



Data Interoperability across the Continuum: CMS Data Element Library Call

Moderated by: Charlie Eleftheriou
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Operator: At this time, I would like to welcome everyone to today's Medicare Learning Network® event. All lines will remain in a listen only mode until the question and answer session. This call is being recorded and transcribed. If anyone has any objections, you may disconnect at this time.

I will now turn the call over to Charlie Eleftheriou.

Thank you. You may begin.

Announcements & Introduction

Charlie Eleftheriou: Hi, I'm Charlie Eleftheriou from the Provider Communications Group here at CMS, and I'm your moderator today. I'd like to welcome you to this Medicare Learning Network call on the CMS Data Element Library.

Today's call will cover the recently released CMS Data Element Library Database of Post-Acute Care Patient Assessment Content mapped to Nationally Accepted Health IT Standards to Support Interoperable Health Information Exchange Between Providers with Patients-- and with Patients, I'm sorry. A question and answer session will follow the presentation.

Before we get started, you received a ring to the presentation in your confirmation email. The presentation is available also at the following URL: go.cms.gov/npc, again that's go.CMS.gov/n as in national, P as in provider, C as in call.

Today's event is not intended for the press and the remarks are not considered on the record. If you're a member of the press, you may listen in, but please refrain from asking questions, during the question and answer session. If you have inquiries contact press@CMS.hhs.gov.

At this time, I'd like to turn the call over to Beth Connor, Registered Nurse, CMS Project Lead for the Data Element Library.

Presentation

Beth Connor: Hello everyone. I'm Beth Connor, I am a Registered Nurse; I work in the Division of Chronic and Post-Acute Care here at CMS. It's part of the Quality Center, the Center for Clinical Standards and Quality that DC PAC is responsible for the Post-Acute Care Quality of Reporting Programs and that includes for inpatient rehab facilities, skilled nursing facilities, home health agencies, long term care hospitals, and hospices.

And today with my colleagues, we're going to be talking about interoperability and the Post-Acute care space. With me today, I have my colleagues Elain Wilkhaiser, who also works in the Division of Chronic and Post-Acute Care, Eliz Palena Hall from ONC, who will talk a little bit more about some of the work that is happening at ONC and the work that she's coordinating with me and others here at CMS on the Data Element Library. We also have Michelle Dougherty from our RTI, who is also a team member for the Data Element Library, and Dave Hill from MITRE, who also works on the DEL.



So, if you're following along with the slides, I'll just point out a couple of things. Slides 2 and 3, you know, here at CMS we use a lot of acronyms and you'll notice that we provided a guide for the acronyms that are used in the presentation on slides 2 and 3.

In today's agenda, we're going to talk about Post-Acute care. So, we're going to provide some background on Post-Acute care, defining what a typically use case might look like for a Post-Acute care patient, as well as, the flow of information. We're going to introduce the IMPACT Act and Data Element Library, and we're going to look at standardization and Interoperability, including some of the benefits and challenges associated with those things, as well as, next steps for developing FHIR standards in Post-Acute care.

And if you go to the next slide, side 5, some of the goals for today, we'll talk about the DEL development and implementation. We're going to discuss how the DEL through searching and reporting, through reports, can be used to support health information exchange and Interoperability, identify how Post-Acute care assessment data can be used to support discharge planning, improve quality, and decrease provider burden, as well as, explore next steps for Fast Healthcare Interoperability Resources or FHIR implementation guide to support care coordination and health information exchange.

And then we'll skip to the next slide 6, we'll talk a little bit about Post-Acute care.

Side 7, so side 7. Post-Acute Care includes the settings that I introduced earlier, long term care hospitals, skilled nursing facilities, home health agencies, inpatient rehab facilities, and hospices. There are approximately 33,000 Post-Acute Care providers in the United States.

Next slide. So recent ongoing research out of RTI in collaboration with ASPE shows that 45 percent of Medicare patients require Post-Acute care services upon discharge from a hospital.

Next slide. So now I'm on side 9. The most common sequences of care for patients when they're discharged after being hospitalized, include that most are sent to a Home Health Agency, so 42.9 percent are sent for home health services, another 18 percent are sent to a skilled nursing facility, and then, of those that are sent to Home Health Agencies, another 7.5 percent require more Home Health agency services, and 6 percent of those that are sent to a Skilled Nursing Facility require Home Health services after that.

Next slide, slide 10. So many Post-Acute care patients have a chronic, multiple chronic conditions. And the largest volume of claims were for various chronic conditions, and those include, of Medicare claims, excuse me, and those include: hypertension, high cholesterol, arthritis, diabetes, heart disease, kidney disease, as well as, others, and all of which or many conditions that both that many Post-Acute care patients have.

Next slide, slide 11. So, in 2016, it was found that about 13 percent of Medicare beneficiaries, who had 6 or more chronic conditions, spent almost 47 percent of Medicare dollars, so quite an astounding figure there.

The Patient Story and Value of Post-Acute Care Interoperable Data Exchange Across the Continuum

And at this point, I'm going to turn it over to my colleague Liz Palena Hall from ONC, who's going to talk a little bit more about the patient's story, and the Health Information Exchange and Interoperability.



Elizabeth Palena Hall: Thank you, Beth.

So in the next slide we want to highlight some of the key reasons why Interoperability is needed, by walking through, you through, Mrs. Smith patient story. And while the story is a theoretical patient stories, stories like Mrs. Smith play out across the country every day.

So, to begin, Mrs. Smith is a 68-year-old white female, who start to experience frequent falls due to arthritis of the right hip. Mrs. Smith lives alone but has remain independent in her activities of daily living and uses a cane. Her adult children live in a different state. She has been diagnosed with hypertension depression, hyperlipidemia, cataracts, stage three chronic kidney disease, ischemic heart disease, and type two diabetes. She's on 9 meds to manage her health conditions and sees a number of specialists.

One day she starts to experience shortness of breath, and become febrile, and called an ambulance. When the ambulance arrived, the EMTs attempt to complete her history, but Mrs. Smith is unable to provide details, due to her increasing dyspnea, fatigue, and confusion. At hospital A, they were unable to complete the history, and the medical team is unaware of her diabetic history, and she misses her initial dose of insulin. The care team is also on aware of her chronic kidney disease and her antibiotics are not renally dosed.

She's also received a fluid bolus, and it sends her into flash pulmonary edema. She ends up with an extended hospital stay, and due to her limited mobility in the hospital, she experiences muscular deconditioning while there. When she's finally discharged, a resident writes an order for her to receive Home Health Services, and she continues with her outpatient dialysis and behavior health follow up.

However once Mrs. Smith is home with Home Health, she realizes that she's left or discharged instructions in the hospital room or other, has otherwise misplaced them. When Home Health finally sees her, they're able to contact the hospital to arrange for those instructions to be faxed. Home Health Agency also submits clinical assessment information to it, CMS, using the OASIS Assessment Instrument.

The day after Mrs. Smith is seen by Home Health, she falls again, and at this time the EMS routes to a different hospital, due to an accident on the roadway that is blocking their access. At Hospital B, she receives imaging results that show that she has broken her right hip and will need a hip replacement.

Following her hospital course, she selects a Skilled Nursing Facility to receive rehab services. The SNF sends MDS information to CMS on content such as functional status, cognitive assessment information, and depression screening. She then receives and goes home with further rehab and home and community based support services to help her with her ADLs. Mrs. Smith's daughter joins her and also needs discharge instructions, such as medication information and follow-up appointments.

As you can see in this patient story, Mrs. Smith's health care experience and transitions across provider settings really illustrates the need to share her health information with our clinical team, her community support provider, and her daughter, and how critical this is to her health outcomes.

Advancements in Interoperability will be essential to improve sharing essential health information in the future, to ensure that we're able to provide the best outcome and will be a key enabler for patient centered care.



Next slide please. As we see often for Mrs. Smith's patient story, there were multiple points of failure, and these are common during transitions and care, and often can include things like medication discrepancies, such as drug omission. And frequently there are multiple modes of a communication when a person is discharged that can introduce errors. There's also delayed information that may cause adverse events, and reliance on the recall of patients during times of high stress can also be unreliable. These points and filler can lead to injuries, to increase costs and burden, and, as well as, longer length of stay in health care utilization.

Next slide, please. So, what do we know about EHR Adoption and Interoperability in Post-Acute Care. ONC published a data brief on SNFs and Home Health EHR Adoption and Interoperability based on 2017 surveys data, and found that home agencies had adopted an EHR at the rate of 78 percent and SNFs had adopted EHRs at the rate of 66 percent.

ONC measures Interoperability based on the ability of the facility or agency to defend, find, receive, and integrate health information. So, if you look at the integration metric or the ability for the entity to consume health information into their EHR and use it, only 18 percent of SNFs and 36 percent of home health agencies were able to do this in 2017. The data clearly shows there was an opportunity for improvement in this area.

Next slide please. In late 2018, MITRE conducted a landscape analysis regarding PAC Interoperability and identified a number of key challenges, these include things like lack of business case, or no financial incentives to cover PAC health IT adoption and interoperability, the lack of standards or consistent use of standards; the limited understanding of providers around Interoperability and its values, such as the efficiency gains that can be achieved, or improvement in quality of care. The lack of formalize workflows, such as a different organization, using different ways, multiple ways, to discharge a patient. Frequent changes in PM models or regulatory changes, also, have been noted to take focus away from resources that would otherwise be used to invest in our health IT. The lack of data transparencies, so where is the data coming from?

Staff recruiting, and retention has, also, been noted to be a challenge, whereas, it is common that-- it has been, commonly, noted about 30 to 40 percent attrition incurs in the SNFs setting.

Next slide please. I think we also noted that accessibility can be problematic for some occasions, including being able to utilize portals effectively, or understanding how to leverage their username and password can be challenging for some. Physicians and clinicians have not typically been integrated in the standards, and software designs are needed for the Post-Acute Care settings.

Settings, such as senior housing facilities and senior living facilities, have been slower to adopt Health IT technology. Internet connectivity can also be a challenge for some. Patient matching continues to be difficult, as well, for the Post-Acute settings, and data, frequently, is not available to PAC facilities, when it is needed most.

Next slide please. So, improve communication, and coordination, and transitioned, and discharge can not only improve patient outcomes, but can also significantly reduce cost. This slide shows the time savings for a PCP that- and how much time they spend finding, faxing and refaxing information, and the cost that could be saved. Subsequent rows show costs that could be saved from adverse events during hospital stay, as well as, cost that can be saved from associated Home Health or SNFs and LTCH stays.

And with that I'm going to pass it over to my colleague Lorraine, who's going to talk about the opportunities for the IMPACT Act in CMS Data Element Library.



IMPACT Act and CMS Data Element Library

Lorraine: Thanks Liz. Good Afternoon everyone. I'm a talk a little bit about the IMPACT Act and its role in Standardization and Interoperability among the PAC setting. So, the Improving Medicare Post-Acute Care Transformation Act was signed into law in October of 2014. And I'll be beginning on slide 19, for all those who are just joining or need to catch up.

It required standardized patient assessment data before the PAC settings, and you can see the settings listed on the slides, the act requires the use of standardized medical quality measures and assessment data for these PAC setting. And also requires that the standardized data be interoperable.

The intent of this act is to support access to longitudinal information to help inform clinical decisions, making and promote coordinated patient care, is to enable data comparison across PAC settings, and it also is to improve discharge planning and health information exchange. The implementation of coordination of these standardized will help aid and improve efficiencies through quality of care and improve health outcomes.

Move on to slide 20 please, Data Element Inoperability. The IMPACT Act requires that PAC assessment data elements be Interoperable. That is hat these data elements share the same definitions and common standards, to ensure that longitudinal information be exchanged through these between these PAC settings.

So, the result is that these interoperable data elements may reduce the overall provider burden, by allowing the use and exchange of health care data, supports electronic health information exchange to facility care coordination, and personal centered care, and also support real time, data driven, clinical decision making.

Go on to the next slide that would be slide 21, the IMPACT Act requirement. So, the IMPACT Act specify certain measured domains or categories to be address, these include: the development of quality measures or functional status, integrity, medication reconciliation, incidents in the major falls, and the transfer of health information, as well as, measures on Medicare Spending per Beneficiary, discharge to community, and potentially preventable readmission.

In addition, providers must submit standardized patient assessment data through PAC assessment data sets, for all patients at, both, admission and discharge in the multiple category including: functional status, cognitive functional and mental status, special services, treatments and interventions, medical conditions and comorbidity impairment, and other categories that have been required by the Secretary. And data must be interoperable.

Next slide, 22. So, what are these PAC care assessments? These 5 Post-Acute Care assessment data are tools that are used to collect, report performance data for each of the PAC study. You can see a sample of the settings listed here on the slide. They include Inpatient Rehabilitation Facility Patient Assessment Instrument or the IRF PAI, Long-Term Care Hospital Continuity Assessment Record and Evaluation Care Data Set or the LCDS, Resident Assessment Instrument or RAI, and the Minimum Data Set for the MDS, Outcome and Assessment Information Set, or the OASIS, and the Hospice Items Set or HIS, known as HIS for Hospice.

The PAC providers are required to submit data to CMS via the use of one of these specific PAC assessment data assessed. These PAC assessment collections are collections questions and response options on a variety of topics both administrative and clinical in nature. Though the PAC assessments looks different and may have



different titles at this time, the goal is to have these assessment instrument standardized with interoperable data, enabling cross settings data collections, outcome comparisons, exchangeability of data, and comparison of quality within and across health care settings.

Next slide please, slide 23, PAC Assessment Content. These CMS patient assessments have been developed individually and over time. While similar concepts are collected on each, there's a variation on how this information is assessed, making it difficult to share that information and easily compare outcomes across setting.

PAC assessments must be updated to include standardized items that are mandated by the IMPACT ACT. These changes allow quality measurements across multisite episode and care be the focus for the patient, and not necessary the health care setting. While the PAC assessment instruments do not paint the whole picture of a person, reporting of this data supports the collection of longitudinal information, which can be used in an exchange to inform person centered care over time and also enabling quality measures care setting. The patient assessment data set includes administrative and clinical assessments.

Next slide. Slide 24 states for standardize patient assessment data element can serve many uses, as you can see as illustrated on the slide. The slide represents how a single concept can be assessed the same way across settings.

For example, Section GG on the IRF PAI, LCDS, the MDS, and OASIS assessments centers around a person's functional status, including their mobility, bathing, toileting, self-care, and eating. So, an example may- questions on the left ask about a person's ability to move, the response is on the right describes a person's independence of these tests. It doesn't matter whether person is in an Acute Care setting, a PAC setting, or at home, their ability to move should be access the same way.

Standardizing these assessment questions and responses is just one way to more promoting Interoperability and to ensure that everyone has the same understanding of the clinical content. We understand that they'll never be a hundred percent standardization across assessments due to different settings and having different needs, but CMS plans to standardize, when possible.

This information that is supplied to CMS can be used for multiple purposes, including quality reporting, payments and payment reform, as well as, provide for care planning, quality improvement activities, and for health care internet exchange during care transition.

Our idea is to collect once, but use it multiple times through reducing provider burden. And with that, I will turn over to Beth Connor.

The Data Element Library (DEL)

Beth Connor: Thank you, Lorraine.

So, we're now on slide 25, the Data Element Library, and the Data Element Library was recently released, just this past June, so not quite a year old. It is our beta release, and of the DEL is basically the- to the support interoperable standardized patient assessment content. The DEL is a centralize resource for CMS assessment



data elements. So, the questions and response options that are found on the Post-Acute Care assessments, that Lorraine just described, and the mappings to nationally accepted Health IT standards.

So, there is no patient data in the Data Element Library. It really is the Post-Acute Care assessment questions and response options or data elements that are found on those assessments.

So, some of the goals of the Data Element Library are to serve as a resource for CMS assessment data elements, to promote the sharing of electronic CMS assessment data sets and information standards, and to help support industry efforts to promote electronic health record and Health IT Interoperability.

So, the intent of this work is to support interoperable exchange. So, we are standardizing assessment, so that we're all speaking the same language. And then we're providing the building blocks through exchange standards, to a support the seamless exchange of data between providers, so that data follows the person. This data can be then being shared, as Lorraine mentioned, in care plans, transfer summaries, consultation notes and referrals, or in other documents, when a person transitions from one setting to another.

And next slide, slide 26. So, I've provided, we've provided a few screen shots of the Data Element Library. In the next few slides, I would say that you can Google the Data Element Library, it usually pops right up, and you can find it there, or you can type in [DEL.CMS.GOV](https://del.cms.gov). And, you'll also be taken to the home page, which is shown here on slide 26.

On the home page, I'll just point out a couple of things. It tells you a little bit about what the Data Element Library is. At the bottom of the page, you'll find a link to sign up for the data element libraries listserv. We do send out announcements on the listserv, so when new assessment content is included, or updated, or new health information IT standards are included in the Data Element Library, we will send out a notification.

We also have announcements that are made here on the home page as well. And included in the Data Element Libraries are the Post-Acute Care assessments that are required by the IMPACT Act, as well as, the Hospice Item Set. The hospice-- hospices are not required under the IMPACT Act.

The next slide will just show you there's a couple things that you can do in the data app-- with the Data Element Library. So, the two basic functions are that you can search for information and you could obtain reports. You can search for information in various categories, so if you know the items ID, or you want to find information on pressure ulcers, or on eating, you can type in the tax, if you're interested to know what all of the data elements are for specific assessment instrument. So, say our want to know what everything is or what are all the items for the IRF PAI, you can search by assessment instrument version, as well as, some other searches that are available. And I encourage you to check those out.

Once you select your search then you'll come up with the results list. If you select one of the hyperlinks, we are on slide 28 right now, moving to slide 29, when you select the hyperlink, you'll find detailed information about the assessments—the assessment items. These items or this, the DEL, can be used by researchers, by providers, by Health IT vendors, it is a free public resource. We are encouraging its use, but there are no requirements for anyone to use the DEL. But, it is a great, a helpful source of information.



The next slide, slide 30 give you a little example of what you or a Health IT vendor might be interested in seeing, if they want to know what are all of the Health IT codes that are included in the Data Element Library. You can obtain a report on that. Right now, we have LOINC codes created for all of the data elements found on the Post-Acute care assessments, and we have SNOMED codes for response options, when we can get them, when feasible. And I'd say there's almost a hundred percent LOINC codes for the PAC assessments, with a few exceptions here and there. And SNOMED codes are a work in progress, right now.

Next slide, slide 31. So just a quick shout out that if you like to have more information on the Data Element Library or you'd like to provide some feedback about the Data Element Library, because we're very interested in hearing your feedback, and to know how you're using the Data Element Library, or other opportunities to improve functionality, that's always something that we're working on. But there are some helpful documents, as well as, some frequently asked questions, and a previous presentation on the DEL that you can find under the training and FAQ tab.

And with that, I'm going to turn it over to my colleague Michelle Dougherty, who's going to talk a little bit more about some of the work behind the data on the library.

Data Element Library Health IT Work Group Activities

Michelle Dougherty: Thank you, Beth. No on slide 32, I'm going to transition to a different kind of segment of our presentation. So earlier you heard about the IMPACT Act and how it requires assessment data elements to be interoperable, that would support health information exchange, which ultimately improve access to longitudinal information, facilitates care coordination and improves patient outcomes.

So in the next set of 10 slide or so, I'm going to provide an overview of the Data Element Library Health IT Work Group Activities, and how their work is seeking to make the data elements interoperable and align with industry standards, so cavaliers, terminologies, and codes set.

The next slide gives a high kind of level view of our guiding principles. So, when the Health IT Work Groups started you know what guided us was that the data set or a subset of relative relevant data from the assessments needed to follow the person, be available in real time, and be exchanged in used by Health IT System.

Slide 34, you'll get to see kind of a view point of our approach and how we tackle that kind of data following the person. So, our approach was to map data set items, both, the question and the response options to help IT content standards. Beth mentioned the use of the LOINC and SNOMED when she was going over the Data Element Library and what's in the repository. The, you know, so I'm going to tell you a little bit more background around that and how we got to that work.

So, you know, once they, once the data elements are mapped to LOINC and SNOMED then our kind of vision was that the content standards could then be used, these LOINC SNOMED codes and those data elements would be used in exchange standard. So, you'll hear a little bit more about that through the presentation. So exchange standards like HL7 Consolidated CDA or the FHIR Standard would then relay relevant information between providers. And then using those standards, some of the assessment content could be we reused to populate clinical documents you know and exchange with other providers, like transfer summaries referrals care plan, you know. Beth had mentioned this as well.



So moving to slide the 35, this is kind of an overview slide that talking about our kind of focus areas of the Health IT Work Group. We had 6 main groupings of work that we've been performing to support the packet data set, to become interoperable, and ready to use an exchange in activities.

So the next slides will go through in more detail each of these 6 areas.

So, slide 36 is our kind of our first step. So, we needed to identify or articulate a vision for interoperable assessment content that then would recognize the value of having standardized data that's collected on almost all Post-Acute Care Patients, and what value that can provide the industry, and how it can be used in following the patient.

So, we identified two models to support Interoperability. Our current approach is to identify a code that represents the assessment question and/or response and can be reused in those relevant exchange documents. We also identified a possible you know future model, in which a value setup code could be identified to support the completion of an assessment item.

The next slide, slide 37 talks about our analysis or consideration for Opportunities For Burden Reduction and Improved Communication. So electronic data can be shared between providers and is machine processable and when that's done it reduces burden by eliminating duplicative data entry, minimizing search time looking for relevant content for complete assessment.

We are hearing from early adopters and implementers, you know at the provider level that when they're able to do so, when they're able to exchange and obtain information in electronic format that can be incorporated into their EHR. That - it really does make a difference for the clinicians and the providers in terms of improving communication and reducing data entry time.

They had some important takeaways from their experience. They said burden is reduced and communication improved, when there are common data standards across various provider type. And when data from the exchange documents between you know will populate the patient's electronic health record.

So, slide 38 identifies another focus area of the Health IT work group which was to recognize important use cases, therefore, providers and implementers and how they are exchanging information on patients and when they're doing so. So, you know in addition to exchanging PAC assessment datasets of the whole, the Health IT work group continuously has been seeking to identify other common use cases.

And identify where relevant kind of subsets of data from those assessment datasets maybe used. So, this slide highlights some of the use cases we have identified. And by doing so, it's helped us focus on what assessment content maybe the most frequently reused you know to support care coordination or transition.

For example, functional status and cognitive status are two content areas from the assessment items, that have a high value to be reused, and then in turn this prioritizes our work and making sure ensuring that data is interoperable.



The next slide, slide 39 talks about our work in aligning with national standards. So, I mentioned on an earlier slide that improved communication and reduced burden, implementers identify the importance of using the same data standards across settings whenever possible. So, not mostly just across PAC settings are certainly important but that in cross other clinical partners as well hospitals and physicians.

So, where and how could that be done? And so, the Health IT workgroup that embarked on in approaching which we continually monitor national standards and identify opportunities to align assessment content whenever it's possible.

So, for example, we analyze the ONC Interoperability Standards and advisories with a goal of kind of looking for opportunities for aligning with PAC assessment content. We also analyze the common clinical dataset and identified opportunities for alignment of assessment content to the USCDI. And last, we were able to provide comments on future candidate data types for possible USCDI expansion that represents data that's supports Post-Acute Care patients.

Next slide talks about our significant focus of the Health IT work group to map relevant vocabulary and terminology standards to the assessment questions and response options. So, that work is described further on this slide. You know really it describes kind of what has been entailed in the mapping process.

Our first step was to identify the proper vocabularies and terminologies, so you've heard a few times, we've reference use of LOINC and SNOMED. So, we selected LOINC to represent the questions and answers. The value of LOINC that it provides an exact replication of the PACs of the assessment.

We also selected SNOMED to represent the answer meanings for the response options of the assessment data element. So, this slide shows an illustration of one data elements item GG0100 from the IRF-PAI on functional abilities and goals. And you can see how a LOINC or SNOMED code is attached to each individual question or answer option.

And that code number is the LOINC code, will represent the exact text. If it's a SNOMED code would represent the meaning in specifically for the answers. These codes are available in the Data Element Library and that Beth showed you on earlier slide what that report look like, and that we anticipate, most often that vendor, implementers would be using that report.

So, moving to the next slide, slide 41, you know finally the Health IT work group focused on resources and tools that were used by developers and implementers. And we did so by identifying best practices for the design of data elements to support Interoperability. And we also did so by ensuring that Health IT vocabularies and terminologies that we selected are used within health information exchange standards. We didn't want to disconnect between the two and select a vocabulary or terminology that wasn't used in big standards that would actually exchange that content. So, it's really important to connect those two.

The, work group is also exploring ways for how the DEL content can be used by other industry tools, that are used by vendors and implementers, such as the Value Set Authority Center and Registries LOINC Mapping Assistant. Our goal was not to replicate, but to see how the DEL can work together with these resources into all. We also recently convened in advisory group roundtable meeting to get input from implementers on the Data Element Library, our Health IT priorities and the priority use cases, and their feedback has been invaluable.



Slide 42 provides a high-level summary of some of their recommendations. So, during that day-long meeting industry experts provided suggestions on clarifying the scope and use of the Data Element Library, what's needed and the ideas for the future including how it can be a resource to connect standards, align with other tools and fill gaps.

The advisory group also identified prior use cases, the next suggested ways that the DEL could support outreach and testing. So next slide, I'd like to turn the presentation over to Dave, who'll talk about it a new initiative to support Health Data Exchange.

Health Data Exchange Through FHIR

Dave Hill: Thank you, Michelle, hope everybody can hear me. So, I'm talking a little bit about what we're going to be doing with DEL and with FHIR. FHIR of courses has gotten a lot of momentum lately. You know it's being used by the Apple Healthcare, for example on over 10 percent of hospitals are you know connected to that. There's also a Google which is doing a lot of things with Cerner, Epic all of the, lot of the big players are now starting to get more and more active with FHIR.

The thing is that with FHIR is that it's really a framework and it has a lot of flexibility in it and that really is the enemy of Interoperability. And so, what we really want to try to do is, look at how this information needs to flow back and forth, not only from a Post-Acute Care space, but also across healthcare and see how we can harmonize, and build make that happen. So that it's all these different players that we've been talking about can communicate with each other.

So, moving to slide 44, one of the things that we're doing is we're starting to really participate in a lot of HL7 working groups. So, we've been talking to the patient care working group, we've been talking to the Argonauts working group-- HL7 Argonauts group even talking with also the DaVinci Project. And we're really trying to establish relationships in places where the materials that we would be developing in this effort could be reviewed by folks from all over healthcare.

We're trying to create a sustainable Post-Acute Care Interoperability Working Group. So far, we've gotten a lot of interest in this, we've been contacted by over a hundred people, who want to participate or observe what's going on here. Really the focus of this Interoperability working group is to take that use case, based on the use case that Liz presented earlier in this presentation take a very tightly scoped piece of that and try to implement something for a connect-a-thon and part of that process is really to take the use case, break it down into data models, and then, develop FHIR Implementation Guides for those data models.

And what I mean by FHIR Implementation Guide is, that it's a collection of what the FHIR community calls profiles and extensions. A profile is something that takes that flexibility in FHIR and then sort of minimize it. That flexibility to make things much more specific about what kinds of values you can put things into. An extension is something that you know FHIR is the way it was originally conceptualized that it's an 80 percent solution.

So, it's meant to fill the centrepbus the core 80 percent of the use of what would happen in healthcare. Sometimes you need to go outside that 80 percent. And so, the extensions allow you to add additional fields and additional values to be able to represent that. And that's put those two together you got an implementation guide which is



really kind of a specification for how this system can communicate with the rest of the healthcare world with through API's.

What we want to do then is, we want to try to you know take all the folks that we've built into the Post-Acute Care Interoperability Working Group as well as the HL7 working groups, and other folks that we've included in our talks and try to make sure that those things are reviewed and that their harmonized with the rest of healthcare. We don't want to create a FHIR silo so to speak of data for just Post-Acute Care. So, we want to try to make sure that you know we are coming up with things that work across health care.

At that point, we want to try to host to connect-a-thon to test FHIR Implementation Guides and that's you know where there's a number of those that are coming up. And so, we want to try to do is actually implement the FHIR API's according to the FHIR Implement Guides. So that we can really confirm and make sure that those API's actually do what we think they will do.

So that information can in fact flow and that the information can get to where it needs to be in a timely fashion. Then at that point also, we want to try to build industry consensus around the FHIR Implementation Guides. You know we're looking at what the Argonaut Group has done, do they've been able to get 82 percent adoption throughout the market in only 3 years. So, we're looking to build to do something similar to that as well.

And then, basically this is an iterative process and agile process. So, the next thing to do is to take you know to determine in the next part of the use case to implement, and then repeat those steps 4 through 8, and try to do that on a pretty regular tempo. So that if we fail, we fail quickly, and we fail cheaply. Hopefully we don't fail, but if we do it's quick and relatively painless. And you know if we do fail, we learn something, and we can try again so and do it quickly.

Next slide 45, you'll see much more detailed sort of breakdown of the use case that Elizabeth talked about earlier and this is kind of an eye chart. But there's lots of different interactions and things like that we would need to address in the use case or piece of this use case. So, the idea here I think you know one of the first things we want to try to do in the Post-Acute Care Interoperability Working Group is to find a particular piece of this, some of these transactions maybe focused on a specific transaction and see if we can get that you know get that working and some type of connect-a-thon.

So that we can show that works and then continue to build over and over and over again until we can build out this entire use case. So, this takes us through you know the outpatient through the emergency medical system through the inpatient hospital, and then finally you know in this slide anyway to the home health.

And then on page - slide 46 the use case continues. So, there's lots of opportunity here to do lots of work on these various pieces of the use case. And if we get you know right now, we have a lot of interest and maybe possible potentially to work on multiple things at once as well and try to coordinate something so we can show something a little bit maybe show faster progress.

On page – on slide 47, we've kind of a proposed timeline for this FHIR work. This is a bit of a stretch goal, but as we talked earlier about the landscape analysis, we pretty much finished that up. We're now working on generating the FHIR profiles with FHIR Implementation Guides. And so, we're looking to hopefully get a project scope statement what you know decide on the use case in the next few weeks.



And then, you know work through the development of those implementation guides and really try to get them ready in a number of reference implementation ready for the connect-a-thon in Atlanta which is just about exactly 6 months from now in mid-September.

So, we've got a fair amount to do in order to get there. But I think if we can show something there, then that would be super. And I think it could really show a lot of impact. I think there's plenty of other opportunities, there's other things going on in October and later. So, there's I think ample opportunity to even at the later dates to show something as well.

And then of course, you know the idea is that overtime these implementation guides and reference implementations get more mature and so then they can be you know moved into a FHIR implementation of a real bona fide FHIR Implementation Guide that we can publish.

So, on slide 48, we're really trying to you know have a Call to Action, so how do you participate in this separate issue? We hope a number of folks are interested in doing that. So, we're looking for Health IT developers. We want to be able to build on existing Health IT systems as much as we can. That helps us you know the ability to scale, you know we're not reinventing the wheel or we don't have to.

And you know but that allows us to try out some new things on existing systems which I think is probably maybe even better than then starting completely from scratch. We're looking for Post-Acute Providers to really sort of help us ensure that this stuff works and fits in within the clinical work flow. So that actually helps the problem instead of makes things maybe you know sort of complicating things. And we want you to know to get feedback from them on what should be are the development priorities? What are the pieces of the use case that are causing the most pain today, that we can address?

There's a number of ways to contribute. You can provide subject matter expertise to the group. You can provide the ability to scale a solution. You can also assist in the delivery of you know by developing code or developing implementation guides and other project artifacts. You can also help us out with testing.

There's a number of ways that we can—we're going to need to test this and verify that works and so if you have testing tools or frameworks that you can bring to bear on this, that would be great as well. And if you're really interested into participating either as a contributor or as if you want to observe the activities of the working group, please that's my email is on the slide, then you can please feel free to contact me and we'll be sure to add you to the list of folks involved.

So, you know that's I think kind of wraps up the presented portion of the talk. I just wanted to close with one thing is that, one time I was up in Maine and my car broke down in fact it had a bad alternator. And so, I had to take it and get it taken care of right away and I went to shop in rural Maine to get up that done. And they repaired the alternator and everything's great, and then I want to pick the car up, they said, you know Mr. Hill, you know you need to have your timing belt changed. You're overdue. And I said how did you know that? And so, we looked it up. And so, I've never been to this place before, they didn't know my car from anything.

And yet they were able to tell me that my car needed a timing belt. And I can practically guarantee if that'd been me needing to go to a hospital in rural Maine, they would not have been able to tell me about it. So, I want what



my car has. I think that would be really great you know to have that for me and for you know all of us as humans. So, with that, I will thank you very much for your attention and I will hand it over to Charlie.

Question & Answer Session

Charlie Eleftheriou: Thank you, Dave. That was great. Great story and great presentation everyone. Thank you so much. We will now take your questions on the lines. As a reminder, this event is being recorded and transcribed. In an effort to get to as many questions as possible, each caller is limited to one question at a time please, just to allow more participants the opportunity to ask questions. You —feel free to send specific questions or questions specific to your organization to the resource box listed on slide 50. So, our staff can do additional research if needed.

Preference will be given to general questions today that are applicable to a larger audience. And we're going to try to stay mindful the time here spent on each question. Dorothy, I think we're ready to take our first question.

Operator: To ask a question, press star followed by the number one on your touchtone phone. To remove yourself from the queue, press the pound key. Remember to pick up your handset before asking your question to assure clarity. Once your line is open, state your name and organization.

Please note your line will remain open during the time you were asking your question, so anything you say, or any background noise will be heard in the conference. If you have more than one question, press star one to get back into the queue and we will address additional questions as time permits. Please hold while we compile the Q&A roster.

Please hold while we compile the Q&A roster.

Well, first question comes from a line of the Joanne Saws-Nah.

Joanne Saws-Nah: Hello, this is Joanne Saws-Nah from EVP Corporation and I don't really have a question. I have 2 comments. One, I'd like to see the DME suppliers be added to the slides to show how they're impacted by the Interoperability issues. And second is, I would like to see that even be expanded beyond Post-Acute Care, so that it starts with your interaction with your primary care physician and data collection begins there, so maybe we can avoid hospitalizations rather than dealing with only Post-Acute Care.

Beth Connor: Thanks very much Joanne for your comments. This is Beth Connor. I agree with you that you know the DEL could one day extend beyond Post-Acute Care. One of the things that we're trying to do with the Data Element Library is really define those clinical assessments that are taking place and the data that's being collected and how that data can be exchanged between providers, not necessarily limited to Post-Acute Care providers, but how is information about the person following the person when they moved from one setting to another.

So, thank you very much for that comment and I will say that there is some work about DMA - DME and FHIR Implementation Guides that's coming out of CPI, right now I don't know the details of that, but if you shoot me an email, I can certainly connect you with someone who can provide more information.



Operator: Your next question comes from the line of Chris Pugliese.

Chris Pugliese: Hi, this is Chris Pugliese from Brightree. I was just sort of curious that this is all really exciting stuff, but how it might fit into existing you know C-CDA standards which is really kind of a challenge for Post-Acute today and that there isn't really set a standard out there for elements that should be on a Post-Acute C-CDA. I realized the DEL could probably fit into that and some of the work with FHIR could replace it. But just today in realities I'm just curious think about how you know that fits in. Thank you.

Beth Connor: Thanks Chris. Michelle, do you want to take this one, or do you?

Michelle Dougherty: No that sounds great. I'm happy to. It's a great question, great comment. As we're recognizing some of the challenges and so part of the Health IT work we have done I mentioned earlier, we were looking at the structure the C-CDA, the various templates those which may use the content, trying to make sure that we aligned with the types of vocabularies and terminologies that were use, but we also recognized both the opportunity as well as a limitation of those existing templates and where there might be gaps.

So, we have done some mapping to various templates, we've identified where the gaps are. The next step to address some of those gaps really comes with I think future group work of that kind of Interoperability group for those that are working within some of the standards development areas as we tailor implementation guides or customize implementation guides. And then work through those HL7 workgroups to identify and fill those gaps. So great comments and spot on. Thanks.

Operator: As a reminder, if you would like to ask a question, please press star then the number one on your telephone keypad. Your next question comes from a line of Robert Viggs.

Robert Higgs: That was Bob Higgs with ICU Care. I have a question and have a comment. First off in terms of the question to a great extent Interoperability is not really as much of an IT issue as it is a use issue given that. And given that you have to care provider organization is unwilling to use FHIR once it says Epic installs it and provides it to them. And being there's no enforcement or compliance planned by HHS or CMS, how do you expect to achieve any meaningful comprehensive Interoperability of records?

The other - the other- the other part of the comment would be if that case study that you began this with a patient Smith and both the home setting into the hospital setting, hospital discharge, home skilled care and such. If all of the records followed the patient because they belong to the patient with the collection device at every point of care we're by the only components in healthcare which is in a brick and mortar is the patient and if the travels with them, everything else works. And then you only ever have to talk to but one point at a time. So that's the other comment. Thank you.

Beth Connor: Thanks Bobby very much for your comments. We really appreciate it. I'm not sure if you saw the recent Interoperability rule release that came out by CMS and ONC combined, but we strongly would encourage you to reply back. There's a right now, there's an RFI request for Increasing Interoperability and EHR-Adoption in the Post-Acute Care Space.

We would love to hear all comments, and this really is for everybody on the call. The comment period is open. I believe until May 3rd we would – we read all the comments and we will take all of them into consideration as we move forward with next steps to advance Interoperability in Post-Acute Care. And we do agree just to speak to



the case study for that you mentioned you know that the data belongs to the patient that is something that is called out in the Interoperability rules that data should be available to patients, patient should have control over their data and we're looking forward to hearing more about what industry feels about those about the comments.

And Dave did you have anything that you wanted to add about the implementation or integration with FHIR or Argonaut maybe?

Dave Hill: Yeah sure, I mean so you know there's a lot of activity going on around FHIR. So, I think for an organization right now to sort of avoid using FHIR is going to probably put them on some degree.

I think you know they said Apple's been doing a lot with the healthkit that's going to bring I think a lot of and they're similar efforts it's not just Apple, but right now the most visible one I would say with their Apple watch program. But the thing is that you know there are already connecting over to 600 hospitals, you know 10 percent of the hospitals in United States, but that's a pretty big number in a short period of time.

And I think that's only going to continue. You know you've got big internet players that are also involved. So, I think you're going to see this explosion of availability and you know the use of FHIR throughout the healthcare world. So, I think that the rules that have come out recently from CMS and ONC, they're very much you know they're absolutely consistent with that and really pushing FHIR API's and things like that.

I think as far as the patient I mean yes you know the patient definitely owns the data, but the other thing is that you know it's helpful to have this information be available to all the people that are caring for the patient and not necessarily have them go directly to the patient to get it, because it's you know a lot of times the patient isn't able to remember like in our use case. They may be confused; they may have some challenges that prevent them from providing all of the detailed information that's really required.

So, the ability for all of the various different players not only the people who you know care for the patient on a day-to-day basis, but also the various players in this use case. That you know are dealing with this particular episode, it's important for all of them to have access to all of the relevant data that they need to make the very best decisions at the time of that decision.

Operator: As a reminder, if you would like to ask a question, please press star then the number one on your telephone keypad.

And there are no further questions at this time. I will turn the call back over to you Charlie.

Additional Information

Charlie Eleftheriou: Okay thank you. Well, it looks like that's all the questions we have for today. If you think of any additional questions that you'd like to send in, please use the email address on slide 50. Also, we hope you'll take a few minutes to evaluate your experience of today's call and presentation, see slide 53 for more information on that. And also, an audio recording and transcript will be available in about two weeks ago at go.cms.gov/npc.

Again, I'm Charlie Eleftheriou and I'd like to thank our presenters and also thank everyone who participated in today's Medicare Learning Network® event on the CMS Data Element Library. Have a great day everyone.



Beth Connor: Thank you.

Operator: Thank you for participating in today's conference call. You may now disconnect. Presenters, please hold.