And it would be a part different
12 from 18. I think I was wrong in my having to DR. MAVROUDIS: If I may offer a DR. J. JACOBS: And excellent DR. MAVROUDIS: This may not fit associate this with 18.

The way Kathy said with 21 is, I think, a good idea. SMR is a different metric. Let them come up with something that's agreeable. I mean if they're agreeable to it, we would be agreeable to it.

We're sitting here in some solemnotic Buddhist kind of way in trying to find out what the best way to deal with this and because of your metrics, you're not

1 allowing us to.

3 here a little bit and say okay, we'll table
4 this and we can discuss it at our next
5 telephone conversation. And we should invite
6 the particulars in that telephone conference
7 and do it.

8

9 like it or if you're the boss and you don't 10 like it, I would say look at it again and make

11 it so you do like it.

21 their while, do you want to do a straw vote to
MS. HINES: What I'm making sure, and thank you for your thoughts, what I'm making sure is that I have both developers that are saying yes, that they're willing to talk and try to come to some - that's all I need to hear is that Kathy is willing to put her metric back on the table and try to work it out and bring it back to us.

I guess just to make it worth just say that this, in concept, is a good

And I think that we should bend

And I guess if your bosses don't

1 metric and the group supports that? DR. HINKLE: Just a point. Can I ask a question, a clarification? So, a process question.

It seems to me if they can work on
it tonight or today, then we could reconvene the outcomes group to look at it again and vote it for the committee so that the, you know, because we've been batting this around for a while and -

CO-CHAIR JEFFRIES: We would just review it in committee.

DR. HINKLE: In the committee?
CO-CHAIR JEFFRIES: Yes.
DR. HINKLE: The whole committee?
CO-CHAIR JEFFRIES: Yes.
DR. HINKLE: Okay. So, I just wanted to ask that clarification, but -

DR. J. JACOBS: I think we need a little more time than one night to get DR. HINKLE: Okay. That - yes, that's what I didn't quite understand. I mean

1 otherwise -

3 one-sentence or two-sentence metric. But to
4 fill up that whole packet -
DR. J. JACOBS: We can give you a

DR. HINKLE: Yes. So, maybe the teleconference. You mentioned that someplace.

DR. MAVROUDIS: Do you need a whole packet, or can they give you additional -

MS. HINES: Yes, it would be changed enough that we would have to modify what we've got.

DR. MAVROUDIS: What kind of a motion do we need?

CO-CHAIR JEFFRIES: I think we should do a straw vote and see with the changes that could have been outlined here if that - when that comes back to this group, that the group would recommend it.

DR. MAYER: I'm sorry. I've been trying to stay quiet here, but it seems to me that what we're talking about, and maybe just hopefully to clarify this a little bit, is

1 we're talking about using the standardized
2 mortality ratio approach as a measure, right?

5 only conceptual question here. And I think we
6 are then looking for a way for the two
7 respective sponsors, each of whom has access
8 to differing data sets and may have
9 incorporated slightly different variables in
10 one way or another to see if they could agree
11 on either a common data set or some way to
12 rationalize this in such a way that a
13 standardized mortality ratio approach could
14 come forward as a measure for the - as an
15 approved NQF measure. DR. MAVROUDIS: Yes.

DR. MAYER: And, I mean, that's the on

Did I reflect the discussion
correctly?
CO-CHAIR JEFFRIES: That's my
understanding.
DR. MAVROUDIS: It may not be a unified approach after three or four days of discussion, but it would set the stage for

1 that over a period of time that what we would
2 hope to happen is that we eventually have one 3 metric for all of these things.

4

6 know, I think the likelihood might be that
7 from two different data sources you might
8 actually get slightly different answers.
I believe that that's what we -
DR. MAYER: I'm not sure that, you

I think what we're talking about is the common approach of creating the SMRs at the institutional levels and recognize that the answers might actually - I mean one would hope not, but it is conceivable and possible that we might wind up with differing -

DR. MAVROUDIS: Agreed.
DR. MAYER: That's all.
CO-CHAIR JEFFRIES: Yes, Marshall.
DR. M. JACOBS: May I just
supplement what John said?
I mean my understanding of this
discussion is that one of the positive aspects of Measure 18 was that it gave the participant

1 the option of reporting using one of three 2 complexity stratification tools.

Is that correct?
DR. MAVROUDIS: That's correct.
DR. M. JACOBS: And so we're now proposing that the participant report an SMR using their choice of three complexity stratification tools with our two teams working together to develop those metrics.

Is that what seems to be on the
table?
CO-CHAIR JEFFRIES: Yes.
DR. M. JACOBS: Okay.
CO-CHAIR JEFFRIES: And so with those clarifications, let's take a straw vote and see how people would agree based on that measure when we see it again.

DR. HOYER: Are you asking how we would vote if in fact everything was reconciled?

CO-CHAIR JEFFRIES: Correct.
DR. HOYER: Or are we voting right

1 now with -

CO-CHAIR JEFFRIES: No.
DR. HOYER: - the three choices?
CO-CHAIR JEFFRIES: We're voting as
if it was reconciled so they know that the work they're doing is not going to be in vain. Okay.

Straw. So, we have 11 straw votes, and the one not in the room. Okay.

DR. MAVROUDIS: That was easy.
CO-CHAIR JEFFRIES: Yes. The workgroup clearly dealt with all the issues.

So, we have time for a public comment, for the public who hasn't commented.
(Laughter.)
MS. WILBON: Operator, are you there on the conference line?

THE OPERATOR: Yes, I am.
MS. WILBON: Is there anyone on the participant's line for the public?

THE OPERATOR: Yes, Boston is on.
MS. WILBON: I'm sorry?

THE OPERATOR: Boston is on. MS. WILBON: Oh, Boston is on. We're opening it up for public comment. So, if you'd like to make a comment at this time, you're on.

THE OPERATOR: Please press Star 1.
PARTICIPANT: The only thing that I would like to say is that $I$ think just from a perspective of having a metric that's been in the public domain versus one that would require participation in a database that requires funding, I just think that that does have an option.

And that's just a comment that I have about this as stewards of this measure.

DR. J. JACOBS: That's an excellent
comment from the phone.
The metrics that have been proposed, best as I can tell, all 20 of them all 21 of them, none of them require participation in any specific database whatsoever.

1

And when we developed the 20 that we developed, and the same is true for Kathy's, we were all very careful to put wording in place that did not require use of any specific database whatsoever.

MS. WILBON: Is there anyone else on the line that would like to make a comment?

Operator, is there anyone else on the listener's line?

THE OPERATOR: Not at this time.
MS. WILBON: Okay. Thank you.
CO-CHAIR JEFFRIES: So, we're going to continue with - let's do another outcome measure. So, why don't we go back to the start of the outcome measure group which was Number 12.

Patricia Galvin is the primary presenter for that.

MS. GALVIN: So Number 12, the measure is the use of an expanded preprocedural or post-procedural time out. There is basically four elements to this

1 recommendation that the conventional pre-
2 procedural time out which includes the
3 identification of the patient, the op site,
4 procedure and history of any allergies is one 5 measure or one indicator.

7 the surgeon shares with all members of the
8 operating room team the essential elements of
9 the operative plan, including diagnosis, plan 10 procedure, outline of essentials in

11 anesthesia, bypass strategies, anticipated or

A pre-procedural briefing wherein planned implants or device applications and anticipated challenges.

That there would be a post-
procedural debriefing wherein the surgeon
succinctly reviews all members of the team the essential elements of the operative plan identifying successful components and opportunities for improvement.

The debriefing ideally would take place in the operating room and may be followed by a more in depth dialog at a later

1 time.

4 intensive care unit, a clinician-to-clinician
5 handoff, if you will, at the end of the
6 operation involving the anesthesiologist,
7 surgeon, physician staff of the intensive care
8 unit, including critical care and cardiology
9 and nursing.

11 I think everybody felt that this was
A briefing or a handoff protocol
at the time of transfer or arrival to the

The discussion centered around -important, it's in line with national patient safety goals, it's been well documented in the literature, and that those parts of the measure were without question.

There was a brief discussion about the ability to - the feasibility of how the data would be collected that if you are saying yes, you are saying yes to all of the elements that are included in each separate section.

But the workgroup discussed that and felt that this measure was feasible,

1 usable and worthy of voting.

5 question.

7 thought this would be feasible. In
CO-CHAIR JEFFRIES: Okay. Are there any comments from either group?

DR. GHANAYEM: Actually, I have a

I'm interested in how the group practicality, this would be great to do, but oftentimes the surgeon is starting the next case in the next room, the cardiologist is off somewhere else, there's an intensivist at the bedside.

So if you don't have all of the elements, which is unlikely to happen a lot of the time, how does that get measured?

I think this would be great if it could happen. But in an era where we have more and more work with fewer resources, I'm not quite sure how this is possible.

CO-CHAIR JEFFRIES: And are you commenting on -

DR. GHANAYEM: The post-procedural

1 handoff.

5 handoff?

7 The handoff also specifies that all those
8 people need to be there.

21 resident, you might not have a surgeon there 22 at that moment, you might have an anesthesia

1 fellow.

MS. GALVIN: Well, we talked about whether it would be an attending or a resident. And in our situation -- or in our discussion, either would be fine as long as it was a surgeon who was at the procedure, who participated in the procedure.

DR. GHANAYEM: I'm just concerned that the way this is written leaves room for more times this not happening to the letter of the law than it does happen to the letter of the law.

So, it would need to be, I think, reworded to some degree.

MS. GALVIN: I think what we discussed was that there would be what I think Dr. Mayer referred to as escapes. That yes, that in the document, in the auditing, that yes, you did or no, you didn't because the patient was unstable, that there was a reason why it wasn't done.

And we all know that this is a

1 critical time and there's a lot going on. And
2 so we need to - as you said, we need to take
3 that into account and that would be in the 4 documentation.
CO-CHAIR JEFFRIES: Marshall.
DR. M. JACOBS: I think Nancy's
point is very important and very practical.
In putting the measure together though, we
thought that the collaboration between the
compartments in a multi-disciplinary team is
what makes the transition successful.
I think that there are a lot of
rules that are delegatable. Some things by
law, are undelegatable like informed consent.
There's nothing in this measure that says
roles are not delegatable. That if the
attending surgeon is doing a case in another
room, the resident surgeon or PA stands in, in
the role of surgeon during the debriefing and
the transfer.
So, I think it was in that spirit
that this measure was put together.

1 Somebody's got to participate in those roles,
2 but several of them are delegatable as
3 necessary.

4

21 in actuality doing that all of the time, and
CO-CHAIR JEFFRIES: And then we also had some discussion about the numerator, about the numerator being all or none.

So if you don't do any of these elements, it would be a zero. If you do all four, then you get a one and that the measure is a rate.

Other comments?
DR. HOYER: I guess I would also have a few concerns that Nancy voiced about just the rigidity of this. And we had some discussion in our meetings about some of the ways that if these kinds of things are tracked and then - it's an effort to raise the bar for sure. It's an effort to raise the bar to a higher standard.

And I don't know that anybody is probably not very often, at least all four

1 components of that.

The number one component is things that are required now, obviously. But the additional things obviously would raise the

And then if those are looked at by outside parties, again it becomes a way of potentially, for lack of a better term, dictating the way one practices medicine and practices these things.

Now again, they're all noble and worthwhile ideas, but it does kind of put a little bit of if you don't meet the standard, you did three-and-a-half out of four, is that something that's going to ding you at some point if it does become something that is adopted as a standard of care.

I mean we should all strive to do these things at every and any point in time, but I personally haven't seen a surgeon - and this is no knock on anybody, but I haven't seen one do a post-procedural debriefing. I

1 have not seen that, witnessed that yet.

3 perspective, I would agree that we have a
4 formal debriefing. But at the end of a
5 procedure, we do ask what was the procedure
6 that you did, because we have to document that
7 in the medical record. So, there are pieces
8 of this that are already in place.

21 we saw it.
MS. GALVIN: From a nursing

The one that I would agree with in
Number 3 was if there was something that went wrong, and then what we discussed in the group was it doesn't have to happen right then, it just needs to be acknowledged at that point, and then a debriefing, you know, we need to talk about this at a later date because, you know, again the patient - you're getting ready to transfer the patient out of the room, it's a critical time.

So, the idea of having that conversation is the intent of the measure as

DR. GHANAYEM: Actually, I think,

1 Lisa, you brought this up at our session. If
2 we keep the wording like this, then we run
3 into the same problem as Mark has alluded to
4 with the third-party payers that - like
5 central line-associated infection, ventilator-
6 associated pneumonia, if you have that, that
7 is a reason for them not to pay you.

If we put the wording in here and we don't document that each of these four points have not been thoroughly accomplished regardless of the rationale, third party payer can still say we're not going to pay you. You haven't met the NQF measure.

And I think we actually put ourselves in jeopardy unless we reword this.

CO-CHAIR JEFFRIES: Marshall.
DR. M. JACOBS: I think this is a fascinating discussion, but I'm not sure it pertains specifically to this measure anymore than it does generically to the whole process.

I mean $I$ heard a certain reticence or fear about raising the bar, which I think

1 we ought to be very anxious to raise the bar.

7 innocently, doesn't every measure that the NQF
And I heard an articulation of if we endorse something, then it's going to dictate how people practice, which it can be looked at from two perspectives.

I'm asking very honestly and endorses dictate how people are going to practice in the sense that payers are going to look for compliance, parents are going to look for compliance, referring physicians are going to look for compliance, administrators are going to look for compliance?

And unfortunately if you want to make quality systematic rather than just altruistic, you really are dictating how people are going to practice, but you're trying to raise the bar in a rational way.

I'm an outsider to this process and I'm confused by the dialog.

DR. GHANAYEM: This one can't be met though. With the resources we have

1 available to us right now, we cannot meet this
2 one as it's laid out.

5 a problem.

7 stuff comes from models like how Air Force 8 pilots interact with the crews on aircraft

9 carriers and how airline pilots interact with 10 control towers and ground crews, and it has

11 been proved in those circumstances to save 12 lives.

DR. M. JACOBS: Well, this sort of

And in the pilot studies done in adult cardiac surgery at the Mayo Clinic, it's been proved to reduce errors.

I think there's only so much that you can relax the proposal if you intend to achieve the desired end. CO-CHAIR JEFFRIES: Dr. Mayer. DR. MAYER: Well, I think the other thing is maybe we don't need to think about this as a black/white sort of issue. I think

1 that many of - I'm pretty sure this is right:
2 There are some of the metrics that are in the
3 adult STS cardiac database and the measure set
4 that do require accomplishing several things
5 in order to get credit, if you will, and I
6 think the data are that nobody is at a hundred 7 percent.

8

9 another your local insurance payer or whatever 10 would deny payment for the whole case because

11 you didn't meet all four of the - or didn't
12 use some percentage, $I$ mean that's a little 21 recognizing things like the asymptote problem,

And so the notion that somehow or bit outside this process because that's a subject of negotiation between you and your payer.

And I can tell you that from our own personal experience in a different realm with one of our local payers, we had a quite involved negotiation about what we were going to do with blood stream infections and you know, you can't get the infection rate

1 below zero, as an example. Here, you couldn't
2 get above a hundred percent compliance.

4 that we're never going to get this a hundred
5 percent of the time. We've tried pretty hard,
6 and I would say most of the time we would get
7 three out of four. We do the ICU
8 brief/handoff thing. We do the timeouts
9 beforehand and stuff.

11 I think the way it's phrased, is to be pretty
12 succinct and brief. And that if there were 13 issues during the case, that all you do is you 14 said this was an issue, not that you resolve 15 it, that you figure out well, it's because 16 somebody forgot to call for this or something 17 like that.

21 sorry, we didn't have time or weren't capable
uncomfortable with this with those caveats that if as we're collecting the data we say or doing the debrief because the patient was

1 pretty unstable and we thought the best thing
2 was to get the child to the unit and get
3 settled and then let the dust settle, that
4 that would be a legitimate escape that you
5 wouldn't necessarily be penalized for that.

7 thinking about this in black and white terms,
8 I think if it's viewed as something that we're
9 trying to get to that there is a recognition And so I think rather than that we're not going to get it a hundred percent of the time, maybe that would give you a little bit more comfort with this measure.

MS. GALVIN: I think the other thing that I would add to that is that when we actually did implement that in our ICU, if you look at Number 4 and the people that are there, all of those people are at the bedside. So, all we were saying was that everybody had to come together at one point and hear the same information.

And actually it streamlined the process because the nurse at the bedside in

1 the past, couldn't hear what the
2 anesthesiologist had to say or didn't hear
3 what the plan for the night would be.

5 communication so you don't have all of those
6 questions later.

9 However, there are some variations of what's 10 written -

21 see a third party payer come to us and say
MS. GALVIN: Right.
DR. GHANAYEM: - based on the availability of the resources. So, oftentimes it is a PA, it's not a surgeon.

MS. GALVIN: Right.
DR. GHANAYEM: It is the anesthesia fellow. It's the ICU fellow. But yes, you're right. It reads a little bit too black and white.

Realizing that, I would hate to well, you didn't have all these people here,

1 check off that they were all here, and for
2 that reason you can't get paid for your
3 services.

4
5 comment, I mean I don't work for private
6 insurance, but I do work for a state Medicaid
7 agency and we don't really look at whether a
8 provider has checked every single box. We
9 never withhold payment for anything like that.

11 and the kind of quality of care that's being

21 about the quality of care that they've provided to the patient.

And if we see that there's an issue with a single provider, perhaps an institution, we'll start talking to that group or that institution.

Occasionally we'll have some calls
from other providers complaining about someone down the street and perhaps what they're doing, we get calls from patients concerned received, so we'll start investigating those

1 providers.

3 treatment just because something wasn't
4 checked off - or withhold payment, I should
5 say.

7 quick comment. I am from one of those payers,
8 the private payers, but I've also been a

21 moving forward and you own - you're going to
But we really don't withhold

DR. HINKLE: I'd like to make a pediatric anesthesiologist.

Let me just make a couple of comments. One is that measurement is here in medicine and it's moving forward. And my participation in this process, I think, has been very - I'm very enlightened by the group moving forward.

Pediatric cardiac surgery I would have thought would be the last sub, subspecialty I would have thought moving in this direction.

So, I applaud the fact that you're try to own these metrics going forward.

5 my experience, it's mainly primary care, but
6 I did have an anesthesia group come forward 7 and say we would like to be measured, we would

8 like to have a pay for performance program to
9 make a little more money.
And I'd hope that in most of your markets if a payer does come forward, you would meet with them.

I've only had, I can tell you in

And I met with them and they came up with the metrics. We went through them back and forth and we came to a decision on the metrics that they were under their control and they were very reasonable and now that's in place, and so we're moving forward around their metric.

So, I would hope that you wouldn't get - I mean I can't imagine any medical director, chief medical officer at any health plan in this country meeting with pediatric cardiac specialists and dictating measures.

They may look at these NQF

1 measures and say to you what do you think? If
2 you want to even participate in upside, you
3 know, increasing upside payments, then they
4 would take - these would at least be a
5 discussion point.

7 and say, Nancy, what do you think of these?
8 And then it would be a collaborative process.

They could put them on the table

None of these have been, you know, they've all been collaborative in primary care as much as it doesn't sound that way from the outside, you know.

So, I would just say
congratulations that you're doing this. This
is pretty impressive. You're going to see this will start a movement.

You do have to be aware that they
sometimes do find their ways into payment.
There's no question about that. But as somebody said, you know, let's move, this is what we're trying to do in healthcare, and we as physicians need to take control, more

1 control of this moving it forward.

3 somebody is going to take control of it
4 outside, so this is a great process.

8 to the steps of that insurance company, walk
9 right in, find the CMO, sit him down, because
10 there's not going to be a pediatric cardiac
11 specialist at that desk and you're going to be

21 again, as I mentioned in the meeting, that
Otherwise, it's going to And I understand your discomfort, but I just, you know, I think the likelihood of that - especially, I would say to you, go the one in control of defining what you want to be measured on.

CO-CHAIR JEFFRIES: Okay. Are there any other comments on this measure? I mean I would just say one thing
from the discussion we had, and that was around usability. And from - I guess I would also like to hear your perspective as a family that it would seem that these points that, there's sort of an expectation that these are

1 done and not that this is above and beyond
2 what is part of practice.
MS. BARNETT-JONES: Absolutely, and
4 that was part of my comment in our sub-group
5 is that we set - the goal is to set the
6 expectation. And I know from my own
7 experience especially when we look at Point
8 Number 4, for me that is routine when we go to
9 CHOP, when we come out of the cath lab.

11

It is routine that all of the persons listed here are there and that there is a debriefing.

At times, the family is included in that debrief. And so that is for me, a very high expectation so that there is the transfer of knowledge, there is the communication.

And it helps, as I said at the
table, that we are all still on the same sheet of music. That everyone is on the same page.

And from an outcome perspective, I think that for a child that enhances the

1 safety, that there is less likely for
2 something to go awry because the communication
3 was there and the opportunity was available to
4 ask questions and make sure that all the
5 answers were laid out at the same time and
6 everyone heard the same message.

8 Jeff, I just wanted to get some clarity before
9 we go to a vote, around the numerator.

11 stated now, it's whether or not the facility 12 implements.

21 case basis, there's going to be four check
Is that how you want it? Is it dichotomous or do you want it on a per patient DR. J. JACOBS: So, the way we anticipate implementing this is one would have a database that's tracking all these different metrics.

And for this metric on a case-byboxes to check where you would document that

CO-CHAIR JEFFRIES: Thank you. So,

And the way the numerator is

1 you complied with Step 1, Step 2, Step 3 and 2 Step 4. 4 specifically if you said no, you would have

5 the option of going to a drop down menu and
6 having the reason why you said no.
Additionally for Step 2 and 3

And I think Step 1 obviously
always has to happen every time or you're going to go to jail, but Step 2 and 3 there's probably some reasonably good, possible explanations for why it's not done like the patient is unstable, giving CPR, things like that.

So, basically it's a yes-no question on a per patient basis with four check boxes. And for the Number 2 and Number 3 , some explanation as to why one might put no. And then you comply it in an all or none fashion like we talked about before. CO-CHAIR JEFFRIES: So, can I have a motion that we vote on this with the modifications to the numerator as were just

1 delineated?

7 four recommend for time-limited endorsement.
8 And no one did not, not recommend.

11 stop.

22 at 5:00 p.m.)

| A | 34:20 68:18 84:12 | allied 9:2 | application 41:15 | attendance 14:19 |
| :---: | :---: | :---: | :---: | :---: |
| ability 62:9 100:17 | administrative | allow 20:16 32:15 | applications 34:18 | attending 103:3 |
| able 29:13 30:1,11 | 7:16 30:12 35:13 | 66:1 67:12 74:9 | 42:10 99:12 | 104:17 |
| 33:6 40:9 54:18 | 88:14 | 77:18 84:22 | applied 45:21 53:3 | attention 16: |
| 63:14 87:16 | administrator | allowance 64:18 | 88:6,11,12 | udience 3:4 |
| absolutely 28:20 | 109:12 | allowed 49:20 50:2 | applies 49:14 66:21 | 14:18 |
| 52:11 114:7120 | adopted 39 | :16 | apply 41:22 66:17 | audited 42: |
| academic 44:22 | 106:17 | allowing 74:3 90:1 | approach 69:21 | auditing 103:1 |
| accept 73:6 | adul | allows 16 | 71:7,8 93:2,13,21 | ustralia 38:8 |
| acceptability 27:9 | 0:8, | al | 94:10 | authored 49:8 |
| acceptable 27:6 | 51:13,13 65:9,1 | alternative 73 | approaching 82:14 | Authority 7:20 |
| access 93:7 | 79:9 110:14 111:3 | altoge | appropriate 23:1 | availability 114 |
| complish 80:8 | adults 51:2,6 63:9 | altruistic 109:16 | 66:7 78:22 | available 70: |
| accomplished | 63:11,16 66:14,18 | America 48 | approve 76:11 | 5:11 110:1 121:3 |
| 108:10 | 21,22 | American 6: | approved 6:20 61:2 | Avenue 1:13 |
| accomplishing | advantage 79:2 | 43:20 | 93:15 | verage 36:7 |
| 111:4 | Advisory 6:16 9 | an | approvin | ware 53:22 118 |
| account 46:18 | afternoon 57:8 | analyst 11:12 | area 6:15 17:3 42:2 | awry 121:2 |
| 104:3 | age 35:1,11 50:21 | and/or 19:14 | areas 22:20 41:1 | a.m 1:14 4:2 5 |
| ccrue 87:15 |  | anesthesia 39:1, | 47:12 | 23:18 |
| accuracy 42:5 | agency 6 | 40:3 43:22 48:8 | Aristotle 12:17 | B |
| achieve 22:1 |  |  |  | 55:15 57:19 |
|  | agnostic 73:1 | anesth | 80:12 86:9 | baby 44:7,9 |
| acknowl | ago 5:13 6:13 10:1 | 8:2 100:6 114:2 | arm | back 13:13 |
| 107:13 | 22:5 34:1 53:6,7 | 116 | arrival 100 | 25:8 59:2 6 |
| acquired | 79:10 | anesthes | arr | 2 |
| active 42 : | agree 65:5 73 | 43:7,1 | articles 41:10 | 90:19 92:17 98 |
| actual 40:19 52:17 | 8:4 93:10 95:1 | Angiography 8:20 | articulation 109:2 | 17 |
| actuality 105:21 | 107:3,9 114:8 | anoma | Ashlie 2:13 11:18 | 33:14 |
| ad 25: | agreeable 89:17,17 | 46:19 | 13:8 | 33:14 37:14 44: |
| add 54:22 | 89:18 | answer 56: | Asia 38:8 | 47:3 |
| 13 77:3 85:21 | agreed 74:15 94:15 | answers 94:8,12 | asked 7:7 | bar 22:11 105:17 |
| 87:21 88:6 113:14 | agreement 24:11 | 121:5 | asking 95:18 109:6 | 105:18 108:22 |
| dded 20:16 | 24:12 | anticipate 121:17 |  | 109:1,18 |
| adding 24:6 66 | agrees 25: | anticipated 99:11 | assess 7:15 | Barnett-Jones 1: |
| addition 63:6 | ahead 14:19 | 99:13 | assessment 35:3,6 | 120 |
| additional 14:5 | :12 56:20 60:3 | an |  | base 25:2 |
| 34:21 54:22 59:5 | AHRQ 6:15 17:12 | anybody 6 | as | based 7:17 |
| 66:13 78:11 84:17 | AHRQ's 7:6 | :2 105:20 | associate 89:13 | 18:2 19:7 |
| 87:21 92:8 106:4 | Air 110:7 | 106:21 | associated 46:19 | 36:22 39:16 40:18 |
| Additionally 122:3 | aircraft 110:8 | an | 70:6 108:6 | 0:19 |
| addressed 80:3 | air | anyway 67:6 | Association 6 | 0.10 74.5 |
| Adjourn 3:22 | airplane 47:3 | aortic 51:8 | assume 32:22 | 0:11 87:8 95:16 |
| adjourned 57:1 | ali |  | 86:10 | 14:1 |
| 123:21 | Allen 1:21 7:22 | applicable 64:11 | asymptote 111:21 | bases 57:14 |
| adjustment 5:9 | allergies 99:4 | 64:22 | attend 19:14 | basic 41:15 |


| basically 60:16 | black 113:7 114:19 | 90:19 | 111:3 116:16 | 35:19 |
| :---: | :---: | :---: | :---: | :---: |
| 63:17 98:22 | black/white 110:22 | bringing 22:12 | 117:21 119:10 | central 108:5 |
| 122:14 | blank 54:9 55:9 | brought 32:11 | cardiologist 8:14 | certain 51:17 87:2 |
| basis 48:10 63:10 | blockade 23:2 | 48:22 69:12 108:1 | 101:10 | 108:21 |
| 121:21 122:15 | blocker 23:11,11 | BSN 1:19 | cardiologists 34:2 | certainly 26:17 |
| batting 91:9 | 23:12 | Buddhist 89:20 | 43:6,10 49:9 | 29:20 86:21 87:11 |
| bear 13:18 | blood 111:20 | build 32:18 45:14 | cardiology 23:4 | chair 9:8 13:1 |
| bedside 101:12 | blue 43:8,9 47:11 | burden 30:1 | 38:20 39:3 40:2 | chaired 10:1 |
| 102:13 110:4 | 48:21,22 | Burstin 2:7 5:16 | 43:20 48:7 64:2 | Chairman 61:6,6 |
| 113:17,22 | board 15:7,14 | 6:1 11:20,21 | 100:8 | Chairs 1:14 |
| began 65:19 | 16:21 17:7 20:9 | 21:18 32:12 50:12 | care 9:3 11:6 23:8 | challenges 99:13 |
| begins 20:3 | bodies 6:21 | 51:10,22 52:12 | 26:18 29:15 38:21 | challenging 80:10 |
| behalf 19:15,19 | body 15:20 | 53:1 | 39:4 40:3 42:16 | change 27:2,8 |
| 79:15 81:2 | book 32:11 41:2,2 | bypass 51:8 99:11 | 43:4 48:8 100:4,7 | changed 92:10 |
| believe 16:6 17:2 | 41:4,12 43:8,9 |  | 100:8 106:17 | changes 85:2 87:8 |
| 17:18 21:18 55:12 | 47:2,11,17 48:21 | C | 115:11,21 117:5 | 92:16 |
| 59:20 60:1 61:2 | 48:22 | C 70:11,13 | 118:10 | chapter 49:7 |
| 69:11 71:22 75:19 | books 41:1 45:22 | calculate 73:8 | careful 75:13 98:3 | charts 30:2 46:1 |
| 76:1 94:4 | boss 90:9 | calculated 71:11 | cares 43:13 | check 115:1 121:21 |
| benchmark 36:5 | bosses 90:8 | 79:6 | carriers 110:9 | 121:22 122:16 |
| 85:11 | Boston 4:19 8:7 | calculating 80:10 | carry 47:2 | checked 115:8 |
| bend 90:2 | 12:6 18:9 33:16 | calculation 71:2 | case 14:470:15 | 116:4 |
| benefit 75:4 | 36:5 59:22 69:17 | 74:7 | 82:9 84:10 101:10 | chief 8:2 117:19 |
| best 74:17 75:9,10 | 71:18 81:16 88:22 | calculations 70:1 | 104:17 111:10 | child 113:2 120:22 |
| 84:16,20 85:7 | 96:21 97:1,2 | 71:17 | 112:13 121:21 | children 8:15 44:11 |
| 89:21 97:19 113:1 | Boston's 82:3 | call 19:11 25:20 | caseload 35:8 | 51:2,5 67:2 |
| beta 23:2,11,11,12 | box 115:8 | 50:6 112:16 | cases 65:9 70:11 | children's 4:10,15 |
| better 9:6 11:6 | boxes 121:22 | called 5:10 22:17 | case-by 121:20 | 4:18 8:6,10,11 9:9 |
| 22:14 29:10 70:11 | 122:16 | 25:5 33:17 47:20 | categories 34:19 | 10:11 12:5 18:8 |
| 70:13 74:21 75:1 | break 3:8 53:19 | 50:8 | 46:14 69:1 86:10 | 33:15 35:22 36:4 |
| 75:2 78:7 106:8 | 56:20 123:13 | calls 50:9 115:17 | 86:12 88:1 89:6 | 49:13 59:22 |
| beyond 5:19 21:7 | Breakfast 123:13 | 115:20 | categorize 46:14 | choice 70:16,18 |
| 23:9 39:17 42:12 | breakout 13:15 | Canadian 9:16 | 84:16 | 95:7 |
| 120:1 | 14:13 53:15,18 | capable 112:21 | Category 69:20 | choices 76:17 96:3 |
| big 28:9 41:2,4 | 56:1 | capture 65:11 | 71:8 | CHOP 120:9 |
| 47:2,11 | breakouts 55:12 | captured 31:11 | cath 8:14 120:9 | chose 71:8 |
| biostatistician 12:5 | brief 21:20 57:6 | capturing 65:9 | caveats 112:19 | Christina 2:12 11:8 |
| bit 13:15,16 14:11 | 100:16 102:14 | cardiac 1:3,5,12 | CDC 50:9 | circumstances |
| 16:5 21:4 22:12 | 112:12 | 4:14,18 5:6 8:6,20 | CDP 17:1 | 110:11 |
| 33:14 36:14 47:3 | briefing 99:6 100:2 | 10:10 17:11,13,16 | center 6:7 9:10 | clarification 56:11 |
| 53:12,14,17 55:16 | 102:2 | 18:5,17 20:21 | 50:4 62:12 64:19 | 91:3,18 |
| 57:9,11 58:7,13 | briefly 13:18 22:3 | 23:1,3 29:19 34:2 | centered 48:3 | clarifications 95:15 |
| 62:5 73:19 77:17 | 42:3 44:1 | 35:2,8 38:21 39:1 | 69:19 70:17 | clarify 22:7 92:22 |
| 90:3 92:22 106:13 | brief/handoff | 39:3 40:2 43:21 | 100:10 | clarity 121:8 |
| 111:13 113:12 | 112:8 | 48:7 49:9 50:19 | centers 38:7 63:15 | classification 74:6 |
| 114:18 | brilliant 83:6 | 51:13 52:5,6,18 | 84:8,10 85:11 | classifications |
| bi-weekly 45:3 | bring 23:6 72:7 | 63:22 110:14 | center-specific | 61:13,17 |


| cleansing 42:9 | combining 83:3,7 | 77:19 | conceptual 93:5 | 1:22 |
| :---: | :---: | :---: | :---: | :---: |
| clear 48:15 77:14 | come 30:5,14 37:4 | company 119:8 | concern 77:21 83:7 | consulted 49:5,16 |
| 78:17 | 61:21 62:18 72:22 | comparable 80:11 | concerned 103:8 | 49:18 |
| clearly 50:10 96:12 | 73:1 76:3 84:2 | compare 18:1 | 115:20 | consumers 15:3 |
| Cleveland 9:20 | 85:18 89:10,16 | 71:20 | concerns 105:13 | content 78:6 |
| 12:11 | 90:16 93:14 | compared 27:20 | concise 48:15 | contention 71:22 |
| click 21:1 | 113:19 114:21 | compartments | conclusion 71:4,5 | 72:1 |
| client 9:16 | 117:2,6 120:9 | 104:10 | 88:16 | contentious 79:16 |
| Clinic 9:20 12:12 | 123:16 | complaining | concordance 7:15 | CONTENTS 3:1 |
| 110:14 | comes 75:1 92:17 | 115:18 | condensed 16:22 | context 32:13 |
| clinical 8:5 12:10 | 110:7 | complementary | conditions 24:8 | continents 40:1 |
| 30:7,12,14 31:2,4 | comfort 113:12 | 82:5 | 68:3 85:15 | continue 54:20 |
| 31:17 34:21 | comfortable 55:22 | complete 25:16 | conference 19:11 | 75:22 76:1 83:12 |
| clinically 30:6 | comment 3:17 19:4 | 46:17 54:17 | 90:6 96:17 | 98:13 |
| clinicians 27:18 | 19:21 53:9 64:6 | completely 31:16 | conferences 45:3 | continuous 16:3 |
| clinician-clinician | 86:17 96:14 97:4 | completeness 42:5 | conflict 7:3 | continuum 23:8 |
| 102:11 | 97:4,14,17 98:7 | complex 69:8 | conflicts 4:6 33:7 | contraindications |
| clinician-to-clini | 115:5 116:7 120:4 | complexity 12:17 | confused 84:19 | 28:19,20 |
| 100:4 | commented 96:14 | 40:7 41:7,22 | 109:20 | contrast 18:1 |
| close 61:14,19 | commenting | 43:16 46:9,16 | confusing 65:3 | contribute 29:2 |
| closely 8:21 9:2 | 101:21 | 47:13 60:13,14 | congenital 5:10 | control 28:3,7 50:5 |
| closer 9:6 | comments 3:6,11 | 79:22 81:9 88:19 | 9:19 10:1 12:9,11 | 81:18 110:10 |
| closure 6:12 | 3:14,19 17:7 19:6 | 95:2,7 | 13:1 35:10 37:7 | 117:13 118:22 |
| CMO 119:9 | 20:1,6 32:5,7 47:8 | compliance 109:10 | 37:15 38:22 42:16 | 119:1,3,12 |
| CNOR 1:19 | 62:13 66:3 67:7 | 109:11,12,13 | 43:3,4,21 44:18 | conundrum 80:16 |
| coalition 18:5 | 101:3 105:11 | 112:2 | 47:21 49:3 50:7 | 81:14 |
| 22:17 | 116:11 119:15 | complicated 36:15 | 51:6,14 63:9,12 | conventional 99:1 |
| codes 7:13,13,14,17 | committee 1:3,12 | complicating 74:14 | 63:17 67:1 68:17 | conversation 66:1 |
| 62:16,19,22 63:1 | 1:16 3:12,13,15 | complication 49:5 | 68:18 70:11 79:13 | 90:5 107:20 |
| 63:3,7,8,19 64:2 | 3:16,20,21 8:19 | complications | congratulations | conversely 87:18 |
| 64:12,16,22 65:2 | 10:2,4,13 16:17 | 40:12,13 48:18 | 118:14 | 88:12 |
| 65:9,10 66:5,6,9 | 17:4 19:6,16 | 49:8,12,15,18,19 | Congressional 1:12 | coordination 26:18 |
| 66:13,15,16,17,19 | 31:16 32:8,17 | complied 122:1 | consensus 1:4 16:7 | coordinator 8:5 |
| 66:19,22 67:1 | 34:13 39:8 44:17 | comply 64:19 | 20:18 48:10 | core 35:7 |
| collaboration 41:8 | 44:20 47:20 54:21 | 122:18 | consensus-based | coronary 51:8 |
| 42:15 43:2 47:15 | 62:14 91:8,12,13 | component 35:7 | 47:18 | correct 5:20 95:3,4 |
| 104:9 | 91:15 | 44:1 84:9 106:2 | consensus-driven | 95:21 |
| collaborative 118:8 | committees 39:10 | components 35:3 | 48:15 | correctly 80:17 |
| 118:10 | common 93:11 | 44:2 83:15 99:18 | consent 104:14 | 86:8 93:17 |
| collect 26:11 28:16 | 94:10 | 106:1 | consequences 25:7 | correlation 70:14 |
| 29:22 | communic | comprehensive | consider 23:22 | Council 9:9 |
| collected 35:14 | 45:12 | 59:8 | 24:4 26:8 72:9 | councils 15:2 16:19 |
| 100:18 | communicatio | comprised 18:6 | 85:20 | country 38:6 70:4 |
| collecting 112:20 | 114:5 120:17 | computer 13:11 | consideration 24:9 | 117:20 |
| college 10:12 38:20 | 121:2 | 54:18 | considered 73:21 | couple 64:1 70:22 |
| 43:20 44:11 | community 18:18 | conceivable 94:13 | $73: 2274: 2$ | 116:10 |
| combin | companies 11:2 | concept 90:22 | CONSTANTINE | course 20:17 45:2 |

Neal R. Gross \& Co., Inc.
202-234-4433

| cover 66:14 | Darryl's 66:12 | deals 60:11 88:19 | described 40:15 | dictating 106:9 |
| :---: | :---: | :---: | :---: | :---: |
| covered 57:14 | data 7:16,16 26:12 | dealt 96:12 | 77:10 | 109:16 117:21 |
| covers 84:9 | 27:18 28:16 29:9 | death 42:20 69:22 | description 3:7 | differences 35:19 |
| co-author 49:10 | 29:19 30:13 31:2 | 69:22 70:1 | 72:9 | different 41:21 |
| Co-Chair 1:17,18 | 31:4,9 34:6 35:13 | debridement 63:21 | descriptions 65:3 | 51:1,7 60:12 |
| 4:3,13 60:5 62:3 | 35:14,14,20 36:1 | debrief 112:10,22 | Design 11:1 | 61:15 69:21 70:3 |
| 64:5 65:13 67:7 | 36:16 38:6 40:19 | 120:14 | designing 11:4 | 70:4 80:21 86:2 |
| 67:10,17,21 68:14 | 41:7,19 42:3,6,7,8 | debriefing 99:15 | desired 110:18 | 89:11,15 93:9 |
| 77:1,7 78:20 84:4 | 42:11,22 43:17 | 99:20 104:19 | desires 67:3 | 94:7,8 111:17 |
| 85:13 91:11,14,16 | 46:1 47:14 61:16 | 106:22 107:4,14 | desk 119:11 | 121:18 |
| 92:14 93:18 94:17 | 62:10,10 69:16 | 120:12 | detailed 17:1 | differing 93:8 |
| 95:12,14,21 96:2 | 70:10 71:17 80:13 | debriefings 110:3 | details 20:20 87:4 | 94:14 |
| 96:4,11 98:12 | 80:14,17,21,21 | decade 39:19 | determine 63:10 | difficult 28:16 73:4 |
| 101:2,20 102:2,4 | 81:4 85:1,1,2,22 | December 20:2,4 | 74:21 | 78:4 |
| 102:9 104:5 105:4 | 86:1,20 87:15,21 | 41:3 | develop 40:6 44:18 | ding 106:15 |
| 108:16 110:19 | 88:7,13,14 93:8 | decides 54:12 55:6 | 46:16 51:4 82:14 | diplomatic 76:14 |
| 119:14 121:7 | 93:11 94:7 100:18 | decision 76:6,10 | 95:9 | direct 8:14 55:14 |
| 122:20 123:3,9 | 111:6 112:20 | 117:12 | developed 35:5 | direction 85:6 |
| co-chairs 67:15 | database 10:1 | decisions 29:10,14 | 39:8 41:19 45:4 | 116:19 |
| CPNP 1:18 | 12:15 13:2 36:2 | define 39:20 45:19 | 47:19 49:2 85:10 | directly 58:20 |
| CPR 122:12 | 37:8,14,16,17,20 | 64:21 | 98:1,2 | director 9:15 10:22 |
| CPT 62:19 63:3 | 38:4,10,17,19,20 | defining 41:13,14 | developer 3:6,11 | 12:10 117:19 |
| 64:16 65:2,15 | 38:22 39:1,18,21 | 119:12 | 3:14,19 25:9,17 | directors 15:8,14 |
| 66:6,9,19 | 40:9,14,19 41:6 | definitely 29:5 | 26:1 | 20:9 |
| create 38:5 81:8 | 41:16 42:3,14,19 | 35:18 | developers 4:7 31:8 | disagreeing 75:17 |
| created 12:19 | 43:16,19,20,22 | definition 48:16 | 32:4,20 33:4 56:7 | 75:18 |
| creating 94:10 | 44:4,13,13,15 | 49:22 | 90:14 | disclose 4:5,12,16 |
| creation 38:11 | 45:9,12 46:5,11 | definitions 45:19 | developing 5:9 | 4:20 5:15 6:19 |
| creative 10:22 | 46:21 47:13,20 | 47:18,19 48:4,5 | 7:12 37:10 39:5 | 7:4,10,21 8:12 |
| credit 111:5 | 50:7,9 52:3,9 | 48:11 49:1,21 | 48:3 | 11:7,10,13,16,22 |
| crews 110:8,10 | 60:18,21 64:12,20 | 50:3,4 51:17 | development 5:19 | disclosure 3:2 8:8,9 |
| criteria 14:4,9 | 64:21 69:14 70:21 | degree 102:19 | 5:21 7:6 10:17 | disclosures 8:18 |
| 18:22 21:21 22:1 | 79:9,13 84:21 | 103:14 | 12:21 16:7 20:18 | 9:4 11:19 13:3 |
| 22:5 27:1,3 57:13 | 86:22 87:10,12,13 | delegatable 104:13 | 32:16 50:11 82:22 | discomfort 119:5 |
| 58:2 64:11 | 87:20 88:3,10,11 | 104:16 105:2 | device 99:12 | discriminate 27:13 |
| critical 27:11 39:4 | 97:11,21 98:5 | delighted 30:5 | devices 11:2 | discuss 18:20 59:15 |
| 40:3 48:8 100:8 | 111:3 121:18 | delineated 123:1 | diagnosis 7:13,13 | 90:4 |
| 104:1 107:18 | databases 39:2,5 | demand 15:22 | 63:8 65:9 66:15 | discussant 67:12 |
| crosswalk 7:12 | 39:22 40:3 48:7 | demonstrated | 66:16 99:9 | discussed 55:4 |
| CSAC 15:8,10 17:5 | 51:12 82:6 88:3 | 29:18 | diagnostic 11:2 | 100:21 103:16 |
| 18:16 19:13,16 | date 21:9 29:20 | deny 111:10 | 66:7 | 107:11 |
| 20:7 26:4 | 107:15 | depending 50:20 | diagram 16:6 | discussing 28:1 |
| currently 4:10 | day 29:9 47:6 | depth 99:22 | dialog 64:13 99:22 | 41:21 48:12 |
| 86:11,13 | days 5:3 93:21 | derivative 34:3 | 109:20 | discussion 13:17 |
|  | DCRI 83:14 | derived 6 | dichotom | 18:21 19:9 57:13 |
| D | deal 82:21 89:21 | 79:18 80:18 81:6 | 121:14 | 57:16,21 58:1,13 |
| Darryl 1:20 6:6 | dealing 72:21 | 86:9 | dictate 109:4,8 | 58:17,21 59:8,17 |

Neal R. Gross \& Co., Inc.
202-234-4433


| faced 76:16 | File 42:20 | 33:11 57:18 76:4 | general 3:6 14:21 | 82:20 83:4 87:20 |
| :---: | :---: | :---: | :---: | :---: |
| facilitating 54:4,6 | fill 83:18 92:4 | 87:6 93:14 116:12 | 19:20 32:5 50:13 | 96:6 98:12 104:1 |
| facilitator 16:2 | final 15:15 20:10 | 116:15,21,22 | generated 86:21 | 106:15 108:12 |
| facility 65:19 | 68:4 | 117:2,6,15 119:1 | 87:1 | 109:3,8,9,10,11 |
| 121:11 | finally $42: 18$ | forwarded 15:10 | generically 108:20 | 109:13,17 111:19 |
| fact 25:15 26:4 | find 89:21 118:18 | found 34:9 | getting 26:12 27:19 | 112:4 113:10 |
| 62:20 73:7 79:10 | 119:9 | foundation 42:15 | 69:6 107:16 | 116:21,22 118:15 |
| 81:16 95:19 | finding 78:3 | 45:16 | Ghanayem 1:19 | 119:2,3,10,11 |
| 116:20 | fine 28:18 77:22 | foundational 26:7 | 10:9,10 101:4,22 | 121:21 122:5,9 |
| failure 48:14 | 103:5 | four 41:12 56:9 | 102:3,6,18 103:8 | good 9:7,18 10:9 |
| fair 71:7 | finished 76:21 | 68:22 74:19 76:8 | 107:22 109:21 | 11:17,20 12:8,22 |
| fairly 23:18 | fire 75:14,15 | 86:9 93:21 98:22 | 114:7,12,16 | 13:9 14:16 37:2 |
| fall 79:11 85:14 | first 5:4,9 12:19 | 105:9,22 106:14 | give 21:4 33:13 | 47:9 57:11,15 |
| fallen 30:3 | 17:10 37:13 38:14 | 108:9 111:11 | 36:8 37:13 58:12 | 60:15 61:1 84:11 |
| familiar 17:9 87:3 | 41:3 47:11 | 112:7 121:21 | 82:13 84:10 92:2 | 88:16 89:15 90:22 |
| family 9:8 119:19 | fit 89:5 | 122:15 123:7 | 92:8 113:11 | 122:10 |
| 120:13 | five 86:12 102:15 | fourth 42:2 | given 14:16 57:18 | governing 16:21 |
| Fanta 2:8 11:11,11 | 123:10 | four-year 48:2 | 60:18 62:20 | government 74:9 |
| 58:18 | five-year-old 9:11 | frame 36:20 | giving 37:3 54:7 | Grannis 2:9 11:14 |
| far 33:11 46:4 | flexibility 85:5 89:4 | franchises 11:3 | 122:12 | 11:14 12:1 13:6 |
| 66:12 | flow 59:13 | frankly 84:7 | gleaned 60:20 | 32:3 67:14 123:6 |
| fascinating 108:18 | flu 24:1,2 | free 33:3 71:22 | Global 10:22 | graphs 46:1 |
| fashion 122:19 | focus 11:4 17:10 | 72:1 | go 4:4 13:10,12 | Gray 1:20 6:6,6 |
| fear 108:22 | focused 17:10 | frightening 23:2 | 14:1,3,12,19 | 62:15 65:7 66:15 |
| feasibility 29:21 | 31:16 51:5 | front 32:20 82:9 | 15:14 16:8 17:5,6 | great 13:6 23:17 |
| 100:17 | focuses 26:22 | fulfilled 26:5 | 20:7 21:17 26:3 | 75:21 101:8,16 |
| feasible $27: 7$ | follow 20:17 44:2 | full 23:8 33:21 | 29:13 30:1,7 31:6 | 119:4 123:19 |
| 100:22 101:7 | followed 99:22 | 34:15,21 43:13 | 33:8 38:13 44:8 | greater 23:15 |
| features 20:16 22:4 | following 19:11 | 46:12 54:21 88:10 | 44:10 45:4,13 | ground 110:10 |
| February 20:8 | follow-up 41:9 44:6 | 88:21 | 56:20 60:3,4 61:4 | grounded 21:22 |
| February/March | 44:14 47:16 | fully 25:22 30:13 | 71:3 98:14 119:7 | 22:1 |
| 20:10 | force 10:19 12:14 | function 44:14 | 120:8 121:2,9 | group 5:1,7 6:16 |
| feed 25:8 | 13:2 16:2 110:7 | fundamental 34:19 | 122:9 | 37:8 44:20 46:13 |
| feedback 52:10 | forgot 112:16 | funded 18:4 | goal 7:14 27:15 | 47:18,19,22 48:20 |
| feel 21:10 33:3 | form 6:22 33:15,21 | funding 97:12 | 85:9 120:5 | 49:9 50:21 54:1,3 |
| 61:19 | 46:13,13,17 | further 12:21 89:9 | goals 13:14 15:16 | 54:5,7,8,12,14,16 |
| feeling 62:6 | formal 107:4 | Furthermore 74:14 | 16:16 18:14 22:13 | 55:6,14,15 57:19 |
| fellow 103:1 114:17 | formally 6:21 | future 64:19 | 26:16 100:13 | 57:19 58:14,15,17 |
| 114:17 | forms 22:1 41:15 |  | goes 30:16 45:18 | 58:22 59:2,9,10 |
| felt 22:10 100:11 | 53:4 | G | going 13:7,10,10,12 | 59:16,17 60:15 |
| 100:22 | forth 19:18 59:18 | Galvin 1:19 8:4,5 | 14:3 21:5,8,15 | 62:16 69:17 71:18 |
| fewer 101:18 | 117:12 | 98:17,19 102:10 | 30:10,11 31:12 | 79:3 80:4 81:17 |
| field 18:11 25:6 | Forum 1:1 11:13 | 103:2,15 107:2 | 32:3 39:15 41:22 | 91:1,7 92:17,18 |
| 33:11 | 11:15,19 | 113:13 114:11,15 | 44:7,9 53:15 | 98:15 101:3,6 |
| fields 64:21 | forward 6:4 19:2 | gasoline 75:14 | 55:13 57:7,17 | 107:11 115:15 |
| fifth 43:1 | 22:18 25:19 30:14 | Gauvreau 2:20 | 59:12 62:21 63:3 | 116:14 117:6 |
| figure 29:13 112:15 | 30:17 31:9,12 | 12:4,4 81:7 | 65:11 71:20 82:4 | grouped 17:22 |


| groups 13:16 14:13 | 117:19 | history 99:4 | identifying 99:18 | 42:10 |
| :---: | :---: | :---: | :---: | :---: |
| 53:15,18,21 55:18 | healthcare 6:9 7:20 | hoc 25:5 | illogical 42:10 | incorporate 84:17 |
| 56:2 57:10,18 | 15:19,21 16:1,4 | home 44:8 47:2 | imagine 64:17 | incorporated 77:17 |
| 58:6 70:3 83:20 | 16:15 22:14 | honestly 109:6 | 117:18 | 93:9 |
| group's 58:1,2,16 | 118:21 | hope 61:22 94:2,13 | impact 26:13 38:20 | increase 15:22 |
| guess 9:5 56:8 65:7 | healthy 18:21 | 117:1,17 | implants 99:12 | increasing 118:3 |
| 65:12,22 77:13 | hear 5:8 25:6 32:19 | hopefully 18:17 | implement 113:15 | increasingly 28:10 |
| 90:8,20 105:12 | 90:17 113:20 | 92:22 | implemented 7:1 | 29:21 30:4 |
| 112:18 119:18 | 114:1,2 119:19 | hoping 20:5 22:13 | 40:2 46:20 | incredibly 50:15 |
| Gus 9:19 77:9 | heard 32:14 108:21 | 31:6 | implementing | index 79:18 |
| guys 13:20 14:5 | 109:2 121:6 | hospital 4:11,15,19 | 44:12 102:12 | Indianapolis 8:16 |
| 17:9 21:18 53:20 | hearing 77:14 | 8:7,15 10:11 12:5 | 121:17 | indicate 31:9 |
| 56:16 58:20 59:3 | heart 5:10 9:12,19 | 18:9 33:15 36:5 | implements 121:12 | indicator 68:21 |
| 66:8 123:15 | 12:9,11 13:1 | 44:8 49:13 59:22 | import 71:22 | 70:16 99:5 |
|  | 17:13 35:10 37:15 | hospitals 18:6 36:1 | importance 26:6 | indicators 10:7 |
| H | 37:18 42:17 43:3 | 37:18,22 38:1,3 | 26:22 | 15:22 44:19 |
| half 41:4 47:12,17 | 43:5 44:19 47:21 | 44:21,22,22 45:1 | important 6:18 7:3 | individual 58:14 |
| hand 21:16 54:17 | 49:3,12 50:7,8 | 62:21 | 24:18 27:5 28:13 | 59:9 65:20 78:11 |
| 59:19 60:3 69:8 | 51:6,14 63:9,12 | Hotel 1:13 | 29:7 35:2 39:11 | industry 15:2 |
| 82:11 | 63:18 67:1 68:17 | hours 123:16 | 48:11 50:11 61:3 | infant 79:12 |
| handed 43:9 | 68:18 | Howard 1:14,17 | 80:6 100:12 104:7 | infection 50:3 |
| handoff 100:2,5 | hearty 37:7 | 4:14 59:20 80:3 | importantly 37:21 | 108:5 111:22 |
| 102:1,5,7,12 | Helen 2:7 11:21 | how's 84:20 | impressive 118:15 | infections 111:20 |
| hands 68:6 78:8 | 14:3,16 21:16 | Hoyer 1:21 8:13,13 | improvement 6:8 | infectious 49:16,17 |
| happen 20:8 66:2 | 65:17 | 95:18,22 96:3 | 7:7 16:3 25:14 | 50:3 |
| 87:16 94:2 101:14 | help 47:6 83:13 | 105:12 | 27:16 29:18 42:1 | information 17:8 |
| 101:17 103:11 | 84:1 | hundred 45:8,9 | 99:19 | 35:15 36:2 47:1 |
| 107:12 122:8 | helped 6:13 | 46:7 111:6 112:2 | improvement/qu... | 102:17 113:20 |
| happened 59:9,15 | helpful 5:17 32:13 | 112:4 113:10 | 38:12 | informative 78:22 |
| happening 103:10 | helps 6:21 120:18 | Hyatt 1:13 | inauguration 9:21 | 79:8 |
| $\begin{aligned} & \text { happy 9:14 47:6 } \\ & 67: 3 \end{aligned}$ | Hi 11:11,17, 20 hierarchical $85 \cdot 3$ | hybrid 81:16 | include 35:9 63:8 | informed 104:14 |
| hard 112:5 | high 40:10,12 58:4 | I | 65:8 68:22 69:1 | innocently 109:7 |
| harmonious 38:7 | 120:15 | ICD 39:9 | 82:15 | inpatient 23:9 |
| 84:3 | higher 105:19 | ICD-11 39:7 | included 70:9 | input 33:4 |
| harmonization | highlight 22:3 | ICD-9 7:12,17 | 100:20 120:13 | insofar 81:1 |
| 22:22 23:14 | high-impact 22:20 | 62:22 65:8 66:5 | includes 15:7 35:1 | instance 72:15 |
| harmonize 49:21 | high-level 21:20 | 66:13,18 | 99:2 | institution 115:15 |
| 50:2 | high-quality 16:1 | ICU 112:7 113:15 | including 13:4 15:2 | 115:16 |
| harmonized 39:7 | HINES 2:11 65:16 | 114:17 | 16:15,19 63:16,16 | institutional 94:11 |
| 43:18 48:16 51:18 | 68:12 81:22 82:19 | idea 17:21 23:13 | 69:13 88:13 99:9 | instructions 66:10 |
| harmonizing 39:18 | 85:16 86:2,6 | 58:15 69:15,19 | 100:8 | insurance 28:5 |
| Harvard 12:6 | 87:18 90:12 92:9 | 72:2,7 79:19 83:6 | inclusion 65:14 | 77:19 111:9 115:6 |
| hate 114:20 | Hinkle 1:21 7:22 | 83:6 89:15 107:19 | inclusionary 64:10 | 119:8 |
| health 8:3 12:7 | 8:1 56:3,4,6 91:2 | ideally 99:20 | inclusive 69:20 | surers |
| 15:3 30:18,21 | 91:13,15,17,21 | ideas 106:12 | 71:7 | intellectual 24:11 |
| 31:15,18 36:2 | 92:5 116:6 | identification 99:3 | inconsistencies | intend 110:17 |


| intensive 38:21 | 28:10 79:4,16 | Jeff's 85:6 | 105:20 107:14,16 | 108:5 |
| :---: | :---: | :---: | :---: | :---: |
| 100:4,7 | 96:12 112:13 | Jenkins 2:19 33:9 | 111:22 118:3,9,12 | link 22:15 |
| intensivist 4:15 | iteration 12:20 | 77:8 81:8 84:6 | 118:20 119:6 | linking 42:19 |
| 10:10 101:11 | IT-enabled 31:18 | 86:1,4,7,18 87:22 | 120:6 123:14 | Lisa 1:14,18,23 |
| intensivists 43:7,11 |  | jeopardy 108:15 | knowing 82:17 | 2:11 4:9 10:20 |
| intent 25:11 107:20 | J | Jersey 1:13 | knowledge 120:16 | 19:13,14 54:3 |
| intention 72:11 | J 1:21 12:22 37:2 | John 1:23 4:17 | knows 74:20 | 56:15 59:19 108:1 |
| interact 33:3 110:8 | 47:9 50:22 51:11 | 5:16 6:12 33:22 | Kohr 1:14,18 4:3,9 | list 14:2 21:1 65:8 |
| 110:9 | 52:11,21 53:2,10 | 44:16 94:19 | 54:4 | 66:7,20,21 |
| interest 3:2 4:6 | 65:6 66:4,16 83:5 | Johnson 10:21,21 |  | listed 62:19 120:11 |
| 6:14 8:22 14:18 | 88:4 89:3 91:19 | judged 27:4 | L | listener's 98:9 |
| interested 71:6 | 92:2 97:16 121:16 | judgment 34:3 | lab 8:14 120:9 | lists 17:20 |
| 74:10 101:6 | Jacobs 2:21,22 |  | labeled 57:19 | literature 61:18 |
| interesting 50:15 | 7:11,11 12:8,9,22 | K | lack 18:10 106:8 | 100:14 |
| internal 29:17 | 13:1 32:11,22 | Kaiser 5:3 | laid 110:2 121:5 | little 13:15,16 |
| international 38:7 | 37:2 47:5,5,9 | Kathy 2:19 40:16 | language 28:4 | 14:11 16:5 21:4 |
| internationally | 50:22 51:11 52:11 | 46:12 77:7 80:8 | 78:13 | 29:2 33:13 36:14 |
| 34:9 | 52:21 53:2,10 | 82:2,7 83:11,17 | large 34:6 44:21 | 37:13 47:1,3 |
| interoperable | 64:7 65:6 66:4,16 | 84:4 85:16 88:5 | 48:2 | 53:12,14,17 55:16 |
| 30:20 | 78:21 83:5 88:4 | 89:8,14 90:17 | larger 59:17 | 57:9,10 58:7,13 |
| intervention 8:20 | 89:3 91:19 92:2 | Kathy's 83:6 88:8 | largest 37:7,16,22 | 73:4,18 77:17 |
| 53:4 | 94:18 95:5,13 | 98:3 | 38:1 | 84:19 89:9 90:3 |
| interventional 64:2 | 97:16 104:6 | keep 21:8 25:1 | lastly 25:15 | 91:20 92:22 |
| intrinsic 42:8 | 108:17 110:6 | 108:2 | late 123:16 | 106:13 111:12 |
| introduce 4:5,8 | 121:16 | keeping 78:14 | Laughter 13:5 | 113:12 114:18 |
| 12:3 68:21 | jail 122:9 | Ken 5:2 | 76:22 96:15 | 117:9 |
| introduced 14:15 | January 20:5 34:7 | key 22:4 31:2 | law 103:11,12 | lives 110:12 |
| 69:12 | Jeff 7:11 10:3,16 | Kim 12:4 | 104:14 | loaded 28:11 |
| introduction 36:9 | 13:1 36:17 64:5 | KIMBERLEE | lead 67:12 | local 111:9,18 |
| introductions 3:2,4 | 65:5 70:20 71:10 | 2:20 | leaves 103:9 | logistical 56:17 |
| 32:14 | 89:8 121:8 | kind 9:1 14:19 | leaving 65:2 | long 10:2 23:18 |
| investigating | JEFFREY 2:22 | 17:21 21:3 22:11 | led 88:15 | 77:6 78:1 84:11 |
| 115:22 | Jeffries 1:14,17 | 30:2,10 40:22 | legitimate 113:4 | 103:5 |
| invite 90:5 | 4:13,14 19:14 | 53:18,20 55:14 | letter 103:10,11 | longer 61:4 |
| involved 5:8,18,21 | 54:5 60:5 62:3 | 58:7 75:14 81:19 | let's 95:15 98:13 | longitudinal 41:9 |
| 6:15 7:5 9:21 | 64:5 65:13 67:7 | 89:20 92:12 | 118:20 | 44:2,6,14 47:15 |
| 10:5,6,17 12:16 | 67:10,17,21 68:14 | 106:12 115:11 | level 42:16 65:19 | long-winded 75:12 |
| 32:15 49:4 111:19 | 77:1,7 78:20 84:4 | kindergartner 9:13 | 84:13 | look 20:14 22:22 |
| involves 6:10 | 85:13 91:11,14,16 | kinds 52:20 105:16 | levels 42:7 65:21 | 43:8 50:14,16 |
| involving 100:6 | 92:14 93:18 94:17 | knock 106:21 | 94:11 | 56:2 62:11 89:9 |
| Iowa 42:15 | 95:12,14,21 96:2 | know 21:7 23:10 | likelihood 94:6 | 90:10 91:7 109:10 |
| issue 26:19 28:1 | 96:4,11 98:12 | 24:3 36:10 44:7 | 119:6 | 109:10,12,13 |
| 29:20 60:16 62:17 | 101:2,20 102:2,4 | 52:8,16 63:21 | limited 35:10 68:2 | 113:16 115:7,10 |
| 69:8 79:19,21,21 | 102:9 104:5 105:4 | 65:19 67:6 73:11 | 68:3,5 | 117:22 120:7 |
| 84:15 110:22 | 108:16 110:19 | 73:12 74:16,16 | line 96:17,20 98:7,9 | looked 62:8 70:21 |
| 112:14 115:14 | 119:14 121:7 | 84:21 89:7 91:9 | 100:12 | 106:6 109:5 |
| issues 24:14 28:3 | 122:20 123:3,9 | 94:6 96:5 103:22 | line-associated | looking 51:4 62:16 |


| 63:7 72:2 82:16 | Mavroudis 1:22 | 95:17 97:15 98:14 | medium 58:4 | 92:3 94:3 97:9 |
| :---: | :---: | :---: | :---: | :---: |
| 93:6 | 9:18,19 60:7,11 | 98:15,20 99:5 | meet 5:2 106:13 | 117:16 121:20 |
| looks 81:21 | 67:8,11 68:19,20 | 100:15,22 104:8 | 110:1 111:11 | metrics 38:12 |
| Lopez 1:22 7:18,18 | 77:3,6 79:1 81:11 | 104:15,22 105:9 | 117:3 | 39:14 40:6 42:1 |
| 115:4 | 82:11 89:1,5 92:7 | 107:20 108:13,19 | meeting 13:8 19:11 | 45:4,5,6,7,16,17 |
| lot 30:13 36:15 | 92:12 93:3,20 | 109:7 111:3 | 20:7 21:7 26:9 | 45:19,20,21 46:2 |
| 45:22 62:18 84:22 | 94:15 95:4 96:10 | 113:12 119:15 | 31:14 53:16 54:21 | 46:4 48:12,13 |
| 101:14 102:12,16 | Mayer 1:23 4:17,17 | measured 101:15 | 56:14,22 57:3 | 51:4,16,21 60:12 |
| 104:1,12 | 5:20 6:3 44:16 | 117:7 119:13 | 59:2 117:20 | 60:17 62:1 69:21 |
| lots 30:4 | 67:20 92:19 93:4 | measurement 15:4 | 119:21 123:21 | 70:4 73:9 82:6 |
| love 52:19 76:15 | 94:5,16 103:17 | 27:10 69:22 | meetings 48:1 | 83:8,10,15 89:22 |
| low 40:11,13 58:4 | 110:19,20 123:2 | 116:11 | 105:15 | 95:9 97:18 111:2 |
|  | Mayo 110:14 | measuremen | meld 62:1 | 116:22 117:11,13 |
| M | MBA 1:17,18 | 73:8 | melded 71:10 | 121:19 |
| M 1:18 12:8 64:7 | MD 1:17,19, 20,21 | measures 5:5,19 | member 12:13,18 | MFA 1:23 |
| 78:21 94:18 95:5 | 1:21,22,22,23 | 6:3,20 7:7 10:18 | members 1:16 12:2 | microphone 12:2 |
| 95:13 104:6 | mean 27:15 31:14 | 11:22 14:2,7,10 | 14:18 20:2,3 | 32:6 |
| 108:17 110:6 | 40:7 50:18 85:16 | 15:9,11,21 17:12 | 62:13 68:13 99:7 | mics 60:9 |
| maintain 82:3 | 89:17 91:22 93:4 | 17:17,20 18:1,7 | 99:16 | migrate 53:21 |
| maintained 6:14 | 94:12,20 106:18 | 18:11,15,16,19,21 | membership 16:18 | Milwaukee 10:12 |
| maintenance 24:20 | 108:21 111:12 | 19:1,3 20:6 22:12 | mention 42:3 | mind 13:13 |
| 25:1 | 115:5 117:18 | 22:20 23:1,2,7,16 | mentioned 24:19 | minutes 53:19 |
| major 16:2 35:1 | 119:16 | 23:17,19,21 24:9 | 25:11 29:6 33:22 | 102:15 |
| 44:5 | means 74:4 | 24:19 25:12 26:8 | 36:10 80:9 92:6 | missed 21:10 59:3 |
| making 44:4 57:13 | meant 22:8 | 26:19 28:11,14 | 119:21 | 59:5,6 |
| 78:7 90:12,14 | measure 3:6,10,11 | 29:19,22 30:2,5 | menu 122:5 | missing 15:5 |
| manage 11:6 | 3:12,14,14,15,18 | 30:14 31:10,17,21 | message 121:6 | mitral 51:9 |
| Management 6:16 | 3:19,20 4:7 8:10 | 32:16 36:12 37:5 | met 1:12 71:5 | mix 84:10 |
| manager 11:15,18 | 12:18 22:22 23:12 | 37:10,12 50:14 | 108:13 109:22 | model 28:8 34:22 |
| managing 9:15,16 | 24:10,12,17,20 | 52:2 54:3 62:11 | 117:10 | 68:21 |
| manner 34:11 | 25:2,8,9,17,21 | 64:10 65:20 66:5 | method 42:9,21 | models 86:3 110:7 |
| Mark 1:21 8:13 | 26:4,6,12,21 27:4 | 81:10 117:21 | 71:12,13,13,16 | modification 87:19 |
| 108:3 | 29:3 31:8 32:4,20 | 118:1 | methodologies 88:5 | modifications |
| markets 117:2 | 33:4,14,18 34:14 | measure's 25:16,18 | methodology 33:18 | 85:21 122:22 |
| Mars 76:20 | 35:5,18 36:21 | measuring 15:18 | 33:20 34:4 36:9 | 123:5 |
| Marshall 2:21 7:11 | 50:20 54:22 55:2 | 16:14 60:12 | 36:16 37:1 40:15 | modify 85:1 92:10 |
| 12:9 13:3 36:10 | 55:3,4,21 57:21 | mediastinitis 50:6 | 40:16,17 41:18 | moment 89:8 |
| 36:17 47:10 64:6 | 58:1,9,11,12 | 50:8,10 | 77:16 86:19 88:1 | 102:22 |
| 78:20 83:14 89:9 | 59:15,22 60:2,6 | Medicaid 7:21 | methods 41:21 | money 117:9 |
| 94:17 104:5 | 60:11 61:13 65:2 | 115:6 | 44:12 | month 61:12 |
| 108:16 | 68:1,9,10,16 69:4 | medical 6:7,17 8:2 | metric 50:11 60:16 | months 9:12 26:1 |
| Massachusetts 8:3 | 77:18 78:5,7 79:5 | 9:10 10:11 11:1 | 61:3,9,11,15 62:2 | 44:9 71:1 87:17 |
| Master 42:20 | 80:5 82:1,2,3,5,9 | 28:19 39:12,15 | 69:4,13,14 70:10 | morbidity 39:20 |
| material 46:1 | 82:10,12,20,22 | 42:16 45:11 48:17 | 70:19 74:13,17 | 41:14 |
| materials 17:19 | 83:1,8,12 84:8 | 107:7 117:18,19 | 75:10 81:18 82:15 | morning 9:7,18 |
| 21:2 | 85:19 87:4,5,19 | medicine 106:9 | 83:16,20 88:6,18 | 10:9 11:17,20 |
| matter 27:5 29:15 | 93:2,14,15 94:22 | 116:12 | 89:16 90:18 91:1 | 12:8,22 13:9 37:2 |

Neal R. Gross \& Co., Inc.
202-234-4433

| 37:4 | 100:12 | notes 54:10,13,14 | 106:4 122:7 | opportunities |
| :---: | :---: | :---: | :---: | :---: |
| mortality 33:19 | nationally $34: 8$ | 54:20,22 55:5,9 | occasionally 25:5 | 99:19 |
| 34:15 35:7,21 | natural 75:4,7 | 55:10,19 57:20 | 115:17 | opportunity 14:11 |
| 39:20 41:14 42:22 | necessarily 63:22 | 58:19 59:5 | OCTOBER 1:9 | 19:5 20:14 22:11 |
| 60:14 68:16 69:5 | 64:3 65:11 113:5 | notice 20:19 | offer 89:1 | 31:20 32:10,19 |
| 72:15,18,19 79:7 | necessary 105:3 | noticed 63:7 | office 11:1 67:5 | 37:3 59:4 121:3 |
| 79:12,17 80:12,18 | need 5:14 23:5 | notion 111:8 | officer 6:7 8:2 | opposed 28:7 |
| 81:5 93:2,13 | 24:16 30:12 31:20 | November 19:2 | 117:19 | optimistic 31:19 |
| motion 67:13,16,18 | 33:6 55:7 62:5,6 | 20:1 | Off-mic 86:17 | option 95:1 97:13 |
| 74:18 92:13 | 63:14 75:16 82:8 | no's 68:13,15 | Off-the-record | 122:5 |
| 122:21 | 90:17 91:19 92:7 | NQF 2:5 5:5 6:20 | 53:9 | order 111:5 |
| move 19:2 29:22 | 92:13 102:8 | 11:9,21 14:20 | oftentimes 101:9 | organ 49:4,14 |
| 33:11 57:17 68:10 | 103:13 104:2,2 | 15:7,22 16:11 | 114:13 | organization 10:15 |
| 76:19 118:20 | 107:14 110:21 | 19:1 20:13 22:16 | Oh 97:2 | 15:1 81:3 |
| moved 67:20 72:13 | 118:22 | 23:1 58:18 64:14 | okay 21:17 56:5,20 | organizations 5:4 |
| 123:2 | needed 24:1,4 25:3 | 64:15 65:14 67:3 | 60:5 67:21 68:8 | 18:7 |
| movement 118:16 | needs 52:13 107:13 | 80:1 84:20 93:15 | 77:1 90:3 91:17 | organized 15:1 |
| moving 28:14 76:4 | negative 79:16 | 108:13 109:7 | 91:21 95:13 96:7 | orientation 13:22 |
| 116:12,15,18,21 | negotiation 111:14 | 117:22 | 96:9 98:11 101:2 | 14:7 21:19 |
| 117:15 119:1 | 111:19 | Nugent 1:23 10:20 | 22:9 119:14 | original 5:1 36:22 |
| MPH 1:17,18 | neon | 10:20 | 123:3,6,9 | 83:7 |
| multi 10:14 | neurologic 49:7,11 | number 36:17 69:1 | Oklahoma 7:19 | originally $34: 6$ |
| multiple 48:17 | neurologist 49:11 | 69:2 71:10 79:20 | once 15:8 17:4 19:3 | ought 72:13 81:6 |
| multi-disciplinary | neurology 50:1 | 79:21 98:16,19 | 19:12 55:15 58:5 | 109:1 |
| 104:10 | never 71:4,5 72:4 | 106:2 107:10 | 87:13 102:13 | outcome 3:10,14,18 |
| multi-institutional | 112:4 115:9 | 113:16 120:8 | ones 30:22,22 | 23:15,19 24:5 |
| 80:20 | new 1:13 40:18 | 122:16,16 | 31:11 52:7 63:17 | 26:8 36:6 45:6,17 |
| multi-societal | 61:10,20 69:16 | numerator 105:5,6 | one-sentence 92:3 | 45:21 60:1 79:22 |
| 47:20,22 48:20 | 70:9 82:22 | 121:9,10 122:22 | one-year 36:6 | 98:13,15 |
| multi-stakeholder | newer 41:17 | nurse 4:9 8:5 | op 99:3 | outcomes 43:3 |
| 18 | nice 33:10 73: | 113:22 | open 1:6 3:9 | 91:7 |
| m | 77:12 81:13 | nurses 43:12 | 7:4 58:17 59:16 | outline 99:10 |
| must-pa |  | sing 100 |  | outlined 86:19 |
|  | ight 91:20 114:3 | 107:2 | operating 8:6 11:2 | :16 |
| N | 106:11 | N.W | 51:1,2 99:8,21 | outpatient 23:9 |
| NACHRI 10:14 <br> name 4:13 7:22 8:4 | nomenclature 38:16 39:8,17 | 0 | 112:10 operation 100:6 | outside 106:7 <br> 111:13 118:1 |
| 9:7 10:20 11:8 | 43:16 47:13 | objection 71:14 | operations 38:18 | 119:4 |
| 13:4 | 66:20,21 | 78:10,16,19 | 40:10,11,20 46:7 | outsider 109:19 |
| names 38:18 | nominated 8:18 | objections 86:16 | 46:14 69:2 | overall 16:14 29, |
| Nancy 1:19 10:10 | 10:13 | objective 41:19 | operative 99:9,17 | 35:3,6 72:14 |
| 105:13 118:7 | non-participants | observed 69:4,22 | 102:15 | overseen 10:15 |
| Nancy's 104:6 | 38:2 | 72:18 79:6,17 | Operator 96:16,18 | erstate 69:9 |
| national 1:1,4 9:9 | North 48:9 | 80:11 | 96:21 97:1,6 98:8 | verview 3:5 14:16 |
| 11:12,15,19 12:14 | note 54:14 123:12 | obviously 8:21 | 98:10 | 21:20 57:7 |
| 15:20 16:16 22:16 | 123:15 | 27:10 29:17 50:16 | opinion 40:21 | overwhelming |
| 22:17 | noted 60:17,17 | 1:3 62:22 106:3 | 61:16,16 84:5 | 81:12 |

owner 83:4
O'Brien 83:14
o'clock 123:10

| P |
| :---: |
| PA 102:20 104:18 | 114:14

packet 16:7 17:2 35:16 92:4,8
page 20:19 120:20
paid 115:2
panel 5:11 12:19
paper 30:10
parents 44:6
109:10
parsimonious 34:22
part 5:1,7 8:11
27:22 34:19 39:18
52:9 60:19 61:8
65:22 70:7 72:14 77:2,16 86:11,13 87:14 89:11 120:2 120:4
participant 94:22 95:6 97:7
participant's 96:20
participate 37:19 37:22 38:2 105:1 118:2
participated 10:14 10:16 36:18 103:7
participating 42:13 60:19 64:19
participation 52:3 97:11,21 116:13 123:19
particular 80:20
particularly 31:13
particulars 82:13 90:6
parties 73:22 106:7
Partnership 22:18 26:16
parts 100:14
party 108:11 114:21
pass 55:3 61:22
patent 6:12
path 31:8,12
patient 6:8 9:8 24:1
24:2,4 26:17
29:11 43:4 46:18
50:21 69:3 99:3
100:12 102:13
103:20 107:16,17
112:22 115:12
121:14 122:12,15
patients 9:2 11:5
43:14 84:17
115:20
patients/consum... 18:18
patient's 35:11
Patricia 1:19 98:17
Patty 8:4
pay 108:7,12 117:8
payer 108:11 111:9 111:15 114:21 117:2
payers 108:4 109:9 111:18 116:7,8
payment 111:10
115:9 116:4
118:18
payments 118:3
PDI 17:14
PDI-17 17:14
PDI-6 17:14
PDI-7 17:14
pediatric 1:3,5,12
4:14,18 7:6 8:14
17:11,13 18:5,17
20:20 35:7 36:1 37:18 38:21 43:4 44:18 47:21 49:2 49:10 51:13 116:9 116:16 117:20 119:10
pediatrician 7:19 8:1
penalized 113:5
pending 52:6
people 29:8 56:9

75:17,19 76:1 82:13 84:22 95:16
102:8 109:4,8,17
110:4 113:16,17
114:22
percent 45:8,10 65:6 111:7 112:2 112:5 113:11
percentage 111:12
performance 6:16
11:22 15:21 27:20
36:6 79:5 85:12 117:8
performing 29:14
period 19:22 42:14
48:2 69:19 94:1
persistence 23:12
person 54:13,20
personal 72:12
111:17
personally 106:20
persons 120:11
perspective 97:9
107:3 119:19 120:21
perspectives 109:5
pertains 108:19
phase 53:16
Philadelphia 4:11 49:13
phone 45:3 97:17
phrased 112:11
physician 100:7
physicians 63:2
109:11 118:22
pick 30:2 62:6,7 74:10 75:3
picking 74:12 77:18
piece 40:5 83:19 84:2
pieces 31:2,4 107:7 pilot 110:13
pilots 110:8,9
place 42:5 64:14 75:8 98:4 99:21 107:8 117:15
places 102:12
plan 8:3 15:3 59:21
99:9,9,17 114:3 117:20
planned 99:12
platform 28:15
38:5,11
please 12:3 69:6
97:6
plus 20:22 21:1
PMA 6:19
pneumonia 108:6
point 14:15 21:15
29:12 31:8,22
47:10 52:22 54:1
91:2 104:7 106:16
106:19 107:13
113:19 118:5
120:7
points 9:17 34:12
41:5 108:10 119:20
Policy 31:15 population 35:10
portion 48:2 56:22
position 78:4
positions 75:18
positive 94:21
possibility 64:18
possible 23:16 30:16 51:18 80:7 81:6 84:21 94:13 101:19 122:10
post 99:14
post-op 23:11
post-procedural 98:21 101:22 106:22
potentially 52:19 54:19 106:8
power 81:11
practical 104:7 practicality 101:8 practice 45:1 109:4 109:9,17 120:2 practices 106:9,10
practitioner 4:10
pre 98:20 99:1
precise 27:12
preference 28:2
preliminary 80:19 81:2
prematurity 35:1 46:19
prepared 64:9
present 1:16 2:5,16 32:7 58:11
Presentation 3:12 3:15,19
presented 10:8 61:18
presenter 98:18
presenters 73:6
presenting 31:15 55:21
presents 58:8 59:14
president 4:22 8:19
11:21 44:16
presiding 1:14
press 97:6
presumably 88:2
pretty 14:16 21:12 50:10 111:1 112:5 112:11 113:1 118:15
pre-op 23:10
pre-procedural 99:6
primary 3:11,14,19 15:17 35:4 58:8 58:10 59:14 60:6 68:19 83:17 98:17 117:5 118:10
principal 15:20
principles 38:9,14
priori 75:3
priorities 22:16,18 26:16
private 16:20 44:22 115:5 116:8
probability 40:21
probably 14:6 24:5
32:9 65:16,18 75:5 76:2 85:4

| 123:10 | 73:3 78:1 85:9,18 86:8 87:5 97:19 | 22:15,18 25:19 | RACHS-1 12:20 | 84:9,12 86:15 |
| :---: | :---: | :---: | :---: | :---: |
| problem 26:9 74:8 | proposer 78:19 | 81:19 87:6 90:17 | 33:18,20 34:11,20 | reasonably 122:10 |
| 81:14 88:17 108:3 | proposing 33:15,19 | 98:3 104:22 | 36:22 61:9 68:21 | reasons 22:6 51:12 |
| 10:5 | 34:14 36:22 78:2 | 106:12 108:8, | 70:6,7 | cap 58:12 81:22 |
| proced | :11 | 118:6 122:17 | RACHS | capped 102:16 |
| 8 98:2 | 95:6 | putting 73:1 | 74:22 | received 66:11 |
| 99:15 | prospec | 崖 | raise 22:11 69,7 | 15:2 |
| procedur | :14 | C-E-E | 5:17,18 | recognition 112:3 |
| 3:11 64:1 65:1 | protocol |  | 109:1,18 | 13:9 |
| 1899:4,10 | proved 110:11, | p.m 57:3,5 123:22 | ising 108 | cogniz |
| 2:16 103:6,7 | provide 18:17 |  | nifications | recogniz |
| 7:5,5 | 25:18 35:5,15 | Q | an 57:10 | 70:3 |
| re | :20 | ed 18:15 | rate 105:10 111:22 | cognizing 111:21 |
| proceeding 24:15 | provided 34:3 36 | quality 1:18:7,9 | ratings 58:4 | commend 15:9 |
| process 5:5 16:7,8 | 84:9 115:12 | 7:6 11:12,15,19 | ratio 33:20 34 | 8:12,1 |
| 20:18,22 21:3,5 | pr | 15:4,18,21 16:3,4 | 68:17 79:6,18 | 2,4 |
| 23:16 24:13 27:8 | 115:8,14 | 15 22:14 25 | 80:11 93:2,13 | 7,8 |
| 32:19 33:5 36:13 | providers 1 | 29:18 | ration | mmend |
| :19,21 42:19 | 27:14,18 115:18 | 2:1 44:19 109 | rational | :1899 |
| 54:2 56:1,18 | 6:1 | 10,11,21 | 108:11 | men |
| 8,12 | provides | quandary 80:15 | ationalize | 5:9,12,13 17:6 |
| 82:17 83:21 84:20 | 47:1 12:10 | quarter 87:16 | ratios 35:2 | 9:1,12 20:7 |
| 84:22 85:3,8 | proximate 23:18 | question 50:13 | read 58:7 | :16 123:4 |
| 88:15 91:4 108:20 | 24.5 | 56:3 66:12 81 | ads 114:18 | recommended |
| 109:19 111:1 | proximity | 91:3,4 93: | ready 13:17 71:3 | :11 19:3,8,9 |
| 113:22 116:13 | public 3:17 | 00:15 101:5 | 107:16 | recommends 68:7 |
| 118:8 119:4 | 16:10 | 118:19 122:15 | real 25:10 56 | reconciled 95:20 |
| professional 5:4 | 19:4,7 20:2,6 | questi | realistic 51:20 | 96:5 |
| profusionists 43:12 | 21:12 24:10 25:13 | 19:17 32:2 55:17 |  | reconvene 3:9 91:6 |
| program 42:13 | 27:16 56:14 75:10 | 56:17,17 59 | Realizing 114:20 | reconvened 57:3,4 |
| 0:18,19 117:8 | 96:13,14,20 97:3 | 14:6 121:4 | really 21:21 22:10 | co |
| programs 61:8 | 97:10 | quick | 4:2,6 | 45:11 |
| gre | pu | 23: | 5:12,13 26:7 | 59:8 66:3 68:12 |
| project 3:5 6:11 | 41:13 | quickly | 34:8 | 7:7 |
| 15 11:15,18 | published 34 |  | 36:8 38 | recording 57:20 |
| 14:2,14 17:8,10 | 19 40:18 | quiet 92:20 | 42:6 44:7,21 | cords 30:21 60 |
| 18:4,14 | 48:20 61:11 | 31:19 | 50:22 57:15 | duce 110:15 |
| 9:21 20:17,19,21 | pul | 8:7 91:22 101 | :15 77:11 78:15 | refer 33: |
|  | pulmonary 49:18 |  | 10 109:16 | reference 80:17 |
|  |  |  |  |  |
|  |  |  |  |  |
| proposal 86.19 |  | race 28:4 | 48 | 析 |
| 10 110:17 | purely 87:2 | 5 | 15 69:11 |  |
|  |  |  | 3:20 108:7 |  |
| propose 86:5 | push 23:13 | 20 | 115:2 122:6 | garding 66: |
| roposed 37:11 | put 5:4 6:4 19:4 | 73:7 74:5 86:11 | reasonable 27:19 | regardless 108:11 |
|  |  | 86:13,18,20 87:7 |  |  |


sitting 39:9 59:10
79:3 89:19
situation 103:4
six 38:9,14 39:22
41:4 44:2,9 47:12 87:16
skim 14:19
slide 28:10
slides 13:13,20
14:20
slightly 93:9 94:8
small 44:21
smaller 38:3 41:12 59:16
SMR 70:6,18 71:1 71:1,2,11 72:13 73:8 74:5,6 77:15 80:20 81:17 84:7 84:15 85:9 86:7,9 89:15 95:6
SMRs 78:1,11 86:5 86:16 94:10
SMR-like 81:8
SNOMED 39:7,9
Social 42:20
societal 10:15
societies $50: 1$
Society 4:22 8:19 9:22 12:13 37:6 38:22 39:1 43:22
solemnotic 89:20
soliloquy 79:1
solution 85:18,18
solve $88: 17$
somebody 112:16 118:20 119:3
Somebody's 105:1 someplace 92:6
soon $87: 15$
sooner 61:20
sorry 17:14 33:8
67:14 92:19 96:22 112:21
sort 26:7 62:18
74:11 76:6 81:4 102:16 110:6,22 119:22
sounds 57:15 81:12 82:21
source 41:20 46:1 48:19
sources $35: 13$
85:22 86:1 87:21 94:7
speak 79:15
speaking 81:2
specialist 119:11
specialists 117:21
specializes 49:11
specialties $30: 8$
specialty $31: 16$
47:15 116:18
specific 8:17 9:4 24:8 52:1 97:21 98:5
specifically 22:6,15
22:19 26:14,20
51:4 64:15 108:19 122:4
specifications 27:12
specificity $22: 9$
specifies 102:7
spectrum $43: 13$
spent $37: 9$
sphere 30:18
spirit 81:20 104:21
sponsor 78:5
sponsors 93:7
sport 43:5
staff 2:5 11:9 14:14
64:14,14 100:7
stage 93:22
stakeholder 15:1
stand 12:2
standard 105:19 106:5,13,17
standardize $38: 15$
standardized 33:19 34:15 35:21 68:16 93:1,13
standards 1:4 15:17,18 16:11

39:18 41:6 43:15
standoff 73:19
stands 82:4 104:18
standstill 73:19
Star 97:6
start 13:17 23:7
48:12 59:21 60:6
75:16 98:15
115:15,22 118:16
123:17
started 7:10 34:1 46:16 123:14
starting 31:22 101:9
starts 123:14
state 7:20 115:6
stated 70:20 121:11
States 15:19 35:17 37:19 40:4
statistic 70:12,13
status 21:8 28:5
stay 92:20
Steering 1:3,12,16
3:12,13,15,16,20
3:21 17:3 19:16 32:7,17 34:13 54:21 62:14
step 20:21 21:3,5 32:6 37:13 122:1 122:1,1,2,3,7,9
steps 119:8
sternal 63:20
steward 24:12,17 24:22 82:1 83:8 83:12,17
stewards 97:15
stop 32:1 46:22 123:11
stopped 72:6
Strategic 10:22 15:16
strategies 99:11
strategy 16:14 77:17
stratification 10:5
40:7 41:7,18
43:17 46:9,17

47:14 70:2 72:16
72:17 80:1,2 81:9
88:20 95:2,8
stratification/risk 60:13
stratified 50:20
stratify 28:5 41:21
straw 90:21 92:15
95:15 96:8,8
stream 111:20
streamlined 113:21
streamlines 114:4
street 115:19
strive 106:18
stroke 48:14 49:6,8
49:21,22
strong 22:21
structural 52:2
structure 15:7 45:5
45:15,20 54:3
70:7
STS 7:13,16 13:1
18:8 24:13 28:2
29:19 37:5,9,14
37:15,19 38:4,10
38:19 39:8 40:14
40:19 41:16 42:2
42:13,19 43:19
44:4,13,15,17,18
45:9,12 46:5,8,11
46:15,21 60:1,18
62:10,22 64:11,14
64:20 65:10 66:19
66:20 67:5 69:14
70:8,14,21 71:16
72:22 73:9 74:7
78:2 79:9,12,15
80:13,14,21 81:7
81:17 82:4,7,10
84:21 86:12,22
87:9,12,18,19,20
88:10,11,22 111:3
STS-EACTS 61:10
70:13 80:13 88:9
studies 110:13
stuff 110:7 112:9
sub 47:14 116:17

116:17
subject 111:14
subjective $40: 21$
submission 25:16
submit 36:1 66:4,5
66:6 82:10
submitted 8:11
16:11 18:2,8,15
19:13 23:22 35:16
66:9,18 67:2
83:16
subsequent 19:10 45:17
subset 72:16
substantial 83:13
sub-criteria 22:2
sub-group 64:8
120:4
sub-specialties
43:18 48:17
sub-specialty $41: 8$
43:1 48:6
successful 99:18 104:11
succinct 73:16
112:12
succinctly 99:16
suggestion 86:5,15 89:2
suggestions 71:9 85:21
summarized 77:4
summary 77:12
supplement 94:19
supplementing 31:3
supplier 15:2
support 26:21 46:2
83:18 88:21
supported 83:20
supports 91:1
suppose 4:19
sure 15:5 16:13
21:16 22:12 24:16
26:10 27:17,21
29:8 30:19 53:22
55:7 57:14 62:20

Page 138

| 63:3,15 64:3 72:8 | 76:11,18 82:20 | terms 22:8,14 | 101:16 103:13,15 | 53:5,8,14 66:10 |
| :---: | :---: | :---: | :---: | :---: |
| 77:9,20 78:17 | 85:17,20 89:7 | 26:13 51:17 113:7 | 103:16 104:6,12 | 68:1,2,4 69:18 |
| 90:12,14 94:5 | 90:3,18 95:11 | terse 79:1 | 104:21 107:22 | 91:20 94:1 96:13 |
| 101:19 105:18 | 118:6 120:19 | tested 34:5 | 108:14,17,22 | 97:5 98:10,21 |
| 108:18 111:1 | tabled 82:12 83:22 | testing 9:16 18:11 | 110:16,20,21,22 | 99:2 100:1,3 |
| 121:4 | tabling 73:21 83:2 | 25:19 26:2,3,5 | 111:6 112:3,11 | 101:15 104:1 |
| surgeon 4:18 9:19 | take 9:2 54:10,13 | 46:3 | 113:6,8,13 116:13 | 105:21 106:19 |
| 10:19 12:10 42:17 | 54:14,20 55:5 | text 21:4 | 118:1,7 119:6 | 107:18 112:5,6,21 |
| 99:7,15 100:7 | 59:20 75:8,8 | thank 6:1,4 9:17 | 120:22 122:7 | 113:11 121:5 |
| 101:9 102:21 | 77:11 81:18 95:15 | 10:8 11:7 13:6 | 123:10 | 122:8 |
| 103:6 104:17,18 | 99:20 104:2 118:4 | 37:3 47:7 53:11 | thinking 23:6,8 | timeline 19:20 |
| 104:19 106:20 | 118:22 119:3 | 56:21 60:10 68:20 | 26:15,20 52:1 | timeouts 112:8 |
| 114:14 | taker 54:14 | 90:13 98:11 121:7 | 113:7 | times 103:10 |
| surgeons 4:22 8:22 | takes 46:18 53:14 | 123:18,20 | third 40:5 42:21 | 120:13 |
| 34:2 36:18 37:6,9 | 102:14 | Thanks 53:10 | 108:11 114:21 | time-limited 18:12 |
| 43:6,6,10 44:20 | talk 13:15 14:11 | 85:13 | third-party 108:4 | 25:20 68:7 123:7 |
| 49:9 | 37:4 48:13 53:17 | therapists 43:12 | thoracic 4:22 9:22 | Tina 2:9 11:14 |
| surgeon's 9:22 | 73:22 85:17 90:16 | thing 7:9 77:13 | 12:14 37:6 52:5 | 53:13 |
| 12:14 35:8 | 107:15 | 97:7 110:21 112:8 | thorough 57:12 | today 9:13 10:8 |
| surgeon-driven | talked 47:12 62:4 | 13:1,14 114:8 | thoroughly 108:10 | 13:14 18:20 26:19 |
| 85:3 | 102:11 103:2 | 119:16 | thought 50:19 | 91:6 123:14,19 |
| surgeries 5:10 | 122:19 | things 4:20 9:1 | 72:12 77:10 101:7 | tomorrow 59:3 |
| surgery 1:3,5,12 | talking 39:12 41:5 | 28:18,22 48:13 | 104:9 113:1 | 123:13,20 |
| 5:6 12:11 13:2 | 43:2 46:22 72:18 | 55:20 94:3 104:13 | 116:17,18 | tonight 91:6 |
| 17:11,13,17 18:5 | 92:21 93:1 94:9 | 105:16 106:2,4,10 | thoughts 90:13 | tool 44:5,14 79:8,8 |
| 18:18 20:21 23:3 | 115:15 | 106:19 111:4,21 | thousand 46:7 | 80:2 88:8 |
| 29:19 37:7,16,18 | talks 47:12 | 122:12 | three 24:20 42:6 | tools 11:5 40:6 |
| 39:3 40:2 43:3 | task 10:19 12:14 | think 5:14 6:18 7:2 | 48:1 53:6 60:12 | 46:10,17 88:9,12 |
| 44:19 48:7 49:12 | 13:2 | 8:17 9:3 14:14 | 60:17 62:8,11 | 88:20 95:2,8 |
| 50:7,9,19 51:13 | tasked 57:20 | 23:5 24:14 26:18 | 67:22 69:21 70:17 | topic 43:1 |
| 51:14 52:5,6,18 | team 43:5,13 88:17 | 30:3,6 37:13,22 | 76:16 78:1,7 79:4 | totally 51:1 |
| 52:20 68:17,18 | 88:21 99:8,16 | 39:10,11 45:12 | 80:2 81:9 82:15 | towers 110:10 |
| 110:14 116:16 | 104:10 | 46:22 48:11 51:3 | 83:1 86:5 88:9,12 | tracked 45:9 |
| surgical 39:22 | teams 95:8 | 51:14,19 52:13,21 | 88:19 93:21 95:1 | 105:16 |
| 102:20,20 | teleconference 92:6 | 53:2 55:11,18,20 | 95:7 96:3 112:7 | tracking 121:18 |
| switch 13:10 | telephone 90:5,6 | 56:6 57:10 60:22 | three-and-a-half | transfer 100:3 |
| Sylvia 1:22 7:18 | tell 97:19 111:16 | 61:5,6,6 65:1,3 | 106:14 | 104:20 107:17 |
| system 42:4 49:4 | 117:4 | 72:6 73:16 75:16 | three-day 42:14 | 120:16 |
| 49:14 72:14 74:21 | telling 53:13 | 76:5 77:4,11 | 48:1 | transferred 10:3 |
| systematic 52:9 | temporarily 82:12 | 78:21 79:19 80:4 | three-year 36:7,11 | transition 104:11 |
| 109:15 | ten 5:12 33:12 34:1 | 80:6,7,15 81:3,13 | thriving 9:13 | transparent 16:9 |
| System's 36:2 | 44:10 102:15 | 82:17,19 83:5,11 | thumb 54:8,8,16 | transplant 9:12 |
| T | enor 71:21 | 84:7,14 86:14 | 55:2,8 | eatment 116 |
| tab 20:20 | terminology 38:16 | 2 91:19 92:14 | 30:16 31:13 32:4 | 72:10 |
| table 3:1 17:20 | 39:6,16 64:12 | 93:5 94:6,9 97:8 | 33:6 34:9 36:15 | trouble 28:11 |
| 32:17 33:7 36:3 | 66:8 | 97:12 100:11 | 36:20 52:16 53:3 | true 77:20,22 87:14 |

Neal R. Gross \& Co., Inc.
202-234-4433

| 98:2 | unfortunately | verify 42:5 | 22:19 36:8 42:3 | 23:13 26:12,14 |
| :---: | :---: | :---: | :---: | :---: |
| try 76:19 90:16,18 | 109:14 | verifying 42:21 | 57:12 64:3 75:7 | 30:4,18 31:6,7 |
| 116:22 | unified 93:21 | version 16:22 | 91:18 121:8 | 32:3 33:14,19 |
| trying 23:13 29:8 | unique 52:18 | 58:19,21 84:1 | wants 82:3 | 34:14 36:21 41:21 |
| 29:22 55:11 75:13 | unit 100:4,8 113:2 | versions 61:21 | Washington 1:13 | 41:22 42:18 43:2 |
| 89:20 92:20 | United 15:19 35:17 | versus 40:11,12 | 1:13 5:2 9:10 | 44:12 47:6 53:11 |
| 109:18 113:9 | 37:19 40:4 | 51:2 83:1 97:10 | wasn't 65:22 77:14 | 57:7,17 62:19 |
| 118:21 | units 61:15,15 | vice 11:21 | 103:21 116:3 | 63:3 65:1 72:17 |
| Tsiatis 2:12 11:8,9 | unity 82:14 | viewed 113:8 | way 9:1 19:8 30:7 | 76:16 82:20 83:3 |
| Tufts 8:3 | unstable 103:20 | virtuous 75:18 | 40:8 47:6 57:17 | 83:3 88:5 89:19 |
| turn 60:9 | 113:1 122:12 | Visa 9:15 | 65:1,17 67:2,4 | 92:21 93:1 94:9 |
| turning 13:7 | untoward 25:7 | visit 42:12 | 72:3,3,21,22 73:1 | 95:5 96:4 97:3 |
| two 17:12 32:21 | update 25:2 | visually 58:8 | 73:16 75:12 76:13 | 98:12 108:12 |
| 33:1 34:6 44:10 | updated 22:4 27:2 | voiced 105:13 | 76:14,20,20 81:20 | 112:4,20 113:8,10 |
| 45:22 53:6 70:12 | upscaled 61:20 | volume 45:20 | 82:16 84:16,20 | 117:15 118:21 |
| 73:22 74:19 78:2 | upside 118:2,3 | VOLUNTARY 1:4 | 85:6 88:16,18 | we've 14:15 15:5 |
| 79:10 80:2 82:6 | Usabilities 29:6 | vote $3: 13,16,21$ | 89:14,20,21 93:6 | 27:22 28:1 32:18 |
| 83:3,8,10 85:17 | usability 119:18 | 58:2 59:17 67:9 | 93:10,11,12 103:9 | 37:11 38:14 40:17 |
| 85:22 87:3 93:6 | usable 27:6 101:1 | 67:18,22 68:8 | 106:7,9 109:18 | 41:18 50:16 51:19 |
| 94:7 95:8 109:5 | USBs 57:19 58:5 | 76:18 80:5 82:8 | 112:11 114:4 | 52:4 85:20 86:4 |
| 123:16 | use 21:13 25:8 29:8 | 85:20 90:21 91:8 | 118:11 121:10,16 | 91:9 92:11 112:5 |
| two-sentence 92:3 | 29:17 31:17 36:4 | 92:15 95:15,19 | ways 46:16 67:6,22 | whatsoever 97:22 |
| typed 55:8 | 36:16 40:15,16 | 121:9 122:21 | 87:1 105:16 | 98:5 |
| types 86:20 | 46:16 55:2 61:9,9 | 123:4 | 118:18 | white 113:7 114:19 |
| U | 98:4,20 111:12 | voted 19:8 | website 20:13,14 | widely 34:8 64:22 |
| ultimate 27:15 |  |  | 20:15 21:12 | widespread 35:17 |
| ultimately 18:22 |  | 96:4 101:1 | WEDNESDAY 1:9 | 11:18 13:8,9 |
| 24:3 25:12 30:20 | V |  | week 31:14 | 53:11 56:5,12 |
| 50:18 52:8 | vain 96:6 | W | weeks 76:8 | 57:6 60:8 96:16 |
| unanimously 61:2 | 27:13 | wait 69:7 | weigh 16:10 77:9 | 96:19,22 97:2 |
| uncomfortable | validity 85:10 | walk 119:8 | weight 69:1 | 98:6,11 123:12 |
| 112:19 | valve 51:9 | want 16:13 19:17 | Welcome 3:2 | willing 87:6 90:15 |
| undelegatable | variables 28:6 | 21:7,17 23:19 | went 16:5 58:13,15 | 90:17 |
| 104:14 | 34:21 46:18 84:18 | 24:3,6 26:10 | 107:10 117:11 | wind 94:14 |
| understand 37:12 | 86:10,12 87:13 | 27:11,17,21 28:22 | weren't 112:21 | winded 77:6 |
| 56:6 71:18 73:14 | 93:9 | 33:5 44:7 51:3 | we'll 4:4,7 17:5 | winner 75:8 |
| 80:16 86:8 87:14 | variation 35:17,21 | 52:8 54:13,20 | 19:5 20:5 32:22 | Wisconsin 10:11 |
| 91:22 119:5 | variations 114:9 | 55:1,20 56:13 | 53:18,20 54:7 | 10:12 |
| understanding | variety 35:13 | 61:4 62:7 63:8,22 | 55:14 56:18,20 | withhold 115:9 |
| 64:13 76:3 93:19 | various 86:20 | 64:21 65:8 66:8 | 58:10 59:1,7 60:6 | 116:2,4 |
| 94:20 | ventilator 108:5 | 69:9 75:5,15,20 | 62:2 90:3 115:15 | witnessed 107:1 |
| understate 69:9 | Venus 76:20 | 77:2,15,16 78:17 | 115:17,22 123:17 | word 73:15 |
| undertaking 5:12 | verification 41:8 | 85:17,19 90:21 | 123:20 | wording 98:4 108:2 |
| undoubtedly 61:10 | 42:4,7 43:17 | 109:14 118:2 | we're 4:4 9:1 13:9 | 108:8 |
| undue 30:1 | 47:14 | 119:12 121:13,14 | 13:12 14:3,22 | words/names 38:17 |
| unfold 9:1 | verified 69:17 | wanted 14:1 22:7 | 20:5,20 22:12 | work 7:19 8:10,21 |


| 10:18,21 11:1 | 1 | 28 38:1 |
| :---: | :---: | :---: |
| 27:22 29:5 30:18 | 1 34:16 79:20 97:6 |  |
| 30:19 33:22 38:6 | 122:1,7 | 3 |
| 39:14 63:5 80:8 | 10:04 4:2 | 3 107:10 122:1,3,9 |
| 80:19 81:7 90:18 | 10:45 53:12 | 122:17 |
| 91:5 96:6 101:18 | 10:51 57:1 | 3.01 35:22 |
| 115:5,6 | 100 65:6 | 3:47 57:3,5 |
| worked 12:20 38:4 | 11 39:10 96:8 | $3038: 1$ |
| 38:15 49:6 | 12 3:4,18 26:1 68:8 | 30th 20:1 |
| workgroup 3:7,8 | 68:13 98:16,19 | 33 3:6 |
| 57:1 62:7 77:2 | 123:6 | 39 34:10 |
| 96:12 100:21 | 122 37:17 | 4 |
| workgroups 32:21 | 13 3:5 |  |
| 33:1 | 15 38:5 | 43:2 113:16 120:8 122.2 |
| working 4:10 7:10 | 16th 20:5 | $122: 2$ $4001: 13$ |
| 22:17 95:9 | 179:12 | 400-plus-member |
| works $84: 685: 7$ | 18 3:10 35:11 59:21 | $14: 22$ |
| world 31:18 37:8 | 60:6 69:19,20 |  |
| 37:17 51:7,8 | 70:9,16,16 71:8 | 5 |
| worth 26:12 90:20 | 71:10 72:13,15 | 5:00 123:22 |
| worthwhile 106:12 | 77:16 78:14 80:5 | 53 3:7 |
| worthy 101:1 | 81:20 89:12,13 | 54 35:22 |
| wouldn't 31:5 | 94:22 | 56 3:8 |
| 113:5 117:17 | 18th 20:4 | 57 3:9 |
| write 83:9,14 | 19 37:21 |  |
| written 43:10 | 1980s 38:15 | 6 |
| 103:9 114:10 |  | 6th 19:22 |
| wrong 69:7 75:5 | 2 | $603: 13$ |
| 76:5 89:12 107:11 | 2 79:21 122:1,3,9 | 68 3:16 |
| wrote 53:3 | 122:16 |  |
| Y | 20 6:13 37:10,21 | 7 |
| Y | 45:3 97:19 98:1 | 7th 20:2 |
| year 17:15 20:8,11 | 200,000 40:20 | 7:30 123:14 |
| 22:5 27:3 44:10 | 2002 34:7 46:6 |  |
| 45:2 46:15 48:1 | 85:10 | 8 |
| years 5:12 6:13 | 2006 46:6 | 8:00 123:18 |
| 10:1 24:21 28:2 | 2008 79:11 | 80,000 70:11 |
| 31:1 33:12 34:1 | 2009 1:9 | 85 37:17 |
| 35:11 38:5 44:10 | 21 1:9 3:14 10:1 |  |
| 44:10 53:6,7 62:1 | 18:7 59:21 68:11 | 9 |
| 74:20 78:7 | 68:16 71:10 72:13 | 9:00 123:15 |
| year-and-a-half | 73:3,6 74:3,5 | 9:30 1:13 |
| 37:10 | 77:17 78:1,15 | 96 3:17 |
| yellow 17:3 | 81:16,17 82:12 | 98 3:21 |
| yes-no 122:14 | 89:11,14 97:20 |  |
| Z | 22 74:4,6 |  |
| zero 105:8 112:1 | 24 26:1 |  |

Neal R. Gross \& Co., Inc.

