#### NATIONAL QUALITY FORUM

+ + + + +

# IMPROVING DIAGNOSTIC QUALITY AND SAFETY IN-PERSON MEETING

+ + + + +

WEDNESDAY JANUARY 11, 2017

+ + + + +

The Committee met at the National Quality Forum, 9th Floor Conference Room, 1030 15th Street, N.W., Washington, D.C., at 9:00 a.m., Missy Danforth and Mark Graber, Co-Chairs, presiding.

#### PRESENT:

- MISSY DANFORTH, Vice President, Hospital Ratings, The Leapfrog Group, Co-Chair
- MARK GRABER, MD, FACP, President, Society to Improve Diagnosis in Medicine, RTI International, Co-Chair
- JENNIFER CAMPISANO, JD, Attorney and Patient Advocate, Booby and the Beast Blog
- MICHAEL DUNNE, PhD, Vice President, Research and Development North America, bioMerieux, Inc.
- DAVID GRENACHE, PhD, Professor of Pathology/ Laboratory Medical Director, University of Utah
- HELEN HASKELL, MA, President, Mothers Against Medical Error
- CARLOS HIGUERA-RUEDA, MD, Vice Chair of Quality and Patient Safety, Orthopaedic and Rheumatologic Institute; Assistant Professor of Surgery, Cleveland Clinic
- MARILYN HRAVNAK, RN, PhD, ACNP-BC, FCCM, FAAN, Professor of Nursing, University of Pittsburgh

- MIRA IRONS, MD, Senior Vice President, Academic Affairs, American Board of Medical Specialties
- NICHOLAS KUZMA, MD, Attending Physician, Section of Hospital Medicine; Assistant Professor, St. Christopher's Hospital for Children
- PRASHANT MAHAJAN, MD, MPH, MBA, Vice-Chair,
  Department of Emergency Medicine, Section
  Chief, Pediatric Emergency Medicine,
  University of Michigan
- KATHRYN MCDONALD, PhD, Senior Scholar and
  Executive Director, Center for Health
  Policy and Center for Primary Care and
  Outcomes Research
- LAVINIA MIDDLETON, MD, Deputy Chief Medical Officer and Professor, Department of Pathology, The University of Texas MD Anderson Cancer Center
- DAVID E. NEWMAN-TOKER, MD, PhD, Professor of Neurology; Director, Armstrong Institute Center for Diagnostic Excellence, Johns Hopkins University School of Medicine
- MARTHA RADFORD, MD, MA, Chief Quality Officer, NYU Langone Medical Center
- DAVID SEIDENWURM, MD, Quality & Safety Director,
  Sutter Health
- THOMAS SEQUIST, MD, Chief Quality and Safety

  Officer, Partners Healthcare System (via telephone)
- HARDEEP SINGH, MD, MPH, Physician Researcher,

  Veterans Affairs Center of Innovation and

  Baylor College of Medicine

### NQF STAFF:

JOHN BERNOT, MD, Senior Director

HELEN BURSTIN, MD, MPH, Chief Scientific Officer

ANDREW LYZENGA, MPP, Senior Director

VANESSA MOY, MPH, Project Analyst

CHRISTY SKIPPER, MS, Project Manager

## ALSO PRESENT:

PAUL EPNER, MBA, MEd, Society to Improve
Diagnosis in Medicine

KERM HENRIKSEN, PhD, Agency for Healthcare

Research and Quality

DAVID HUNT, MD, Department of Health and Human Services

JEFFREY JOPLING, MD, Gordon and Betty Moore
Foundation

# CONTENTS

Welcome and Recap of Day 5
Brainstorming exercise - Potential Measures
of Diagnostic Quality
Review and Discussion of Breakout
Group Results
Committee Discussion:
Revisiting the Framework for Measuring
Diagnostic Quality
Public and Member Comment
Wrap-up and Next Steps
Adjourn

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

8:59 a.m.

CHAIR GRABER: Good morning,
everybody. Welcome back to Day 2. I think
everybody's here. We are going to start a minute
or two early, and our job today is very simple
and it's going to be a lot of fun.

We are supposed to come up with as many measure concepts as we can for the NQF about how to approach this problem of diagnostic error and improving diagnosis.

Yesterday was kind of the background that you need to start developing measure concepts and to think about them in a comprehensive way.

So what we were planning to do right now is kind of review what we went over yesterday and get you in the mood to start developing measure concepts, see if there is any questions or things you want to expand on that we went over yesterday and get going for the majority of the day on working in small groups to come up with as

many concepts as we can.

It's very much a brainstorming kind of activity so don't spend a lot of time criticizing other people's concepts. Better to say that's great, that's great, and just get as many as you can on the table.

There will be plenty of time to critique these over the next couple months and by the time we are done with all this at our next face to face meeting they will all look much better organized and refined and some of the weak ones will have been weeded out.

But our job today is just to get as many as we can on the table. Yeah, can we go to the next slide? Okay. Okay.

Good. So I just want to review what we went over yesterday so it will be fresh in your mind.

We talked about that diagnosis is a process, and the framework that we were going to work from was this one from the National Academy report that laid out all the steps of the process

starting with patient engagement, the big circle where all the - most of the action is in terms of doing a history and physical and thinking about what the possibilities might be, coming up with some initial diagnostic possibilities, maybe ordering some tests, maybe getting some consults.

And then some period of time goes by.

I put that in red. You know, in the initial

diagram you could barely see that time dimension.

But it's so important because diagnosis plays out

over time no matter what diagnosis you're talking

about.

And then eventually you come up with some plan of action and you do something and you find out hopefully whether it was a good thing or a bad thing and you learn from it and you may readjust the diagnosis. But it's part of a learning process that plays out over time.

I think everybody's pretty confident with working with that at this point. Next.

And we emphasize that the process has outcomes. So when you're thinking about outcome

measures, keep this slide in mind, and there are patient outcomes - the patient either gets better or they don't - they respond or they don't - they are happy or they are unhappy - they benefit or they are harmed.

There are different degrees of harm.

There is minor harm, there is temporary harm,

there is permanent harm, there is death. So

these are all patient outcomes that are relevant

and psychological harm should certainly be part

of what we are thinking about and there are

system outcomes.

This process has got a certain efficiency. A certain fraction of patients are diagnosed in a timely fashion or they are not. A certain fraction of patients are diagnosed accurately or they are not.

Laboratories have a performance characteristic. They have a certain percentage of tests that are completed on the right turnaround time or within a certain specification of accuracy. So there are system characteristics

and system outcomes that we would also like you to keep in mind and would be very appropriate for measure concept development.

And for sure don't forget about the learning aspect. Right now, there is no learning or very little learning about diagnostic errors.

Health care organizations aren't finding these.

They are not hearing about them except if there is a malpractice suit. We would like to have much better ways, more ways, more effective ways, of finding and capturing these diagnostic errors, learning from them and having that learning process be fed back somehow to improve the process so that they won't happen with such frequency going forward.

So that learning process is really key and hopefully we will have a lot of measures that focus on that learning and the process improvement.

Kathy reminded us that this all takes place in an organization that has certain characteristics. It has certain people with

1 certain skills. The physical environment is 2 important to diagnosis - how many distractions you get per hour. The people that you work with 3 4 - how many of them are available to help you do 5 things? Can they help you with documentation? 6 Can they help you with researching clinical 7 8 questions that come up? Are the tools you need 9 available -- the diagnostic tests? 10 Can I get a CAT scan today if I need 11 it, or an MRI? Can I get a consultant on the 12 phone in ten minutes if I need to to consult 13 about a case? 14 So the work system critically 15 determines how successful we are in diagnosis. 16 Definitely keep that in mind, too. 17 And the team members -- so it starts 18 off with that dyad. It's, you know, 19 traditionally the doctor and the patient. 20 They're supposed to be a team, and how do -- how 21 do we get that to happen?

Right now, it's usually the

paternalistic model of medicine where the physician speaks down to the patient and expects them to just kind of obey blindly.

That's not what we want going forward.

We want a partnership where the patients are
actively engaged in diagnosis, participate in it
to the extent that they want to and that they
can, and we want to somehow bring the other team
members back in to be part of a functioning team.
They have, like - they have, like, dissipated.
The radiologists are in a room somewhere.

We never talk to them. The clinical laboratory staff would be so valuable in helping us understand the best testing algorithm to use or how to interpret a test or to know the next best test to order, and yet we rarely talk to them.

We need to bring all these team members back in to much closer collaboration so that they can work for the betterment of the patient.

We want to focus on things that

matter. So this is a diagram that David emphasized. There is little subparts to that. Can you kind of click through them? Yeah.

So we want to focus on that shape in the middle, the football -- preventable diagnostic error.

So we want to focus on things that
matter -- things that are breakdowns in the
diagnostic process somewhere but that affect the
outcome and lead to a diagnosis that's delayed or
wrong or missed. Those would be the key
opportunities there.

And we want to focus on things that lead to harm. So this is from Hardeep's presentation that emphasizes, again, that concept of looking at preventable diagnostic harm but harm for sure. That's the target. We want to reduce harm to the extent that we can.

And this is, again, from Hardeep's presentation. We want measures that are actionable so that an organization to build them in to their quality improvement program.

They could use them for learning, that they would be available for research. We need so much research. You know, there is all these interventions out there.

We have no idea which ones work.

Having a measurement framework and having measure concepts that would give us some data for research would just be terrific and would be really an essential next step to help improve what we are doing in this domain and we need measures that engage the audience.

And who is our audience for these measures? Well, it's a large group for sure.

It's the providers, the doctors, the nurses, all the professional staff. The measures have to make sense to them.

They have to be able to look at it and say oh, yeah, you know, if we did a good job on that measure that would improve diagnosis in my practice.

So they have to have face validity, I think. For sure they have to be recognizable and

understandable by patients and actionable by our health care organizations.

So, you know, I don't know what the characteristics of an ideal measure are but it would certainly include those elements for sure.

All right. So, you know, we want you to focus on all the steps of the diagnostic process but there is other things that we hope you'll keep in mind as you're developing measure concepts.

So here is my little list. For sure the six dimensions of quality. So should be safe, efficient, timely, equitable, patient centered, and gold star to whoever can remember the sixth one. Effective. Thank you. That's it.

You know, keep in mind that there are certain conditions where diagnostic errors are more prominent and from malpractice claim studies these are the ones that rise to the top of the heap -- cancer, cardiovascular conditions, infections, fractures, trauma.

So keep in mind the common things.

Try and keep in mind the root causes of
diagnostic errors so we are concerned about all
the system-related flaws that contribute, all the
cognitive shortcomings that we know about and the
human factors perspective -- the human factors
engineering principles that tie these together.

Kerm is like our expert in that and has reminded us that, you know, our performance is just so intricately related to the system we are working in and how well all that works and how it facilitates us or gets in our way. So the root causes are important.

And there are some things that aren't in that IOM process diagram that we talked about that we want to include. So screening wasn't really dealt with in that process diagram but it's an important -- certainly a very important item and breakdowns in screening lead to lots of harm from diagnostic error.

I mentioned yesterday that failure to get your cancer screening is just way too common

a cause of severe harm and, certainly, highly preventable. So please think about measures related to screening but at the same time we don't want inappropriate testing. We want diagnosis to be efficient and there is way too much inappropriate testing at the present time.

I have a strong bias against using that over diagnosis term. I don't like it. I don't think it's specific and I don't think it's within our domain.

But what is within our domain is inappropriate testing, which is part of the over diagnosis problem. So when I talk about this I think it's great to have measures that address inappropriate testing.

I would be much less interested in all the other aspects of over diagnosis. I think that's out of range. At least, that's my perspective.

And definitely think about the electronic medical record. It is right in the middle of everything that we do these days. It

helps us in a thousand ways and it - you know it's a problem in 2,000 ways.

So, hopefully, in 50 years it'll all be figured about but right now we need measures that will help us understand those elements that are beneficial and those elements that are detrimental and how we can optimize the process by taking best advantage of all the resources electronic health records allow us.

And please also think about the patient. We also mentioned that that's really not prominently emphasized in that IOM diagram that we started off with.

Yeah, they are there. They are there at the start when they engage with the health care system and they are there at the end when they receive the diagnosis.

And where are they in the middle there? You don't really get a feel for that from the diagram. But they are there at every step of the process, and as we discussed yesterday, it's appropriate and will be helpful and beneficial to

think about that and to involve them to the extent that we can and to the extent that they are willing in every step of the diagnostic process.

Particularly, we'd like them to give us better feedback about how we are doing - did we get it right, did we get it wrong, how was your experience in the diagnostic pathway.

For sure we'd like them to help us identify diagnostic errors because we are not finding them now and they are in an ideal position to know whether diagnosis worked for them or it didn't.

And for sure we'd like them to participate in performance improvement - that learning process that we have been talking about.

So those are some of the major places. But definitely they think about every single way that they can be involved.

So how can we use measurement to improve patient engagement, but also take into account that some patients will be able or be

more willing or more aggressive in participating in their care and some will not.

So we have to appreciate where they are at and their level of understanding and their desire to work with us.

We do not want to get to the point today of discussion measures per se so we are going to stop at the measurement concept level.

So you don't need to worry about well, what is going to be the numerator and what's going to be the denominator and how are we going to figure those things out.

That is a topic for another day and probably for other groups. So today we are just going to talk about concepts, not specific measures per se. And I don't think you have to worry too much about filling up every - all those buckets and cubbyholes that we talked about yesterday. The NQF staff will sort all that out when we are gone. If you just focus on what are the good outcome measures, process measures, structure measures, those are the three big

buckets that we want you to fill up and we will sort them out into the little buckets over the next few weeks and months.

Okay. So let me just pause there.

Did that make sense? Do you have comments,

questions, concerns about where we are coming

from and what we would like to do?

MR. LYZENGA: I would also encourage you if you're having - if there is something that you think ought to be measured, you're having a hard time kind of conceptualizing it as a measure or a measure concept, throw it up there anyway even if it's just a question - I think we should measure this, how do we measure that, broad areas. You know, if you're having a hard time sort of making it into a concept or a measure concept put it up there anyway and we can kind of work through it later as well.

CHAIR GRABER: Yes, please.

MEMBER HRAVNAK: I was just wondering
- in some of the conceptual models, as I am
looking at them, I keep looking for caseload

somewhere and I am wondering are you assuming that it's under one of those other headings and I am just missing it or is it important enough to be called out somewhere specifically?

Because we know that it is a very powerful component with error. And I guess the other thing is that's also a very important mitigator for the time continuum because when people say, I don't have enough time, or we are looking at timeliness it's relative to the time I have in distribution across the caseload. So --

CHAIR GRABER: Yeah. Thanks for bringing that up. So that's usually talked about in the environment of care. So, you know, what is your workload and your pressure of production.

So it does -- you know, that's one place where it comes up. But, you know, we have got time that goes throughout the whole process and workload, you know, plays out at more than one step for sure.

So very important. There is a lot of physicians that would say that's the number-one

thing that would help with diagnosis. They just don't have enough time to do it, to think, and it takes time to think.

So yeah, key area to think about.

DR. BURSTIN: Maybe just to broaden that a bit. I mean, I think it's certainly on the physician side and the diagnosis in practice but also, I mean, a fair amount of evidence on nurse staffing and safety and so not forgetting the in-patient side and, obviously, it's not just the docs either.

MEMBER HRAVNAK: I was just wondering if it -- if we think it's important enough to actually spell it out somewhere.

CHAIR GRABER: Yeah.

MEMBER HRAVNAK: Should be a concept.

CHAIR GRABER: Okay. Everybody's

All right. So here's our -- here's our

task for the next two hours. We'd like you to

come up with as many concepts as you can in these

three buckets - structure, process and outcome.

So our recommendation for dividing up

happy?

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

your time is that you appoint somebody to be the timekeeper and you spend 30 minutes on each of them.

Maybe at the end of the day there is many more concepts in one bucket or the other but at the present time we don't know. So try and spend equal time on those three things.

The fun part is the last 30 minutes or maybe you want to work it in somehow in some other fashion. You're welcome to reconfigure.

We'd like you to think about one specific disease -- concept measures that would be applicable to a specific disease. And you can pick the disease, but here's how we'd like to divide them up.

So in group one - I am in that group - we will pick some disease that's, like, subacute in nature like anemia or asthma or I'm not sure what. We will find something.

And group two is Hardeep's group.

Hardeep, can you, like, pick some cancer problem to focus on?

And the third group - David's in that one - some emergency diagnosis. Something that's got to be diagnosed, like, right now or something really bad will happen.

And maybe - I don't know if it's best to do that maybe first because it would help you come up with general things or do it last because you'll have the general things in mind. I don't know. You can work that out internally. But 30 minutes devoted to that will be also very much appreciated.

When we are done we will get back together. We will take a look at what everybody's come up with and we will try and get your reactions to them and start to prioritize which concepts we think are most important to move forward.

So is it clear? Any questions?

MEMBER SINGH: So Mark, this is

already a nice sort of list here. Do you want to

talk about how we --

CHAIR GRABER: Yeah. What do -- what

do we have available for people? 1 2 MR. LYZENGA: So we have got that list of some preliminary concepts, which also includes 3 4 the domains, if that helps, you know, sort of 5 focus your thinking. But as Mark said, don't worry too much about that. 6 7 We have also, I think, printed out the 8 Safer Dx categories if -- again, if that helps 9 stimulate thoughts or help focus your ideas, and then the diagram of the IOM framework, all just 10 11 things to sort of get your minds stimulated and 12 help you sort of focus your thinking. 13 But don't worry about fitting things 14 into any of those categories. That's just to 15 give you ideas. 16 MEMBER SINGH: So as a group should we 17 look at these and say hey, this one looks really 18 good -- let's consider that, put it in our bucket 19 20 MR. LYZENGA: Sure. 21 MEMBER SINGH: -- or this one will not

22

work.

Sure, or if you have 1 MR. LYZENGA: 2 like a tweak that - tweak you want to make or something that's --3 4 MEMBER SINGH: A tweak or something 5 that's based on this? Okay. Yeah, really a measure 6 MR. LYZENGA: 7 -- an additional one or anything that. 8 CHAIR GRABER: There will be a member 9 of the NQF staff with each of the groups to help take notes. So that's taken care of. And where 10 11 should we go? 12 MR. LYZENGA: Here is a list of the 13 groups. We kind of assigned people out, if 14 that's all right. I think we could probably just congregate in kind of corners of the room. 15 16 we could put one group over here, say, group one

the back of the room over there, group three.

Oh, back there? Is that better? All right.

Group three back there. So yeah, here, there -group one, group two, group three.

over here, group two and then somewhere toward

CHAIR GRABER: Okay.

17

18

19

20

21

1	MR. LYZENGA: Does that all make
2	sense?
3	DR. BERNOT: Just one thing, Andrew.
4	For David and Kerm, you're not on these but feel
5	free to join the group. I know, for example,
6	group three's down a person without Tom. So,
7	certainly, if one of you can join that. But it
8	would be good to get your input. Oh, okay.
9	Perfect. That works also.
10	(Whereupon, the above-entitled matter
11	went off the record at 9:20 a.m. and resumed at
12	11:46 a.m.)
13	CHAIR GRABER: So the general plan is
14	to have lunch in about a half hour and to show
15	you the results from group one before lunch and
16	do the other two groups after lunch.
17	We need just a few minutes to organize
18	all the ideas that came out of our group. Any
19	initial reactions to how your group went or how
20	this process went or how we could do it better?
21	Was it helpful to consider a specific
22	disease or was that did that get in the way?

That's good?

MEMBER MCDONALD: It was kind of fun.

CHAIR GRABER: Kind of fun?

MEMBER MCDONALD: Yes.

CHAIR GRABER: Good. As opposed to really fun, right? Okay. Well, let me just get started a little bit with our group.

We were the group that was -- that
were supposed to pick a disease entity that was
neither an emergency nor cancer. We settled on
child abuse because Prashant was in our group and
it's a big problem in pediatric emergency rooms,
and it raised some interesting concept questions
for us as we were trying to think through what
might be relevant to that specific disease or
that kind of disease.

The first thing that came up was often in diagnosis you try and generate a general story -- a general history from all the people there.

So you'll talk to the patient and the family, and you try and synthesize everything into one coherent history.

But in cases of child abuse, it's very important to get independent histories from the different players and it just --- I don't know if that's unique or how unique it is, but it's certainly different, and I don't know if it generates a concept or not, but it's relevant to the quality of diagnosis that in that particular case you have to talk to everybody and do it independently so that things don't blend together.

Another thing that came out of that discussion was the problem of uncertainty in diagnosis. Right now we don't have a good way of designating uncertainty.

Oftentimes, clinicians will just check

a box -= ICD code, whatever it is -- and that's

what you're forced to do because the clinical

rules require that you bill for that care that

you provided. But that labels a patient

prematurely before you know with any certainty

what they have, in some cases, and that that

would be particularly inappropriate in cases of

child abuse because the consequences of labeling a family as one that's where child abuse is a problem are severe and you have to take definitive action and remove the child from that situation.

So we were hungering for a way to designate uncertainty and a concept around that, but we didn't quite succeed.

Does anything come to mind in terms of a concept for how it would improve diagnosis to be able to capture uncertainty or to designate uncertainty?

MEMBER NEWMAN-TOKER: Sure. I mean, you could have a structural measure that says whether there is a structured data field in your electronic health record that allows you to code the stage of the diagnostic process like, you know, is this differential diagnosis, tentative diagnosis, working diagnosis or final diagnosis.

CHAIR GRABER: So that would be the structure thing and then the process thing where do people use it --

1	MEMBER NEWMAN-TOKER: Do people use
2	it, yeah.
3	CHAIR GRABER: - and for what
4	situations is it most appropriate?
5	MEMBER NEWMAN-TOKER: Yeah.
6	CHAIR GRABER: Yeah. Thank you.
7	Good.
8	DR. BURSTIN: This might be a good
9	place for David to make a comment as well
10	David Hunt, the other David just because I
11	think some of these may not really be measures,
12	but they could wind up being standards for EHRs.
13	And so David thought that was fair
14	game. So some of these elements, again, you
15	wouldn't want to necessarily create new measures
16	on things that are basically structural elements
17	in the EHR. So I just want to at least put that
18	on the table.
19	MEMBER SINGH: So we actually
20	discussed it in our session in our group as well.
21	There is a couple of things. So one is there is

no ICD-9 code or ICD-10 code for uncertainty.

	I think we need to sort of influence
2	the field in which to capture uncertainty at
3	billing and coding levels so that you can
4	actually get reimbursed for a visit where you
5	talk to the patient about a lot of things and the
6	diagnosis was still uncertain. I mean, we are
7	labeling people with a diagnosis they don't have
8	because you don't know what to put, for instance,
9	in a requisition form for an imaging test.
10	MEMBER RADFORD: Canada has diagnosis
11	not yet made.
12	MEMBER SINGH: Yeah. Yeah.
13	MEMBER RADFORD: It's there but it's
14	not - yeah.
15	MEMBER SINGH: Yeah, exactly. So -
16	MEMBER RADFORD: So, you know, we can
17	- we can learn from Canada.
18	MEMBER SINGH: Yeah. So that's one
19	sort of major policy implication and we sort of
20	put that and recaptured that.
21	Second thing was we actually just
22	finished a narrative review, which is still under

review, but I can sort of send a confirmation copy to you all.

But essentially the measurement methods around uncertainty are very under developed, and what we found was there is ways to get to it.

For instance, you can look at a medical record and look for ways such as maybe, probably, likely, could be -- you know, all of those narrative terms that capture, and there could be electronic methods to do a linguistic analysis of the note to capture uncertainty within the note, and we talked about that for radiology and pathology as well.

And then another measure could be what we call sort of this shotgun testing. Somebody comes in with a new symptom or a new complaint and you just order a whole lot of tests, like more than five types of different lab tests along with an imaging test or, you know, and that could be another measure of potential uncertainty.

A fourth one would be potential

differential diagnosis documentation. So we have got a nice differential diagnosis documentation that also expresses uncertainty, which is also maybe a good thing that you're thinking about it. So those are the four that, I think, we discussed and --

MEMBER KUZMA: Oh, Nicolas. Yes. I was just going to -- that jogged my memory.

Actually for child abuse on the ICD-10 codes, it's a spectator-confirmed child abuse is what you enter in for them. So you do have that level of I am suspicious of this or this is definitive. There is two separate codes that you bill for that. So that's one rare situation where that's kind of built into the ICD-10 code already.

CHAIR GRABER: We generated over a hundred discrete ideas, which is way too many to show you. There were some that, you know, people said oh, that's good -- let's -- that should lead to a concept.

So we are just going to show you that group and it's about, I don't know, eight or nine

and we'd like to get your reactions. What I'd like to ask you to do as you -- as we go through this for each of the groups is to jot down a concept that you really like so that at the end of the day I would like everybody to, you know, have an idea -- here's one or two things that I really thought were terrific and should be headed towards a concept. And not everything we are going to show you is going to meet that bar, but maybe some of them will. So we are going to be reviewing the ones that are in purple, if we can figure out a way to see them. Okay. Can people see that? Okay. So one concept was that the electronic record should support the diagnostic process, which is, I guess really at a very general level.

I am guessing each of the groups help refine that a little bit. Yeah?

PARTICIPANT: Well, we didn't talk about that one much.

CHAIR GRABER: I find that hard to

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

believe. Okay. So let's leave that for other groups. You spent some time on that I am guessing, right, Hardeep?

MEMBER SINGH: No, not that -seriously not that much. We were just sort of
talking about other stuff. But it looks like a
nice concept. I think it's way too high level to
be any useful -- anything useful in the future
unless we fix it now --

CHAIR GRABER: Yeah.

MEMBER SINGH: -- in terms of what is it we are trying to get at.

CHAIR GRABER: Right. So let's spend a minute on that. What specific ways could the electronic record support the diagnostic process better than it does now?

MEMBER SINGH: So we did do that. We did review some measure concepts around documentation such as, you know, copy-paste, excessive use of templates and we even went to the extent of proposing sort of measurement concepts around OpenNotes where patients could

actually report -- there was just a recent study 1 2 where a patient could actually report documentation-related diagnostic issues with the 3 4 notes based on OpenNotes. So I think we need to 5 get down to a little bit of specificity as to what part of the diagnostic process -- is it --6 7 CHAIR GRABER: Those are all good. 8 MEMBER SINGH: - interruption? Is it communication of test results? 9 communication of referrals? What is it that we 10 11 are trying to support? We can't do - this is 12 like saying we need technology to improve 13 diagnosis. 14 MR. HENRIKSEN: Yeah. It could be navigational ease of pulling up diagnostic 15 16 information. I mean --17 CHAIR GRABER: Right. And 18 interoperability comes in there. You really 19 need the information from everywhere to be 20 effective at diagnosis. 21 MEMBER NEWMAN-TOKER: So just one 22 comment on this. I agree with Hardeep that this -

- at this some level this feels like it's just 1 2 way too high altitude. Although one could imagine a measure that was sort of a general 3 4 survey type measure of employees at a health 5 system or hospital saying, does your electronic health record support the diagnostic process and 6 7 getting a percentage or a score or something like 8 that. 9 Well, it would give you an indicator 10 of whether people thought that it was 11 facilitating -- I mean, you would -- you could --12 you'd have to phrase the question differently. 13 You'd say, you know, does it help you prevent 14 diagnostic error and improve diagnostic 15 performance, and that might give you something. 16 I don't know. I am just --MEMBER SINGH: I think most clinicians 17 18 would say no, that it doesn't help. 19 MEMBER NEWMAN-TOKER: Yeah. But the 20 other thing is --21 MEMBER SINGH: We know that already

though.

MEMBER MCDONALD: Actually, there is a --- there is a good measure, like, for office chaos, like calm versus chaos. It's one scaled measure. It's possible that there is something kind of analogous here where it's -- you know, does the -- does your electronic health care -- health care record kind of create more, you know, like an easier way of doing diagnosis or harder and it's just, you know, a scale of easier to harder, and it's possible people could answer that. That could be tested.

MEMBER SINGH: So I have one suggestion in this area. So AHRQ is developing health IT safety supplement questions to their patient safety culture survey, and I am wondering what those questions are, and if there are a few questions that could influence still -- I don't know what stage the project is at. You know, there could be one around diagnosis-related safety culture or related issues, you know.

MR. HENRIKSEN: That's under

consideration, yes.

MEMBER SINGH: You have something on the way then hopefully.

CHAIR GRABER: David.

MR. HUNT: It's under consideration.

MEMBER SEIDENWURM: So the -- so the electronic record can support the diagnostic process either by facilitating it or by not standing in the way of it. And so I think that we need to address this really, you know, vigorously in a two-pronged fashion.

medical records as they are currently constituted impede the diagnostic process is by producing an enormous cognitive burden on clinicians who are trying to make very complex decisions. So while they are toggling between and among screening and while they are toggling between and among the different cognitive domains, they are also trying to, you know, think very complex thoughts and just as they tell us, you know, not to use flash photography at Cirque du Soleil because it might

distract the performers, I think that we are doing the equivalent to physicians and subjecting them to flash photography as they are, you know, attempting to, you know, perform the triple flip on the high wire. Okay. So I think that's the first thing, and so we need to have screens that do not present us with a blizzard of information. We need to have things that are appropriate in physical and conceptual scale to the task at hand. We need not -- we need to have to not go between verbal memory and visual spatial memory, you know, a million times a second. So I think that's the first thing is we need to have systems that don't impede us as we do these things.

The second thing we need, I think, are systems that facilitate diagnosis. So, you know, when we want toast, you know, we put the bread in the slot and we push down the lever because there is a device that captures our need.

And so in the same way when we want to make a diagnosis, if -- you know, cough -- then something should come up with cough and, you

know, the chest -- any other chest x-ray reports that the patient -- I mean, I don't know, you know, what it would be.

Any cultures the patient has had, any, you know, are there risk factors, whatever it is, you know, should come up in a way that's presented in a -- in a soundly designed fashion, and we are not getting that.

So we need -- we need systems that don't prevent us from thinking, and we need systems that help us think. And industry knows how to do this, right? I mean, we all -- we all have such objects in our pocket. Why can't we have them in our hospitals?

CHAIR GRABER: Martha, and then Helen. Martha, go ahead.

MEMBER RADFORD: I just wanted to comment that this came up when it -- you know, basically as kind of an observation that the EHRs are set up for billing and not for care and, you know, I think that David's workflow suggestions are most excellent.

MEMBER HASKELL: Okay. I just wanted to reiterate my point that patient input is critical. I think technology is the key way that you can get patient input into diagnosis. So people can put in -- correct misperceptions, put in changing symptoms. They can add in a lot.

And then the other thing, we -- and this is me speaking from a totally naive perspective -- but we had a discussion of red flags and why the electronic medical record couldn't flag things that need attention.

It seems to me that wouldn't be so hard to do. I think Google, as you pointed out, already does it in other areas. But so you say great weight loss between appointments or symptoms that taken together could be troubling. I don't see why that couldn't be -- electronic medical record couldn't just flag that.

CHAIR GRABER: Those are two good ones. EMR should highlight red flag conditions, and it should allow patients to contribute.

Thank you. Marilyn.

MEMBER HRAVNAK: So I was just thinking that maybe process is just too broad of a word. Maybe because, you know, it helps the availability of information, but I think it doesn't always facilitate clinical decision making.

So maybe the electronic record supports diagnostic decision making or facilitates diagnostic decision making might get a little bit closer to what we mean.

CHAIR GRABER: Good. Thank you.
Mira.

MEMBER IRONS: Yeah, I am just thinking in terms of I agree that process may be too broad. But I wonder if there could be language that talks about the electronic records supports communication between the patient and other members of the team that actually allows for focusing of the encounters that occur. There are two communities now -- cystic fibrosis and inflammatory bowel disease -- that have disease specific EHR portals, where patients actually put

in information prior to a visit that allows the doctor to then just focus on the problems that they've identified and not go through everything else that we have to do for compliance reasons that ends up optimizing that visit and the EHR actually facilitates that by allowing input from the patient, the doctor, other clinic staff.

CHAIR GRABER: Good. Thanks. Martha, did you have something else?

MEMBER RADFORD: No.

CHAIR GRABER: No problem. Okay. So let's move on. The second item there is appropriate staffing ratios and mix, and our concept there was when a patient comes in with a problem, institutions need to have thought about how that patient's going to be triaged and whether they have the appropriate mix of staff and the appropriate number of staff in the particular areas to handle that. And, of course, that's going to vary tremendously from small hospitals to big hospitals and private settings. But thought needs to be given to how you're going

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

to handle different diagnostic problems and whether you have on site or available appropriate staff to take care of that problem. Prashant.

MEMBER MAHAJAN: Mark, if I can just add. So where this came up was this concept of which from the pediatric world that is the sole concept of pediatric readiness for emergencies and what they found out when they did a national survey of all the hospitals across the country, it came up that close to 70 or 80 percent of the institutions are just not ready to handle pediatric patients. By that, not only was the training not adequate but the equipment -- like pediatric-sized equipment.

So that was one approach, sort of a pediatric readiness. So an extrapolation would be an institutional readiness for seeing patients that they are expected to see. So, for instance, if they are seeing pediatric patients, geriatric patients, then the institution is geared in all concepts -- training, equipment, et cetera, from that. So that's how we became after that.

CHAIR GRABER: Any other comments on that one? Hardeep.

MEMBER SINGH: So I, again, would suggest focusing this a bit better on diagnosis and risk like we discussed yesterday. So what's sort of the risk here? Why do we want this?

We want to -- I am guessing --- I am just giving, for example, if I am a patient, I started having some new problem today, I want to try to get in to see somebody.

So I am not sure whether you can just have such a measure for all types of care which, you know, include chronic care and, you know, multiple other types of things. But I would say you need to have some capacity to see patients on an urgent care basis if they have new problems and most institutions or many institutions will not have as much capacity as they think they do when patients often have to wait, you know, five days, six days to see a patient. So I don't know, can you sort of modify that a little bit for, you know, urgent conditions?

CHAIR GRABER: Yeah. Sure, it needs more thought. It came up in our group particularly in regard to child abuse because you need some specialty expertise. You need pediatricians who know that syndrome. You need expertise in the medical conditions that mimic child abuse. You need social work services. So, you know, have institutions thought that through to the extent that they'd be able to appropriately triage and handle those kinds of cases.

MEMBER SINGH: So would --

MEMBER RADFORD: It also came up in discussing that it takes time to make diagnoses. It takes thought. It takes all those things and that, you know, one of the things came up was that -- not related to child abuse but other diagnoses on the -- in the outpatient setting that if a provider is expected to see 80 patients in a day, then their ability to make diagnosis is very clearly compromised so that that kind of staffing needs to be more explicit perhaps.

So just to have a more 1 MEMBER SINGH: 2 explicit measurement concept around time or --CHAIR GRABER: Yeah. 3 Yeah. 4 MEMBER SINGH: -- number of patients 5 per day or caseload, or something else? CHAIR GRABER: Yeah, we talked about 6 7 capacity yesterday. You need capacity. You need 8 time to think, and that's worthy of a measure or 9 concept, although we didn't quite capture it 10 here. 11 Okay. Let's move on. We are going to 12 skip the next one because I don't recall what we said about that. But let's talk about feeding 13 14 things up to the board, which I think is an 15 important thing. There needs to be -- our idea 16 here was that there needs to be some way for 17 diagnostic quality and safety to become something 18 that the board hears about and the leadership of 19 the organization knows about and considers and 20 addresses. Any reactions to that one? 21 No? No? Okay. No problems.

MEMBER MCDONALD: We had -- we had one

that was a little similar. We were talking about kind of how hospital boards or other organizations' boards might be, you know, having agenda items and being - responding to, you know, peer review issues, malpractice issues. So we were - we were trying to think about that one. I would just endorse that another group is interested.

MEMBER SINGH: Yeah, and I -- yeah, we would just say what kind of diagnostic performance data. So when we thought about what kinds, like, now it was the things that are readily available at the institution such as peer reviews, patient complaints, malpractice claims.

So just involving the board in diagnostic performance itself is a good measurement and concept but what safety data do you want to show them and that's when we came up with some specifics.

MR. LYZENGA: We also just said: does the organization have a recurring board agenda item for diagnosis?

CHAIR GRABER: All right. So the members of my group are going to have to help me with this one. Evidence-based interview tool to record medical ailments -- I am not recalling the thought there.

MEMBER RADFORD: Well, this had to do with the fact that to make a diagnosis that -taking, obviously, a history and doing a physical is key, and that we felt that interview techniques may need some support because they may not be optimal -- you know, where there is a lot of examples of failure to take a good history or, you know, that kind of thing and just put -- just sort of put that in.

CHAIR GRABER: Yeah. So thank you,
Martha. It's coming back to me. So I think we
talked about, for example, if you come in to an
ER with chest pain, most hospitals have a nice
algorithm -- a pathway that you go through -- and
that that helps standardize the process and
reduce variability and reduce diagnostic errors.

So shouldn't there be more of those

for more conditions? Is that kind of where we were headed?

MEMBER RADFORD: Well, also just interview techniques, more generally. I mean, we were talking also at dinner last night around taking a good medication history and there is been these techniques that have come up about how to do that more better than we're doing now and, you know, it just was something to think about as a structure measure, is that in place in an organization?

CHAIR DANFORTH: I think it's a way to really validate the importance of the information that you can get from the patient, which is something we have talked a lot about yesterday and in our group today, right.

And so when we say getting correct information from the patient is really important then using evidence-based ways to get that information, you know, to have the support.

MEMBER SINGH: So just to clarify, how is that a sort of a -- how do you operationalize

that into a measurement concept?

CHAIR GRABER: You could say pathways exist for the top 10 complaints that you see in your setting, you know, the diagnostic --

MEMBER RADFORD: Or you could say staff received or staff and medical staff - including medical staff received instruction on interviewing techniques. I mean, anything is possible.

CHAIR GRABER: Yeah, Carlos.

hospitals have different needs and you just can let them decide what are those needs, but the measurement is to be sure that they facilitate it and they put that system in place to have the providers to get together and say that we need to be aware of A, B and C. So they have a protocol for the most common conditions. I mean, they will know what are the things that they need to take care of.

CHAIR GRABER: Yeah. Thanks. David.

MEMBER GRENACHE: Our group touched on

this briefly, too, but in the -- in the realm of competency. You know, this might be more of a process, but what is used by health care systems to demonstrate that care providers are competent to perform specific skills as it relates to diagnosis.

CHAIR GRABER: Good. The next one was a discussion that -- I think this was structure -- that our electronic records systems should be able to capture the chief complaint, should capture key points along the diagnostic process and the final diagnosis so that you could use those things to study timeliness and accuracy and -- yeah, the next line is separate. So the concept there is to better capture those key things. Comments on that?

MEMBER NEWMAN-TOKER: I think that's a really important thing for us to be monitoring. I don't know whether it ends up as standards for the EHR or whether it ends up as a measure. But I think this idea, and I think it has to be capture and retains because the -- the chief

1	complaint or symptoms and it has to be in a
2	standardized format like ICD-coded symptoms or
3	the CDC's reason for visit-coded symptoms, so
4	that it's not a disaster to compare across
5	settings and providers because right now if you
6	have a chief complaint pick list in Epic, it's
7	sort of configured for all your local or
8	departmental or whatever specific desires and
9	then it's not comparable across the institution.
10	MEMBER HASKELL: What do you mean by
11	patient diagnosis on here?
12	CHAIR GRABER: Yeah. David David
13	Hunt.
14	MEMBER RADFORD: Sorry. There is
15	a chief complaint there is a working
16	diagnosis. There is a differential diagnosis and
17	eventually there is a final diagnosis all of
18	those.
19	MEMBER HASKELL: And the outcome?
20	MEMBER RADFORD: Well, outcome is a
21	different issue. This is documentation about the
22	diagnoses. The outcome of the diagnoses I

mean, maybe the final diagnosis is an outcome of the diagnostic process. But, you know -- yeah.

CHAIR GRABER: David, and then

Hardeep.

MR. HUNT: What I am hearing again and again as far as the EHR is issues around usability of the EHR -- that there is got to be support along the interface for -- but also cognitive support. So two different areas.

That's just the theme that I am hearing.

MEMBER SINGH: Again, I would sort of just build on that. This is -- I was thinking -- I think making this a bit more sort of specific because if you look at this, I think the EHRs are trying to do this already.

So what's sort of new here? I wasn't there. I mean, most -- I mean, EHRs capture -- I mean, you either write a free test or you click a checkbox about what the chief complaint is.

Already we do that, and what do you mean the whole process of diagnosis is when you mean tests and procedures? Well, EHRs are supposed to have

that data anyway. I mean, there is a whole policy around it.

CHAIR GRABER: I think there is a lot of variability.

MEMBER SINGH: So there may be a way
So if you want to just capture chief complaint
they can, but I know Epic does this. VA, you can
just write chief complaint in a text. I mean,
what's the -- you either have a box or you have
text. You can do one or the other in most EHRs.

MEMBER NEWMAN-TOKER: Well, so it's the standardization piece that is really key to being able to actually track these issues in and around your institution and across institutions. So I think what we need is not only the ability for somebody to free text their way into a chief complaint field, which is fine, but they also need to be able to provide in some kind of structured data format what it is and then they just save that. It can't just be something that, you know, people have to divine from the records.

MEMBER SINGH: So if you want to say

EHRs capture chief complaint in structured fashion, that's different from saying what it is now. But I might say -- I still then would not be sure what whole process of diagnosis and patient diagnosis is. I mean, I am -- sorry, I am being a little bit of a, you know, challenge here. But I don't understand this, and I study this area so --

MEMBER MAHAJAN: So Hardeep, actually the point is I -- you know, I was also trying to think about how do we eventually do this. So where it struck me was, like, a forcible function. Not necessarily standardization of the wording but if force function -- and maybe I've being naive here -- but somehow that before you move on to ordering a test -- say, for instance -- you have to put a list of differential diagnosis, like a force function.

So what the - the discussion was that if there is a way to capture the thought process on how it is documented in the EHR -- like what were the differentials, why were the tests

ordered -- then this would be one way to capture that. And maybe this may not be the right thing but I am ---

MEMBER SINGH: So maybe - I think what you're getting to is some EHRs there is too much of structured data collection. It's checkbox, checkbox, checkbox, and maybe we will want to say that it should be a balance between narrative text of thinking reflection on what the clinician's thinking or a reflection on what the clinician is thinking, versus some structured data entry for some critical elements such as chief complaint. That would be a lot more sort of logical than -- you know, and that could be measurable because you could see how much structure in there if data exists in a note or in an EHR.

MEMBER MAHAJAN: So at this time, should we then think of a balancing -- or this is not the right time -- but a balancing measure to this one in a sense because it could be that there could be a medical legal implication of

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

certain documentation. So should we be thinking of that now or not, or put it in the parking lot?

Because some of this may have a flip.

CHAIR GRABER: Mike, and then David.

MEMBER DUNNE: Yeah. Central to what
this form wants to do is the ability to define a
missed or inappropriate diagnosis, and if you
cannot track the process from start to finish, if
the working diagnosis displaces the initial
diagnosis, or the final diagnosis displaces or
modifies the working diagnosis, you never have a
-- you never have a paper trail of how things
went, what the logic of the thinking was along
the entire process.

So if you want to take the final diagnosis for review and say where might this have gone in the wrong direction, you need to log and retain each of those steps and then be able to review it.

That also filters back in through what we call a feedback improvement loop because now you can involve the entire team when there was a

deviant diagnosis and say where did the process go wrong.

And unless you maintain that and force that step, you know, force a log on these different phases, you're never going to capture it.

MEMBER SEIDENWURM: I am just sort of digesting what Mike said. That's correct. A lot of times the EHR goes back and retrospectively changes things, you know, that were not reflective of information at the time and maybe that gets to something that was said earlier about, you know, potential med-legal implications.

make, which I think is a great deal less important than the two other points that were made in between, is that although the EHR is supposed to have this information available to the clinician it does not present it in an affirmative fashion. The clinician has to search for it and I think that there are enough sort of

known patterns of clinical reasoning and clinical problem solving that perhaps these could be more - I don't know if it's deeply or superficially embedded in the system so that they, you know, would present the relevant information or the relevant questions or the relevant appliance for that person.

CHAIR GRABER: Yes, organize it better and facilitate the process. Good. Let's move on. We talked about updating the board. What else do we have?

Okay. There needs to be interoperability and available past records - kind of obvious. We talked about uncertainty.

So this is about appropriate screening. We were saying that we haven't been talking much about behavioral health disorders the last couple days. So appropriate screening for this and for many other instances where appropriate screening should be done would be, I think, a very good concept. I am guessing the other groups talked a little bit about screening.

David.

MEMBER NEWMAN-TOKER: I just think at this level of granularity or abstraction the - in terms of the measurement concepts I think we should stay away from calling out specific diseases or conditions.

I think the idea of having a measure of compliance with appropriate screening across important conditions, recognizing that child abuse may be important, depression may be important and cancer may be important, whatever, but that it - the measurement concept is essentially compliance with appropriate screening.

CHAIR GRABER: Yes. Back it up a little. Good. David, and then Prashant.

MEMBER SEIDENWURM: So in our group we did talk about the issue of appropriate mental health diagnoses along with physical, if you want to call it that, diagnoses and the role that the appropriate diagnosis of mental health conditions can alter the feasibility of certain treatment

algorithms or diagnostic algorithms in particular patients and then, conversely, the false positive diagnosis of mental illness can also result in impediments to the diagnostic process and they are both, I think, way too common and they are both unhelpful to the patient. So I think that, you know, I agree with what Dave said about, you know, not being too disease-specific but, I mean, we are not saying - we didn't say depression or schizophrenia. You know, we just want to make sure that the patient - and this gets to the whole idea of patient communication, patient understanding, patient's ability to act on the diagnostic information. So we thought that was important. Yes.

CHAIR GRABER: Good. David, did you have more comments? Okay. So our last one - it's not purple. But we talked about the value of being able to find triggers that would facilitate learning about diagnostic error.

So, for example, we need better ways to screen readmissions to detect possible

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

misdiagnosis from the prior admission. So this is, perhaps over specified but the general concept is kind of endorsement of the idea of using triggers to facilitate learning about diagnostic errors.

So I am guessing, Hardeep, you're in favor of that one. David?

MEMBER SEIDENWURM: Yes. Yes, we came up with a bunch of examples of this that, you know, readmission would be a great one. talked about, you know, a cancer being discovered at surgery. We talked about, you know, 17 office visits before an asthma diagnosis and, you know, there are problems with the individual ones we talked about - you know, multiple imaging studies before a cancer diagnosis. We talked about a lot - you know, there - you know, we have to learn more about the exact, you know, predictive value of these various administratively determined indicators. But yes, we - I think our group spent a fair amount of time trying to be creative on this topic.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

MR. LYZENGA: There were also a couple 1 2 from our group on things like poly pharmacy as an indicator - potential indicator of misdiagnosis 3 or similar things to that. 4 David, and then 5 CHAIR GRABER: Hardeep. 6 7 MEMBER NEWMAN-TOKER: So I guess - I 8 think it's absolutely critical that institutions 9 need to be able to use these kind of - revisit readmission, changing status of care kind of 10 11 measures to inform their understanding of 12 diagnosing performance. 13 The question is what are - what is the 14 measurement concept there that it's a diseasespecific rate of unplanned revisits or 15 16 readmissions? Is that the measurement concept? 17 CHAIR GRABER: Well, just speaking for 18 the group, I think we were thinking more about 19 how valuable it would be to start using 20 administrative data of facilitate learning. MEMBER NEWMAN-TOKER: Well, I think 21

that that's critical. I think how that gets

turned into a measure is sort of an interesting idea. But I think at some - and there are lots of different ways you could do it, right? You could say as a structural level is this available at your institution to be able to do this. It's a process level - do you actually do this for the top 10 - because these are the complaints. And as an outcome measure, you know, you could do kind of the deeper analytic dives.

I think here the main thing that we should try to do is avoid tying ourselves too much to the nuances of the metric. Like, so I think, you know, triggers is one way - that is, to look for things that prompt chart review but that direct analysis of data is another way. So I think that there is - there are multiple ways you can get to this issue of using readily available administrative data to track diagnostic errors.

MEMBER RADFORD: Yes, and specifically our group was - I mean, my personally - I am lateraling this right back to CMS, who has access

I could hear from them when someone shows up at, you know, another hospital with a new diagnosis so that I can then investigate what happened and make sure. So payers, too. I mean, I guess - what is it, the payers are starting to do this as well.

MEMBER NEWMAN-TOKER: So on that point, our group did bring up specifically this issue of regionalized feedback and the critical nature of that sort of closing the loop when people leave your health system and that in and of itself is probably a market of diagnostic quality if you're actually able to track what happens to your patient when they leave your health system.

CHAIR GRABER: Good point. And David.

MEMBER SEIDENWURM: So we talked about information sharing among economically unrelated entities because I think there is pretty good, you know, sort of vertical information silos but there is pretty bad, you know, horizontal sharing

of information when it doesn't fit the business model and I am looking over at our colleague from the, you know, ONC because I think that, you know, the purpose of regulation I think is to help when the business model doesn't independently support it. So I would say that, you know, maybe that's something that we can suggest that would facilitate appropriate diagnosis.

CHAIR GRABER: Great. So just think back over the last 20, 30 minutes and if there were any of these concepts that you really like - one or two - just make note of that and we will do lunch and reconvene at what time?

MR. EPNER: Can we have a public comment? It's on the agenda.

CHAIR GRABER: Yes, sure. Okay. We need to open the line and see if there is any public comment.

OPERATOR: Okay. At this time, if you would like to make a comment please press star, then the number one. And there are no public

comments at this time.

MR. EPNER: I have one.

CHAIR GRABER: Did you want to make a comment, Paul?

MR. EPNER: Yes, I have one, and this goes back to David - thank you - it goes back to David's comment about usability and - versus capability. I think we are talking now about things that may be - should be in standards but also we need to be thinking ahead about what the measure might come afterwards.

So, again, if we think of how Fed Ex deals with a package, they have a very defined process with computer alerts and time stamps and things like that.

And the diagnostic process, whether it's the safer Dx model or the NAM model, it's a process and we need to be thinking about how do we build the data structures including time stamps that will later enable us to do the alerts and the things where the process isn't working in a timely fashion. And I just hope that should be

thought about. Thank you.

CHAIR GRABER: Good. So thanks, everybody. Great morning, and come back at 1:00 o'clock. David.

MR. HUNT: I just wanted to highlight, because I've heard a number of times where we want to have the capacity and I want to remind the group of the old adage that culture eats standards for lunch, and that is to say having the capacity and oh, gosh, we have learned this the very hard way - having the capacity to do something in a technology or in a tool is a wholly different consideration as to whether or not it's used and having the culture that supports and nurtures the use of a specific method of process I think is almost as important if not more important.

MEMBER SINGH: And just to follow that up with a concrete example, EHR has a lot of meta data already that actually tracks a lot of the things that are going on and when lawyers get their records to look at anything what they are

1 getting is a whole lot of paper that they then 2 sort of have to sift through to figure out and they can't make head or tail out of it and they 3 4 call these experts who have said, I can't 5 understand the medical record. So just FYI. We'll all have a little CHAIR GRABER: 6 indigestion but enjoy your lunch. 7 8 (Whereupon, the above-entitled matter 9 went off the record at 12:32 p.m. and resumed at 10 1:03 p.m.) 11 CHAIR GRABER: We're going to hear 12 from group two and group three. They will each have a half hour to present their 13 14 recommendations. After that, we are going to go around 15 16 the room and everybody I would like you to tell 17 us the two concept measures that you like the 18 best. 19 So keep working on that list of the 20 ones you really like and we'd like to hear your

top two. We will then hear what the next steps

are from the NQF staff and that'll be it.

21

So group two.

MR. LYZENGA: I'll ask my group members to help me out and correct me, chime in. Not sure how to - we didn't actually highlight any as particularly worthy of discussion or important. We actually started out with our disease specific, just to sort of get our thoughts oriented and get us going. So we have and we didn't order these into structure process outcomes so just a number of sort of concepts or ideas related to cancer care or diagnosis. Did you follow a specific diagnostic pathway. am sorry. Sorry. From my member - like, group members any of these that you would highlight A number related to time to diagnosis or this notion came up a number of times of when are you certain enough - when do you achieve a degree of certainty where you have, you know a reasonable diagnosis and you don't have to keep doing testing. Let's see - a couple of more concepts like - oh, sorry. Go ahead.

Yes.

MEMBER MCDONALD:

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

I was going to

say one thing. As we are sort of looking at this the - we did discuss was how sometimes you'd want to think about pairing concepts because you're trying to deal with the - so as we were talking about cancer it was this idea of that concern about too much testing versus too little testing and how to have measures that would help you see if you're in trouble on one side or the other, whether it's population level measures or whether it's more, like, process measures at a - at a - the level of a particular delivery system. So as we look at these people can know that we were thinking about that.

MR. LYZENGA: So then in a little bit more in the line of sort of a measure concept there is some things like - sorry, percent of - percent of cancers with a delayed diagnosis.

You'd probably want to pick some particular ones where you have an idea of what a delayed diagnosis might mean. Occults blood in stool and did not get a colonoscopy - that's a fairly specific measure, I think. Time to follow an

abnormal screen - I can't remember what that was about. Is that time follow-up on an abnormal screen? Is that the idea? Okay.

MEMBER SINGH: Somebody has a fecal occult blood test that's positive, follow up on that. Or a mammogram abnormal, follow up on that.

CHAIR GRABER: These all look important to me. The one that I would like to maybe emphasize is the timeliness issue. The VA embarked on a program a couple years ago to track timeliness of colon cancer diagnosis. So how long did it take between the red flag and your colonoscopy and they set a goal. So they defined timeliness for that one condition and it forced everybody to really think about that and it changed organizational performance nationwide. So I think that's a very powerful concept idea is to start divining - defining what timeliness means for specific conditions.

MEMBER MCDONALD: Yes. I guess the countervailing thought to that where we started

in this discussion was the idea of kind of chasing - David, you were the one who were saying chasing a diagnosis for a long, long time, trying to get more and more certainty when maybe more and more certainty isn't all that beneficial for the vast, vast, vast majority of cases. So if you could pair what the VA did with that concern about over chasing then you'd have a nice balanced set of measures.

MEMBER SINGH: And we also thought and I think maybe you have it below, Andrew - to
look at the U.K. so the cancer early detection
programs where we - where they've actually come
up with pathways for two weeks and four weeks
and they measure this very sort of bell. They've
been doing this for many years now. Within four
weeks - if you're a new suspected cancer you need
to have the evaluation done within four weeks and
what proportion of patients meet that criteria.

MR. LYZENGA: I think I just made a note to look up those concepts.

MEMBER SINGH: Yes, so we will just

look at those benchmarks.

MR. LYZENGA: Somebody - I think
another group talked about this a little bit discrepancy rate of pathological interpretations.
This one - I thought it was kind of interesting clinically significant amendment to original
pathology or radiology report for inpatients
subsequently diagnosed with cancer I guess
intended to be an indicator of a misdiagnosis.
Is that right? From our group.

MEMBER MCDONALD: Yes. I don't - I don't think it was just inpatient actually, right? I mean, it could be in any setting. But just the idea that this would be a proxy for - something's going on here and kind of maybe it's more of a quality improvement type of concept.

MEMBER SEIDENWURM: Yes, we were trying to get at the idea that, you know, of a diagnostic change and what might be triggers to go looking for those.

I mean, you know, a lot of amendments to pathology reports might be special testing

coming in, right, and that wouldn't be the same thing or radiology reports might be, you know, I called the ICU and told them. You know, but maybe we thought this was an enriched supply of - an enriched source of these types of things.

CHAIR GRABER: Lavinia, you're a long way away.

MEMBER MIDDLETON: And I would just add to that, the next acknowledgment of that in the - in the record or acknowledgment to the patient or actionable item to complete the loop because, unfortunately, sometimes these things happen and if there is not a critical result policy or a red flag result policy that you're measuring what happens in the report in the lab but not the impact on the patient or the patient care.

MR. LYZENGA: So this next one here is not really a concept as much as sort of idea of - that may be worth pursuing is sort of a system outcome.

Jen mentioned the sort of phenomenon

of somebody getting an improper diagnosis and 1 2 improper treatment, which leads to the subsequent inability to participate in clinical trials -3 4 sort of a down side for the system. Do you have 5 tumor boards at your organization and is there patient involvement, engagement or presence at 6 7 those boards, particularly for difficult to 8 diagnose cancers or diagnostic dilemmas? 9 MEMBER MCDONALD: The interval pace 10 was interesting. You might want to -11 MR. LYZENGA: Yes. Do you want to 12 talk about that for a minute? 13 MEMBER MCDONALD: Yes. Some of my -14 some of our clinical colleagues might talk about it better but it actually came - Jen, it started 15 16 out with you. It's just the idea of more of a -17 more of a focus on that interval between being 18 seen and it's kind of like - I think it's a look 19 back in terms of maybe a red flag having been missed. 20 21 So we were, I think, talking about

that this might be a sign of, you know, if a

cancer shows up after an interval when there was a previous image that cleared the patient of any concern you can look back and see if was that clearing really appropriate or not would be a way to get at problems. You have to look at them retrospectively.

MEMBER SEIDENWURM: And we wanted this to be something to be considered in either screening types of modalities like colonoscopy for example. You know, cancer shows up a year after a colonoscopy - you know, what does that tell you and is there a proportion. We know in mammography, for example, there is a known proportion of times that that'll happen but you deviate from that so in the opportunistic detection - what we were talking about before.

MEMBER SINGH: The goal being if you've had a normal colonoscopy that's in the last one year and you just got diagnosed with colon cancer, those are the people who you want to look at.

So somehow we were getting to that

kind of concept. Maybe - I think maybe we are clarifying some of the language on that.

MR. LYZENGA: We had a few like this that were, like, more - again, indicators of a of a potential missed diagnosis or lack of diagnosis, more than five androgen tests within the past year or three or more consultations or an inefficient diagnosis, rather. Sort of the you know, possibly indicating more, reflecting Some patient reported experience of their experience in navigating the diagnostic process or understanding it - their understanding of the diagnosis, whether it's been communicated to them effectively - did they get a care plan - was it explained - were the effects of treatments and expected outcomes explained. We talked a little bit about system outcomes as - patient confidence as a system outcomes, you know, would be hard to specify maybe as a measure concept but just that issue that was raised about the public debate and sort of controversy about breast cancer screening kind of lowering patient confidence in the system

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

to some degree.

We talked a little bit about some population level measures, looking at the percentage where - or rate of things like early stage diagnosis, late stage diagnosis, even maybe mortality or something like that or other metrics at a population level that might be reflecting some inadequacy in the diagnostic process or approach. Anything else to add to that from our group members? Were these the okay ones? Okay.

MEMBER SEIDENWURM: So we talked - so we got off the idea of cancer a little bit when we added PE but the arithmetic's the same. The idea would be trying to look at the rate of diagnosis of the condition compared to changes of its - in its mortality or morbidity rates to look for over diagnosis and then you could also look at, you know, percentage of negative studies, you know, in the PE area. You know, we know that that's kind of a problem depending upon which diagnostic algorithms were employed - you know, whether they do DDIME or Wells testing and there

are similar, you know, analogous circumstances in cancer and other diagnoses.

DR. BURSTIN: Just as an example, NQF hasn't endorsed state-level measure that looks at percent of late presentation of HIV. It's another way of looking at that that might be a nice analogy to take a peek at.

MR. LYZENGA: We talked a little bit about, again, patient-reported harms related to the diagnostic process and even provider-reported peer to peer reporting of harms related to the diagnostic process and extracting something from that. Another patient-reported outcome, something like was getting a diagnosis worth it in the end. That was sort of a little bit vague but something like the amount or level of radiation exposure, you know, prior to your diagnosis, just trying to get at, you know, again, that over testing question.

So yes, measures trying to identify where organizations are sort of outliers in certain domains such as malpractice claims for

the same problem - are they way above normal or do they have above - more than normal patient complaints maybe for a particular problem in a certain time frame where most clinicians that are consistently being poorly scored in peer review.

CHAIR GRABER: Could I put in a vote of support for the peer to peer reporting?

MR. LYZENGA: Uh-huh.

CHAIR GRABER: You know, it went by kind of quickly. But in terms of finding diagnostic errors, I think talking to patients is a gold mine.

But getting reports from providers is the other main way to find diagnostic errors effectively. And what we have seen over the years is that providers just don't bother or they are reluctant to report through the usual pathways - I am not sure why - but that they are more comfortable reporting to a peer. So I think that's a really nice concept that you capture there that we should try to encourage and then work on.

MEMBER SINGH: Yes, and we discussed that and we may have put it in a separate structure box but essentially health care organizations need to support the process of providers discussing either errors in M&M - morbidity mortality - conferences or getting feedback or facilitating some kind of a reporting system where you can learn from errors and so giving examples of what happened in Maine where, you know, somebody led a project on reporting and learning from reporting.

MR. LYZENGA: Let me know, again, group members if you want me to highlight any particular ones here. Here's an interesting one, I thought - does the second opinion match the first diagnosis or some measure of discrepancies between first and second opinions or we also talked about, I think, maybe in the structure section or process does - did you get a second opinion or does the organization recommend getting a second opinion, particularly for some conditions that are - that would be appropriate -

particularly appropriate for. Again, another population level, late stage diagnosis rate. I think these are maybe duplicates. Resolution and discordant pathology or other discordant findings - maybe something like a patient or a - primary care provider reported assessment was the lab or radiology or other testing report clear, just some way of getting at the sort of adequacy and communication of testing findings and the other group has some of these things like poly pharmacy as a marker or indicator of misdiagnosis. If somebody's on over seven medications maybe they've -

DR. BURSTIN: As a primary care doctor that's my entire practice.

MEMBER MCDONALD: Right. But the but the idea would be if you are actually
assessing patients who have poly pharmacy and
worrying about whether they have side effects or
interactions from their poly pharmacy that's good
diagnostic practice.

MR. LYZENGA: Yes, that's not exactly -

MEMBER MCDONALD: Well, this is the 1 2 idea that if somebody has poly pharmacy and those interactions aren't being assessed then it would 3 4 be a way to sort of drill into potential outcomes 5 that are harm - the harm outcomes. MR. LYZENGA: Can we work that one a 6 little -7 8 Yes, it needs more. MEMBER MCDONALD: 9 MEMBER SEIDENWURM: But this might be 10 a trigger or, you know, a source of an enriched population for which to look for diagnostic 11 12 difficulties. 13 MEMBER MCDONALD: Ultimately want it 14 to be harms from poly pharmacy, not being 15 evaluated appropriately. 16 MR. LYZENGA: Again, similarly, poly 17 testing as an indicator of excessive work up. 18 Let's see - number of complaints per year 19 similar to the, I presume, the receiving 20 clinician - you know, making a complaint about an 21 unclear or inadequate report from the lab or

radiology. Got into a little bit of some EHR

issues like percent of cut and paste. Some people raised some ways you can actually measure that using keystroke analysis and things like that.

Same with did you consult the prior lab results. I think a previous group talked about percentage of prior studies available and timeliness of work up.

PARTICIPANT: Talking about cancer?

MR. LYZENGA: No. Now we are into the cross cutting. We went through some outcomes.

Now we are in process. Sorry, that wasn't clear.

That's more of a structure outcome. Do you have a patient portal at your organization.

Talked a little bit about the clarity and the communicate of test results to patients - for example, through patient portals. Some disagreement about whether it's possible to communicate some certain test results, particularly things like radiology results to patients in - at something like an eighth grade level. But maybe there can be some sort of index

or other tool analyzing the level of - at which, you know, test results or other information is presented to patients. Did you have something?

MEMBER NEWMAN-TOKER: Just a comment on the stroke example. Here's another example of where - that you just had - just appeared on the screen there - it's another example of where we have to be clear about what we want to measure for process.

I think all the process measures when we think about them as being disease
specific we actually have to think of them as
being symptom specific because the problem isn't
what happens when the patient comes with a TIA
and whether they get an appropriate work up for
stroke. Once somebody knows it's a TIA or a
minor stroke then they almost invariably get the
right treatment.

The problem is in detecting that in the first place. So the TIA is actually a diagnosis there. It's not a symptom. So you have to - you know, you can say in patients with

transient or illogical symptoms or patients with dizziness or patients with numbness or whatever, but I think we are going to see this all over again. Once we get to the point where we are actually talking about symptom-specific - symptom specific measures it really has to - it has to be clear that that's - that the process points to a symptom, not a disease.

CHAIR GRABER: David.

MEMBER SEIDENWURM: Yes, I totally agree about the symptom idea but I think there is still enormous gaps in care in a guideline-specified evaluation of common diagnostic problems in that. So I think that this was just meant to be an index case of that where, particularly with respect to timeliness and certainly, you know, in too many places. Just to use the example of TIA again, oh, he's all better - you know, we have got plenty of time when, you know, we know that that's not the case. So I think - and there are other examples of that sort. But your point is exactly correct that

it's really the symptom rather than the diagnosis.

MEMBER SINGH: And I wanted to add that I think we just followed the instruction of just discuss anything and everything possible in terms of concepts without sort of clearing through the language and the measure and the measure concept, et cetera. I think a lot of this needs to be fleshed out and I particularly am saying this because you only came up, I think with eight or nine and maybe that's because you discussed those more and you focused on those.

But here we just captured the entire conversation about anything and everything possible, which is sort of what understood and I think Kathy and I kind of had a little discussion there. We are not sure exactly but we just captured everything.

CHAIR GRABER: Please use -

MEMBER SINGH: I may not have said

that.

22 | CHAIR GRABER: Please use your

microphones.

MR. LYZENGA: Similar to the clarity of communication some sort of assessment about what a patient needs to know about their diagnosis and is that being communicated in a way that corresponds to their health literacy, which would need to be associated, presumably, with are you assessing the health literacy of your patients is the next one. OpenNotes - does the organization collect information about diagnosis-related problems and solicit feedback from patients through their OpenNotes and through patient portals. That's, again, probably a structure measure. Maybe not. Again, were mental health problems considered.

Patient and family-centered grounds with all necessary parties involved - again, maybe structure. Some measure concepts related to over utilization, whether imaging is being done in the last weeks of life or other diagnostic tests in the last weeks of life because that's really necessary. Communication

about with patient not just about, you know again a sort of static diagnosis but about their
disease progression continuing through, you know,
their encounters with the - with the clinician
about their disease progression and the evolving
treatments approach. We thought that as sort of
part of the communication about the diagnosis.

Periodic reassessment and confirmation of diagnosis and that would probably need to be disease specific. Let's see - any other ones our group would want to highlight here?

MEMBER SINGH: Yes. So the one about the asthma came from - you know, there is certain papers already of how much time or length of - or times somebody has to visit before we made the diagnosis. I think for asthma it was seven.

CHAIR GRABER: Asthma was seven. Iron deficiency - anemia was two years.

MEMBER SINGH: Two years. And so we thought that we could have certain measures around where the evidence already existed there are, you know, certain delays and identify.

And then the pairing of medication with known side effects came from yesterday's discussion. I think Helen - you know, Helen asked or you mentioned this is a common problem. So we thought electronic health records could enable us to figure out, you know, who are the patients who are taking ace inhibitors, for instance, and had cough where the ace inhibitor was discontinued and it was because of the cough, and certain medication in pairs could lead to detection of, you know, known problems.

CHAIR GRABER: I'd just like to mention that in Gordy Schiff's work in the top ten reasons for diagnostic errors are medication side effects that were misinterpreted. So that's a very rich area.

MEMBER SINGH: And actually that was number two, yes, and we did a similar survey in pediatrics and pediatricians said the number two misdiagnosis in children was missed medication side effects.

MR. LYZENGA: This is another one

about sort of patient communication, whether the patient is understanding. A clear distinction is being made between what's a consultation and a handoff of care was raised that there may be some confusion sometimes and the patient thinks that a consultation is them being handed off to somebody who's going to be providing their care, moving forward. Were consultations completed if they were ordered -

CHAIR GRABER: That's extremely important. I think - Hardeep, weren't you involved with a VA policy that required clarification of who owns a test result?

MEMBER SINGH: Yes. Right. Yes. And we didn't sort of discuss that explicitly but essentially sort of the ownership of who's responsible for follow-up is a big issue that has come up in several, you know, related studies and that could be for test results where we picked it up but it could be for other stuff as well.

There is always everybody pointing fingers at each other - I am not the one

responsible.

MR. LYZENGA: Similarly, was it specified testing regimen completed, was the follow-up algorithm completed. Not sure what algorithm refers to here.

Again, timeliness of diagnosis and testing and consultation. Something trying to get at whether - at under work-ups. Is there some standard set of assessments or criteria - diagnostic criteria that are being completed when they should be. I assume that would, again, be disease specific or condition specific.

MEMBER SEIDENWURM: Yes. So to clarify, the melanoma one was kind of about timeliness but it was also about the adequacy of the evaluation, right, because if the tumor shows up, you know, at a short interval following an evaluation designed to detect that tumor, for example, then perhaps the tumor was especially fast growing or the evaluation was especially poor.

MR. LYZENGA: Inadequate history -

these would need to be definitely worked into some kind of concept. It's a little bit under specified. Detection of medication side effects errors - I think that's kind of a duplicate. When it is sort of a quality improvement issue is when there is a misdiagnosis is there a process in place to follow up and learn from the experience.

MEMBER MCDONALD: I'd go back to the medication side effect pairing just to make sure people understand that one. There we were talking about the - there are specific - there are specific medications where you know that there could be a side effect and if those diagnoses are being missed for the medications that are paired with those side effects that would be something that could be searched and monitored and would be helpful in diagnostic work that relates to missing side effect diagnoses because those get missed. We hear that frequently from patients.

CHAIR GRABER: David.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

MEMBER SEIDENWURM: So just on this inadequate history and inadequate exam, I just want to make sure that we don't forget that the majority of diagnostic errors happened at the bedside and the kind of interaction between the provider and the patient and although it's easier to find information on when test results are lost to follow-up, et cetera, we can't ignore the fact that that bedside piece is a piece that's hard to track but really central to actually improving diagnosis at the bedside.

Our group had a couple of discussions around this issue of kind of how you can move that towards measurement and I think it's really through this idea of process mismatches either between the diagnosis process done and the symptom - presenting symptom or the diagnostic process mismatches with the disease that ends up being diagnosed.

So, for instance, just to give a concrete example, if a patient with benign positional vertigo leaves with a diagnosis of

benign positional vertigo, got neuro imaging, that's a process mismatch because there are two guidelines that say that you should diagnose benign positional vertigo at the bedside and not through neuro imaging.

So that's a clear indication that the diagnostic process at the bedside and the test ordering and the rationalization of everything just doesn't make any sense.

And if there is no mention, for instance, of nystagmus, that one word alone as a key word search in the electronic health record, if that's never mentioned and a patient, given a vestibulous disorders diagnosis, clearly, something is wrong, right, at the bedside. So I think we should be identifying the symptoms specifically as a process mismatch.

CHAIR GRABER: Yes, I agree, and thanks for emphasizing that. I think this is a perfect place for patient reporting. Patients with OpenNotes are seeing examinations where the physician looked at 90 things when the patient

knows that the physician didn't touch them. 1 2 have heard that several times. MEMBER SINGH: We had a - we had a 3 discussion on a similar measure. We didn't put 4 5 it on the -Right. 6 CHAIR GRABER: So we need to 7 start looking at that and the patients are in a 8 perfect position to tell you what was done and 9 what wasn't done. 10 MEMBER SEIDENWURM: So we had to search for, you know, search for patient 11 12 complaints. I mean, I think you read a lot on your social media sites about, you know, I got 13 14 this bill for all this stuff I didn't get. So maybe a structural one could be do you monitor. 15 16 MEMBER MAHAJAN: So Mark, what - one 17 comment. 18 CHAIR GRABER: Yes, Prashant. 19 MEMBER MAHAJAN: So, you know, just 20 going up to the melanoma one, it just struck me 21 that if we are going by condition specific, so 22 one of your - like the group starts with that if it is a high risk condition like stroke or cancer then it needs to come in there.

My point is that we do end up in that way I just hope that we are not missing other conditions which require more timely diagnosis but just our group doesn't end up bringing that up. You know, it could be some other subspecialty related measures.

CHAIR GRABER: We're about at the end of our half hour. How are we doing on your list?

MEMBER SEIDENWURM: Let me just scroll down and see if there are any structure measures worth - a lot of these are not really concepts but just sort of ideas.

MEMBER MCDONALD: Actually in the spirit of that last comment though too we - I think while we were talking about structures we ended up talking about how we - you need to be sort of condition specific and you need to be setting specific to some extent when you're thinking about what structural measures would be

appropriate and how they, you know, how you'd think about their causal path.

MR. LYZENGA: We talked about a number of sort of indicators of culture - you know, the appropriate diagnostic culture, whether a system exists for nonpunitive reporting of diagnostic errors or problems, leader of protected time to consider diagnostic issues, whether there is a policy disclosure program, thought about whether some of these things could be done through a some sort of a culture survey related - with elements related to openness to reporting and learning from diagnostic problems, again, whether patient portals, OpenNotes were two consultant product that was the - that was sort of a facetious one but some indicator of when too many consultants are involved I think David raised this as they multiply the number of tubes in the patient with the number of consultants and you get an indicator of whether there is -

MEMBER SEIDENWURM:

was in - yes, when we were interns that was an

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

The point is that

indicator of, shall we say, case complexity.

And so we were trying to think of an indicator that could be derived from administrative data that might indicate complex cases where there was diagnostic uncertainty.

And so I had, you know - to internship.

MR. LYZENGA: I don't think I was supposed to write that one either. Again, does the - does the organization have a standardized process for hand-offs, do they have a recording board agenda, does the organization perform, has the - have they performed at least one RCA for a diagnostic problem within the past year. You have to think that there has been at least one and if they are not doing that there is probably some inadequacy there. Again, standardized process tool for hand-offs. Let's see -

MEMBER NEWMAN-TOKER: Just a minor comment on that point. You know, so there are a lot of these measures where you can make them yes/nos or graded or whatever. I mean, something like that probably - rather than say have you

performed at least one, you know, it should be how many have you performed in the last year so that you can get a more robust set of answers out of the data.

MR. LYZENGA: I think maybe Hardeep mentioned this earlier. Sorry, go ahead.

MEMBER IRONS: Just to comment - you know, a few times I've seen this come up about is this on the board agenda, you know, and is this a priority for a board, and I wonder whether having been on a hospital - several hospital boards it may - it might make sense - should the question be should this be on the organizational dashboard, you know, rather than just having board reports every so often, have specific metrics on the organizational dashboard because that's something they'd buy into.

MEMBER SINGH: Yes, but I think the problem is we don't know what to put on that dashboard. So we - I think - you're totally on the spot. We definitely need boards to see this data. I think we need the CEO, the CFO and the C

whatever to look at this data. But what? 1 2 MEMBER IRONS: So you could start I mean, one could be - how many root 3 small. 4 cause analyses have we done for a diagnostic error in the last year. 5 MEMBER SINGH: For diagnosis we 6 7 actually talked - yes. 8 MEMBER IRONS: You know, an then once 9 you tackle that one, you know, if the numbers are going up or the numbers are going down then you 10 11 graduate to higher things. 12 MEMBER SINGH: Yes. 13 MEMBER IRONS: But I'd get something 14 on there rather than wait for the perfect - you don't want grade to be the enemy of good here -15 16 MEMBER SINGH: Yes. 17 MEMBER IRONS: - if you can get on the 18 dashboard. 19 MEMBER SINGH: So I think that's where 20 we put that RCA, patient complaints, peer review 21 data, malpractice claim data - all four - as 22 diagnostic performance data that was potentially

more ready right now to be shown to somebody in 1 2 the leadership level. MEMBER IRONS: Protected time some 3 folks to work on this issue. 4 5 Microphones, please. CHAIR GRABER: MEMBER IRONS: 6 I'm sorry. 7 CHAIR GRABER: Okay. We need to move We are going to hear about one more. 8 on. 9 MR. LYZENGA: One more - one more 10 analysis that we talked very, you know, briefly 11 about this issue of certainty of diagnosis that 12 sometimes coding - codes are applied when they 13 are not appropriate just because something needs 14 to be put in and whether there is a need for symptom-based coding to sort of more 15 16 appropriately reflect the diagnostic process and 17 what was done there unless, Mira, any more 18 comments. 19 CHAIR GRABER: Great. Thanks very 20 much. Good job. Group two. Group three. 21 MEMBER MIDDLETON: A quick comment, 22 just very quickly.

Lavinia. 1 CHAIR GRABER: Yes. 2 MEMBER MIDDLETON: RCAs - number of RCAs and whether or not an RCA has been used to 3 4 drive institutional improvement. MEMBER SINGH: Excellent point. 5 was a whole paper on problem with RCAs recently 6 7 in BMJ quality and safety and that's one of the 8 biggest problems they are saying. A lot of the 9 RCAs don't lead to actionable improvements. Another problem is that 10 CHAIR GRABER: 11 they don't include a cognitive analysis, which is 12 so often involved in diagnostic errors. Even in new RCA 2 tool from the MPSF 13 14 doesn't focus on diagnostic errors at all. Definitely need to do some work there. 15 16 MEMBER NEWMAN-TOKER: So I am going to 17 represent for group three and if my colleagues 18 will permit I am going to take a little poetic 19 license and focus our attention on a few specific 20 things that I don't think have been discussed 21 thus far.

And one of them is patient engagement

and measures associated with that and the other is a few of the specific things where, you know, we can start getting towards the actual - move in the direction of measures, you know, thinking about percentages and fractions and numbers, numerators and denominators.

So on the side of - on the structure piece we had a fair amount of talk about the patient engagement and the diagnostic process through electronic tools.

So somehow the issue of either - being able to get whether the system allows the patient to amend their diagnoses or put notes or get feedback on whether the diagnoses were accurate or inaccurate that somehow there could be a measure that was developed around that - the concept of having structures in place for patients to be able to engage in the diagnostic process.

The second in this sort of structural one was the idea of space, sort of patient-centered space. So, for instance, there is a -

there is an innovative health clinic that - I don't know for those who've followed the internet, it was founded by ZDoggMD - and they show - I saw them give a talk and they showed how they kind of reconstructed the space to have a more patient-centered experience just by how they aligned the patient and the computer and the physician or the provider so that it was like a they had, like, this sort of, like, a half circle table and they were both sitting kind of next to each other looking together at the computer screen and the space facilitated kind of better communication with the patient. So I think that's another potential place to sort of look for the extent to which we are engaging patients in the - in the diagnostic process through a structural measure.

Under outcomes, obviously, we all have, you know, the issues about outcomes in terms of diagnostic accuracy, et cetera, and we talked at length about how we might be able to use patients as a source of information.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

But I think we haven't talked a lot today about measures of psychological harm. So I think it's one thing to measure patient satisfaction with their care process but I actually think we have to go beyond that. talked about how the psychological harms of a misdiagnosis are an important outcome to capture and one that really kind of falls off the radar screen. And even when you talk about sort of morbidity/mortality, in people's minds that doesn't include the psychological morbidity associated with getting a wrong diagnosis, and as we have heard, Jenny testified the other day that, you know, that was kind of like the big player in this story.

So somehow measuring the psychological harm associated with misdiagnosis I think is the potential measure space.

On the process side, there was definitely some discussion about this idea of patients being able to communicate directly and succinctly with the providers that they need to

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

and there are lots of measures that you could think of around that space - you know, number of - you know, total time from initial patient attempt to reach the team about the diagnostic process to actually getting their needs met or a number of encounters or steps that they have to take in the process in order to get to a relevant provider who can provide them the answers that they need related to their diagnosis, et cetera.

And in terms of this idea of having methods in place to assess from patients, not just whether they were satisfied but whether they were explicitly engaged in shared decision making as part of the diagnostic process where their values and preferences were accounted for and taken into account as part of the diagnostic discussion since what tends to happen nowadays is that physicians or other providers may just substitute their own sort of judgments of the evidence without weighing and factoring in the patient's preferences and values into that discussion. And then in particular, making sure

that patients actually understand and are communicated the diagnosis but not just communicated the diagnosis but that they were given the kind of appropriate intelligible and actionable post-discharge instructions that facilitated their recognizing if a diagnostic error had occurred and reentering the system so that they could be part of the proactive process of early capture of diagnostic failures.

Right now, the post-discharge instructions are a little too vague and too, sort of, general, like, if you get worse, you know, call your doctor kind of thing rather than these are the three things for this - you know, the thing we are worried about in you - if you came in dizzy and we think it's an ear problem but this is what's going to happen to you if it's not. You know, here are the five symptoms you need to be monitoring yourself for, I think, is another way to let - have the patients be more proactively engaged in that process.

So those are the kind of patient-

centered one. Maybe I'll stop there if people have any comment. Yeah, go ahead, Helen.

DR. BURSTIN: I think a lot of those I was really just thinking there we are great. have been bringing in measures recently of decision quality that are patient surveys essentially where they reflect on what they've We will likely be bringing in Collaborate, done. which is a nice example of just a very simple three-item tool in the current year developed by Glyn Elwyn at Dartmouth, and I think I told a couple of you yesterday what's really exciting about tools like this is they have, first of all, three items - sort of refreshing - as opposed to pages and pages and pages. But, you know, as Dr. Elwyn - Glyn Elwyn's the developer of it - and if you ask him and the Likert scale goes one to nine, which is kind of unusual, like, why nine, and his response is very simple. There are nine buttons on a cell phone and this survey was developed with the intent that patients could just complete it on their phones as they are

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

walking out of an office visit. So just as an
example, the three questions were things like how
much effort was made to help you understand your
health issue, how much effort was made to listen
to the things that matter to you most about your
health issue and how much effort was made to
include matters most to you in choosing what to
do next. You could easily see how even though it
wasn't necessarily developed I think with the
idea of diagnosis in mind it might be very
applicable or even potentially could be tweaked
into something that could be more aligned with
the diagnostic realm. But it just seems like a
really easy kind of potential early opportunity
to get a measure out there that's very patient
centered that I think everyone should be curious
about - Jen or Helen's perspective on something
like that being something that would be of value
through your journey.

20 CHAIR GRABER: Could you send that 21 around?

DR. BURSTIN: Yes.

CHAIR GRABER: That would be great. 1 2 Thanks. 3 MEMBER NEWMAN-TOKER: So on that 4 point, we actually had - on the issue of tweaking 5 these instruments we certainly shouldn't reinvent the wheel where we don't need to. But one of the 6 7 things that came up in our conversation was 8 about, for instance, the current culture survey. 9 If you actually read the detailed questions almost none of them apply to kind of whether the 10 place is safe with respect to diagnosis. 11 12 are all - almost all related to kind of treatment 13 application and so it's not clear that the 14 concept of safety culture as it replies to treatment necessarily generalizes to diagnosis. 15 16 MEMBER SINGH: I'm not sure if that's 17 true because teamwork and communication is part 18 of it so -19 MEMBER NEWMAN-TOKER: It's not a 20 question of whether the team -21 MEMBER SINGH: And I am pretty sure there is several other elements that address to 22

the structural and process elements of making a 1 2 diagnosis. So we should 3 MEMBER NEWMAN-TOKER: 4 look at that offline. But I actually think that when people -5 MEMBER SINGH: Run diagnostic -6 7 diagnosis specific but it addresses several 8 related elements, which is communication and 9 teamwork and speaking up and other things. MEMBER NEWMAN-TOKER: 10 Yeah. 11 problem - the problem there is whether people are 12 answering the culture survey with diagnosis in 13 mind when they are answering those questions. 14 And from having spoken to people who fill out the culture surveys they've said no. 15 16 MR. HENRIKSEN: At our - in our center 17 we recently just a couple months ago went through 18 a similar process where we were trying to come up with ideas in the different patient safety areas 19 20 and diagnostic safety was certainly a major component of that. 21

In terms of culture survey we called

it diagnostic readiness but it was essentially a culture survey, and the - and we had a sort of debate on what your - the two points of view that both, you know, Hardeep and David are sort of discussing and one was do we just sort of prepare sort of a supplement for the standard medical office culture survey and append it to that because if you had a separate total survey on culture or on diagnostic safety alone then now you have two culture surveys for the medical office and are we giving them too many surveys.

And then the other option is no. The other argument is that diagnostic safety needs - is so unique that it needs its own culture survey, a full-blown very well psychometric survey that can speak to the diagnostic safety issue.

And so we haven't really resolved that debate but I was sort of favoring the latter in my own way of thinking. But we haven't really resolved it and that would be for our 2018 budget year.

MEMBER SINGH: So Kerm, do we know - I know you kind of talked to us about the health IT safety supplement items. How many, roughly, items were you thinking of adding, let's say, for heath IT safety, roughly?

Well, we would want it MR. HENRIKSEN: to be multidimensional. You need two to four questions to flesh out a dimension and so you're talking about, you know, like 28 items - between 28, 30, 32 items depending upon - and these are things that are fairly clearly stated. They are - all the questions are vetted and, you know, you establish the psychometrics for reliability and validity and so there are very - it takes time to develop those and it's not a quick measure. in terms of the how much - how many surveys and how many toolkits can medical offices and different settings of care actually implement and not be confused. But once we received an application because someone thought that there are so many tools out there that we need a tool to - for organizations to decide among all the

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

tools out there which ones to choose. And, I mean, it's really gotten to that point.

MEMBER SINGH: So and that's a perfect example of bringing - so there is actually - you know this but I am going to mention for the sake of this group, there is actually an AHRQ testing process toolkit which has questions on the testing process in the office and includes safety items around diagnostic, you know, safety and culture.

And so, you know, here is where we are going to reinvent another tool to put into place.

I am just thinking is there ways to leverage, and
I know that the uptake of that tool is not a lot,
you know, based on some other things but -

MR. HENRIKSEN: Yeah, and that's the Mickey Eider toolkit and RTI, in conjunction with Paul also developed a testing - you know, a risk assessment toolkit for a send-out testing and I remember talking with Paul after. Art did not do much with that in terms of putting it out there. It was an actual contract and I thought SIDEM was

1	going to put it on its website, and was there any
2	traction on that or -
3	MR. EPNER: No, we did not post it
4	anywhere that I know. There was a publication
5	that came out. That's all.
6	MR. HENRIKSEN: Okay. Yeah, there
7	was.
8	MEMBER SINGH: Helen?
9	DR. BURSTIN: We only had three. Was
10	the culture - the culture of safety sort of is at
11	a facility level, right? It's still at the
12	hospital, for example.
13	MR. HENRIKSEN: Well, there is H
14	shops. There is a hospital -
15	DR. BURSTIN: Right.
16	MR. HENRIKSEN: - level. There is
17	hospital level. There is hospital, medical
18	office, long-term care.
19	DR. BURSTIN: Great. Okay. No, that
20	would be really useful to them.
21	CHAIR DANFORTH: I just want to put in
22	a huge plug to integrate additional questions in

the current survey instruments. One of the only
national organizations that I can name that's
been asking hospitals to do these culture safety
surveys going on now. Sixteen years - it's
becoming increasingly difficult to get hospitals
and other health care organizations to do these
surveys in their entirety and what they are doing
is they are going to your website, they are
taking your survey, they are picking five
questions and they are sticking it on the back of
a Press Ganey employee engagement survey and they
are completely undoing all of the psychometric
properties that you've tested for and developed.
And we have had to do so much work - two years'
worth of work - with a national expert panel to
get them to basically stand behind us and tell
organizations you can't do this - it won't count
as doing a safety culture survey. So doing
something separate on diagnostic safety, I think,
one, there is going to be a problem with uptakes.
They are going to take two questions from it or
one question from it. They are not going to use

it the way you intended to use it. But two is I think that it - diagnostic safety needs to be seen from an organizational standpoint as a critical part of overall quality and safety. I mean, going back to the conversation we had yesterday, they are not necessarily separate or different. It's an aspect of patient safety. The things like being able to speak up.

When you do speak up, you feel like people are responding to - you know what I mean - to your suggestions. All of those things are similar. Those are maybe some unique things.

But - and I am happy to talk to you more offline.

But you can put out a 28-question survey that's got the best psychometric testing results you've ever seen. They are going to take one or two questions from it and stick it on the back of an employee engagement survey.

MEMBER SINGH: And I think this would also be an opportunity to sort of go back and look at all the questions that we developed, I don't know, what, a decade or more ago, right?

I mean, see what is now our national priority and maybe change things over time. Take some out for the next five years. Take stuff out on things that have been relatively better addressed and things that are new. Add some supplemental questions on diagnosis, which are not being covered elsewhere.

MEMBER NEWMAN-TOKER: Yeah. I think the key for me out of this conversation is that it's critical that we have some specific questions that relate to diagnosis and I think, you know, finding ways to find - to compress the instruments either by throwing out old stuff that isn't really necessary anymore or by doing something clever like the NIH PROMIS system which is an adaptive computer-based, you know, approach to sort of reduce the number of questions yet still psychometrically valid.

You know, there are ways to decrease the respondent burden but it doesn't change the fact that right now there isn't enough focus on the culture of diagnostic safety and somehow we

have to get that into the mix and have it be 1 2 measurable as its own at least somewhat discrete entity so that we can say okay, look, you know, 3 4 the diagnostic safety culture at this place looks 5 not so good and it's improving now or it's falling off the map or whatever. 6 MR. HENRIKSEN: Do you think five or 7 8 six items as a supplement to an existing culture 9 survey would be sufficiently -10 MEMBER NEWMAN-TOKER: It's better than 11 nothing. 12 - impact - okay. MR. HENRIKSEN: 13 MEMBER SINGH: I'm actually thinking -14 I mean - I mean, we have the AHRQ testing process toolkit - has a bunch of questions in there. 15 16 know testing process is a problem in the 17 outpatient setting. We can start with one thing 18 - you know, maybe start with that or take some 19 questions just from there. 20 MEMBER NEWMAN-TOKER: Well, I mean, so 21 I sit in the - I've been in the patient safety 22 board of - we have a patient safety board at

Hopkins and that's sort of like a subset of the board of trustees. And they really pay attention to these results of these culture surveys whenever they are being tracked at each of our hospitals, so on and so forth, and I think just nowhere in this discussion is, you know, whether we are actually paying attention to the issue of diagnosis coming up at all.

So somehow I think it needs to make it to that, you know, kind of boardroom discussion and if the way to do that is to append five or six questions maybe that's the way.

John asked me if I would sort of point to a couple of specific measures so maybe we will do that. Our group did stroke and the - I think the key issue - I think when you start drilling down into specific conditions, especially where you know what the diagnostic error problems are, you can actually get concrete about which measures are relevant and which ones aren't. And I think for this particular one the issue of the - you

know, the percentage of patients presenting with a particular complaint like dizziness who did not receive a timely diagnosis of stroke and then looking at the percentage of patients who are harmed including the severity of that harm.

There is some additional sort of secondary issues about management, about the patients requiring surgical decompression, is a - is a specific measure that relates to the lateness of presentation. So the same way we heard earlier from Helen about the, you know, the late HIV presentations, right. Like, did you get to that point that it was that severe kind of idea and the percentage of patients who receive appropriate preventive - secondary prevention stroke therapy.

There were some suggestions. Mira has left but she said, for instance, you know, even just looking to see whether stroke was on the differential diagnosis in patients with neurological complaints in and of itself could be a measure concept.

And what I - what I said was in this particular case for the sort of - for the average dizzy patient who's older, stroke is always on the differential diagnosis and the problem is that the right information for how to differentiate it from your problems is not gathered.

But it is true that in younger

patients in whom the risk of misdiagnosis is much

higher that is actually an issue - that it just

doesn't even come on to anybody's radar screen.

So there are some potential measures in that

space.

And I think on the structure side the availability of appropriate specialists to deal with this kind of problem, whether that's, you know, a stroke neurologist or vestibular specialist or other people, and I think the access to those individuals such as via telemedical services to be able to consult in a timely way so that those diagnoses can be made when they need to be made in frontline health

care settings. So those are the, I think, the key things that we came up with.

This sheet that you guys have now as a printout is just a summary work that Mark and Hardeep and I and other people did as part of the diagnostic error in medicine research summit in 2015 and what we were trying to do is kind of come up with a short list of metrics in this sort of structure process outcomes framework that might be used in monitoring or measuring performance at kind of a leadership or a safety officer kind of level. And we tried to focus on things that were actually measurable with today's data, or pretty close, and so, you know, to the extent that this is helpful and informs the process we brought up several of these and sort of put them in our list as a group. But to the extent that this is of use to the broader initiative, happy to share the PDF with anybody, or Christy has it and she can send it around, so on and so forth.

CHAIR GRABER:

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

Can you send it around,

David, or -

MEMBER NEWMAN-TOKER: Christy will.

Thanks.

CHAIR GRABER: Great.

just as a source of original data to think about measurement related concepts, something we had mentioned earlier is actually safer guides that we developed with ONC's sponsorship which has two guides that are relevant for discussion to this group. One is on test results reporting and the second one is on communication of - communication in general through the electronic health record. That would be useful.

The other source of data to sort of just think about the measurement concepts is a recent paper review by Alcare - I think Edna Shenwee is the first author - where they looked at the review of the triggers to find diagnostic errors and sort of the methodology that they use of categorizing things might be also used for, like, escalation of care, discordance and, you

know, changing the exchange in that. It's a nice taxonomy that you might want to look at.

MEMBER NEWMAN-TOKER: Yeah, and you'll note that some of those are also on the work that we did back in 2015 under outcome metrics.

CHAIR GRABER: Fantastic. Well, a huge thanks to everybody's participation in the groups. Lots of ideas came out of this. As we identify other resources it'll be helpful - please share them around. I think everybody would enjoy and benefit from seeing those.

We'd like to spend just a few minutes hearing what you think are the cream of the crop. So we'd like to hear from everybody are top two things - what two things did you like the best in terms of measure concepts. Jeff. Or you can pass.

MR. JOPLING: So I was busy looking up some stuff. Can I comment on the cultural surveys and things like that? It's kind of to echo what people have already said. But - and Dave may end up being able to speak to this

better than I can.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

Really quick - looking at the work that Peter Pronovost did with CLABSIs, you know, spread stuff across a hundred ICUs in Michigan with the checklist invitation coupled with the cusp cultural transformation package.

They gave this - the 65 questions safety attitudes questionnaire to all the ICUs before and afterwards and at the end of the study ran a regression - sophisticated regression against which of these 65 statements, you know, the agreement against those affected or correlated strongly with improvement in CLABSIs. And so there is actually only two - fortunately, two - things that fell out. Item 10 and item 41 - so item 10 was hospital administration supports my daily efforts and item 41 was I am frequently unable to express disagreement with staff physicians/intensivists in this ICU. So those two components out of 65 questions were correlated with a difference. And so there is there have to be research and testing done and

maybe actual pilot studies of improving 1 2 diagnosis. But we - I think there is hope to distill things down to just a question or two. 3 4 CHAIR GRABER: Great. You'll send 5 that around too? MR. JOPLING: 6 Yeah. 7 CHAIR GRABER: That would be great. 8 Did you want to nominate two concepts that you 9 liked? Paul. Can I just throw in 10 MR. EPNER: 11 another comment or two then and not have - use 12 the public comment period later - just do it all 13 now? 14 Yeah, that's what I am saying. package it all up quickly. So first thing, I 15 think similar to research dollars there is a lot 16 17 more research on the treatment side than there is 18 on the diagnostic side. We have to fix that, and 19 I think we worry about survey questions and we

worry about other work that's already being done

relationship between the diagnostic side and the

and the proliferation of tools.

20

21

22

I think the

treatment side is out of balance and so I wouldn't - I'd say we have to figure out that problem.

So what I really would suggest from a measures standpoint is the notion that treatment and diagnosis are distinct domains and that because something exists in the treatment world that's generalized to make it look like it fits every situation.

We have to figure out a diagnosticspecific way to address it and make sure that
they don't answer on one side and just say yeah,
we have answered that question already.

So that's - I don't know if that was in there specifically. I didn't see in there but the notion of different kinds of measures such as - I mean, I didn't hear us talk about things like Saul Reiner's work in standard patients and so other approaches to measuring that are different from the normal.

So, you know, I would hope that we would think about innovative approaches to

measurement that could be built into this framework. But I didn't hear anything about secret Santas, shoppers or any of that stuff.

Two other quick comments - clinical context. So we are still in a world where the MR has to talk to the lab information system and the radiology information system and there is still IT people who focus on keeping the interface light and not letting a lot of information go across the interface. And so there is all kinds of diagnostic errors associated with - if, you know, Paul Tang at one of our meetings who's a radiologist talked about the notion that he can get an order for an abdominal image and he has 35 ways of implementing that and without knowing what the suspicions are and the differential he can't decide.

In the laboratory - the clinical laboratory physicians I don't think really have an appreciation for how much they are unaware of the imprecision of laboratory tests. The notion that patients are taking a lot of Vitamin B and

the biotin and all that is influencing the chemistries of the tests and leading to misdiagnosis of thyroid disease - the notion that cross reactivities with drugs and poly pharmacy is throwing off lab results. So a structural measure around the notion of what kind of clinical context is passed on to the supporting organizations who are being - who really have to look out for the ordering physician and advise them when there is a risk of a wrong answer because of mitigating factors. That's not happening. So I would think about that.

And then my final comment - final comment, truthfully - is that the Coalition to Improve Diagnosis of which 32 organizations are members including NQF is embarking on a tools environmental scan for diagnosis.

So it's been coming up today. If
there is something we can build into this
environmental scan both literature search and
survey to figure out what's out there. If there
is something that would be useful to this NQF

committee we should have you involved to some 1 2 degree in the planning stage. I just need to know if there is something to build into that. 3 4 We are really starting to get going on that. 5 Thank you for the opportunity. CHAIR GRABER: Would this be the right 6 7 time to get public comment? Yeah. Is there 8 anybody online who wanted to comment? 9 OPERATOR: At this time if you would 10 like to make a comment please press star and then 11 the number one. There are no public comments at 12 this time. 13 CHAIR GRABER: Thank you. David, your 14 two favorite concepts. 15 MEMBER NEWMAN-TOKER: Yeah. So iust 16 to reflect momentarily on Paul's comment. does give Kerm an alternative strategy to the 17 18 ones he mentioned, which is they have two columns 19 - one for with respect to treatment and one for 20 with respect to diagnosis and they ask the exact 21 same questions.

For me, the - I think the two that

rise to the top of the list are revisit tracking for diagnostic errors in a symptom-disease framework so the percentage of patients with, you know, symptom X or discharge diagnosis X who return with diagnosis Y that's linked and measuring those is the top and most important thing because I think that needs to ultimately be in dashboard work for CEOs and executives.

And the second is process mismatched tracking at the bedside. So where we - the percentage of encounters with symptom X or problem X where we fail to document critical pieces of information or perform diagnostic tests that were totally inappropriate to that problem or that condition or diagnosis. We put in a half plug for having a diagnostic safety officer named at your institution.

CHAIR GRABER: Thank you. David.

MEMBER SEIDENWURM: One quick comment and my two choices - the interface concept is extremely important. Most hospital information structures are run like spy rings. You know, the

agent in Madrid doesn't know the identity of the agent in Paris and the - you know, the information transfer is lost and so I think that's a really important point.

I guess my two concepts that I'd like to put towards the top of the list would be the sort of calibration of diagnostic certainty and, you know, when you're allowed to stop doing the work up and, you know, how sure do you need to be. I mean, those are the things - if we could get at ways of measuring that or defining that better that would be great.

administrative data to search for possible cases of diagnostic error - you know, I really like that as sort of screens. We had the interval cancer ideas and we had the, you know, five ER visits ideas and we had, you know, lots of ideas around that. And so I think that whole area is potentially a rich vein of ore to mine. Thanks.

CHAIR GRABER: Carlos.

MEMBER HIGUERA RUEDA: The first

concept is the one that relates to the time and observer relationship with misdiagnosis. So I think that something around staff support or time ratio for encounter that would be probably number one. And number two will be correlated with the process with appropriate history and physical.

So be sure that we have some sort of - not a code or anything like that but just like one or two lines with a rationale with the main points.

Rationale for the diagnosis work-up and the main points of the physical exam.

CHAIR GRABER: Hardeep.

MEMBER SINGH: So the two that I would favor, one of them would be something around the timeliness of diagnosis and of a high-risk condition and so I would, you know, put cancer to start but mostly focusing on specific problems such as follow-up with abnormal test results, you know, to fix. So I think that would be one measurement concept I would propose forward.

And the second one would be something at the organizational level. So does the

organization have the capacity to do measurement related to diagnostic safety. So are they looking at it from the organizational perspective and having infrastructure to do that would be the measurement concept that I would support because that'll actually pull everything up because once they have the collective mindfulness about what they are finding they will fix stuff automatically. Thanks.

CHAIR GRABER: Jen.

MEMBER CAMPISANO: I would say that
two that rise to the top for me, one would be
having a culture where it is okay to report
problems and to learn from them, and in an
environment at the hospital level or at the
clinical level where doctors feel comfortable,
you know, saying oh, I made a mistake, and so I
guess that would be sort of a systemic notion.

And then the other would be communication of the diagnosis with the patient and making sure that that is clear and well understood and not just initially but throughout

the treatment process.

CHAIR GRABER: Missy. You're going to miss?

MR. JOPLING: Sorry, I had a second, yeah.

CHAIR GRABER: Okay.

MR. JOPLING: So I am thinking action oriented. So one of the concepts I really liked was having some type of tie to the board whether it's - you shouldn't have let me go - you can further specify because it can be, like, from what Lavinia said to have, you know, the three pieces of the RCA from doing it to actually acting on it to having some type of measure on their dashboard - just something so that the board is actually paying attention to it.

The second thing, I think, is actionable from the front line would be the document - the recognition of and documentation of the red flag symptoms. I think that's a massive part that's missing from both the research perspective. It's missing from the

daily clinical activities if that's actually recorded that can help team members from the start to finish of the diagnostic process, actually see what the - those reflections were as they - as they were there.

CHAIR GRABER: Thanks. Would you mind turning off the microphone next to you? Great.

engagement related to diagnostic quality, for two reasons. One is because I think it's important for the board to recognize problems that will need resources and then allocating those resources, and two, just from an accountability standpoint there has been a lot of work to move accountability for patient safety events away from not just front line care givers but up to administrators and ultimately the board. And so I think this is a good opportunity to do that.

The second one are - the second concept, any kinds of measures that measure effectiveness of communication with patients not only in gathering their history and communicating

them - communicating with them throughout the diagnostic process but also involving them in resolving diagnostic errors including interviewing them for root cause analyses.

CHAIR GRABER: Well, these are like my children. I love them all. I would really like to see organizations finally learn from diagnostic errors and I'd like to see that diagnosis includes differential diagnosis somewhere along the process. Those are my top two. Kathy.

MEMBER MCDONALD: I'd like to just ditto Missy's but I'll be different. So electronic health records support diagnostic process and decision making, the first one of group one and the way that it was further articulated is really important in my view.

And the other really important one in my view is the patient-reported outcomes - you know, whether the goals are met, delays in diagnosis occurred - you know, kind of all the questions that could be asked to patients about

their experience of diagnosis.

CHAIR GRABER: Martha.

MEMBER RADFORD: My two favorites are, one, does the organization have a robust way to learn from the diagnostic issues. That's a structure measure. And two, mining our administrative data more thoroughly and more insightfully to pick up diagnostic issues and we had several strategies for that around readmissions, appearance of rare diagnosis - appearance of new diagnoses over time, et cetera, that I think we need to take advantage of, and the reasons for these are, you know, I am a CQO and I want things I can use.

CHAIR GRABER: Thank you. And Helen.

MEMBER HASKELL: So I am echoing Kathy in that I like the idea of capturing and retaining the whole diagnostic process in the EHR with the patient input as part of that so all along including patient outcome. So I am rolling many things into one so that I can get two. And then my second one is the idea of pharmacy side

effects so checking for pairing of drugs with side effects and also red flagging poly pharmacy and checking that people are not having interactions and side effects that are undiagnosed.

CHAIR GRABER: Nicholas.

MEMBER KUZMA: I think the first one is the institution trying to create some sort of system to identify diagnostic errors and then when they identify them do they have a system in place to learn from them and change processes.

And then the second one would be something with communication with the patients and families. Do they - are they involved in creating the diagnosis - do they understand what the - the follow-up and all of that.

CHAIR GRABER: Thank you. David.

MR. HUNT: It is hard to choose but I do like the late stage first presentation be it cancer or any other condition - a late stage diagnosis for a population. One of the reasons I like that, I mentioned - one topic that I hadn't

heard come up earlier is that that would also be a very good measure when you split by race, ethnicity, social economic status for looking for disparities.

And the second one that I like is the

- any board or governance activity, looking

specifically at the accuracy of diagnoses. And

the only thing I'll ask is I am sure we are going

to but those who have left we will solicit them

for their two answers also. Thank you.

CHAIR GRABER: Thanks. Kerm.

MR. HENRIKSEN: First of all, thanks for the - just confirmatory feedback on the extent to which we want to use culture surveys in terms of the issue of a few items for supplemental modifications versus the full-blown new instrument in and of itself. So that's very useful information to carry back. And I think that is probably the direction that we have the capability and the funding mechanisms for the contract mechanisms to actually implement in a sooner - quicker order. But in terms of the

measures that folks have been talking about, they may have been discussed but I don't think it was discussed to any great extent and that was measures to identify disparities with regard to the nature of the extent of the diagnostic workup, given the same underlying condition whether it's a - and so there is - there is some emerging evidence to show that those are really evidencebased disparities that need to be addressed. And so I don't know if it was on the list. I heard discussion of it in a sidebar conversation. So it's just something that really needs to be put on the list.

The measures of uncertainty has been brought up several times and - but it still seems to be a challenge, and maybe it's the peer to peer discussions that folks have mentioned as being, you know, clinicians talking to clinicians, physicians to physicians and that may be indeed one way of capturing some of that.

The other issue that sort of resonated with me when Paul was speaking about let's not

lose sight of the distinctiveness of diagnostic safety by trying to overgeneralize things that are going on in patient safety to cover - to say that we are addressing the diagnostic side of the coin, I think this group needs to really think about how to raise the distinctiveness of diagnostic safety separate from treatment, separate from patient safety.

And so there are various ways of doing that - perhaps the dashboards that were - organizational dashboards were recommended. I know there is - you know, all sorts of possibilities of increasing the distinctiveness of diagnostic safety as its own entity. And so that probably deserves some more brainstorming.

CHAIR GRABER: Thank you, Kerm.

Prashant.

MEMBER MAHAJAN: So Lavinia actually gave me her two so is it okay to read hers?

Okay. So first we had feedback mechanism for improvement to RC advocacy and the second was communication of diagnosis to patient with

acknowledgment of understanding from the patient.

And my two were I was trying to look at the clinical reasoning skills and how to do measures and more of a structure measure. So forcing the EHR to have the clinicians document what you mentioned - differential diagnosis in the thought process so hoping to capture that.

And second was patient involvement but more from shared diagnosis model rather than shared decision making, point being that at every time of uncertainty that they are involved and they are aware of the thought process and some way to capture that in the EHR.

DR. BURSTIN: We have some from Tom, who's - Tom, are you with us? Do you want to just report out yourself or we could read it for you? He's feeling a little better today. I'll just read it for him.

He said some concept around follow-up of abnormal findings or results like a metric of time to diagnosis from important conditions - a subset of that one - and then some concept around

identifying, tracking potential diagnostic miscues, something along the lines of a trigger tool.

He said board engagement is important.

It's a big part of his own day jobs, since he's head of a quality and safety partners health system. But I am not sure it's a metric to follow in this space that would be directly actionable enough.

CHAIR GRABER: Great. Our work is done. Thank you all. Great ideas. Thanks for everybody's interest and participation. We are going to turn it over to the NQF staff to tell us how this all becomes sausage.

DR. BERNOT: All right. I'll be brief just to wrap this up. But what we will plan to do is from our staff we will try to make some sense of this, especially with the high points and digest this down to where we - there is going to be somewhere we think are already listed at a measure concept level and other ones that are more the themes and ideas we may pass back for

essentially a homework assignment to have people help us get those down to what they might get closer to measure or at least measure concepts from those themes.

So we have - I'll let Christy - I'll turn it over to Christy to give the details but we have a meeting coming up in just one week. So in this process - in the course of this next week is we will have the instructions on what we are going to do and then we will present it all there. So it's a real nice follow-up time frame, I think, for this.

MS. SKIPPER: Yes. So thank you, John, you just covered what I was going to say about web meeting to we will still be - we will be in touch with you about what's going to occur on that call. But following the second web meeting we will have updated the draft framework and we will post it for a 30-day member and public commenting period just to get other feedback from members and the public and then we will reconvene for a web meeting on March 16th to have the

committee respond and adjudicate the comments received and revisit our measure inventory and other items that may need to come up and be addressed on that call. And this meeting will also be a precursor to the next in-person meeting which takes place April 12th and 13th.

MR. LYZENGA: I just want to quick emphasize on the - on the 30-day comment period on the draft framework and I want to, again, emphasize that this is - this is a draft framework. We have some work to do on that, clearly, I think, in sort of refining some of the domains or categories. But given the short time turnaround before we have to get this out for comment we may do something pretty similar to what we presented to you here even though we may, again, have further development of that as we move forward in the project. But if you see this pop up on a new website and you say oh, we - we are going to change that and then, you know, don't worry about it, we still may, and it's just something we need to put out for comment.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

_	more work to come.
2	MEMBER SINGH: Are you putting in just
3	the draft framework without any of the
4	measurement concepts that were discussed in the
5	last two days?
6	MR. LYZENGA: Yeah. Probably not the
7	concepts that have been discussed in the last two
8	days, just -
9	MEMBER SINGH: So what would actually
LO	go out?
L1	MR. LYZENGA: So it - well, that's yet
L2	to be decided. Some context around it but the
L3	domains and subdomains, some explanation of what
L <b>4</b>	those are, what the thinking was behind it.
L5	Possibly some examples of measures associated
L6	with that -
L7	MEMBER SINGH: For instance, would you
L8	put some of these -
L9	MR. LYZENGA: - similar to that.
20	MEMBER SINGH: - right sided things
21	out, especially some from today or -
22	MR. LYZENGA: We have to - we can

welcome -

DR. BURSTIN: Again, it's just public comment. It's always just an opportunity for input. So that's part of I think what we will talk with you about on the 17th, yeah.

MR. LYZENGA: Right. We are open to input from anyone at what should be included in that.

MEMBER RADFORD: Strongly for some context.

MEMBER SINGH: Absolutely. I am very concerned that your people will misunderstand what we are doing here and we will get comments that are probably very tangential.

I think this is all - it's a very,

very large body of knowledge and I think if we

put the whole thing out there it would probably

send some kind of a mixed message or - and I

would - if you want to put some stuff out there.

The other thing I was going to say is
I think you were asked okay, what are the top
two. I mean, that also has to be contextualized.

Top two things to do now versus top two things to focus on in the next 10 years or five years. science in this area, as I mentioned yesterday, is so poor and so under developed we can tell about the two things that organizations can do But then with saying that, you know, for instance, Kerm mentioned uncertainty. That came up again and again - calibration. Those are concepts for the future. The things that we can do now are the practical things like making getting organizations involved and trying to sort of do something about this and maybe communication of results. But I think if we advocate for a lot of things at the same time without saying this is for the future, this is for now, I think it sort of might be taken very well by the general public.

DR. BURSTIN: Yeah, and we will put
that in context. I do think that we want to put
out at least even if it's early just to say
here's - with context linking back to the
framework some potential concepts that might link

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

1	back to the framework just to make it more alive.
2	But I think the idea of having a measure concept
3	is something somebody could develop into a
4	measure in the next three to - you know, the next
5	three years or so. So we can frame it that way.
6	But there is, obviously, going to be a lot of
7	research and background work that would get you
8	to the next level. But I still want to make sure
9	we keep this moving forward, that it isn't all
10	about this -
11	MEMBER SINGH: So - yeah, so maybe
12	important concepts that would inform further
13	measure development or measure concept. So, I
14	mean, just clarifying the language itself will
15	help without calling them measurement or measure
16	related things because people think there is a
17	measure now on, like, 300 things. So -
18	CHAIR GRABER: Thanks, everyone.
19	(Whereupon, the above-entitled matter
20	went off the record at 2:31 p.m.)
21	

A a.m 1:9 5:2 27:11,12 abdominal 134:14 ability 48:20 57:15 60:6 64:13 able 13:17 18:22 30:11 48:9 54:10 57:13,18 60:18 64:19 66:9 67:5
<b>able</b> 13:17 18:22 30:11 48:9 54:10 57:13,18
68:14 108:12,18 109:21 110:21 122:8
127:20 130:22 <b>abnormal</b> 75:1,2,6 139:18 149:20 <b>above-entitled</b> 27:10 72:8 156:19
absolutely 66:8 154:11 abstraction 63:3 abuse 28:11 29:1 30:1 30:2 34:9,10 48:3,7 48:17 63:10
Academic 2:1 Academy 6:21 access 67:22 127:19 account 18:22 111:16 accountability 142:13 142:15
accounted 111:15 accuracy 8:22 54:13 109:20 146:7 accurate 108:14 accurately 8:17
ace 94:7,8 achieve 73:17 acknowledgment 78:9 78:10 149:1 ACNP-BC 1:21
act 64:13 acting 141:14 action 7:2,14 30:4 141:7
actionable 12:21 14:1 78:11 107:9 112:5 141:18 150:9 actively 11:6 activities 142:1 activity 6:3 146:6 actual 108:3 119:22
132:1 adage 71:8 adaptive 123:16 add 43:6 46:5 78:9 82:9 91:3 123:5
added 82:13 adding 118:4 additional 26:7 120:22 126:6 address 16:14 40:10 115:22 133:11

addressed 123:5 147:9 152:4 addresses 49:20 116:7 addressing 148:4 adequacy 86:8 96:15 adequate 46:13 Adjourn 4:20 adjudicate 152:1 administration 131:16 administrative 66:20 67:18 103:4 138:14 144:7 administratively 65:19 administrators 142:17 admission 65:1 advantage 17:8 144:12 advise 135:9 advocacy 148:21 advocate 1:14 155:14 **Affairs** 2:1,19 affect 12:9 affirmative 61:21 Agency 3:16 agenda 50:4,21 69:16 103:11 104:9 agent 138:1.2 aggressive 19:1 ago 75:11 116:17 122:22 agree 37:22 44:14 64:7 90:11 99:18 agreement 131:12 ahead 42:16 70:10 73:21 104:6 113:2 **AHRQ** 39:14 119:6 124:14 ailments 51:4 **Alcare** 129:17 alerts 70:14,20 algorithm 11:14 51:19 96:4,5 algorithms 64:1,1 82:21 aligned 109:7 114:12 alive 156:1 allocating 142:12 allow 17:9 43:21 allowed 138:8 allowing 45:6 **allows** 30:16 44:18 45:1 108:12 alter 63:22 alternative 136:17 altitude 38:2 amend 108:13 amendment 77:6 amendments 77:21

American 2:1 amount 22:8 65:21 83:16 108:8 analogous 39:5 83:1 analogy 83:7 analyses 105:4 143:4 **analysis** 33:12 67:15 88:3 106:10 107:11 Analyst 3:9 analytic 67:9 analyzing 89:1 Anderson 2:9 Andrew 3:8 27:3 76:11 androgen 81:6 anemia 23:18 93:18 answer 39:10 133:12 135:10 answered 133:13 **answering** 116:12,13 **answers** 104:3 111:8 146:10 anybody 128:19 136:8 anybody's 127:11 **anymore** 123:14 anyway 20:12,17 57:1 **appearance** 144:10,11 appeared 89:6 append 117:7 125:11 appliance 62:6 applicable 23:13 114:11 application 115:13 118:20 **applied** 106:12 **apply** 115:10 appoint 23:1 appointments 43:15 appreciate 19:3 appreciated 24:11 appreciation 134:20 **approach** 5:10 46:15 82:9 93:6 123:16 approaches 133:19,22 appropriate 9:2 17:22 31:4 41:8 45:13,17,18 46:2 62:15,18,20 63:8 63:13,18,21 69:8 80:4 85:22 86:1 89:15 102:1,5 106:13 112:4 126:15 127:15 139:6 appropriately 48:10 87:15 106:16 **April** 152:6 area 22:4 39:14 58:8 82:19 94:16 138:19 155:3

argument 117:13 arithmetic's 82:13 Armstrong 2:10 Art 119:20 articulated 143:17 asked 94:4 125:14 143:22 154:21 asking 121:3 aspect 9:5 122:7 aspects 16:17 assess 111:11 assessed 87:3 assessing 86:18 92:8 assessment 86:6 92:3 119:19 assessments 96:9 assigned 26:13 assignment 151:1 **Assistant** 1:20 2:3 associated 92:7 108:1 110:12,17 134:11 153:15 **assume** 96:11 assuming 21:1 asthma 23:18 65:13 93:13.16.17 attempt 111:4 attempting 41:4 Attending 2:2 attention 43:11 107:19 125:2.7 141:16 attitudes 131:8 Attorney 1:14 audience 13:11.12 author 129:18 automatically 140:9 availability 44:4 127:15 **available** 10:4,9 13:2 25:1 46:2 50:13 61:19 62:13 67:4,18 88:7 average 127:2 avoid 67:11 aware 53:17 149:12

## В

B 53:17 134:22 back 5:4 9:13 11:9,19 24:12 26:18,19,20 51:16 60:20 61:9 63:15 67:22 69:11 70:6,6 71:3 79:19 80:3 97:9 121:10 122:5,17,20 130:5 146:18 150:22 155:21 156:1 background 5:12 156:7 bad 7:16 24:4 68:22 balance 59:8 133:1

America 1:15

areas 20:15 43:14

45:19 56:9 116:19

balanced 76:9 124:22.22 125:2 65:11,16 73:11 74:5 73:17 83:22 84:4 balancing 59:19,20 141:9,16 142:8,11,17 75:12 76:12,17 77:8 88:19 93:13,20,22 **bar** 35:9 146:6 150:4 80:1,10,20 81:21 94:10 barely 7:9 boardroom 125:10 82:12 83:2 88:9 101:1 **certainly** 8:10 14:5 based 26:5 37:4 119:15 boards 50:2,3 79:5,7 138:17 139:16 145:20 15:18 16:1 22:6 27:7 104:11,21 cancers 74:17 79:8 29:5 90:17 115:5 147:9 basically 31:16 42:19 **body** 154:16 capability 70:8 146:20 116:20 certainty 29:20 73:18 121:16 **Booby** 1:14 capacity 47:15,18 49:7 **basis** 47:16 **bother** 84:16 49:7 71:7,10,11 140:1 76:4,5 106:11 138:7 bowel 44:21 cetera 46:21 91:8 98:8 Baylor 2:20 capture 30:11 32:2 **Beast** 1:14 box 29:16 57:9 85:3 33:10,12 49:9 54:10 109:20 111:9 144:11 becoming 121:5 brainstorming 4:6 6:2 54:11,15,22 56:17 **CFO** 104:22 bedside 98:5,9,11 99:4 57:6 58:1,20 59:1 challenge 58:6 147:16 148:15 99:7,15 137:10 bread 41:17 61:5 84:20 110:7 change 77:19 123:2,20 **breakdowns** 12:8 15:19 behavioral 62:17 112:9 149:7,13 145:11 152:20 believe 36:1 Breakout 4:9 captured 91:13,18 changed 75:17 **bell** 76:15 breast 81:21 captures 41:19 changes 61:10 82:15 benchmarks 77:1 **brief** 150:15 **capturing** 9:11 144:17 **changing** 43:6 66:10 beneficial 17:6,22 76:5 **briefly** 54:1 106:10 147:20 130:1 cardiovascular 14:21 chaos 39:3,3 **benefit** 8:4 130:11 **bring** 11:8,18 68:9 care 2:7 9:7 14:2 17:16 benign 98:21 99:1,4 bringing 21:13 101:6 characteristic 8:19 **BERNOT** 3:6 27:3 113:5,8 119:4 characteristics 8:22 19:2 21:14 26:10 **broad** 20:14 44:2,15 29:18 39:6,7 42:20 9:22 14:4 150:15 best 11:14,16 17:8 24:5 broaden 22:5 46:3 47:12,13,16 **chart** 67:14 chasing 76:2,3,8 72:18 122:15 130:15 **broader** 128:18 53:20 54:3,4 66:10 better 6:4.11 8:2 9:10 **brought** 128:16 147:15 73:11 78:17 81:14 check 29:15 18:6 26:19 27:20 **bucket** 23:5 25:18 85:3 86:6,14 90:12 checkbox 56:19 59:6.7 36:16 47:4 52:8 54:15 buckets 19:18 20:1,2 95:4,7 110:4 118:18 59:7 **checking** 145:1,3 62:8 64:21 79:15 22:21 120:18 121:6 128:1 90:18 109:12 123:4 **budget** 117:21 129:22 142:16 checklist 131:5 **build** 12:21 56:12 70:19 124:10 131:1 138:12 Carlos 1:19 53:10 chemistries 135:2 149:17 135:19 136:3 138:21 chest 42:1,1 51:18 betterment 11:20 built 34:15 134:1 **carry** 146:18 **chief** 2:5,8,12,15 3:7 case 10:13 29:8 90:15 **Betty** 3:20 **bunch** 65:9 124:15 54:10,22 55:6,15 **beyond** 110:5 burden 40:15 123:20 90:20 103:1 127:2 56:19 57:6,8,16 58:1 bias 16:7 **BURSTIN** 3:7 22:5 31:8 caseload 20:22 21:11 59:13 **big** 7:1 19:22 28:12 83:3 86:14 113:3 49:5 **child** 28:11 29:1 30:1,2 45:21 95:17 110:14 cases 29:1,21,22 48:11 114:22 120:9,15,19 30:4 34:9,10 48:3,7 150:5 149:14 154:2 155:18 76:6 103:5 138:14 48:17 63:9 biggest 107:8 **business** 69:1,5 **CAT** 10:10 children 2:3 94:20 **bill** 29:18 34:13 100:14 **busy** 130:18 categories 25:8,14 143:6 **chime** 73:3 **billing** 32:3 42:20 **buttons** 113:20 152:13 bioMerieux 1:15 **buy** 104:17 categorizing 129:21 **choices** 137:20 **biotin** 135:1 causal 102:2 **choose** 119:1 145:18 C bit 22:6 28:7 35:19 37:5 cause 16:1 105:4 143:4 choosing 114:7 44:10 47:4,21 56:13 C 53:17 104:22 **causes** 15:2,13 Christopher's 2:3 58:6 62:22 74:14 77:3 calibration 138:7 155:8 **CDC's** 55:3 **Christy** 3:10 128:20 81:17 82:2,12 83:8,15 call 33:16 60:21 63:20 129:2 151:5,6 **cell** 113:20 87:22 88:15 97:2 72:4 112:13 151:17 center 2:6,7,9,11,12,19 chronic 47:13 **blend** 29:9 152:4 **circle** 7:1 109:9 116:16 blindly 11:3 called 21:4 78:3 116:22 centered 14:14 108:22 circumstances 83:1 blizzard 41:7 calling 63:5 156:15 113:1 114:16 **Cirque** 40:22 **Blog** 1:14 central 60:5 98:10 **CLABSIs** 131:3,13 calm 39:3 CAMPISANO 1:14 blood 74:20 75:5 **CEO** 104:22 claim 14:19 105:21 **BMJ** 107:7 **claims** 50:14 83:22 140:11 **CEOs** 137:8 **board** 2:1 49:14,18 Canada 32:10,17 certain 8:13,14,16,19 clarification 95:13 cancer 2:9 14:21 15:22 8:21 9:21,22 10:1 50:15,21 62:10 **clarify** 52:21 96:14 103:11 104:9,10,15 23:21 28:10 63:11 14:18 60:1 63:22 clarifying 81:2 156:14

clarity 88:15 92:2 clear 24:18 86:7 88:12 89:8 90:7 95:2 99:6 115:13 140:21 cleared 80:2 clearing 80:4 91:6 clearly 48:21 99:14 118:11 152:12 Cleveland 1:20 **clever** 123:15 **click** 12:3 56:18 clinic 1:20 45:7 109:1 clinical 10:7 11:12 29:17 44:5 62:1,1 79:3,14 134:4,18 135:7 140:16 142:1 149:3 clinically 77:6 clinician 59:11 61:20 61:21 87:20 93:4 clinician's 59:10 clinicians 29:15 38:17 40:15 84:4 147:18,19 149:5 close 46:10 128:14 closer 11:19 44:10 151:3 closing 68:11 **CMS** 67:22 **Co-Chair** 1:12,13 Co-Chairs 1:10 Coalition 135:14 **code** 29:16 30:16 31:22 31:22 34:15 139:7 **codes** 34:9,13 106:12 coding 32:3 106:12,15 **cognitive** 15:5 40:15,19 56:9 107:11 coherent 28:22 coin 148:5 Collaborate 113:8 collaboration 11:19 colleague 69:2 colleagues 79:14 107:17 collect 92:10 collection 59:6 collective 140:7 College 2:20 colon 75:12 80:20 colonoscopy 74:21 75:14 80:9,11,18 **columns** 136:18 **come** 5:8,22 7:13 10:8 22:20 24:7,14 30:9 41:22 42:6 51:17 52:7 70:11 71:3 76:13 95:18 101:2 104:8

116:18 127:11 128:8 146:1 152:3 153:1 comes 21:17 33:17 37:18 45:14 89:14 comfortable 84:19 140:16 coming 7:4 20:6 51:16 78:1 125:8 135:18 151:7 comment 4:16 31:9 37:22 42:18 69:16,19 69:21 70:4,7 89:4 100:17 101:17 103:19 104:7 106:21 113:2 130:19 132:11,12 135:13,14 136:7,8,10 136:16 137:19 152:8 152:15,22 154:3 commenting 151:20 comments 20:5 47:1 54:16 64:17 70:1 106:18 134:4 136:11 152:1 154:13 **committee** 1:8 4:12 136:1 152:1 common 15:1.22 53:18 64:5 90:13 94:4 communicate 88:16,19 110:21 communicated 81:13 92:5 112:2.3 communicating 142:22 143:1 communication 37:9 37:10 44:17 64:12 86:9 92:3,22 93:7 95:1 109:13 115:17 116:8 129:12,12 140:20 142:21 145:13 148:22 155:13 communities 44:20 comparable 55:9 compare 55:4 compared 82:15 competency 54:2 competent 54:4 complaint 33:17 54:10 55:1,6,15 56:19 57:6 57:8,17 58:1 59:13 87:20 126:2 complaints 50:14 53:3 67:7 84:3 87:18 100:12 105:20 126:21 **complete** 78:11 113:22 **completed** 8:20 95:8 96:3,4,10

completely 121:12

complex 40:16,20

103:4 complexity 103:1 **compliance** 45:4 63:8 63:13 component 21:6 116:21 components 131:20 comprehensive 5:15 **compress** 123:12 compromised 48:21 computer 70:14 109:7 109:11 computer-based 123:16 concept 9:3 12:15 19:8 20:12,16,17 22:16 23:12 28:13 29:6 30:7 30:10 34:20 35:4,8,15 36:7 45:14 46:5,7 49:2,9 50:17 53:1 54:15 62:21 63:12 65:3 66:14,16 72:17 74:15 75:18 77:16 78:19 81:1,19 84:20 91:8 97:2 108:17 115:14 126:22 137:20 139:1,20 140:5 142:20 149:19,22 150:21 156:2,13 concepts 5:9,14,19 6:1 6:4 13:7 14:10 19:15 22:20 23:5 24:16 25:3 36:18,22 46:21 63:4 69:12 73:10,21 74:3 76:21 91:6 92:18 101:14 129:7,16 130:16 132:8 136:14 138:5 141:8 151:3 153:4,7 155:9,22 156:12 conceptual 20:21 41:9 conceptualizing 20:11 concern 74:5 76:7 80:3 concerned 15:3 154:12 concerns 20:6 concrete 71:19 98:21 125:20 condition 75:15 82:15 96:12 100:21 101:1 101:20 137:15 139:16 145:20 147:6 **conditions** 14:18,21 43:20 47:22 48:6 52:1 53:18 63:6,9,21 75:20 85:22 101:5 125:18 149:21 Conference 1:9 conferences 85:6

confidence 81:17.22 confident 7:19 configured 55:7 confirmation 33:1 93:8 confirmatory 146:13 **confused** 118:19 confusion 95:5 congregate 26:15 conjunction 119:17 consequences 30:1 consider 25:18 27:21 102:8 consideration 40:1,5 71:13 considered 80:8 92:15 considers 49:19 consistently 84:5 constituted 40:13 consult 10:12 88:5 127:20 consultant 10:11 102:14 consultants 102:17,19 consultation 95:3,6 96:7 consultations 81:7 95:8 consults 7:6 **CONTENTS** 4:2 context 134:5 135:7 153:12 154:10 155:19 155:21 contextualized 154:22 continuing 93:3 continuum 21:8 contract 119:22 146:21 **contribute** 15:4 43:21 controversy 81:21 conversation 91:14 115:7 122:5 123:9 147:11 conversely 64:2 copy 33:2 copy-paste 36:19 **corners** 26:15 correct 43:5 52:17 61:8 73:3 90:22 **correlated** 131:13,21 139:5 corresponds 92:6 cough 41:21,22 94:8,9 count 121:17 countervailing 75:22 country 46:9 **couple** 6:8 31:21 62:18 66:1 73:20 75:11 98:12 113:12 116:17

125:15

designed 42:7 96:18 digesting 61:8 **coupled** 131:5 31:13 40:4 53:21 dilemmas 79:8 course 45:19 151:8 55:12,12 56:3 60:4 desire 19:5 cover 148:3 63:1,16 64:16 65:7 desires 55:8 **dimension** 7:9 118:8 66:5 68:17 70:6 71:4 dimensions 14:12 covered 123:7 151:14 detailed 115:9 **CQO** 144:13 76:2 90:9 97:22 **details** 151:6 dinner 52:5 cream 130:13 102:17 117:4 129:1 detect 64:22 96:18 direct 67:15 direction 60:17 108:4 create 31:15 39:7 145:8 136:13 137:18 145:17 detecting 89:19 creating 145:15 **David's** 24:1 42:21 70:7 detection 76:12 80:16 146:19 creative 65:21 94:11 97:3 directly 110:21 150:8 day 4:4 5:4,22 19:13 criteria 76:19 96:9,10 23:4 35:5 48:20 49:5 determined 65:19 **Director** 1:17 2:6,10,13 determines 10:15 **critical** 43:3 59:12 66:8 110:13 150:5 3:6,8 66:22 68:10 78:13 days 16:22 47:20,20 detrimental 17:7 disagreement 88:18 122:4 123:10 137:12 62:18 153:5,8 **develop** 118:15 156:3 131:18 critically 10:14 **DDIME** 82:22 developed 33:5 108:16 disaster 55:4 deal 61:16 74:4 127:15 discharge 137:4 criticizing 6:3 113:10,21 114:9 119:18 121:13 122:21 disclosure 102:9 critique 6:8 **deals** 70:13 crop 130:13 dealt 15:17 129:9 155:4 discontinued 94:9 death 8:8 discordance 129:22 cross 88:11 135:4 developer 113:16 cubbyholes 19:18 debate 81:20 117:3,19 developing 5:13,18 discordant 86:4,4 decade 122:22 14:9 39:14 discovered 65:11 **cultural** 130:19 131:6 **culture** 39:16,21 71:8 **decide** 53:13 118:22 development 1:15 9:3 discrepancies 85:16 134:17 152:17 156:13 discrepancy 77:4 71:14 102:4,5,11 115:8,14 116:12,15 **decided** 153:12 deviant 61:1 discrete 34:17 124:2 116:22 117:2,7,9,10 decision 44:5,8,9 deviate 80:15 discuss 74:2 91:5 117:14 119:10 120:10 111:13 113:6 143:15 **device** 41:19 95:15 120:10 121:3.18 149:10 devoted 24:10 discussed 17:21 31:20 123:22 124:4.8 125:3 decisions 40:16 diagnose 79:8 99:3 34:5 47:5 85:1 91:12 107:20 147:2,3 153:4 140:13 146:14 decompression 126:8 diagnosed 8:15,16 24:3 cultures 42:4 decrease 123:19 77:8 80:19 98:19 153:7 **curious** 114:16 **deeper** 67:9 diagnoses 48:14,18 discussing 48:14 85:5 current 113:10 115:8 deeply 62:3 55:22,22 63:19,20 117:5 121:1 deficiency 93:18 83:2 97:15,19 108:13 discussion 4:9.12 19:7 currently 40:13 108:14 127:21 144:11 define 60:6 29:12 43:9 54:8 58:19 **cusp** 131:6 **defined** 70:13 75:14 146:7 73:5 76:1 91:16 94:3 cut 88:1 defining 75:19 138:11 diagnosing 66:12 100:4 110:20 111:17 cutting 88:11 definitely 10:16 16:20 diagnosis-92:10 111:22 125:6,10 **cystic** 44:20 18:18 97:1 104:21 diagnosis-related 129:10 147:11 107:15 110:20 39:20 discussions 98:12 D **definitive** 30:4 34:12 diagnostic-133:10 147:17 **D.C** 1:9 degree 73:17 82:1 diagram 7:9 12:1 15:15 disease 23:12,13,14,17 daily 131:17 142:1 136:2 15:17 17:12,20 25:10 27:22 28:9,15,16 degrees 8:6 difference 131:21 **Danforth** 1:10,11 52:12 44:21,21 73:7 89:11 120:21 142:8 delayed 12:10 74:17,19 different 8:6 29:3,5 90:8 93:3,5,10 96:12 Dartmouth 113:11 delays 93:22 143:20 33:19 40:19 46:1 98:18 135:3 dashboard 104:14,16 delivery 74:11 53:12 55:21 56:9 58:2 **disease-** 66:14 demonstrate 54:4 104:20 105:18 137:8 disease-specific 64:8 61:5 67:3 71:13 denominator 19:11 141:15 116:19 118:18 122:7 diseases 63:6 dashboards 148:10,11 denominators 108:6 133:16,19 143:13 disorders 62:17 99:14 disparities 146:4 147:4 data 13:7 30:15 50:11 **Department** 2:4,8 3:18 differential 30:18 34:1 147:9 50:17 57:1,19 59:6,12 departmental 55:8 34:2 55:16 58:17 depending 82:20 126:20 127:4 134:16 **displaces** 60:9,10 59:16 66:20 67:15,18 143:9 149:6 70:19 71:20 103:4 118:10 dissipated 11:10 depression 63:10 64:9 differentials 58:22 distill 132:3 104:4,22 105:1,21,21 Deputy 2:8 differentiate 127:6 distinct 133:6 105:22 128:14 129:6 derived 103:3 differently 38:12 distinction 95:2 129:15 138:14 144:7 **deserves** 148:15 distinctiveness 148:1,6 **Dave** 64:7 130:22 difficult 79:7 121:5 David 1:16 2:10,13 3:18 designate 30:7,11 difficulties 87:12 148:13 12:1 27:4 31:9,10,10 designating 29:14 digest 150:19 distract 41:1

distractions 10:2 ease 37:15 **emphasized** 12:2 17:12 15:3 18:10 51:21 65:5 distribution 21:11 easier 39:8,9 98:6 emphasizes 12:15 67:19 84:11,14 85:5,8 **ditto** 143:13 **easily** 114:8 emphasizing 99:19 94:14 97:4 98:4 102:7 **dives** 67:9 easy 114:14 employed 82:21 107:12,14 129:20 employee 121:11 divide 23:15 eats 71:8 134:11 137:2 143:3,8 122:18 dividing 22:22 echo 130:21 145:9 **divine** 57:21 echoing 144:16 employees 38:4 escalation 129:22 divining 75:19 economic 146:3 **EMR** 43:20 **especially** 96:19,20 enable 70:20 94:6 **dizziness** 90:2 126:2 economically 68:19 125:18 150:18 153:21 dizzy 112:16 127:3 encounter 139:4 essential 13:9 Edna 129:17 **encounters** 44:19 93:4 docs 22:11 **effect** 97:10,14,19 **essentially** 33:3 63:13 **effective** 9:10 14:15 doctor 10:19 45:2,7 111:6 137:11 85:3 95:16 113:7 86:14 112:13 37:20 encourage 20:8 84:21 117:1 151:1 doctors 13:14 140:16 effectively 81:14 84:15 ended 101:19 establish 118:13 endorse 50:7 **document** 137:12 effectiveness 142:21 et 46:21 91:8 98:8 141:19 149:5 effects 81:15 86:19 endorsed 83:4 109:20 111:9 144:11 documentation 10:6 94:2,15,21 97:3,16 endorsement 65:3 ethnicity 146:3 34:1,2 36:19 55:21 145:1,2,4 **ends** 45:5 54:19,20 evaluated 87:15 60:1 141:19 efficiency 8:14 evaluation 76:18 90:13 98:18 documentation-related efficient 14:13 16:5 enemy 105:15 96:16,18,20 37:3 effort 114:3,4,6 engage 13:11 17:15 events 142:15 documented 58:21 efforts 131:17 108:18 eventually 7:13 55:17 doing 7:3 13:10 18:6 **EHR** 31:17 44:22 45:5 engaged 11:6 111:13 58:11 39:8 41:2 51:8 52:8 54:20 56:6,7 58:21 **everybody** 5:4 29:8 112:21 73:20 76:16 101:10 59:17 61:9.18 71:19 **engagement** 7:1 18:21 35:5 71:3 72:16 75:16 103:15 121:7.18.18 87:22 144:18 149:5 79:6 107:22 108:9 95:21 130:10.14 123:14 138:8 141:13 149:13 121:11 122:18 142:9 **everybody's** 5:5 7:19 148:9 154:13 EHRs 31:12 42:19 150:4 22:17 24:14 130:7 **dollars** 132:16 56:14,17,22 57:10 engaging 109:15 150:12 evidence 22:8 93:21 domain 13:10 16:10,11 58:1 59:5 engineering 15:7 domains 25:4 40:19 Eider 119:17 enjoy 72:7 130:11 111:20 147:8 83:22 133:6 152:13 eight 34:22 91:11 **enormous** 40:15 90:12 evidence- 147:8 evidence-based 51:3 153:13 eighth 88:21 **enriched** 78:4,5 87:10 **Dr** 22:5 27:3 31:8 83:3 either 8:2 22:11 40:8 enter 34:11 52:19 evolving 93:5 86:14 113:3.15 56:18 57:9 80:8 85:5 entire 60:14,22 86:15 114:22 120:9,15,19 98:15 103:8 108:11 91:13 Ex 70:12 123:13 149:14 150:15 154:2 entirety 121:7 **exact** 65:18 136:20 **entities** 68:20 exactly 32:15 86:22 155:18 **electronic** 16:21 17:9 draft 151:18 152:9,10 30:16 33:11 35:15 entity 28:9 124:3 90:22 91:17 153:3 36:15 38:5 39:6 40:7 148:14 exam 98:2 139:11 **drill** 87:4 40:12 43:10,17 44:7 entry 59:12 examinations 99:21 drilling 125:17 44:16 54:9 94:5 99:12 environment 10:1 **example** 27:5 47:8 drive 107:4 108:10 129:13 143:14 21:14 140:15 51:17 64:21 71:19 drugs 135:4 145:1 environmental 135:17 **elements** 14:5 17:5,6 80:10.13 83:3 88:17 du 40:22 31:14,16 59:12 135:20 89:5,5,7 90:18 96:19 98:21 113:9 114:2 **DUNNE** 1:15 60:5 102:12 115:22 116:1 **Epic** 55:6 57:7 **EPNER** 3:14 69:15 70:2 duplicate 97:4 116:8 119:4 120:12 duplicates 86:3 **Elwyn** 113:11,16 70:5 120:3 132:10 **examples** 51:12 65:9 85:9 90:21 153:15 **Dx** 25:8 70:17 **Elwyn's** 113:16 **equal** 23:7 embarked 75:11 dyad 10:18 Excellence 2:11 equipment 46:13,14,21 excellent 42:22 107:5 embarking 135:16 equitable 14:13 Ε embedded 62:4 equivalent 41:2 excessive 36:20 87:17 **E** 2:10 ER 51:18 138:17 exchange 130:1 emergencies 46:7 ear 112:16 **emergency** 2:4,5 24:2 error 1:18 5:10 12:6 exciting 113:12 Executive 2:6 earlier 61:12 104:6 28:10,12 15:20 21:6 38:14 126:11 129:8 146:1 emerging 147:7 64:20 105:5 112:7 executives 137:8 **emphasize** 7:21 75:10 125:19 128:6 138:15 exercise 4:6 early 5:6 76:12 82:4 112:9 114:14 155:20 152:8,10 **errors** 9:6,11 14:18 **exist** 53:3

existed 93:21 family 28:20 30:2 112:18 121:9 123:3 156:5 existing 124:8 family-centered 92:16 124:7 125:11 138:17 framework 4:13 6:20 exists 59:16 102:6 Fantastic 130:6 155:2 13:6 25:10 128:9 far 56:6 107:21 fix 36:9 132:18 139:19 133.7 134:2 137:3 151:18 expand 5:20 fashion 8:15 23:10 140:8 152:9,11 153:3 expected 46:18 48:19 40:11 42:7 58:2 61:21 flag 43:11,18,20 75:13 155:22 156:1 70:22 78:14 79:19 141:20 free 27:5 56:18 57:16 81:16 fast 96:20 expects 11:2 flagging 145:2 frequency 9:15 **experience** 18:8 81:10 favor 65:7 139:14 **flags** 43:10 frequently 97:21 81:11 97:8 109:6 favoring 117:19 flash 40:21 41:3 131:17 favorite 136:14 **flaws** 15:4 fresh 6:17 144:1 **expert** 15:8 121:15 favorites 144:3 flesh 118:8 front 141:18 142:16 **FCCM** 1:21 fleshed 91:9 frontline 127:22 expertise 48:4,6 experts 72:4 feasibility 63:22 flip 41:4 60:3 **full-blown** 117:15 **explained** 81:15,16 fecal 75:4 **Floor** 1:9 146:16 fed 9:13 70:12 focus 9:18 11:22 12:4,7 fun 5:7 23:8 28:2,3,6 explanation 153:13 explicit 48:22 49:2 feedback 18:6 60:21 12:13 14:7 19:20 function 58:13,14,18 **explicitly** 95:15 111:13 68:10 85:7 92:11 23:22 25:5,9,12 45:2 functioning 11:9 108:14 146:13 148:20 **funding** 146:20 exposure 83:17 79:17 107:14,19 123:21 128:12 134:8 further 141:11 143:16 **express** 131:18 151:20 expresses 34:3 **feeding** 49:13 155:2 152:17 156:12 extent 11:7 12:18 18:2 feel 17:19 27:4 122:9 **focused** 91:12 future 36:8 155:9,15 18:2 36:21 48:9 140:16 focusing 44:19 47:4 **FYI** 72:5 101:21 109:15 128:15 **feeling** 149:17 139:17 G 128:18 146:14 147:3 feels 38:1 **folks** 106:4 147:1.17 147:5 fell 131:15 **follow** 71:18 73:12 game 31:14 extracting 83:12 felt 51:9 74:22 75:5.6 97:7 Ganey 121:11 extrapolation 46:16 fibrosis 44:20 150:8 gaps 90:12 **extremely** 95:10 137:21 field 30:15 32:2 57:17 **follow-up** 75:2 95:17 gathered 127:7 figure 19:11 35:12 72:2 96:4 98:8 139:18 gathering 142:22 F 94:6 133:2,10 135:21 145:16 149:19 151:11 **geared** 46:20 **FAAN** 1:21 figured 17:4 **followed** 91:4 109:2 general 24:7,8 27:13 face 6:10,10 13:21 fill 20:1 116:15 following 96:17 151:17 28:18,19 35:17 38:3 facetious 102:16 **filling** 19:17 football 12:5 65:2 112:12 129:13 facilitate 41:16 44:5 **filters** 60:20 force 58:14,18 61:3,4 155:17 53:14 62:9 64:20 65:4 final 30:19 54:12 55:17 forced 29:17 75:15 generalized 133:8 66:20 69:8 56:1 60:10,15 135:13 forcible 58:12 generalizes 115:15 facilitated 109:12 112:6 135:13 **forcing** 149:5 generally 52:4 facilitates 15:12 44:9 **finally** 143:7 forget 9:4 98:3 generate 28:18 find 7:15 23:19 35:22 forgetting 22:9 generated 34:16 45:6 facilitating 38:11 40:8 64:19 84:14 98:7 form 32:9 60:6 generates 29:6 123:12 129:19 format 55:2 57:19 85:7 geriatric 46:19 facility 120:11 **finding** 9:7,11 18:11 forth 125:5 128:21 getting 7:6 38:7 42:8 **FACP** 1:12 84:10 123:12 140:8 52:17 59:5 72:1 79:1 fortunately 131:14 fact 51:7 98:8 123:21 findings 86:4,9 149:20 **Forum** 1:1,9 80:22 83:14 84:13 fine 57:17 forward 9:15 11:4 24:17 85:6,21 86:8 108:3 factoring 111:20 **fingers** 95:22 factors 15:6,6 42:5 95:8 139:20 152:18 110:12 111:5 155:11 finish 60:8 142:3 156:9 qive 13:7 18:5 25:15 135:11 finished 32:22 fail 137:12 found 33:5 46:8 38:9,15 98:20 109:4 first 24:6 28:17 41:6,13 Foundation 3:21 136:17 151:6 failure 15:21 51:12 85:16,17 89:20 **founded** 109:3 given 45:22 99:13 failures 112:9 fair 22:8 31:13 65:21 113:13 129:18 132:15 four 34:5 76:14,16,18 112:4 147:6 152:13 138:22 143:15 145:7 105:21 118:7 108:8 givers 142:16 145:19 146:12 148:20 fourth 33:22 fairly 74:21 118:11 giving 47:8 85:9 117:11 **fraction** 8:14,16 falling 124:6 fit 69:1 **Glyn** 113:11,16 falls 110:8 **fits** 133:8 fractions 108:5 **goal** 75:14 80:17 **false** 64:2 **fitting** 25:13 fractures 14:22 **qoals** 143:20 **families** 145:14 five 33:19 47:19 81:6 frame 84:4 151:11 gold 14:14 84:12

**Google** 43:13 guess 21:6 35:16 66:7 114:4.6 118:2 121:6 50:2 68:3 104:11.11 Gordon 3:20 68:5 75:21 77:8 138:5 127:22 129:13 143:14 120:12,14,17,17 **Gordy** 94:13 140:18 150:6 131:16 137:21 140:15 **qosh** 71:10 guessing 35:18 36:3 **Healthcare** 2:16 3:16 hospitals 42:14 45:21 **gotten** 119:2 47:7 62:21 65:6 heap 14:21 45:21 46:9 51:18 governance 146:6 guideline-90:12 hear 68:2 72:11,20,21 53:12 121:3,5 125:5 **Graber** 1:10,12 5:3 quidelines 99:3 hour 10:3 27:14 72:13 97:20 106:8 130:14 20:19 21:12 22:15,17 guides 129:8,10 133:17 134:2 101:10 24:22 26:8,22 27:13 heard 71:6 100:2 **hours** 22:19 110:13 126:11 146:1 **HRAVNAK** 1:21 20:20 28:3,5 30:20 31:3,6 **H** 120:13 34:16 35:22 36:10,13 147:10 22:12,16 44:1 37:7,17 40:4 42:15 half 27:14 72:13 101:10 hearing 9:8 56:5,10 huge 120:22 130:7 130:13 human 3:18 15:6,6 43:19 44:11 45:8,11 109:9 137:15 47:1 48:1 49:3,6 51:1 hand 41:10 hears 49:18 hundred 34:17 131:4 51:15 53:2,10,21 54:7 hand-offs 103:10,17 heath 118:5 hungering 30:6 55:12 56:3 57:3 60:4 Helen 1:18 3:7 42:15 **Hunt** 3:18 31:10 40:5 handed 95:6 handle 45:19 46:1,11 62:8 63:15 64:16 66:5 94:3,3 113:2 120:8 55:13 56:5 71:5 66:17 68:17 69:10,17 48:10 126:11 144:15 145:18 70:3 71:2 72:6,11 Helen's 114:17 handoff 95:4 help 10:4,6,7 13:9 17:5 75:8 78:6 84:6,9 90:9 happen 9:14 10:21 24:4 91:19,22 93:17 94:12 78:13 80:14 111:17 18:9 22:1 24:6 25:9 **ICD** 29:16 95:10 97:22 99:18 25:12 26:9 35:18 112:17 **ICD-10** 31:22 34:9.15 100:6,18 101:9 106:5 happened 68:4 85:9 38:13,18 42:11 51:2 ICD-9 31:22 69:5 73:3 74:7 114:3 106:7,19 107:1,10 ICD-coded 55:2 98:4 142:2 151:2 156:15 114:20 115:1 128:22 happening 135:12 ICU 78:3 131:19 129:4 130:6 132:4.7 helpful 17:22 27:21 happens 68:15 78:15 **ICUs** 131:4.8 136:6,13 137:18 89:14 97:18 128:15 130:9 idea 13:5 35:6 49:15 138:21 139:12 140:10 helping 11:13 54:21 63:7 64:12 65:3 happy 8:4 22:18 122:13 141:2,6 142:6 143:5 **helps** 17:1 25:4,8 44:3 128:19 67:2 74:5,19 75:3,18 144:2,15 145:6,17 hard 20:11.15 35:22 51:20 76:1 77:14.18 78:19 146:11 148:16 150:10 43:13 71:11 81:18 **HENRIKSEN** 3:16 37:14 79:16 82:12,14 86:17 87:2 90:11 98:15 156:18 98:9 145:18 39:22 116:16 118:6 grade 88:21 105:15 Hardeep 2:18 23:21 119:16 120:6,13,16 108:21 110:20 111:10 graded 103:21 36:3 37:22 47:2 56:4 124:7,12 146:12 114:10 126:14 138:13 graduate 105:11 58:9 65:6 66:6 95:11 hey 25:17 144:17,22 156:2 granularity 63:3 104:5 117:4 128:5 high 36:7 38:2 41:5 ideal 14:4 18:11 **GRENACHE** 1:16 53:22 139:12 101:1 150:18 ideas 25:9,15 27:18 grounds 92:16 **Hardeep's** 12:14,19 high-risk 139:15 34:17 73:11 101:15 group 1:12 4:10 13:13 23:20 higher 105:11 127:10 116:19 130:8 138:17 23:16,16,20,20 24:1 harder 39:8,10 highlight 43:20 71:5 138:18,18 150:11,22 25:16 26:16,16,17,18 harm 8:6,7,7,8,10 12:14 73:4,14 85:13 93:11 identified 45:3 26:20,21,21,21 27:5,6 12:16,17,18 15:20 highly 16:1 identify 18:10 83:20 27:15,18,19 28:7,8,11 16:1 87:5,5 110:2,17 **HIGUERA** 53:11 138:22 93:22 130:9 145:9,10 31:20 34:22 48:2 50:7 **HIGUERA-RUEDA** 1:19 126:5 147:4 51:2 52:16 53:22 harmed 8:5 126:5 histories 29:2 identifying 99:16 150:1 63:17 65:20 66:2,18 harms 83:9,11 87:14 history 7:3 28:19,22 identity 138:1 67:21 68:9 71:8 72:12 51:8,12 52:6 96:22 ignore 98:8 110:6 72:12 73:1,2,13 77:3 **HASKELL** 1:18 43:1 98:2 139:6 142:22 **illness** 64:3 77:10 82:10 85:13 55:10,19 144:16 **HIV** 83:5 126:12 illogical 90:1 86:10 88:6 93:11 head 72:3 150:6 homework 151:1 image 80:2 134:14 98:12 100:22 101:6 hope 14:8 70:22 101:4 headed 35:7 52:2 imagine 38:3 106:20,20 107:17 headings 21:2 132:2 133:21 imaging 32:9 33:20 119:6 125:16 128:17 hopefully 7:15 9:17 health 2:6,14 3:18 9:7 65:15 92:19 99:1,5 129:11 143:16 148:5 17:3 40:3 14:2 17:9,15 30:16 **impact** 78:16 124:12 38:4,6 39:6,7,14 54:3 groups 5:22 19:14 26:9 **hoping** 149:7 **impede** 40:14 41:14 26:13 27:16 35:3,18 62:17 63:19,21 68:12 **Hopkins** 2:11 125:1 impediments 64:4 36:2 62:22 130:8 horizontal 68:22 implement 118:18 68:16 85:3 92:6,8,15 **growing** 96:20 94:5 99:12 109:1 hospital 1:11 2:3,3 38:5 146:21

implementing 134:15 implication 32:19 59:22 implications 61:14 importance 52:13 **important** 7:10 10:2 15:13,18,18 21:3,7,21 22:13 24:16 29:2 49:15 52:18 54:18 61:17 63:9,10,11,11 64:15 71:16,17 73:6 75:9 95:11 110:7 137:6,21 138:4 142:10 143:17,18 149:21 150:4 156:12 imprecision 134:21 improper 79:1,2 **improve** 1:13 3:14 9:13 13:9.19 18:21 30:10 37:12 38:14 135:15 improvement 9:19 12:22 18:15 60:21 77:16 97:5 107:4 131:13 148:21 improvements 107:9 **improving** 1:3 5:11 98:10 124:5 132:1 in-patient 22:10 in-person 1:3 152:5 inability 79:3 inaccurate 108:15 inadequacy 82:8 103:16 inadequate 87:21 96:22 98:2.2 inappropriate 16:4,6,12 16:15 29:22 60:7 137:14 include 14:5 15:16 47:13 107:11 110:11 114:7 included 154:7 includes 25:3 119:8 143:9 including 53:7 70:19 126:5 135:16 143:3 144:20 increasing 148:13 increasingly 121:5 independent 29:2 independently 29:9 69:6 index 88:22 90:15 indicate 103:4 indicating 81:9 indication 99:6 indicator 38:9 66:3,3 77:9 86:11 87:17 102:16,20 103:1,3

intelligible 112:4 indicators 65:20 81:4 intended 77:9 122:1 102:4 indigestion 72:7 individual 65:14 individuals 127:19 industry 42:11 inefficient 81:8 infections 14:22 inflammatory 44:21 influence 32:1 39:18 influencing 135:1 inform 66:11 156:12 information 37:16,19 41:7 44:4 45:1 52:13 52:18,20 61:11,19 62:5 64:14 68:19,21 69:1 89:2 92:10 98:7 109:22 127:5 134:6,7 134:9 137:13,21 138:3 146:18 **informs** 128:15 infrastructure 140:4 inhibitor 94:8 inhibitors 94:7 initial 7:5.8 27:19 60:9 111:3 initially 140:22 initiative 128:19 Innovation 2:19 innovative 109:1 133:22 inpatient 77:12 inpatients 77:7 input 27:8 43:2,4 45:6 144:19 154:4.7 insightfully 144:8 **instance** 32:8 33:7 46:18 58:16 94:8 98:20 99:11 108:22 115:8 126:18 153:17 155:7 instances 62:19 Institute 1:20 2:10 institution 46:20 50:13 55:9 57:14 67:5 137:17 145:8 institutional 46:17 107:4 institutions 45:15 46:11 47:17,17 48:8 57:14 66:8 instruction 53:7 91:4 instructions 112:5,11

151:9

instrument 146:17

instruments 115:5

121:1 123:13

integrate 120:22

intent 113:21 interaction 98:5 **interactions** 86:20 87:3 145.4 **interest** 150:12 **interested** 16:16 50:8 **interesting** 28:13 67:1 77:5 79:10 85:14 interface 56:8 134:8,10 137:20 internally 24:9 International 1:13 internet 109:3 interns 102:22 internship 103:6 interoperability 37:18 62:13 interpret 11:15 interpretations 77:4 interruption 37:8 interval 79:9,17 80:1 96:17 138:16 interventions 13:4 interview 51:3.9 52:4 **interviewing** 53:8 143:4 intricately 15:10 invariably 89:17 inventory 152:2 investigate 68:4 invitation 131:5 **involve** 18:1 60:22 involved 18:19 92:17 95:12 102:17 107:12 136:1 145:14 149:11 155:11 **involvement** 79:6 149:8 involving 50:15 143:2 **IOM** 15:15 17:12 25:10 Iron 93:17 **IRONS** 2:1 44:13 104:7 105:2,8,13,17 106:3,6 issue 55:21 63:18 67:17 68:10 75:10 81:20 95:17 97:5 98:13 106:4,11 108:11 114:4,6 115:4 117:17 125:7,17,22 127:10 146:15 147:21 issues 37:3 39:21 50:5 50:5 56:6 57:13 88:1 102:8 109:19 126:7 144:5,8 it'll 17:3 130:9 item 15:19 45:12 50:22 78:11 131:15,15,16 131:17

items 50:4 113:14 118:3,4,9,10 119:9 124:8 146:15 152:3 **JANUARY** 1:6

**JD** 1:14 Jeff 130:16 JEFFREY 3:20 Jen 78:22 79:15 114:17 140:10 **JENNIFER** 1:14 **Jenny** 110:13 **job** 5:6 6:13 13:18 106:20 iobs 150:5 jogged 34:8 **John** 3:6 125:14 151:13 **Johns** 2:11 join 27:5,7 **JOPLING** 3:20 130:18 132:6 141:4.7 iot 35:3 **iourney** 114:19 iudaments 111:19

KATHRYN 2:6 **Kathy** 9:20 91:16 143:11 144:16 keep 8:1 9:2 10:16 14:9 14:17 15:1,2 20:22 72:19 73:19 156:9 **keeping** 134:8 **Kerm** 3:16 15:8 27:4 118:1 136:17 146:11 148:16 155:7 key 9:16 12:11 22:4 43:3 51:9 54:11,15 57:12 99:12 123:9 125:17 128:2 keystroke 88:3 kinds 48:10 50:12 133:16 134:10 142:20 **knowing** 134:15 knowledge 154:16 known 62:1 80:13 94:2 94:11 knows 42:11 49:19 89:16 100:1

**KUZMA** 2:2 34:7 145:7

**lab** 33:19 78:15 86:6 87:21 88:6 134:6 135:5 labeling 30:1 32:7 labels 29:19

Laboratories 8:18 Likert 113:17 100:12 101:14 103:20 match 85:15 **laboratory** 1:17 11:13 **line** 54:14 69:18 74:15 107:8 110:1 113:3 matter 7:11 12:1,8 134:18,19,21 141:18 142:16 119:14 132:16 134:9 27:10 72:8 114:5 lack 81:5 lines 139:9 150:2 134:22 142:14 155:14 156:19 laid 6:22 linguistic 33:11 156:6 matters 114:7 Langone 2:12 link 155:22 lots 15:19 67:2 111:1 MBA 2:4 3:14 language 44:16 81:2 linked 137:5 130:8 138:18 **MCDONALD** 2:6 28:2,4 91:7 156:14 linking 155:21 love 143:6 39:1 49:22 73:22 75:21 77:11 79:9,13 large 13:13 154:16 list 14:11 24:20 25:2 lowering 81:22 late 82:5 83:5 86:2 26:12 55:6 58:17 86:16 87:1,8,13 97:9 lunch 27:14,15,16 126:12 145:19,20 72:19 101:10 128:8 69:14 71:9 72:7 101:16 143:12 **lateness** 126:10 128:17 137:1 138:6 **LYZENGA** 3:8 20:8 25:2 **MD** 1:12,19 2:1,2,4,8,9 147:10,13 25:20 26:1,6,12 27:1 2:10,12,13,15,18 3:6 lateraling 67:22 Lavinia 2:8 78:6 107:1 listed 150:20 50:20 66:1 73:2 74:14 3:7,18,20 76:20 77:2 78:18 141:12 148:18 listen 114:4 mean 22:6,8 30:13 32:6 **literacy** 92:6,8 79:11 81:3 83:8 84:8 37:16 38:11 42:2,12 lawyers 71:21 lead 12:10,14 15:19 literature 135:20 85:12 86:22 87:6,16 44:10 52:4 53:8,18 34:19 94:10 107:9 little 9:6 12:2 14:11 88:10 92:2 94:22 96:2 55:10 56:1,17,17,18 20:2 28:7 35:19 37:5 leader 102:7 96:22 102:3 103:7 56:20,21 57:1,8 58:5 leadership 49:18 106:2 44:10 47:21 50:1 58:6 104:5 106:9 152:7 64:8 67:21 68:5 74:20 128:11 62:22 63:16 72:6 74:6 153:6,11,19,22 154:6 77:13,21 100:12 leading 135:2 74:14 77:3 81:16 82:2 103:21 105:3 119:2 leads 79:2 82:12 83:8,15 87:7,22 M 122:5,10 123:1 88:15 91:16 97:2 124:14,14,20 133:17 Leapfrog 1:12 M&M 85:5 learn 7:16 32:17 65:17 107:18 112:11 149:17 138:10 154:22 156:14 **MA** 1:18 2:12 85:8 97:7 140:14 local 55:7 **Madrid** 138:1 means 75:20 143:7 144:5 145:11 **log** 60:17 61:4 **MAHAJAN** 2:4 46:4 meant 90:15 learned 71:10 logic 60:13 58:9 59:18 100:16,19 measurable 59:15 logical 59:14 124:2 128:13 learning 7:18 9:5,5,6,12 148:18 9:12,16,18 13:1 18:16 long 75:13 76:3,3 78:6 main 67:10 84:14 139:9 measure 5:9,13,19 9:3 64:20 65:4 66:20 **long-term** 120:18 139:10 13:6,19 14:4,9 20:11 20:12,14,14,16 26:6 85:11 102:13 look 6:10 13:17 24:13 Maine 85:9 **leave** 36:1 68:12,15 25:17 33:7,8 56:14 maintain 61:3 30:14 33:15,21 36:18 **leaves** 98:22 67:14 71:22 74:12 major 18:17 32:19 38:3,4 39:2,4 47:12 led 85:10 75:8 76:12,21 77:1 116:20 49:8 52:10 54:20 **left** 126:18 146:9 79:18 80:3,5,21 82:14 majority 5:21 76:6 98:4 59:20 63:7 67:1,8 legal 59:22 82:16,17 87:11 105:1 making 20:16 44:6,8,9 70:11 74:15,22 76:15 length 93:14 109:21 109:14 116:4 122:21 56:13 87:20 111:13 81:19 83:4 85:16 88:2 let's 25:18 34:19 36:1 124:3 130:2 133:8 111:22 116:1 140:21 89:8 91:7,8 92:14,18 36:13 45:12 49:11,13 135:9 149:2 143:15 149:10 155:10 100:4 108:16 109:17 62:9 73:20 87:18 looked 99:22 129:18 malpractice 9:9 14:19 110:3,18 114:15 93:10 103:17 118:4 looking 12:16 20:22,22 50:5,14 83:22 105:21 118:15 126:9,22 147:22 21:10 69:2 74:1 77:20 mammogram 75:6 130:16 135:6 141:14 **letting** 134:9 82:3 83:6 100:7 mammography 80:13 142:20 144:6 146:2 level 19:4,8 34:11 35:17 109:11 126:4,19 149:4 150:21 151:3,3 management 126:7 36:7 38:1 63:3 67:4,6 130:18 131:2 140:3 152:2 156:2,4,13,13 Manager 3:10 74:9,11 82:3,7 83:16 146:3,6 map 124:6 156:15,17 86:2 88:22 89:1 106:2 looks 25:17 36:6 83:4 March 151:22 measured 20:10 120:11,16,17 128:12 124:4 Marilyn 1:21 43:22 measurement 13:6 18:20 19:8 33:3 36:21 139:22 140:15,16 loop 60:21 68:11 78:11 Mark 1:10,12 24:19 150:21 156:8 lose 148:1 49:2 50:17 53:1,14 25:5 46:4 100:16 **levels** 32:3 loss 43:15 128:4 63:4,12 66:14,16 lost 98:7 138:3 **lever** 41:18 marker 86:11 98:14 129:7,16 134:1 leverage 119:13 lot 5:7 6:3 9:17 21:21 139:20 140:1,5 153:4 **market** 68:13 license 107:19 32:5 33:18 43:6 51:11 Martha 2:12 42:15,16 156:15 life 92:20,21 52:15 57:3 59:13 60:2 45:8 49:20 51:16 measures 4:6 8:1 9:17 61:8 65:16 71:19,20 144:2 **light** 134:9 12:20 13:11,13,15 liked 132:9 141:8 72:1 77:21 91:8 **massive** 141:21 16:2,14 17:4 19:7,16

19:21,21,22 23:12 31:11,15 66:11 72:17 74:7,9,10 76:9 82:3 83:20 89:10 90:6 93:20 101:8,13,22 103:20 108:1,4 110:2 111:1 113:5 125:15 125:20 127:12 133:5 133:16 142:20 147:1 147:4,14 149:4 153:15 measuring 4:13 78:15 110:16 128:10 133:19 137:6 138:11 mechanism 148:20 mechanisms 146:20,21 **MEd** 3:14 med-legal 61:13 media 100:13 medical 1:17,18 2:1,8 2:12 16:21 33:8 40:13 43:10,18 48:6 51:4 53:6,7 59:22 72:5 117:6,10 118:17 120:17 Medicare 68:1 medication 52:6 94:1 94:10,14,20 97:3,10 medications 86:12 97:13,15 medicine 1:13 2:3,4,5 2:11.20 3:15 11:1 128:6 meet 35:9 76:19 meeting 1:3 6:10 151:7 151:15,17,22 152:4,5 **meetings** 134:12 melanoma 96:14 100:20 members 10:17 11:9,19 44:18 51:2 73:3,14 82:10 85:13 135:16 142:2 151:21 memory 34:8 41:11,11 mental 63:18,21 64:3 92:14 mention 94:13 99:10 119:5 mentioned 15:21 17:11 78:22 94:4 99:13 104:6 129:8 136:18 145:22 147:17 149:6 155:3,7 **message** 154:18 met 1:8 111:5 143:20 **meta** 71:19 **method** 71:16

methods 33:4,11 111:11 metric 67:12 149:20 150:7 metrics 82:6 104:16 128:8 130:5 MICHAEL 1:15 Michigan 2:5 131:4 Mickey 119:17 microphone 142:7 microphones 92:1 106:5 middle 12:5 16:22 17:18 **MIDDLETON** 2:8 78:8 106:21 107:2 Mike 60:4 61:8 **million** 41:12 mimic 48:6 mind 6:18 8:1 9:2 10:16 14:9,17 15:1,2 24:8 30:9 114:10 116:13 142:6 mindfulness 140:7 minds 25:11 110:10 mine 84:12 138:20 mining 144:6 minor 8:7 89:17 103:18 minute 5:5 36:14 79:12 minutes 10:12 23:2,8 24:10 27:17 69:11 130:12 Mira 2:1 44:12 106:17 126:17 **miscues** 150:2 misdiagnosis 65:1 66:3 77:9 86:11 94:20 97:6 110:7,17 127:9 135:3 139:2 misinterpreted 94:15 mismatch 99:2,17 mismatched 137:9 mismatches 98:15,18 misperceptions 43:5 missed 12:11 60:7 79:20 81:5 94:20 97:15,20 missing 21:3 97:19 101:4 141:21,22 Missy 1:10,11 141:2 Missy's 143:13 mistake 140:17 misunderstand 154:12

mitigating 135:11

mix 45:13,17 124:1

mitigator 21:8

mixed 154:18

modalities 80:9

model 11:1 69:2,5 70:17,17 149:9 **models** 20:21 modifications 146:16 modifies 60:11 **modify** 47:21 momentarily 136:16 **monitor** 100:15 monitored 97:18 monitoring 54:18 112:19 128:10 months 6:8 20:3 116:17 mood 5:18 **Moore** 3:20 morbidity 82:16 85:6 110:11 morbidity/mortality 110:10 morning 5:3 71:3 mortality 82:6,16 85:6 Mothers 1:18 move 24:17 45:12 49:11 58:16 62:9 98:13 106:7 108:3 142:14 152:18 moving 95:7 156:9 **MOY** 3:9 **MPH** 2:4,18 3:7,9 **MPP** 3:8 **MPSF** 107:13 **MRI** 10:11 multidimensional 118:7 multiple 47:14 65:15 67:16 **multiply** 102:18

Ν **N.W** 1:9 naive 43:8 58:15 **NAM** 70:17 name 121:2 **named** 137:16 narrative 32:22 33:10 59:8 national 1:1,8 6:21 46:8 121:2,15 123:1 nationwide 75:17 nature 23:18 68:11 147:5 navigating 81:11 navigational 37:15 necessarily 31:15 58:13 114:9 115:15 122:6 necessary 92:17,22 123:14

**need** 5:13 10:8,10,12

11:18 13:2,10 17:4 19:9 27:17 32:1 37:4 37:12,19 40:10 41:6,8 41:10,10,13,15,19 42:9,9,10 43:11 45:15 47:15 48:4,4,5,7 49:7 49:7 51:10 53:16,19 57:15,18 60:17 64:21 66:9 69:18 70:10,18 76:17 85:4 92:7 93:9 97:1 100:6 101:19,20 104:21,22 106:7,14 107:15 110:22 111:9 112:19 115:6 118:7 118:21 127:22 136:2 138:9 142:12 144:12 147:9 152:3,22 needs 45:22 48:1,22 49:15,16 53:12,13 62:12 87:8 91:9 92:4 101:2 106:13 111:5 117:13,14 122:2 125:9 137:7 147:12 148:5 negative 82:18 neither 28:10 **neuro** 99:1.5 neurological 126:21 neurologist 127:17 Neurology 2:10 never 11:12 60:11,12 61:5 99:13 **new** 31:15 33:17,17 47:9,16 56:16 68:3 76:17 107:13 123:5 144:11 146:17 152:19 **NEWMAN-TOKER** 2:10 30:13 31:1,5 37:21 38:19 54:17 57:11 63:2 66:7,21 68:8 89:4 103:18 107:16 115:3,19 116:3,10 123:8 124:10,20 129:2 130:3 136:15 nice 24:20 34:2 36:7 51:18 76:8 83:7 84:20 113:9 130:1 151:11 Nicholas 2:2 145:6 Nicolas 34:7 night 52:5 **NIH** 123:15 nine 34:22 91:11 113:18,18,19 nominate 132:8 nonpunitive 102:6 **normal** 80:18 84:1,2 133:20 **North** 1:15

methodology 129:20

pathological 77:4

**note** 33:12.13 59:16 69:13 76:21 130:4 **notes** 26:10 37:4 108:13 notion 73:16 133:5,16 134:13,21 135:3,6 140:18 nowadays 111:17 NQF 3:4 5:9 19:19 26:9 72:22 83:3 135:16,22 150:13 **nuances** 67:12 number 45:18 49:4 69:22 71:6 73:10,15 73:16 87:18 94:18,19 102:3,18,19 107:2 111:2,6 123:17 136:11 139:4,5 number-one 21:22 **numbers** 105:9,10 108:5 numbness 90:2 numerator 19:10 numerators 108:6 **nurse** 22:9 **nurses** 13:14 Nursing 1:21 nurtures 71:15 nystagmus 99:11 **NYU** 2:12

## 0

o'clock 71:4 **obey** 11:3 objects 42:13 observation 42:19 observer 139:2 **obvious** 62:14 **obviously** 22:10 51:8 109:18 156:6 occult 75:5 **Occults** 74:20 occur 44:19 151:16 occurred 112:7 143:21 office 39:2 65:12 114:1 117:7,11 119:8 120:18 officer 2:8,12,16 3:7 128:12 137:16 offices 118:17 offline 116:4 122:13 Oftentimes 29:15 old 71:8 123:13 **older** 127:3 **ONC** 69:3 **ONC's** 129:9 once 89:16 90:4 105:8 118:19 140:6

ones 6:12 13:5 14:20 35:12 43:20 65:14 72:20 74:18 82:10 85:14 93:10 119:1 125:21 136:18 150:21 online 136:8 open 69:18 154:6 **openness** 102:12 OpenNotes 36:22 37:4 92:9,12 99:21 102:14 operationalize 52:22 **OPERATOR** 69:20 136.9 opinion 85:15,20,21 opinions 85:17 opportunistic 80:15 opportunities 12:12 opportunity 114:14 122:20 136:5 142:18 154:3 **opposed** 28:5 113:14 optimal 51:11 optimize 17:7 optimizing 45:5 option 117:12 order 11:16 33:18 73:9 111:7 134:14 146:22

ordered 59:1 95:9

ordering 7:6 58:16 99:8 135:9 ore 138:20 organization 9:21 12:21 49:19 50:21 52:11 79:5 85:20 88:14 92:10 103:9.11 140:1 144:4 organizational 75:17 104:13,16 122:3 139:22 140:3 148:11 organizations 9:7 14:2 83:21 85:4 118:22 121:2,6,17 135:8,15 143:7 155:5,11 organizations' 50:3 organize 27:17 62:8 organized 6:11 oriented 73:8 141:8 original 77:6 129:6 Orthopaedic 1:19 ought 20:10 outcome 7:22 12:10 19:21 22:21 55:19,20 55:22 56:1 67:8 78:21 83:13 88:13 110:7 130:5 144:20 outcomes 2:7 7:22 8:2 8:9,12 9:1 73:10 81:16,17,18 87:4,5

88:11 109:18,19 128:9 143:19 outliers 83:21 outpatient 48:18 124:17 overall 122:4 overgeneralize 148:2 ownership 95:16 owns 95:13

P-R-O-C-E-E-D-I-N-G-S p.m 72:9,10 156:20 **pace** 79:9 package 70:13 131:6 132:15 pages 113:15,15,15 **pain** 51:18 pair 76:7 **paired** 97:16 pairing 74:3 94:1 97:10 145:1 pairs 94:10 panel 121:15 paper 60:12 72:1 107:6 129:17 **papers** 93:14 **Paris** 138:2 parking 60:2 part 7:17 8:10 11:9 16:12 23:8 37:6 93:7 111:14,16 112:8 115:17 122:4 128:5 141:21 144:19 150:5 154.4 PARTICIPANT 35:20 88:9 **participate** 11:6 18:15 79:3 participating 19:1 participation 130:7 150:12 particular 29:7 45:19 64:1 74:11,18 84:3 85:14 111:22 125:22 126:2 127:2 particularly 18:5 29:22 48:3 73:5 79:7 85:21 86:1 88:20 90:16 91:9 parties 92:17 partners 2:16 150:6 partnership 11:5 pass 130:17 150:22 **passed** 135:7 **paste** 88:1 paternalistic 11:1

pathology 2:9 33:14 77:7,22 86:4 Pathology/ 1:16 pathway 18:8 51:19 73:12 pathways 53:2 76:14 84:18 patient 1:14,19 7:1 8:2 8:2,9 10:19 11:2,21 14:13 17:11 18:21 28:20 29:19 32:5 37:2 39:15 42:2,4 43:2,4 44:17 45:7,14 47:8,20 50:14 52:14,18 55:11 58:5 64:6,11,12,12 68:15 78:11,16,16 79:6 80:2 81:10,17,22 84:2 86:5 88:14,17 89:14 92:4,13,16 93:1 95:1,2,5 98:6,21 99:13,20,22 100:11 102:14,19 105:20 107:22 108:9,12 109:7,13 110:3 111:3 113:6 114:15 116:19 122:7 124:21.22 127:3 140:20 142:15 144:19,20 148:3,8,22 patient's 45:16 64:13 111:21 patient- 108:21 112:22 patient-centered 109:6 patient-reported 83:9 83:13 143:19 patients 8:14,16 11:5 14:1 18:22 36:22 43:21 44:22 46:12,17 46:19,20 47:15,19 48:19 49:4 64:2 68:1 76:19 84:11 86:18 88:16,21 89:3,22 90:1 90:2 92:9,12 94:7 97:21 99:20 100:7 108:18 109:15,22 110:21 111:11 112:1 112:20 113:21 126:1 126:4,8,14,20 127:9 133:18 134:22 137:3 142:21 143:22 145:13 patterns 62:1 Paul 3:14 70:4 119:18 119:20 132:9 134:12 147:22 Paul's 136:16 pause 20:4

path 102:2

pay 125:2

I
payers 68:5,6
paying 125:7 141:16
<b>PDF</b> 128:19
<b>PE</b> 82:13,19
pediatric 2:5 28:12 46:6
46:7,12,16,19
pediatric-sized 46:14 pediatricians 48:5
94:19
pediatrics 94:19
peek 83:7
peer 50:5,13 83:11,11
84:5,7,7,19 105:20
147:16,17 <b>people</b> 9:22 10:3 21:9
25:1 26:13 28:19
30:22 31:1 32:7 34:18
35:14 38:10 39:10
43:5 57:21 68:12
74:12 80:20 88:2
97:11 113:1 116:5,11 116:14 122:10 127:18
128:5 130:21 134:8
145:3 151:1 154:12
156:16
people's 6:4 110:10
percent 46:10 74:16,17
83:5 88:1
percentage 8:19 38:7 82:4,18 88:7 126:1,4
126:14 137:3,11
percentages 108:5
perfect 27:9 99:20
100:8 105:14 119:3
perform 41:4 54:5 103:11 137:13
performance 8:18 15:9
18:15 38:15 50:11,16
66:12 75:17 105:22
128:11
performed 103:12
104:1,2
performers 41:1 period 7:7 132:12
151:20 152:8
Periodic 93:8
permanent 8:8
permit 107:18
person 27:6 62:7
personally 67:21 perspective 15:6 16:19
43:9 114:17 140:3
141:22
Peter 131:3
pharmacy 66:2 86:10
86:18,20 87:2,14
135:4 144:22 145:2 phases 61:5
priases or o

<b>PhD</b> 1:15,16,21 2:6,10
3:16
phenomenon 78:22
phone 10:12 113:20 phones 113:22
photography 40:22
41:3
<b>phrase</b> 38:12
physical 7:3 10:1 41:9
51:8 63:19 139:6,11 <b>physician</b> 2:2,18 11:2
22:7 99:22 100:1
109:8 135:9
physicians 21:22 41:2
111:18 134:19 147:19 147:19
physicians/intensivis
131:19
pick 23:14,17,21 28:9
55:6 74:18 144:8
picked 95:19
picking 121:9 piece 57:12 98:9,9
108:8
pieces 137:13 141:13
pilot 132:1
Pittsburgh 1:22
<b>place</b> 9:21 21:17 31:9 52:10 53:15 89:20
97:7 99:20 108:17
109:14 111:11 115:11
119:12 124:4 145:11
152:6
places 18:17 90:17 plan 7:14 27:13 81:14
150:16
planning 5:16 136:2
<b>player</b> 110:15
players 29:3
plays 7:10,18 21:19 please 16:2 17:10 20:19
69:21 91:19,22 106:5
130:10 136:10
plenty 6:7 90:19
plug 120:22 137:16
pocket 42:13 poetic 107:18
point 7:20 19:6 43:2
58:10 61:15 68:9,17
90:4,22 101:3 102:21
103:19 107:5 115:4
119:2 125:14 126:13 138:4 149:10
pointed 43:13
pointing 95:21
points 54:11 61:17 90:7
117:3 139:9,11
150:18

policy 2:7 32:19 57:2 78:14,14 95:12 102:9 **poly** 66:2 86:10,18,20 87:2,14,16 135:4 145:2 poor 96:21 155:4 poorly 84:5 **pop** 152:19 population 74:9 82:3,7 86:2 87:11 145:21 **portal** 88:14 portals 44:22 88:17 92:13 102:14 position 18:12 100:8 positional 98:22 99:1,4 **positive** 64:2 75:5 possibilities 7:4,5 148:13 possible 39:4,10 53:9 64:22 88:18 91:5,15 138:14 possibly 81:9 153:15 post 120:3 151:19 post-discharge 112:5 112:10 potential 4:6 33:21.22 61:13 66:3 81:5 87:4 109:14 110:18 114:14 127:12 150:1 155:22 potentially 105:22 114:11 138:20 powerful 21:6 75:18 practical 155:10 practice 13:20 22:7 86:15.21 **Prashant** 2:4 28:11 46:3 63:16 100:18 148:17 precursor 152:5 predictive 65:18 preferences 111:15,21 preliminary 25:3 prematurely 29:20 **prepare** 117:5 presence 79:6 present 1:11 3:13 16:6 23:6 41:7 61:20 62:5 72:13 151:10 presentation 12:15,20 83:5 126:10 145:19 presentations 126:12 **presented** 42:7 89:3 152:16 presenting 98:17 126:1 **President** 1:11,12,15 1:18 2:1 presiding 1:10 press 69:21 121:11

136:10 pressure 21:15 presumably 92:7 **presume** 87:19 pretty 7:19 68:20,22 115:21 128:14 152:15 prevent 38:13 42:10 preventable 12:5,16 16:2 prevention 126:15 preventive 126:15 previous 80:2 88:6 primary 2:7 86:5,14 principles 15:7 printed 25:7 printout 128:4 prior 45:1 65:1 83:17 88:5,7 prioritize 24:15 **priority** 104:10 123:2 private 45:21 proactive 112:8 proactively 112:21 **probably** 19:14 26:14 33:9 68:13 74:18 92:13 93:9 103:15.22 139:4 146:19 148:15 153:6 154:14,17 problem 5:10 16:13 17:2 23:21 28:12 29:12 30:3 45:11,15 46:3 47:9 62:2 82:20 84:1,3 89:13,19 94:4 103:13 104:19 107:6 107:10 112:16 116:11 116:11 121:20 124:16 127:4,16 133:3 137:12,14 problems 45:2 46:1 47:16 49:21 65:14 80:5 90:14 92:11,15 94:11 102:7,13 107:8 125:19 127:6 139:17 140:14 142:11 procedures 56:22 process 6:20,22 7:18 7:21 8:13 9:13,14,16 9:18 12:9 14:8 15:15 15:17 17:7,21 18:4,16 19:21 21:18 22:21 27:20 30:17,21 35:16 36:15 37:6 38:6 40:8 40:14 44:2,14 51:20 54:3,11 56:2,21 58:4 58:20 60:8,14 61:1 62:9 64:4 67:6 70:14 70:16,18,21 71:16 73:9 74:10 81:11 82:8

83:10,12 85:4,19 81:20 132:12 136:7 48:13 51:6 52:3 53:5 receiving 87:19 88:12 89:9,10 90:7 136:11 151:19,21 55:14,20 67:20 144:3 recognition 141:19 97:6 98:15,16,18 99:2 154:2 155:17 154:9 recognizable 13:22 publication 120:4 99:7,17 103:10,17 radiation 83:17 recognize 142:11 106:16 108:9,19 **pull** 140:6 radiologist 134:13 recognizing 63:9 112:6 109:16 110:4,19 pulling 37:15 radiologists 11:11 recommend 85:20 radiology 33:14 77:7 111:5,7,14 112:8,21 **purple** 35:12 64:18 recommendation 22:22 116:1,18 119:7,8 purpose 69:4 78:2 86:7 87:22 88:20 recommendations 124:14,16 128:9,16 pursuing 78:20 134:7 72:14 137:9 139:6 141:1 raise 148:6 recommended 148:11 **push** 41:18 raised 28:13 81:20 88:2 142:3 143:2,10,15 put 7:8 20:17 25:18 reconfigure 23:10 144:18 149:7,12 26:16 31:17 32:8,20 95:4 102:17 reconstructed 109:5 41:17 43:5,5 44:22 ran 131:10 reconvene 69:14 151:8 51:13,14 53:15 58:17 151:21 processes 145:11 range 16:18 record 16:21 27:11 60:2 84:6 85:2 100:4 producing 40:14 rare 34:14 144:10 104:19 105:20 106:14 **product** 102:15 30:16 33:8 35:15 rarely 11:16 production 21:15 108:13 119:12 120:1 rate 66:15 77:4 82:4,14 36:15 38:6 39:7 40:7 professional 13:15 120:21 122:14 128:17 86:2 43:10,18 44:7 51:4 137:15 138:6 139:16 rates 82:16 **Professor** 1:16,20,21 72:5,9 78:10 99:12 147:12 152:22 153:18 Ratings 1:12 129:13 156:20 2:3,8,10 program 12:22 75:11 154:17,19 155:18,19 **ratio** 139:4 recorded 142:2 rationale 139:9,10 recording 103:10 102:9 putting 119:21 153:2 programs 76:13 rationalization 99:8 records 17:9 40:13 Q ratios 45:13 44:16 54:9 57:21 progression 93:3,5 quality 1:1,3,8,19 2:12 **RC** 148:21 62:13 71:22 94:5 **project** 3:9,10 39:19 85:10 152:18 2:13,15 3:17 4:7,14 **RCA** 103:12 105:20 143:14 proliferation 132:21 12:22 14:12 29:7 107:3.13 141:13 recurring 50:21 **RCAs** 107:2,3,6,9 prominent 14:19 49:17 68:14 77:16 **red** 7:8 43:9,20 75:13 prominently 17:12 reach 111:4 78:14 79:19 141:20 97:5 107:7 113:6 **PROMIS** 123:15 122:4 142:9 150:6 reactions 24:15 27:19 145:2 **prompt** 67:14 question 20:13 38:12 35:1 49:20 reduce 12:18 51:21,21 Pronovost 131:3 66:13 83:19 104:12 reactivities 135:4 123:17 properties 121:13 115:20 121:22 132:3 read 100:12 115:9 reentering 112:7 **proportion** 76:19 80:12 133:13 148:19 149:16,18 referrals 37:10 80:14 questionnaire 131:8 readily 50:13 67:17 **refers** 96:5 **propose** 139:20 questions 5:19 10:8 readiness 46:7,16,17 refine 35:19 refined 6:11 proposing 36:21 20:6 24:18 28:13 117:1 protected 102:7 106:3 39:15,17,18 62:6 readjust 7:17 refining 152:12 protocol 53:17 114:2 115:9 116:13 readmission 65:10 reflect 106:16 113:7 provide 57:18 111:8 118:8,12 119:7 66:10 136:16 provided 29:19 120:22 121:10,21 readmissions 64:22 reflecting 81:9 82:7 reflection 59:9,10 provider 48:19 86:6 122:17,21 123:6,11 66:16 144:10 98:6 109:8 111:8 123:17 124:15,19 ready 46:11 106:1 reflections 142:4 provider-reported real 151:11 reflective 61:11 125:12 131:7.20 132:19 136:21 143:22 realm 54:1 114:13 refreshing 113:14 83:10 providers 13:14 53:16 reason 55:3 regard 48:3 147:4 quick 106:21 118:15 54:4 55:5 84:13,16 131:2 134:4 137:19 reasonable 73:19 regimen 96:3 85:5 110:22 111:18 152:7 reasoning 62:1 149:3 regionalized 68:10 providing 95:7 quicker 146:22 reasons 45:4 94:14 regression 131:10,10 142:10 144:13 145:21 proxy 77:14 regulation 69:4 quickly 84:10 106:22 psychological 8:10 reassessment 93:8 reimbursed 32:4 132:15 110:2,6,11,16 quite 30:8 49:9 recall 49:12 **Reiner's** 133:18 psychometric 117:15 recalling 51:4 reinvent 115:5 119:12 121:12 122:15 R Recap 4:4 reiterate 43:2 relate 123:11 psychometrically race 146:2 recaptured 32:20 123:18 radar 110:8 127:11 receive 17:17 126:3,14 related 15:10 16:3 psychometrics 118:13 received 53:6,7 118:19 39:21 48:17 73:11,15 **RADFORD** 2:12 32:10 **public** 4:16 69:15,19,22 152:2 83:9,11 92:11,18 32:13,16 42:17 45:10

satisfied 111:12 95:18 101:8 102:11 88:6.16.19.20 89:2 send-out 119:19 102:12 111:9 115:12 95:19 98:7 122:15 **Saul** 133:18 **Senior** 2:1,6 3:6,8 116:8 129:7 140:2 125:3 129:11 135:5 **sausage** 150:14 sense 13:16 20:5 27:2 142:9 156:16 save 57:20 59:21 99:9 104:12 139:18 149:20 155:13 relates 54:5 97:19 resumed 27:11 72:9 saw 109:4 150:18 126:9 139:1 retain 60:18 saying 37:12 38:5 58:2 separate 34:13 54:14 relationship 132:22 retaining 144:18 62:16 64:9 76:2 91:10 85:2 117:8 121:19 139:2 retains 54:22 107:8 132:14 140:17 122:6 148:7,8 relative 21:10 SEQUIST 2:15 retrospectively 61:9 155:6.15 says 30:14 seriously 36:5 relatively 123:4 80:6 relevant 8:9 28:15 29:6 return 137:5 scale 39:9 41:9 113:17 **services** 3:19 48:7 62:5,6,6 111:7 125:21 review 4:9 5:17 6:16 scaled 39:3 127:20 32:22 33:1 36:18 50:5 scan 10:10 135:17,20 **session** 31:20 129:10 reliability 118:13 60:16,19 67:14 84:5 **Schiff's** 94:13 set 42:20 75:14 76:9 reluctant 84:17 105:20 129:17,19 schizophrenia 64:10 96:9 104:3 remember 14:14 75:1 reviewing 35:11 Scholar 2:6 **setting** 48:18 53:4 119:20 reviews 50:14 School 2:11 77:13 101:21 124:17 remind 71:7 revisit 66:9 137:1 152:2 **science** 155:3 settings 45:21 55:5 reminded 9:20 15:9 Revisiting 4:13 Scientific 3:7 118:18 128:1 **remove** 30:4 revisits 66:15 **score** 38:7 settled 28:10 **replies** 115:14 Rheumatologic 1:20 scored 84:5 seven 86:12 93:16,17 report 6:22 37:1,2 77:7 rich 94:16 138:20 screen 64:22 75:1,3 severe 16:1 30:3 78:15 84:17 86:7 89:7 109:12 110:9 rings 137:22 126:13 87:21 140:13 149:16 rise 14:20 137:1 140:12 127:11 severity 126:5 reported 81:10 86:6 risk 42:5 47:5,6 101:1 screening 15:16,19,22 **shape** 12:4 reporting 83:11 84:7,19 119:18 127:9 135:10 16:3 40:17 62:16,18 **share** 128:19 130:10 85:7,10,11 99:20 RN 1:21 62:20.22 63:8.14 80:9 **shared** 111:13 149:9,10 102:6,12 129:11 robust 104:3 144:4 81:21 sharing 68:19,22 reports 42:1 77:22 78:2 **role** 63:20 screens 41:6 138:16 **sheet** 128:3 84:13 104:15 **rolling** 144:20 **scroll** 101:12 **Shenwee** 129:18 represent 107:17 room 1:9 11:11 26:15 **se** 19:7.16 shoppers 134:3 **require** 29:18 101:5 26:18 72:16 search 61:21 99:12 **shops** 120:14 rooms 28:12 required 95:12 100:11,11 135:20 **short** 96:17 128:8 requiring 126:8 root 15:2,13 105:3 138:14 152:13 requisition 32:9 143:4 searched 97:17 shortcomings 15:5 research 1:15 2:7 3:17 roughly 118:3,5 second 32:21 41:12.15 shotgun 33:16 13:2,3,8 128:6 131:22 **RTI** 1:13 119:17 45:12 85:15,17,19,21 **show** 27:14 34:18,21 132:16,17 141:22 **RUEDA** 53:11 138:22 108:20 129:12 137:9 35:9 50:18 109:4 156:7 rules 29:18 139:21 141:4,17 147:8 Researcher 2:18 run 116:6 137:22 142:19,19 144:22 **showed** 109:4 researching 10:7 145:12 146:5 148:21 **shown** 106:1 S Resolution 86:3 149:8 151:17 **shows** 68:2 80:1,10 resolved 117:18,21 safe 14:13 115:11 **secondary** 126:7,15 96:16 side 22:7,10 74:8 79:4 safer 25:8 70:17 129:8 resolving 143:3 **secret** 134:3 resonated 147:21 **section** 2:2,4 85:19 86:19 94:2,15,21 97:3 safety 1:3,19 2:13,15 resources 17:8 130:9 22:9 39:15,16,21 seeing 46:17,19 99:21 97:10,14,16,19 108:7 142:12,13 49:17 50:17 107:7 130:11 110:19 127:14 132:17 respect 90:16 115:11 seen 79:18 84:15 104:8 132:18,22 133:1,12 115:14 116:19,20 136:19,20 117:9,13,16 118:3,5 122:3.16 144:22 145:2,4 148:4 **SEIDENWURM** 2:13 sidebar 147:11 respond 8:3 152:1 119:8,9 120:10 121:3 respondent 123:20 121:18,19 122:2,4,7 40:6 61:7 63:17 65:8 sided 153:20 responding 50:4 123:22 124:4,21,22 68:18 77:17 80:7 **SIDEM** 119:22 82:11 87:9 90:10 sift 72:2 122:10 128:11 131:8 137:16 96:13 98:1 100:10 sight 148:1 **response** 113:19 140:2 142:15 148:2,3 101:12 102:21 137:19 responsible 95:17 96:1 148:7,8,14 150:6 **sign** 79:22 significant 77:6 result 64:3 78:13,14 **sake** 119:5 send 33:1 114:20 **Santas** 134:3 128:20,22 132:4 silos 68:21 95:13 results 4:10 27:15 37:9 satisfaction 110:4 154:18 similar 50:1 66:4 83:1

11			=7=
87:19 92:2 94:18	73:13,21 74:16 88:12	68:9 99:17 133:15	statements 131:11
100:4 116:18 122:12	100:18 104:6 106:6	146:7	static 93:2
132:16 152:15 153:19	141:4	specification 8:21	status 66:10 146:3
similarly 87:16 96:2	sort 19:19 20:2,16	specificity 37:5	stay 63:5
simple 5:6 113:9,19	24:20 25:4,11,12 32:1	specifics 50:19	step 13:9 17:20 18:3
<b>SINGH</b> 2:18 24:19	32:19,19 33:1,16 36:5	specified 65:2 90:13	21:20 61:4
25:16,21 26:4 31:19	36:21 38:3 46:15 47:6	96:3 97:3	steps 4:18 6:22 14:7
32:12,15,18 36:4,11	47:21 51:14 52:22	specify 81:19 141:11	60:18 72:21 111:6
36:17 37:8 38:17,21	55:7 56:11,13,16	spectator-confirmed	stick 122:17
39:12 40:2 47:3 48:12	59:13 61:7,22 67:1	34:10	sticking 121:10
49:1,4 50:9 52:21	68:11,21 72:2 73:7,10	spell 22:14	stimulate 25:9
56:11 57:5,22 59:4	74:1,15 76:15 78:19	spend 6:3 23:2,7 36:13	stimulated 25:11
71:18 75:4 76:10,22	78:20,22 79:4 81:8,21	130:12	stool 74:20
80:17 85:1 91:3,20	83:15,21 86:8 87:4	spent 36:2 65:21	stop 19:8 113:1 138:8
93:12,19 94:17 95:14	88:22 90:22 91:6,15	spirit 101:17	story 28:18 110:15
100:3 104:18 105:6	92:3 93:2,6 95:1,15	<b>split</b> 146:2	strategies 144:9
105:12,16,19 107:5	95:16 97:5 101:15,20	spoken 116:14	strategy 136:17
115:16,21 116:6	102:4,11,15 106:15	sponsorship 129:9	Street 1:9
118:1 119:3 120:8	108:20,21 109:9,14	spot 104:21	<b>stroke</b> 89:5,16,17 101:1
122:19 124:13 129:5	110:9 111:19 112:11	spread 131:4	125:16 126:3,16,19
139:13 153:2,9,17,20	113:14 117:2,4,5,6,19	<b>spy</b> 137:22	127:3,17
154:11 156:11	120:10 122:20 123:17	<b>St</b> 2:3	strong 16:7
<b>single</b> 18:18	125:1,14 126:6 127:2	staff 3:4 11:13 13:15	strongly 131:13 154:9
sit 124:21	128:8,16 129:15,20	19:19 26:9 45:7,17,18	struck 58:12 100:20
site 46:2	138:7,16 139:7	46:3 53:6,6,6,7 72:22	structural 30:14 31:16
sites 100:13	140:18 145:8 147:21	131:18 139:3 150:13	67:4 100:15 101:22
sitting 109:10	152:12 155:11,16	150:17	108:20 109:17 116:1
<b>situation</b> 30:5 34:14 133:9	sorts 148:12	staffing 22:9 45:13 48:22	135:5
situations 31:4	soundly 42:7 source 78:5 87:10	stage 30:17 39:19 82:5	<b>structure</b> 19:22 22:21 30:21 52:10 54:8
six 14:12 47:20 124:8	109:22 129:6,15	82:5 86:2 136:2	59:16 73:9 85:3,18
125:12	space 108:21,22 109:5	145:19,20	88:13 92:14,18
<b>Sixteen</b> 121:4	109:12 110:18 111:2	stamps 70:14,20	101:13 108:7 127:14
sixth 14:15	127:13 150:8	stand 121:16	128:9 144:6 149:4
<b>skills</b> 10:1 54:5 149:3	spatial 41:11	standard 96:9 117:6	structured 30:15 57:19
skip 49:12	speak 117:16 122:8,9	133:18	58:1 59:6,11
<b>SKIPPER</b> 3:10 151:13	130:22	standardization 57:12	structures 70:19
slide 6:15 8:1	speaking 43:8 66:17	58:13	101:18 108:17 137:22
<b>slot</b> 41:18	116:9 147:22	standardize 51:20	studies 14:19 65:15
<b>small</b> 5:22 45:20 105:3	speaks 11:2	standardized 55:2	82:18 88:7 95:18
social 48:7 100:13	special 77:22	103:9,16	132:1
146:3	specialist 127:18	<b>standards</b> 31:12 54:19	<b>study</b> 37:1 54:13 58:7
Society 1:12 3:14	specialists 127:15	70:9 71:9	131:9
sole 46:6	Specialties 2:2	standing 40:9	stuff 36:6 95:20 100:14
Soleil 40:22	specialty 48:4	standpoint 122:3 133:5	123:3,13 130:19
solicit 92:11 146:9	specific 16:9 19:15	142:14	131:4 134:3 140:8
solving 62:2	23:12,13 27:21 28:15	star 14:14 69:21 136:10	154:19
somebody 23:1 33:16	36:14 44:22 54:5 55:8	start 5:5,13,18 17:15 24:15 60:8 66:19	subacute 23:17
47:10 57:16 75:4 77:2 79:1 85:10 87:2 89:16	56:13 63:5 66:15 71:15 73:7,12 74:22	75:19 100:7 105:2	subdomains 153:13
93:15 95:6 106:1	75:20 89:12,13 90:6	108:3 124:17,18	subjecting 41:2 subparts 12:2
156:3	93:10 96:12,12 97:12	125:17 139:17 142:3	subsequent 79:2
somebody's 86:12	97:13 100:21 101:20	started 17:13 28:7 47:9	subsequently 77:8
something's 77:15	101:21 104:15 107:19	73:6 75:22 79:15	subset 125:1 149:22
somewhat 124:2	108:2 116:7 123:10	starting 7:1 68:6 136:4	subspecialty 101:8
sooner 146:22	125:15,18 126:9	starts 10:17 100:22	substitute 111:19
sophisticated 131:10	133:11 139:17	state-level 83:4	succeed 30:8
sorry 55:14 58:5 73:13	specifically 21:4 67:20	stated 118:11	successful 10:15

succinctly 110:22 sufficiently 124:9 suggest 47:4 69:8 133:4 **suggestion** 39:13,13 suggestions 42:21 122:11 126:17 **suit** 9:9 summary 128:4 **summit** 128:6 superficially 62:3 supplement 39:15 117:6 118:3 124:8 supplemental 123:6 146:16 supply 78:4 support 35:16 36:15 37:11 38:6 40:7 51:10 52:20 56:8,9 69:6 84:7 85:4 139:3 140:5 143:14 supporting 135:7 supports 44:8,17 71:15 131:16 **supposed** 5:8 10:20 28:9 56:22 61:19 103:8 surgery 1:20 65:12 surgical 126:8 survey 38:4 39:16 46:9 94:18 102:11 113:20 115:8 116:12,22 117:2,7,8,15,16 121:1 121:9,11,18 122:14 122:18 124:9 132:19 135:21 surveys 113:6 116:15 117:10,11 118:16 121:4,7 125:3 130:20 146:14 suspected 76:17 suspicions 134:16 suspicious 34:12 Sutter 2:14 **symptom** 33:17 89:13 89:21 90:5,8,11 91:1 98:17,17 137:4,11 symptom-based 106:15 symptom-disease 137:2 symptom-specific 90:5 symptoms 43:6,16 55:1 55:2,3 90:1 99:16 112:18 141:20 syndrome 48:5 synthesize 28:21 **system** 2:16 8:12,22

9:1 10:14 15:10 17:16 38:5 53:15 62:4 68:12 68:16 74:11 78:20 79:4 81:17,18,22 85:8 102:5 108:12 112:7 123:15 134:6,7 145:9 145:10 150:7 system-related 15:4 systems 41:13,16 42:9

42:11 54:3,9 Т table 6:6,14 31:18 109:10 tackle 105:9 tail 72:3 taken 26:10 43:16 111:16 155:16 takes 9:20 22:3 48:14 48:15,15 118:14 152:6 talk 11:12,16 16:13 19:15 24:21 28:20 29:8 32:5 35:20 49:13 63:18 79:12,14 108:8 109:4 110:9 122:13 133:17 134:6 154:5 talked 6:19 15:15 19:18 21:13 33:13 49:6 51:17 52:15 62:10,14 62:22 64:18 65:11,12 65:15,16 68:18 77:3 81:16 82:2,11 83:8 85:18 88:6,15 102:3 105:7 106:10 109:21 110:1,6 118:2 134:13 talking 7:11 18:16 36:6 50:1 52:5 62:17 70:8 74:4 79:21 80:16 84:11 88:9 90:5 97:12 101:18,19 118:9 119:20 147:1,18 talks 44:16 **Tang** 134:12 tangential 154:14 target 12:17 task 22:19 41:9 taxonomy 130:2 team 10:17,20 11:8,9 11:18 44:18 60:22 111:4 115:20 142:2 teamwork 115:17 116:9 techniques 51:10 52:4 52:7 53:8 technology 37:12 43:3

71:12

telemedical 127:20

telephone 2:17 tell 40:21 72:16 80:12 100:8 121:16 150:13 155:4 templates 36:20 temporary 8:7 ten 10:12 94:14 tends 111:17 tentative 30:18 term 16:8 terms 7:2 30:9 33:10 36:11 44:14 63:4 79:19 84:10 91:6 109:20 111:10 116:22 118:16 119:21 130:16 146:15,22 terrific 13:8 35:7 test 11:15,16 32:9 33:20 37:9 56:18 58:16 75:5 88:16,19 89:2 95:13,19 98:7 99:7 129:11 139:18 tested 39:11 121:13 testified 110:13 testing 11:14 16:4,6,12 16:15 33:16 73:20 74:6,6 77:22 82:22 83:19 86:7,9 87:17 96:3,7 119:6,8,18,19 122:15 124:14,16 131:22 tests 7:6 8:20 10:9 33:18,19 56:21 58:22 81:6 92:21 134:21 135:2 137:13 **Texas** 2:9 text 57:8,10,16 59:9 thank 14:15 31:6 43:22 44:11 51:15 70:6 71:1 136:5,13 137:18 144:15 145:17 146:10 148:16 150:11 151:13 thanks 21:12 45:8 53:21 71:2 99:19 106:19 115:2 129:3 130:7 138:20 140:9 142:6 146:11,12 150:11 156:18 theme 56:10 themes 150:22 151:4 therapy 126:16 they'd 48:9 104:17 things 5:20 10:5 11:22 12:7,8,13 14:8 15:1 15:14 19:12 23:7 24:7 24:8 25:11,13 29:9 31:16,21 32:5 35:6 41:8,14 43:11 47:14

48:15.16 49:14 50:12 53:19 54:13,16 60:12 61:10 66:2,4 67:14 70:9,15,21 71:21 74:16 78:5,12 82:4 86:10 88:3,20 99:22 102:10 105:11 107:20 108:2 112:14 114:2,5 115:7 116:9 118:11 119:15 122:8,11,12 123:2,4,5 128:2,13 129:21 130:15,15,20 131:15 132:3 133:17 138:10 144:14,21 148:2 153:20 155:1,1 155:5,9,10,14 156:16 156:17 thinks 95:5 third 24:1 **THOMAS** 2:15 thoroughly 144:7 thought 31:13 35:7 38:10 45:15,22 48:2,8 48:15 50:11 51:5 58:20 64:14 71:1 75:22 76:10 77:5 78:4 85:15 93:6.20 94:5 102:9 118:20 119:22 149:7,12 thoughts 25:9 40:20 73:8 thousand 17:1 three 19:22 22:21 23:7 26:18,20,21 72:12 81:7 106:20 107:17 112:14 113:14 114:2 120:9 141:12 156:4,5 three's 27:6 three-item 113:10 throw 20:12 132:10 throwing 123:13 135:5 **thyroid** 135:3 **TIA** 89:14,16,20 90:18 tie 15:7 141:9 timekeeper 23:2 timeliness 21:10 54:13 75:10,12,15,19 88:8 90:16 96:6,15 139:15 timely 8:15 14:13 70:22 101:5 126:3 127:21 times 41:12 61:9 71:6 73:16 80:14 93:15 100:2 104:8 147:15 toast 41:17 today 5:6 6:13 10:10 19:7,14 47:9 52:16 110:2 135:18 149:17

153:21

today's 128:13 toggling 40:17,18 told 78:3 113:11 **Tom** 27:6 149:14,15 tool 51:3 71:12 89:1 103:17 107:13 113:10 118:21 119:12,14 150:3 toolkit 119:7,17,19 124:15 toolkits 118:17 tools 10:8 108:10 113:13 118:21 119:1 132:21 135:16 top 14:20 53:3 67:7 72:21 94:13 130:14 137:1,6 138:6 140:12 143:10 154:21 155:1 155:1 topic 19:13 65:22 145:22 total 111:3 117:8 totally 43:8 90:10 104:20 137:14 touch 100:1 151:16 touched 53:22 track 57:13 60:8 67:18 68:14 75:11 98:10 tracked 125:4 tracking 137:1,10 150:1 tracks 71:20 traction 120:2 traditionally 10:19 trail 60:12 training 46:13,21 transfer 138:3 transformation 131:6 transient 90:1 trauma 14:22 treatment 63:22 79:2 89:18 115:12,15 132:17 133:1,5,7 136:19 141:1 148:7 treatments 81:15 93:6 tremendously 45:20 triage 48:10 triaged 45:16 trials 79:3 tried 128:12 trigger 87:10 150:2 triggers 64:19 65:4 67:13 77:19 129:19 triple 41:4 trouble 74:8 troubling 43:16 true 115:17 127:8 trustees 125:2 truthfully 135:14

try 15:2 23:6 24:14 28:18,21 47:10 67:11 84:21 150:17 trying 28:14 36:12 37:11 40:16,19 50:6 56:15 58:10 65:21 74:4 76:3 77:18 82:14 83:18,20 96:7 103:2 116:18 128:7 145:8 148:2 149:2 155:11 tubes 102:18 tumor 79:5 96:16,18,19 turn 150:13 151:6 turnaround 8:21 152:14 **turned** 67:1 turning 142:7 tweak 26:2,2,4 tweaked 114:11 tweaking 115:4 two 5:6 22:19 23:20 26:17,21 27:16 34:13 35:6 43:19 44:20 56:9 61:17 69:13 72:12,17 72:21 73:1 76:14 93:18,19 94:18,19 99:2 102:14 106:20 117:3.10 118:7 121:14,21 122:1,16 129:9 130:14,15 131:14,15,20 132:3,8 132:11 134:4 136:14 136:18,22 137:20 138:5 139:5,8,13 140:12 142:9,13 143:11 144:3.6.21 146:10 148:19 149:2 153:5,7 154:22 155:1 155:1,5 two-pronged 40:11 tying 67:11 **type** 38:4 77:16 141:9 141:14

<u>U</u>

types 33:19 47:12,14

78:5 80:9

U.K 76:12 ultimately 87:13 137:7 142:17 unable 131:18 unaware 134:20 uncertain 32:6 uncertainty 29:12,14 30:7,11,12 31:22 32:2 33:4,12,21 34:3 62:14 103:5 147:14 149:11 155:7 unclear 87:21

underlying 147:6 understand 11:14 17:5 58:7 72:5 97:11 112:1 114:3 145:15 understandable 14:1 understanding 19:4 64:13 66:11 81:12,12 95:2 149:1 understood 91:15 140:22 undiagnosed 145:5 **undoing** 121:12 unfortunately 78:12 unhappy 8:4 unhelpful 64:6 unique 29:4,4 117:14 122:12 **University** 1:17,21 2:5 2:9.11 unplanned 66:15 unrelated 68:19 **unusual** 113:18 **updated** 151:18 updating 62:10 **uptake** 119:14 **uptakes** 121:20 urgent 47:16,22 usability 56:7 70:7 **use** 11:14 13:1 18:20 30:22 31:1 36:20 40:21 54:12 66:9 71:15 90:18 91:19.22 109:22 121:22 122:1 128:18 129:20 132:11 144:14 146:14 useful 36:8,8 120:20 129:14 135:22 146:18

٧

usually 10:22 21:13

utilization 92:19

**usual** 84:17

Utah 1:17

VA 57:7 75:10 76:7 95:12 vague 83:15 112:11 valid 123:18 validate 52:13 validity 13:21 118:14 valuable 11:13 66:19 value 64:18 65:18 114:18 values 111:15,21 VANESSA 3:9 variability 51:21 57:4 various 65:19 148:9 vary 45:20 vast 76:6,6,6 vein 138:20 verbal 41:11 versus 39:3 59:11 70:7 74:6 146:16 155:1 vertical 68:21 vertigo 98:22 99:1,4 vestibular 127:17 vestibulous 99:14 Veterans 2:19 vetted 118:12 Vice 1:11,15,19 2:1 Vice-Chair 2:4 view 117:3 143:17,19 vigorously 40:11 visit 32:4 45:1,5 93:15 114:1 visit-coded 55:3 visits 65:13 138:18 visual 41:11 **Vitamin** 134:22 **vote** 84:6

W

wait 47:19 105:14 walking 114:1 wanted 42:17 43:1 71:5 80:7 91:3 136:8 wants 60:6 Washington 1:9 wasn't 15:16 56:16 88:12 100:9 114:9 way 5:15 15:12,22 16:5 18:18 27:22 29:13 30:6 34:17 35:13 36:7 38:2 39:8 40:3.9 41:20 42:6 43:3 49:16 52:12 57:5,16 58:20 59:1 64:5 67:13,15 71:11 78:7 80:4 83:6 84:1,14 86:8 87:4 92:5 101:4 112:20 117:20 122:1 125:11 125:12 126:10 127:21 133:11 143:16 144:4 147:20 149:13 156:5 ways 9:10,10,10 17:1,2 33:5,8 36:14 40:12 52:19 64:21 67:3,16 88:2 119:13 123:12 123:19 134:15 138:11 148:9 weak 6:11

web 151:15,17,22 website 120:1 121:8 152:19 WEDNESDAY 1:5 weeded 6:12 week 151:7,8

11		
weeks 20:3 76:14,14,17	write 56:18 57:8 103:8	<b>27</b> 4:10
76:18 92:20,21	wrong 12:11 18:7 60:17	<b>28</b> 118:9,10
weighing 111:20	61:2 99:15 110:12	<b>28-question</b> 122:14
weight 43:15	135:10	20-question 122.14
welcome 4:4 5:4 23:10	199.10	3
154:1	X	<b>30</b> 23:2,8 24:9 69:11
Wells 82:22	X 137:4,4,11,12	118:10
went 5:17,20 6:17 27:11	<b>x-ray</b> 42:1	
27:19,20 36:20 60:13	X-1 ay 42.1	<b>30-day</b> 151:19 152:8 <b>300</b> 156:17
72:9 84:9 88:11	Υ	<b>32</b> 118:10 135:15
116:17 156:20	<b>Y</b> 137:5	<b>35</b> 134:14
weren't 95:11		33 134.14
wheel 115:6	year 80:10,19 81:7 87:18 103:13 104:2	4
who've 109:2	105:5 113:10 117:22	<b>41</b> 131:15,17
wholly 71:13	years 17:3 75:11 76:16	41 131.15,17
willing 18:3 19:1	84:16 93:18,19 121:4	5
wind 31:12		
wire 41:5	123:3 155:2,2 156:5 years' 121:14	<b>5</b> 4:4
wish 68:1	yes/nos 103:21	<b>50</b> 17:3
wonder 44:15 104:10		6
wondering 20:20 21:1	yesterday 5:12,17,21 6:17 15:21 17:21	
22:12 39:16		<b>65</b> 131:7,11,20
word 44:3 99:11,12	19:19 47:5 49:7 52:15 113:12 122:6 155:3	7
wording 58:14	yesterday's 94:2	<b>70</b> 46:10
work 6:21 10:3,14	younger 127:8	70 46.10
11:20 13:5 19:5 20:18	younger 127.0	8
23:9 24:9 25:22 48:7	Z	<b>8:59</b> 5:2
84:22 87:6,17 88:8	<b>ZDoggMD</b> 109:3	<b>80</b> 46:10 48:19
89:15 94:13 97:18	200ggiiiD 100.0	<b>85</b> 4:14
106:4 107:15 121:14	0	05 4.14
121:15 128:4 130:4		9
131:2 132:20 133:18	1	<b>9:00</b> 1:9
137:8 138:9 142:14	<b>1:00</b> 71:3	<b>9:20</b> 27:11
150:10 152:11 153:1	<b>1:03</b> 72:10	<b>90</b> 99:22
156:7	<b>10</b> 53:3 67:7 131:15,16	9th 1:9
work- 147:5	155:2	341 1.9
work-up 139:10	<b>1030</b> 1:9	
work-ups 96:8	<b>11</b> 1:6	
worked 18:12 97:1	<b>11:46</b> 27:12	
workflow 42:21	<b>12:32</b> 72:9	
working 5:22 7:20	<b>12:52</b> 72:5 <b>12th</b> 152:6	
15:11 30:19 55:15	<b>136</b> 4:16	
60:9,11 70:21 72:19	<b>13th</b> 152:6	
workload 21:15,19	<b>150</b> 4:18	
works 15:11 27:9	<b>156</b> 4:20	
world 46:6 133:7 134:5	15th 1:9	
worried 112:15	<b>16th</b> 151:22	
worry 19:9,17 25:6,13	<b>17</b> 65:12	
132:19,20 152:21	17th 154:5	
worrying 86:19		
worse 112:12	2	
worth 78:20 83:14	<b>2</b> 5:4 107:13	
101:14 121:15	<b>2,000</b> 17:2	
worthy 49:8 73:5	<b>2:31</b> 156:20	
wouldn't 31:15 43:12	<b>20</b> 4:7 69:11	
78:1 133:2	<b>2015</b> 128:7 130:5	
wrap 150:16	<b>2017</b> 1:6	
Wrap-up 4:18	<b>2018</b> 117:21	
' '		
II		

## <u>C E R T I F I C A T E</u>

This is to certify that the foregoing transcript

In the matter of: Improving Diagnostic Quality

and Safety In-Person Meeting

Before: NQF

Date: 01-11-17

Place: Washington, DC

was duly recorded and accurately transcribed under my direction; further, that said transcript is a true and accurate record of the proceedings.

Court Reporter

near Nous &