Transcript

HEALTH INFORMATION TECHNOLOGY ADVISORY COMMITTEE (HITAC) EHR REPORTING PROGRAM TASK FORCE 2021 MEETING

August 12, 2021, 10:00 a.m. – 11:30 a.m. ET

VIRTUAL
### Speakers

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Operator
All lines are now bridged.

Michael Berry
Great. Thank you very much, and good morning, everyone, and welcome back to the EHR Reporting Program Task Force. I am Mike Berry with ONC, and we are very excited to have you with us today and to get started. We do have some task force members that are traveling, and they will be joining us shortly, and one of our co-chairs, Jill Shuemaker, is at HIMSS presenting now, and she will not be with us today, but will be back next time. But, let me start with roll call with our other co-chair, Raj Ratwani.

Raj Ratwani
Good morning.

Michael Berry
Zahid Butt? Jim Jirjis? Bryant Karras?

Bryant Thomas Karras
I am here.

Michael Berry
Joseph Kunisch? Steven Lane?

Steven Lane
I am here.

Michael Berry
Kenneth Mandl?

Kenneth Mandl
I am here.

Michael Berry
Abby Sears?

Abby Sears
Good morning.

Michael Berry
Sasha TerMaat? Sheryl Turney?

Sheryl Turney
Good morning.
**Michael Berry**
And, Steven Waldren?

**Steven Waldren**
Good morning.

**Michael Berry**
Good morning. Good morning to all, and thank you for joining us again, and I will now turn it over to our co-chair Raj Ratwani to kick us off.

**Raj Ratwani**
Great. Good morning, everybody. So, we are back at it. I appreciate everybody jumping on, especially with a lot happening for everybody in terms of COVID and, of course, the HIMSS conference as well. We do have a lot to cover today, so we are going to jump right in. Just as a reminder, the slides at the beginning of the deck are all boilerplate things that I think everybody should have a good handle on at this point, so I think we can jump straight to Slide 9 in the slide deck, and we are going to begin with a discussion of the data quality measures and turn it over to Sasha to drive some of this, if that is okay, and I think Zahid is not quite on yet or may not be joining. Oh, okay, Sasha and Zahid are both out, so we can a quick recap here and see if there are any additional comments, and we can also pull up the shared document that we have all been working on, and we will just open it up for feedback at this stage, I think.

**Sasha TerMaat**
Hi, folks. This is Sasha.

**Raj Ratwani**
Oh, great.

**Zahid Butt**
Hey, good morning, this is Zahid. Sorry, I was trying to dial on the phone.

**Raj Ratwani**
Oh, no problem. Zahid, Sasha, I am going to turn it over to you to drive the conversation on these measures if that works okay.

**Discussion of Data Quality Potential Future Measure (00:02:57)**

**Sasha TerMaat**
Yeah, that sounds great. We had a chance to talk through it a little bit between the two of us, and we are looking forward to the group discussion. I think the Urban Institute folks have some slides to overview the proposal, right?

**Gary Ozanich**
Sure, yeah. This is Gary Ozanich with the Urban team. If we can go to Slide No. 10, please. So, just to give some background on this measure, it really began as a discussion of the use of the C-CDA scorecard as part of the standards and compliance domain, but it evolved into a larger, broader discussion of data completeness, including social determinants. Essentially, the task force, in discussions… Although this was
submitted as a potential future measure, the task force had an interest and saw it as cutting across all the domains, and thus, it has been accelerated to the discussion today.

So, in terms of the potential measure, essentially, there is one measure, which is the data element percent of complete data. So, for each data element selected, the number of active patients with complete information for that data element, the denominator, the suggested denominator, the number of individuals with an encounter, and the definition of “active patient,” and I know that is still up for discussion as to how to define that across all the domains.

So, the reporting elements for consideration… Obviously, social determinants and identifiers and the like. The suggestion is for the developers to report numerators and denominators, not just percentages of completion. Aggregation by developer and potential subgroup by provider type to potentially be reported out as quintiles and the frequency of reporting and look-back period for numerators and denominators. Slide 11 has some questions that occurred during the discussion of that measure and of this domain, generally speaking, and with that, I will turn it back to you, Sasha.

**Sasha TerMaat**

Yeah. So, let’s go back to Slide 10 first to talk through some of the observations that Zahid and I were able to make. I will summarize, and Zahid, please do jump in as needed, and then, we can talk about some of the questions that were posed here. So, as we talked through this, each of the potential data elements for consideration, which are in over at the right-hand column there, would have to be separately considered as a possible future measure, and there are some questions that we would have that would be unique to the particular data element under question.

For example, in a preliminary look across this, I think there are some of these that would probably need to be more clearly defined. For example, address might be better specified as specific address components or a ZIP code, for example. If we ask about gender, we might want to be more specific as to whether we mean administrative sex versus gender identity, et cetera.

As we would consider each of those individual data elements, I think our recommendation would be that the use case for knowing the completeness of it be considered. Some of these, for example… Zahid and I were just speculating on what the use case is. For example, we speculated that the mother’s maiden name is perhaps used in some patient matching scenarios. Otherwise, we were not sure what that meant in terms of the data completeness of capture of mother’s maiden name. And, I think others of them might have other purposes for understanding. If we know, for example, the frequency of population for race/ethnicity, that might give more insight into other equity initiatives.

The way in which systems handle some of these data elements would also have to be considered as we thought through specific ones. So, as an example, it is not possible in the EHR I work with to have a patient record that does not have any name. It is a required field to even create a record, so you are not going to find any patient records that do not have a last name populated, and by definition, this would be 100 percent. If there is a question of how many patients are unknown in terms of last name, that would have to be handled in a different way that accounted for the unique unknown-patient-naming practices that exist across different health systems. Other EHRs might have other required fields. I suspect name is a common one,
but certain demographics might be expected to populate a record, and so, that would have to be factored into how you would handle the analysis of any such data.

Similarly, we talked about how EHRs may have a different approach to handling either default or encounter versus patient-level population, and so, if a certain value is defaulted as unknown, for example, and then changed to a more specific value, we would want to make sure that we were clear in the way the measure was specified. Are we trying to measure any sort of population or a non-unknown value in the system? Similarly, if certain systems capture these at a patient level, and then, Zahid was saying that some hospital systems may capture them at a hospitalization level, then we would need to be clear about what that meant in terms of the measurement complexity of “as written” being at the patient level.

I think that is our big-picture summary to thinking through this. We were not sure that…to get to some of the more specific elements over on the right, we did not think a look-back was necessary. We thought the most simplistic way would be to just check the denominator population for the numerator data element at the time the data was measured. The potential subgroup by client reported by quintiles was not clear to either of us, so we would either suggest making sure that was more clearly specified or removing it. Aggregation made sense, though of course, we noted that it would not account for patients with multiple records across systems. I do not think you would want it to, but we just wanted to highlight that for clarity.

And then, across here, this is called “data quality and completeness.” The proposal measures here are really just about the completeness element of data quality. It does not get at some of the other aspects of data quality. Before we talk about the questions on the next slide, I am going to pause and invite Zahid or others in the group to chime in.

Zahid Butt
This is Zahid. Sasha, you summarized it perfectly, so I do not have anything else to add.

Raj Ratwani
Great. I am seeing Joe with his hand up. Joe, do you want to go ahead? Joe, maybe…

Sheryl Turney
Sorry, I could not get off mute. I do have one question, and I do not know if this is the right time to ask it or not. Related to these measures that we are talking about, for this particular group of data elements, I did not have a question related to whether they would be required or not, but as we were talking about the components of how this data would be then made available or used, what is the expectation in terms of these data quality measures? Who would this data be made available to? I guess I am not 100 percent clear on that through all the discussions that we have had, and when Sasha was talking about what is physically required by us in the EHR system and understanding what some of those components are, I know from a payer perspective some of these measures are things that we would like to see, and is that going to be integrated with the data that we are talking about here in terms of how that data is going to be shared or who that data would be made available to?

Sasha TerMaat
Can we just be on the same page, Sheryl? You mean the data of the aggregate count, right?
Sheryl Turney
Yes.

Sasha TerMaat
So, if this were a potential future measure, when it is collected in 2024 and we knew that for the Epic system, the denominator was 100,000 and the numerator was 99,900…I am just making up numbers, and they probably did not make sense, sorry.

Sheryl Turney
Right. And, I was thinking about it, Sasha, because if you have a measure that shows you have a certain percentage of data completed for social determinants of health, whether assigned by birth sex or how someone identifies, et cetera, all of that data, then that might be data that would then be official to be used for looking at equity measures. So, is that data made available outside the EHR system? Is it only to be reportable to HHS? That is what I am not quite 100 percent understanding how this data is used, and that is why I am asking.

Sasha TerMaat
So, as I understand it, the proposal for this program is that as part of the certification process, products that undergo certification would submit these metrics on the frequency that we recommend and have been talking about annually. My guess is that they would then be made public along with other certification information that is currently available today on ONC’s certified HIT product list website, although I think all of that is still also subject to further design and consideration. So, that is only going to give you…

Sheryl Turney
Are we going to be talking about that part?

Sasha TerMaat
Pardon?

Sheryl Turney
That is what I am asking, though. Are we going to be talking about that part, or are we only going to be talking about what is measured?

Sasha TerMaat
I think this current RFI is about the measures. Can ONC or Urban Institute confirm?

Gary Ozanich
This is Gary, and that is our understanding. Seth or somebody from ONC, would you care to chime in? I know Michael is not available today.

Seth Pazinski
Hi, this is Seth Pazinski with ONC, and yes, that is right. So, the current charge for this task force and the request for public feedback right now from Urban is just focused on the measures piece. The processes will be defined through rulemaking, and that would be the opportunity for public engagement comment on that part of it.
Sheryl Turney
Okay, thank you. That just helps me because I understand a little bit better where my comments will go. Thank you.

Zahid Butt
This is Zahid. Just to add one point that I think Sasha did allude to in her summary, for instance, gender is going to be multiple fields in several EHRs, and in some, it might be just one. So, any precision of definition would be very important because they would have to internally aggregate those numbers to get to the singular concept of gender that is envisioned here.

Raj Ratwani
Thanks, Zahid. So, right now, I am still seeing Joe with this hand up.

Joseph Kunisch
Can you hear me now? This is Joe.

Raj Ratwani
Yes. Please go ahead.

Joseph Kunisch
Okay. Just real quick, I would recommend adding preferred language to this, and that way, we would complete the REGAL data set for at least the basic social determinants.

Bryant Thomas Karras
This is Bryant. I totally agree with that, and just to chime in, I think one of the key use cases or motivations for these data quality we should acknowledge would be that it cannot be reported to public health as a required field if it does not exist in the EHR system, so I think having that measure that there is completeness in there would enable us to emphasize that yes, please, you need to report that. We know that 98 percent of EHRs have it or such…once that aggregate information is made public in the rulemaking. Thank you. Sorry I could not raise my hand.

Sasha TerMaat
I guess that might help us transition, Bryant, to the next slide and the question because it is not going to actually answer the question of if EHRs have it, it is going to get at if people capture it. The first question is to what extent do the provider client processes drive the capture of this data? I think it is entirely user driven, except for perhaps the scenarios where something is actually a requirement to have a record. So, if you can only create a patient record if you have at least a last name, then we know every record will have a last name, but the extent to which something like race, ethnicity, or preferred language would be captured is actually going to show the provider client processes more than anything about the system.

Steven Lane
If I could chime in, this is Steven…sorry, you are doing hands.

Raj Ratwani
Steve Lane, if you have something directly related to that comment, please go ahead, but otherwise, I will go to Steve Waldren first.

**Steven Lane**

It was directly related, sorry. I think that that is true across the board, Sasha. A lot of these things are really going to be driven by client behavior, and I think we just have to acknowledge that part of the reason for this whole program is so that purchasers of health IT can know what they are likely to get when they select a given vendor’s product, and what they are likely to get is almost certainly reflected in how these products are implemented and used in the real world. So, I think there are a number of these metrics that are going to be dependent on the behavior of the customer, and yet, the vendor has something to do with how their customers purchase, install, implement, and support their own product, so I think if a given vendor product ends up with a bunch of customers that are not selecting some bit of data, that is still relevant to other customers of that product even though it was not necessarily directly under the control of the programmers who built the product. I hope that made sense.

**Sasha TerMaat**

Yes. I agree with you. I think most of the measures are extremely user-driven or actually third-party driven in some of them that we talked about with apps.

**Raj Ratwani**

Great, thank you. And, Steve Waldren is next. Thanks for your patience. Or, maybe not. It looks like he may have dropped off, but at least the hand is down, so until he is back…

**Steven Waldren**

No, I am here. Can you hear me okay now?

**Raj Ratwani**

Yes, we can. Please go ahead.

**Steven Waldren**

Sorry. So, I agree with what has been said. For me, thinking about the data elements and the completeness piece, I do not think it is really all that helpful to think about completeness of an individual data element. Now, I think it should be reported that way. I think what is more important is for certain subject use cases, and I think there have been at least two of them that have been discussed several times. One is patient matching, and the other is to really support robust reporting and understanding around the social determinants and equity. I think we should focus on maybe one or two of those, and those are the data elements we look at.

And then, I completely agree that this is what you can actually determine from this completeness. It is just kind of what the state is of the adoption of these types of data elements to being deployed, which you do not know. Again, if it is processes inside these organizations on the clinical side, or, as Sasha said, there is also the availability for an EHR to demand or require certain data elements, if you are a purchaser, you say, “Oh, this one has the highest completion,” but it may not be in a user-friendly way. It may be just in a mandated way. So, from a purchase standpoint, I do not know if it is going to be all that helpful to users,
but at least it is more of a high-level, public-reporting understanding of where the industry is at on some key issues like matching, social determinants, or equity.

**Zahid Butt**
This is Zahid. I think that all of the elements listed in terms of the first use case of patient matching… Obviously, there are many other ways to match patients, but of the ones that are listed here, the name, date of birth, and possibly ZIP code might be the ones that would be the most useful in that category. Sasha and I both agreed that mother’s maiden name is almost never seen in these data captures, so I do not know if fully qualified address would be an additional element, perhaps, that could add to that, and I think on the health equity side, the three that were already mentioned would be the ones that would potentially be useful.

**Sasha TerMaat**
So, thinking through some of the additional questions here, just to make sure we consider all of them, when Zahid and I talked about distinctions between where the data was captured, I think that it would be impractical at this point… When I think about some of these pieces of information, they could come from a variety of places, so we would need to clarify, for one, what the distinctions are that we are attempting to make here and what we would use that data for. If a patient’s race and ethnicity are entered by a registrar into an EHR or entered by a patient directly into a portal or interfaced from a different registration system in use at the health system, I do not know that that is super significant, or if it is, we would have to be much clearer about what the intention is there. Our thinking was not to try to make that kind of distinction for the use cases we had in mind.

The next two questions: To what extent do regional local characteristics affect this measure, and could duplicate measures be counted and distort this measure? We were not totally sure we understood those questions. I do not know if someone from Urban Institute has more context and could maybe help us. What duplicate measures are you thinking would be counted?

**Gary Ozanich**
Sure. This is Gary. So, just in terms of information exchange, the focus is on interoperability, and so, there is a question about how the data quality and completeness relates to the interoperability between organizations. That was an attempt to capture that. And, duplicate measures…we were really looking more at the possibility of having duplicate records for the same patient within some of the systems. So, the assumption is that some developers have products that have a better opportunity to deal with duplications and other issues about data curation. Is that helpful?

**Sasha TerMaat**
You do not really mean measures, you mean records.

**Gary Ozanich**
Records, yeah, that is what I mean.

**Sasha TerMaat**
So, if we are totally by developer…

**Gary Ozanich**
We could do duplicate records…

_Sasha TerMaat_
Sorry, go ahead.

_Gary Ozanich_
No, you are correct, records, yes.

_Sasha TerMaat_
If we are totally by developer… To use me as an example, I have had appointments over the last 15 years at four different health systems in Madison, so there are going to be at least four records for Sasha, and some of them might have this data about my race and ethnicity populated, for example, and some of them might not. So, when that is totaled, you are going to get maybe 3 of 4, for example, for the Sasha records, but I do not think there is any way to total by EHR and not have that when patients have multiple records.

_Steven Waldren_
This is Steve Waldren, and I think we would want it to show up as duplicates because we are really talking about interoperability. All systems need to have those data to be able to do matching across them and to be able to do the interoperability, so [inaudible] [00:26:40].

_Sasha TerMaat_
Right, I would agree. I think you would want all the Sasha records to be counted and to know to what extent they had the data populated, so I guess maybe the answer we are coming to is that duplicate records… Patients do have multiple records in different EHRs, but if we count each one, I do not think it would distort the measure.

_Zahid Butt_
This is Zahid. Sasha and I also talked about the duplication problem usually existing when you have measures at the patient level. At the encounter level, you usually do not have as much of the duplication if the measure is counting the encounters, but for these specific measures and the way they are stored in the EHR, I think an encounter-based measurement would be more problematic than the duplication of the patient-based measure.

_Sasha TerMaat_
I agree. And then, the final question that was posed here: To what extent does the use of third-party applications or middleware shape the performance? I think it would be really specific to what third-party applications or middleware were envisioned. Like I was talking about, for populating race and ethnicity, maybe a registrar puts it into the EHR directly, maybe the patient enters it in the patient portal to self-report race and ethnicity, or maybe it is captured in a separate registration system that interfaces into the EHR. There could be any number of scenarios where different systems are in play, but I do not know that we could really answer that question without getting a little bit more specific.

_Zahid Butt_
This is somewhat similar to the second bullet, external versus internal.
**Sasha TerMaat**
Yeah, and I guess what we would propose for the group is that that distinction be deferred. We do not think it is practical to be distinguishing by source or that that would give a lot of meaningful insight at this point.

**Joseph Kunisch**
Yeah. This is Joe. Just a quick comment on that. If you are looking strictly at EHRs, I have worked at organizations with different billing and registration systems that interface into the EHR. So, data transfers over, but I am not sure there would be a whole lot of value in saying, “Where did this actually come from, patient versus another registration system portal, or wherever?” It seems like the objective is just to say if the data is in the EHR and if it is complete.

And, just to comment on the maiden name, I agree. That is probably one that is not going to be of high value. Working with registration in the past around quality measures, it is difficult enough to get them to put in the basic information, and probably, that would be one field that they would skip over. And, we are always very reluctant to make required fields just because there are always scenarios where, in emergency situations with patients en route on a transport, they have to enter data quickly and they do not have the full data, and sometimes, throughout the encounter, it might never get completed because the patient is already in there and has an encounter number. So, there are some challenges around this. I guess I am saying it is not as easy as it seems. Thank you.

**Raj Ratwani**
So, we are getting right to the time where we want to switch over to the clinical care measures and turn it over to Steve Lane and Abby Sears. A reminder that the shared Google doc is a place to add additional comments and to leave anything that we did not have time to cover here. I hope that works for everybody. And, if you have any challenges accessing that document, just let us know and we will make sure we get you access. Sasha and Zahid, thank you so much for driving this conversation. I know we have a packed agenda here, so we will make the transition now and pass it over to Steve and Abby.

**Preliminary Recommendations for Clinical Care Measures (00:31:50)**

**Abby Sears**
Thanks. Steven, I think I will start, if that is okay, and then I will hand it to you.

**Steven Lane**
Yeah.

**Abby Sears**
I am just going to review the changes that are based off the last conversation. So, absorbing the feedback from last week’s discussion, if you go to the Google doc… If you could pull up the shared Google doc, I am just going to go right off of that. Thank you. And then, you go to the part with the agreed-upon changes. Okay, great. All we did there was try to incorporate the feedback into what we agreed upon, and I kind of want to just stop there and make sure that it should reflect what we said we all agreed were things we wanted to move forward. The first one is just that the metrics should be based on C-CDA types, including, but not limited to, summary-of-care documents, that we recommend and urge C-HIT…

**Steven Lane**
Abby, sorry, let's just go one by one. So, Sasha included a comment there that she was not sure the word “valid” really added to that, and it could be confusing in trying to define what “valid” meant. So, perhaps as we go through these, we could just strike that word to keep it simpler.

**Abby Sears**
Yup, that sounds good. I just did that. It is hard to actually see the comment side while editing. So, on the next one, I tried to change the language to recommend [inaudible] C-HIT to require EHR certification, expectations that will allow for the reporting to separate counts of documents received by push.

**Steven Lane**
Abby, on that one… By the way, your audio is breaking up a little, at least for me, so it is a little hard to understand you. But, on that one, it was not clear to me why you felt that language was clearer than what we had. I do not think it is really up to the certified health IT to require EHR certification. It would be up to ONC. I kind of liked the way we had it phrased before, which was this notion of signaling to industry the intention to add a future metric, so I was just curious if you could explain why you thought this language was clearer.

**Abby Sears**
What I thought I remembered from the conversation was that… I was trying to go upstream. If we were going to be signaling to the industry, signaling felt like it was not strong enough, that if we went all the way to C-HIT and made the recommendation to actually make changes in the certification process, then we would be able to add the metric, but the challenge with adding the metric was underlying that the granularity of the data was not available. So, I do not think that… My thought was if we really want to actually signal to the industry, it would be, then, the step of asking for more granularity at the certification process so that we actually can get to the separate counts because that is what I thought I remembered as a challenge.

**Steven Lane**
Would it not be ONC that would require that?

**Abby Sears**
I do not know. That is where I was going to the certification body. If that is ONC, I can change that language.

**Sasha TerMaat**
So, today, certification already includes documents received by push. The part that is outside of the scope of certification is query-based document exchange. So, is the concern that we would measure something outside the scope of certification at all, or that some systems might not differentiate? My sense is that…

**Abby Sears**
It is that some systems do not differentiate and have the level of granularity for the specific counts.

**Sasha TerMaat**
Okay. I was worried that we were supposed to be sticking the measurements to things that were in the scope of certification.

**Abby Sears**
Then, I guess I would ask why we would be signaling that we want something different.

**Steven Lane**  
Because it is valuable, right? It would be valuable to be able to measure document receipt by push and to differentiate that from document receipt by query. But, I think you are right that it would presumably need to be added to certification before it could be added to reporting.

**Abby Sears**  
I guess signaling did not feel like… I did not know what we were going to get from signaling, I guess. What I thought I was doing was moving to language that would do more than signal, which would be to request what we needed from the certification process to be able to get to what we thought was the best approach or to the level of reporting that we thought would be most helpful.

**Steven Lane**  
So, how do people feel about how I modified the language there?

**Sasha TerMaat**  
Can I just echo back to make sure I am clear? We are not recommending that certification incorporate a whole new criterion for query-based exchange, but what we are saying is that certification would expect differentiation of whatever exchange types are supported. Is that correct?

**Abby Sears**  
Correct.

**Steven Lane**  
So, is that new language still acceptable for this above-the-line list? “Recommend ONC to incorporate EHR certification requirements that will allow for the reporting…” Sorry. I think we would just say “…allow for separate counts of documents received by push and query.” Is that okay?

**Abby Sears**  
I am fine with those changes. I think the question is to the group. Does that reflect what we were asking for?

**Steven Lane**  
Are you okay with that, Sasha?

**Sasha TerMaat**  
I do not understand what “reporting to separate counts” means, but that is a grammar thing.

**Steven Lane**  
Ah, “to separate.” That is the verb. “…allowing for the reporting to separate counts of documents received by push and those received by query or pull.” Would “differentiate” be better?

**Sasha TerMaat**  
Maybe, yeah.
Steven Lane
All right. I do not want to spend too much more time on this one because we have meatier stuff to get to. Sorry, Abby. I hope it is okay that I am jumping in the middle.

Abby Sears
No, that is fine. Okay, I think I am going to move on, then. Is that okay?

Steven Lane
Yes.

Abby Sears
Okay. So, the next one is “The definition of ‘clinicians’ for the sake of this reporting includes all licensed, independent practitioners as well as all nursing/MA/clinical support staff.” It looks like there is a comment on that.

Steven Lane
Yeah, Sasha had mentioned this when we were talking last time. There would be some mapping required.

Sasha TerMaat
Yeah. It would require build from each health system to map their user types to this, but if folks are comfortable with that… It was just a note.

Abby Sears
I remembered the note. I did not… It was not clear to me that people wanted a change in the language based off the conversation, so that is why I wrote it the way I did, or that is why I moved it up and did not make a change.

Steven Lane
Yeah. I think we are just acknowledging that. I think you can go on.

Abby Sears
All right. The next one is “Viewing a document should be defined as having an open document displayed to a user, whether the display includes all or a subset of the data received and regardless of whether the user scrolls through or clicks on any of the data in the document itself.” I think there did not appear to be any concerns with that as it was written last week.

Steven Lane
Okay.

Abby Sears
Okay. I deleted “a cross-cutting, overarching expectation” because I… Or, no, did you delete that, Steven?

Steven Lane
I do not know, but I think Sasha had a comment on the concept of updating documents not in certification. Yeah, I think we are comfortable leaving that out.

**Abby Sears**
Yeah, so that is fine. All right, going down to the ones that needed further discussion, then… What we…

**Steven Lane**
I do want… Go ahead.

**Abby Sears**
Well, I just want to reflect the conversation that was had last week, which is why I made the changes on this one. On this first one, which is “The metric should count each received document once and avoid recounting,” what I remembered the conversation being was to actually make an overarching comment across the whole set of domains, asking to only count once. Does that reflect what we came to last week?

**Steven Lane**
My recollection is that Sasha, you pointed out that different vendors do this differently, and it would be very difficult to do this in a way that would accurately differentiate the different behaviors of different vendors, so I think we just decided to leave it out.

**Sasha TerMaat**
That was my memory too, or to defer it to some future consideration.

**Abby Sears**
Okay. I know that that was your opinion, Sasha. It was not clear to me from the discussion that everyone agreed, so that is why I left it down there, for continued further discussion. My recollection of the conversation was that we did not get a final decision on it.

**Steven Lane**
Personally, I would recommend that we just drop it at this point because it is going to be really hard to differentiate. Does anyone disagree with that? Do you disagree with that, Abby?

**Abby Sears**
No, I do not disagree. Okay, then we can cut that one. All right. So, that moves us to… Let me see. I want to get in here and delete that. So, we are deleting this, right?

**Steven Lane**
Wait, no.

**Sasha TerMaat**
I thought we were talking about the one above.

**Steven Lane**
Yeah, do not delete that one. Undo that.
Abby Sears
All right, okay. I just have to figure out how to undo.

Steven Lane
That “back” arrow in the upper left.

Abby Sears
Yeah, got it. Thanks. Okay. So, then, that moves us to the next one, which is that “We are recommending that this statement be added to the global expectations across all the domains. A cross-cutting, overarching expectation for all reporting should include activity log reports by automatically generating and transmitting from provider systems at specified intervals.”

Steven Lane
And, I think the discussion on this one was that this really is not about the metrics itself. It is more about the process, which I do not think is really what we have been asked to comment on so much, and also, Sasha’s point that this was very prescriptive, and based on how the different vendors build their systems, they might have different ways to be more efficient in specific situations, so I think… I came away from our last discussion feeling like this was beyond the scope of what we were asked to do.

Sasha TerMaat
I think we could make a cross-cutting expectation that we want to prioritize minimal provider burden, but I do not think we can be as prescriptive as this is currently worded given the differences in EHR deployment models.

Abby Sears
Okay.

Steven Lane
Yeah, and I think we have the “minimize burden” as an overarching theme to start with, so I do not think we need to add to this specifically.

Abby Sears
Then, we could delete that whole thing, I think. If we are narrowing it to “burden” and that is already an overarching consideration, then we would delete the whole thing. Is that accurate?

Steven Lane
Does anyone disagree? Yeah, I think so. Now you can delete it.

Abby Sears
Okay. So then, moving down, the next one… I deleted this one, “Activity log reports should automatically be generated,” because it was part of the earlier one and it was part of that comment around making a comment around the overall global expectations for everything. That is how I remembered the conversation from last week.
Agreed.

**Abby Sears**
It looks like...okay. All right, the next one is “When possible, metrics should be reported at the product level, ambulatory, in-patient, or ED products, not at the vendor level, as products from the same developer may have different functionality and performances. Denominator should be used to differentiate the product type, and will replace health IT.” That is the consolidation of a lot of discussion. I was trying to condense both your comments, Steven, in the document, as well as Sasha’s comments, and I might not have reflected [inaudible] [00:47:07].

**Steven Lane**
Yes, and Sasha made the point, both verbally and in the document, that an integrated product like Epic would have a difficult timedifferentiating these things, and I added to that, that acknowledging that Epic perhaps could not differentiate at the product level...there may be other vendors with distinct products used by different customer bases, such as vendors who own multiple ambulatory EHRs that they have obtained by acquisition, where here, it would be important for them to report at the product level because the two products may behave very differently in this regard, and if they rolled up together to the vendor level, you would miss that differentiation. So, that is why I added the words “when possible” to the front of this first sentence.

**Sasha TerMaat**
If we found a denominator that was product-domain-specific... I think it is possible to differentiate the denominator if it is based on patients who have a visit, but then, we have to write separate denominators so that we have one denominator for inpatient products, which is like patients who have an inpatient admission, and one denominator for ambulatory products, which is like patients who have a visit, and then, the numerator might be duplicative because if you did an action that is not visit-specific, like viewing a patient portal or reviewing a C-CDA document, that might be counted as both if a patient has both an office visit and an admission. Is that what we are thinking?

**Steven Lane**
So, I think there are two different concepts, so that is why I separated them out into two different bullets. So, let’s try to deal with them separately. I think this notion of being able to separate at the product level where that is logically possible has value, and I would just like to see if anybody disagrees with that.

**Sasha TerMaat**
I actually agree with that.

**Steven Lane**
Okay. And then, I think separate from that is this notion of differentiating the denominator by product type, which, as you said, Sasha, is ambulatory versus inpatient EHRs. I think that also makes sense, but as you say, in the situation with Epic where you have customers who install both, there may be some sort of overlap there, so I think this one might be a little more problematic, but again, I am curious what other people think. Sasha, are you comfortable with the way that is phrased now?

**Sasha TerMaat**
I think the first bullet is fine, with the understanding that in some cases, it is not going to be possible.

**Steven Lane**  
Right.

**Sasha TerMaat**  
I think the first part of the second bullet makes sense to me. I am not sure what the “and will replace health IT” part means.

**Abby Sears**  
It meant that the language in the denominator that actually says… So, we suggested that the denominator actually differentiate by product, but the definition of the denominator is health IT, so we would have to change that, so I was just being clear on that.

**Sasha TerMaat**  
Oh. So, instead of the denominator being the number of health records received using health IT, you would be saying the number of records received using an ambulatory product or an inpatient product?

**Abby Sears**  
It would be to differentiate by product of health IT. That is what I meant by that.

**Sasha TerMaat**  
Okay, thank you. I am looking at the denominator now. That makes sense. If we are making an encounter-based denominator, I think it is possible to differentiate. I do not think is possible to differentiate receipt of summary of care by domain because that is not a domain-specific action.

**Steven Lane**  
Especially once we start incorporating documents received by push, so I think this does become problematic.

**Sasha TerMaat**  
Yup.

**Steven Lane**  
So, if no one disagrees, I am going to take this one bullet, “When possible, metrics should be,” and move it above the line. Is that all right with everyone? Anyone disagree?

**Bryant Thomas Karras**  
No, Steve, I agree.

**Steven Lane**  
Okay, thank you. All right, do you want to go on to the reporting period, Abby?
Yeah. “The reporting period should align with the reporting period of the other metrics and reflect any view of documents received during that time period.” There was a lot of discussion last week about what time period we are looking at, and so, I put in the comment saying that it should reflect the same time period to reduce the burden of the reporting, and the look-back period or the period would be for the period that the reporting period actually lasts. What are people’s thoughts on that?

**Steven Lane**
I added a comment in the document that measuring views of documents received during the measurement period could limit the intensity of analysis required by the alternate approach of measuring views of any outside document received. Also, timely viewing of recently received data is likely to have a greater impact on care than review of older documents, so I think there are a couple of good reasons to limit this to documents viewed that were received during the reporting period. Does anyone disagree?

**Bryant Thomas Karras**
The receiving date does not necessarily reflect the age of the document. You may receive a document that is 10 years old, and if it is not viewed, is that really a problem?

**Steven Lane**
No, that is absolutely true, Bryant, and there is a certain amount of slop in any of these metrics. You are right, but I still think it is valid, and I still think it is valid to use to compare products.

**Bryant Thomas Karras**
I agree. If, for simplicity chips, it decreases the complexity, that is acceptable.

**Sasha TerMaat**
I think what we are saying is that it is the number of documents in the denominator that are viewed during the reporting period, right? Because the denominator is already the ones received in that window.

**Steven Lane**
Yes.

**Sasha TerMaat**
I agree. That is simpler, and we should be clear.

**Steven Lane**
So, can I move this one above the line? It may warrant a little bit of fine-tuning on the language.

**Abby Sears**
Right. The massaging of the language can happen. I can work on that later.

**Steven Lane**
Okay. Let me move it, and you keep going, Abby.

**Abby Sears**
Okay. “Request feature reporting to include how often data was parsed and viewed separately from the received document as defined by the definition and certification language.” For example, currently, it is continuity-of-care document referral note and inpatient setting only…sorry, “inpatient setting only” is the discharge summary. So, that was, again, a consolidation of a lot of discussion and comments. How does this read now?

Steven Lane
So, I added a comment to this one, Abby, and I felt that the language at the end, the continuity-of-care document, referral note, et cetera, really was not needed because up above, we already suggested that any received C-CDA document would be counted.

Abby Sears
That is fine from my standpoint. Are people comfortable with the intent of it?

Sasha TerMaat
I do not know that I understand what it means as defined by the definition in certification language.

Abby Sears
Related to the data parsed. The data parsed would be only the data that is already defined in the certification language.

Sasha TerMaat
The parsing is defined in the [inaudible – crosstalk] [00:56:06].

Steven Lane
I actually added that down below a little bit more clearly, so let's scroll down to the bullet that says “In lieu of…” Sorry, Abby, I did this after you had it your way with it. So, I said, “In lieu of the terms ‘parse’ and ‘integrate,’ consider referencing and utilizing the existing certification criteria for incorporation of received outside data,” and then I gave the reference, and they say, “Incorporation means to electronically process structured information from another source such that it is combined in structured form with information maintained by health IT and is subsequently available to use within the health IT system by a user.” So, I think this was Sasha's suggestion, to, insofar as possible, reference the existing certification criteria. And Gary, I would be curious about your view on this because of course, you guys authored the “parse and integrate” language. I am wondering if there was a reason that you chose different terminology than that which was already used in certification.

Gary Ozanich
No. Actually, it is just a language that was adopted in the discussion with the stakeholders. We really did not attempt to differentiate it.

Steven Lane
Part of that may have been my fault when I was a stakeholder.

Sasha TerMaat
Yeah. I think one of the other challenges is that in their measures of incorporation, CMS is not really looking at maybe what we are thinking of here in ONC’s definition or in the parsing sense because historically, their measures in meaningful use have been looking more at incorporation of a document into a particular patient’s record from a mailbox to a record, and then, in CMS’s measures, they have usually seen reconciliation as something that would happen after incorporation, and so, the structured combination with local data is more of the reconciliation activity than it is an incorporation piece.

Personally, I think the terms are super confusingly used in current states. “Parsing” is more intuitive to me, maybe because it does not have this confusing double usage across CMS and ONC today, but I think we would want to be clear what we meant, and “parsing” is not defined in certification. So, from a personal perspective, like you, Steven, I might find “parsing” clearer as to what is intended here, but the certification language does not talk about parsing at all. It talks about incorporation and reconciliation, and ONC’s language in certification is not totally consistent in my mind with how CMS has incorporated those into meaningful use measures in the past, some of which are now retired.

Steven Lane
So, are you suggesting we not even wade into this swamp and leave it at “parse and integrate,” or do you like my specification?

Sasha TerMaat
I think if what we mean is “parse and integrate,” we should define that ourselves for this purpose to say that would include reconciliation as defined in certification, but also, the non-reconciliation actions that I think were intuitively in “perceiving and parsing” so that that could be consistently implemented across systems as they design this measure.

Steven Lane
And, do you think it is realistic that we could do that in the time available, including this morning?

Sasha TerMaat
That is a good question.

Steven Lane
Sounds like we are going to need to leave this for another day. I love the language you were using, Sasha, and perhaps you could try tossing that in the document and we could look at it if we have the chance at a subsequent meeting or offline.

Sasha TerMaat
Yeah, I can try to do a pass-through. I see the things that are blue to me in the Google doc, the language that you have added. I will try to add onto that.

Steven Lane
Wonderful, okay. Abby, how many more minutes do we have for this?

Michael Berry
We have about two minutes left, Steve and Abby.
Abby Sears
Okay. Well, we got through what we got through last week. We still have the things that we have not touched from last week. So, let’s see.

Steven Lane
I think the third-party apps one down at the bottom… Since we did not get to that, can we jump to there? Because I think it is pretty non-controversial, except for the… Well, there is controversy on that one. Abby, do you want to go through that real quick?

Abby Sears
Sure. “Recommendations for further discussion are report separately on app registration versus app use if possible,” and Sasha, I think you had some comments related to that.

Sasha TerMaat
So, this is actually a comment that came out of an EHRA discussion because the processes for registration of patient apps and the processes for registration of clinician apps are often handled differently in EHRA discussion, so we were not sure that the measure of having a denominator of clinician apps registered was going to be practical, and none of us were certain about it, so we took it as a further follow-up. This is truly a question, not a statement, from me. I do think registration and use are different, so those can be differentiated. Whether registration makes a reasonable denominator is the open question we were doing some follow-up on with an EHRA.

Abby Sears
I think that the point of registration versus use is really important, and I think that the more we can articulate the use, the better this is going to be, because I think we all register on apps and never use them, and I do not think that reflects almost anything, frankly.

Steven Lane
I totally agree.

Sasha TerMaat
Registration in the app world is actually not a thing that a user does. So, with FHIR, the app has to register with the server… I am mangling all the vocabulary here; apologies to FHIR experts. So, in a patient-facing app world, before a patient-facing app could be used by any patient in conjunction with an EHR, it has to register with the server to be available, and so, the EHR developer maintains the registration process and knows which apps have registered because they have filed with the EHR developer. And then, after registration, it is available to be used at a particular EHR deployment site by a particular patient who has selected that app.

And so, the EHR developer would know about the registration action from a patient app perspective, and then, the usage would be reported by the health system because they would have that in their audit log. Clinician-facing applications are not necessarily registered with the EHR developer in the same way patient-facing applications are. That was what we had this open question about here. But, the app registration
would not be about something someone was doing in the app. That would be about the app developer signing up their app to be used with a particular EHR.

**Steven Lane**
So, my suggestion is that we would suggest that metrics report on the use of clinician-facing apps rather than their registration.

**Sasha TerMaat**
Sounds good. I am on board.

**Abby Sears**
Or, even the activation of it within the provider system. I think the registration is not going to tell us much of anything, but I do not think we are trying to have the providers do any reporting based off their use of the apps, so something in between might actually be the activation of the apps within the provider system, which might tell us at least something more than registration.

**Sasha TerMaat**
What is the difference between activation and use?

**Steven Lane**
Activation means you installed it, use means I used it. To me, that is very different.

**Sasha TerMaat**
Right. Is there a system thing that would know it is activated if there is not…I know use is in the audit trail. What would be the indicator that something is active in the EHR when the active thing is the app?

**Steven Lane**
Would the EHR not know that an app had been installed?

**Sasha TerMaat**
Well, you would know if it was registered and you would know if it was used. I do not know what installation means in an app context when you are doing FHIR.

**Raj Ratwani**
We are three minutes over time. Let’s leave a comment there that we need to appropriately clarify on installation, activation, implementation, and whatever the other words are there, so we can flag it. I want to make sure we leave enough time for Ken and Jim to jump into standards adoption and conformance measures.

**Steven Lane**
Absolutely. Thank you so much for the time.

**Raj Ratwani**
Steve and Abby, thank you for all the hard work on that, and Sasha, great comments there. Ken and Jim, over to you, and Ken, I know you have some slides that you want to present, but let’s get the overview of the measures first.

**Discussion of Standards Adoption and Conformance Measures (01:05:54)**

**Gary Ozanich**
Okay, Slide 16, please, and I will do this very quickly. So, the motivation of the measures is to provide a measure of the use of FHIR profiles, which can help guide updates to the US Core and provide insights into the volume and types of data being used by apps, second, to assess the implementation of health IT provisions of CURES by providing insight into the usage of bulk FHIR overall and for different use cases. So, the draft measures are designed to address the following questions when FHIR Core and non-Core are requested by providers and consumers when they use the apps and how frequently both FHIR transactions are occurring overall, and by type. Next slide, please.

And, for the clinician-facing and patient-facing apps, these are the suggested measures. I know Ken and Jim are going to go into them, so I will not go into them now, and then, the third measure concerns bulk FHIR. So, with that, Ken and Jim, I will turn it over to you.

**Raj Ratwani**
Thanks. Ken, Jim, before you jump in, we are going to do a slight adjustment to the agenda here, and apologies to those in the public comment, but we are going to move that to 11:25 as opposed to 11:20 so we can get a few extra minutes here. Ken and Jim, over to you.

**Kenneth Mandl**
Fantastic. I have two questions: Can you hear me, and can you see my slides?

**Raj Ratwani**
We can hear you, and slides are now up.

**Kenneth Mandl**
Fantastic. So, thank you kindly to the ONC, the HITAC committee, and the task force chairs for this opportunity to present. I will be presenting work that Jim Jirjis and I, along with Bill Greg and input from several members of the standards community, have given input into. So, hold on. It is not working so well. Hold on for one second.

**Bryant Thomas Karras**
While Ken is doing that, this is Bryant. If I am on the phone only, will these slides be distributed afterwards?

**Kenneth Mandl**
Okay, hold on. Wow, this really... Okay, can you still see my slides?

**Raj Ratwani**
I currently cannot. For the slide share question, we will try and get the slides out to everybody.
Okay, hold on. Let me try this again. How about now?

Raj Ratwani
Yup, we can see them now.

Kenneth Mandl
Okay, I am just going to use this in this mode to keep it safe.

Raj Ratwani
Yeah, that would be great.

Kenneth Mandl
So, the objectives today: We would like to give ONC the data they need to react to the real-world evolution of health information technology under 21st Century CURES and to monitor and advance a competitive, market-driven app space information economy, a data-driven health system where EHR-derived population data sets are readily obtainable and exchangeable, and an affordable information economy. So, we therefore believe that it is important to collect across different denominators and numerators to yield a range of metrics that can be mixed and matched as the ecosystem evolves, so we have taken the excellent start that the Urban Institute gave us with metrics across clinician-facing apps, patient-facing apps, and the bulk FHIR access API-based ecosystem, and provided somewhat more granularity in our suggestions.

So, for clinician-facing apps, and what you will see is a repeat of this structure and theme across clinician-facing, patient-facing, and bulk FHIR apps, let’s begin at the bottom of the slide with the denominators. This gets at some of the conversation, which I found very useful in the previous session, about app registration. I think some of those questions that were raised just before this presentation began are important and worth answering with perhaps some deeper dives, and I will refer those in some of the questions at the end of the slide deck.

One way to begin to look at how used these apps are is to look at the number of providers with at least one EHR session in the period, so if we are looking at activity within an apps ecosystem, one important denominator is how many docs this applies to. Another is how many patients are in that ecosystem, perhaps by sight or perhaps across the vendor product, what is the count of EHR-documented encounters in the period… I know that metrics for encounters have been discussed in prior sessions, and I do not think there is anything unique about these metrics. We are certainly comfortable looking at a universal definition across all these metrics and domains for encounters. And then, at times, it may be important to look at a per-site usage, and I will just note that “per site” may vary. Jim gave an example of dbMotion installation at HCA, which is a single installation, but it covers all the HCA hospitals. So, is that a site, even though it is many hospitals, and also, what resolution can developers ascertain now, and what can we expect them to be able to ascertain in the future in terms of parsing, for example, by site?

So, looking at this, what you will see is that the denominators are very similar across these metrics. Let’s look at the numerators now. So, for clinician-facing endpoints, the total number of API calls by FHIR version and by resource type. So, one way to look at this is are these clinician-facing endpoints exposing data according to which FHIR version, and how much data is moving in an API call by resource type? I think “resource type” here is synonymous with what is meant in the Urban Institute metrics by the term “profile.”
I believe that "resource type" is referring to the same thing that Urban Institute is referring to in "profile." Sorry for the jumpy slide.

For clinician-facing endpoints, total number of creates and updates by FHIR version and resource type. This refers to the ability to write back into the electronic medical record, something many, many stakeholders since the earliest days of the Smart on FHIR Project have asked for. The write-back is more complicated, less evolved part of the ecosystem, but one which could be monitored through the EHR reporting system. Next bullet: For clinician-facing endpoints, total volume of data transferred in gigabytes and count of FHIR resources transferred by FHIR version and by resource type. So now, we are getting a sense for how much data is moving around into clinician-facing apps. And then, this gets to the conversation that was just happening, and I think it is worth resolving uniformly across these different metrics. For clinician-facing endpoints, the total count of Smart on FHIR app launches. So, this begins to get at the apps and how regularly they are used.

Now, let’s look at patient-facing, and you will see a lot of analogy here. So, the denominators are very similar, except we are not as focused on the numbers of clinicians for the patient-facing side, so this will sound very familiar, but I will go through it. For patient-facing endpoints, total number of API calls by FHIR version and resource type. For patient-facing endpoints, total number of creates/updates by FHIR version and resource type, which is the write-back, total volume of data transferred, again, and count of FHIR resources transferred by FHIR version and resource type. For patient-facing endpoints, count of Smart on FHIR apps with at least one launch. For clinician-facing endpoints, the total count of Smart of FHIR app launches. Again, getting at that very important distinction which was articulately discussed before between whether you are actually using these apps, and again, we have reviewed the denominators.

Bulk data whereby we expect that there will be different levels of usage, and here, we are looking at in the denominators, the count of EHR-documented encounters in the period, and denominators per site, and denominators potentially by user type. Here, we are going to have different users potentially accessing these bulk FHIR endpoints, and it would be very interesting to know the categories of those users to understand how data are moving around the health system.

Let’s look at the numerators. For bulk data endpoints, total number of API calls by FHIR version and resource type, total number of creates and updates by FHIR version and resource type, write-back… That one, we may not need as much in the bulk FHIR world. There may not be much write-back going on. For bulk FHIR endpoints, total volume of data transferred, gigabytes, and count of FHIR resources transferred by FHIR version and resource type. And then, there is another idea that we are introducing here, which is the number of registered smart back-end services apps with at least one API request. These are apps that are connecting on the back end of the electronic medical record and may also access bulk FHIR data.

The next slide is a category that is not yet in the Urban Institute metrics, but is an important additional ONC requirement maturing as a certification requirement one year after the other interoperabilities, and that is the electronic health information export. This is the whole electronic medical record exported either for a patient, per data, or for a provider. So, the whole ex hospital data set out of one vendor product, presumably to be uploaded into another vendor product or potentially into an analytic environment. That is a requirement, and so, I think a very interesting thing to monitor how this is happening. It also relates to
HIPAA right of access for patients requesting their own EHI. So, the denominator here is per number of sites and the numerator is number of individual patient EHI export requests processed: Those initiated by patients, those initiated by hospital staff, and then, the number of EHI full-data export requests, and also cost. I know we are coming up on time, but I am coming up also on finishing.

We also are proposing that we understand the range of apps by getting counts and even lists of apps by the name of the app, or perhaps a unique app ID, counts and lists of apps using the Smart on FHIR API and vendor-associated app galleries, counts and lists of apps not using the Smart on FHIR API, counts and lists of apps using the Smart on FHIR API plus additional API, or counts and lists of apps with at least one launch in the measure period registered for Smart on FHIR write permissions or apps using the write APIs. That is W-R-I-T-E, for anyone on the phone.

Other questions: Are vendors certifying their core products, e.g., bulk FHIR bolt-on products? Can we get metadata on apps with unique identifiers for each app? Can vendors resolve API calls by site? What data are visible to EHR vendors currently? For example, does an EHR vendor typically even know how many apps are registered? How are these metrics complemented by mandated reporting requirements? And, I am going to hold it right there at time.

Raj Ratwani
Perfect. Thanks, Ken, and apologies to everybody. I failed to ask Ken to make those slides a little bit bigger, but we will make sure those get distributed. We are right at time for public comment, which I want to make sure we respect, so we will go ahead and do that, and then, hopefully, we will have two or three minutes to at least get discussion started.

Public Comment (01:22:42)

Michael Berry
All right, thank you, Raj. Operator, can we open up the line for public comments?

Operator
Yes. If you would like to make a comment, please press *1 on your telephone keypad. A confirmation tone will indicate your line is in the queue. You may press *2 if you would like to remove your line from the queue, and for participants using speaker equipment, it may be necessary to pick up the handset before pressing *. One moment while we poll for comments.

Michael Berry
All right, thank you. And, while we are waiting, I just want to remind everybody that we will reconvene our task force meeting next Thursday, August 19th at the same time, 10:00 Eastern Time. Operator, do we have any public comments?

Operator
There are no comments at this time.

Michael Berry
All right, thank you. Raj?
Raj Ratwani
Great, thanks. We are going to use every minute we have, so let's jump in to see if there are any questions or comments for Jim and Ken. Sasha, I see your hand up.

Sasha TerMaat
Yeah. Ken, thanks. I do think a lot of what you suggested clarifies some of the vocabulary confusion we were having when talking about API measures, and I agree it would be helpful to be consistent across all of the related measurements. I would be happy to add comments if we could get this in a format that we can have access to offline. One of my other thoughts would be that a variety of these measures are outside the scope of certification. For example, there is no certification requirement to have an app gallery at all, and so, I think we would probably want to prioritize by the ones who would be within the scope of all the certified products participating in the reporting program.

Kenneth Mandl
Yes, and from that perspective, if EHR vendors are meeting certification requirements through, for example, an app gallery, how would you recommend monitoring that activity?

Sasha TerMaat
What certification requirement would you see as being met by an app gallery?

Kenneth Mandl
For example, supporting the clinician’s ability to connect an app to the FHIR API.

Jim Jirjis
Jim Jirjis here. Not all the apps in an app gallery would necessarily use a FHIR API. Is that correct? Is that what you are getting at? These measures are meant to monitor the use of these APIs on FHIR. Is that what you are getting?

Sasha TerMaat
Yeah. I guess I think of app galleries as supplemental to the certification requirement. I do not see the overlap, and Ken, maybe we need to talk further, but in my mind, they are separate, so I would focus on the certification components.

Kenneth Mandl
Okay. We will certainly look at that, dig in, and sort out what is most consistent with the certification requirements.

Raj Ratwani
Okay, we will take a quick question from Steve Lane, and then we are going to wrap things up.

Steven Lane
Thanks. I just wanted to ask if we can please get the specific recommendations that were presented added to the shared Google doc so that we can look at them and wordsmith them as we have been doing with the others? Great presentation. Thank you, Jim and Ken, for putting this together. Clearly, nobody understands
this stuff better than Ken, but we do want to bring it down to a level where we can turn this into specific recommendations.

Final Remarks (01:26:37)

**Raj Ratwani**
Yeah, great point. We will absolutely do that. So, we will make sure those get added to the shared Google doc. I would ask everybody once again to jump in this week, to look at those, and to comment on the other ones, and then we will continue the discussion next week, so we will make sure we have some time on the agenda for next Thursday to walk through these in some more detail and get feedback. With that, we are right at time, and I will be very respectful of everybody’s time. Thank you to everybody that presented today and took the time to really think through what was being presented and the great conversation, and thanks to everybody for jumping on this call to make sure that we can keep moving through these, and as Mike Berry mentioned, next Thursday, same time, same place. Thanks very much, everybody.

Adjourn (01:27:21)