Kendra Hanley

From: Kimberly Smuk
Sent: Thursday, April 21, 2016 12:43 PM
To: Bryn Rhodes; Floyd Eisenberg
Cc: Kendra Hanley; Jamie Jouza; Yvette Apura; Jorge Belmonte; Chris Markle; Nadia Ramey; Yan Heras; qdm@esacinc.com
Subject: RE: CQL - Expression of Concepts

Thanks Bryn and Floyd for your responses.
The PCPI team is reviewing and will follow up after we are able to discuss internally.

Kim
312-464-4252

From: Bryn Rhodes [mailto:bryn@databaseconsultinggroup.com]
Sent: Saturday, April 16, 2016 2:55 PM
To: Floyd Eisenberg
Cc: Kimberly Smuk; Kendra Hanley; Jamie Jouza; Yvette Apura; Jorge Belmonte; Chris Markle; Nadia Ramey; Yan Heras; qdm@esacinc.com
Subject: Re: CQL - Expression of Concepts

Hi All,

I agree with Floyd that there are potentially both QDM and CQL issues here. The CQL can support the evaluation and counting that I see being described here, but if the logic needs to be able to relate the components of the result with the overall assessment, then as Floyd is indicating, this will require the ability to represent that relationship in QDM.

So that's the part I'm not clear on, whether there is a need to represent that relationship, or if it is sufficient just to assume that it exists and focus on counting and representing the individual components.

I agree a call would probably be best in terms of talking through the details on this one and others like it.

Regards,
Bryn Rhodes
bryn@databaseconsultinggroup.com

On Thu, Apr 14, 2016 at 7:45 AM, Floyd Eisenberg <floyd.eisenberg@esacinc.com> wrote:
Kim,

I apologize that I did not see the attachment to your first email. I see this is an issue dating back to 2013. Would you be amenable to having the issue included in QDM Jira? I think it is important to do so for tracking.

I think there could be both a QDM and a CQL issue to review here. The first question, however, is how the clinical workflow and documentation provides the data you seek. It may be best to have a phone call to review, and it is possible this example would be a good one for CQL Online (which starts April 28) but we need to understand the workflow first.

Let me try to recap here:
You want to know the result of a diagnostic test, for the example presented it is one of three types of imaging studies (ultrasound (US), magnetic resonance (MR), or computed tomography (CT)). And that the result of the imaging study shows

>50% stenosis of a peripheral artery as part of the Initial Population/Denominator (IP/D). I assume the reason arteriogram (invasive) is not allowed is that it might be a valid numerator criterion.

Assumptions:

1. There is a value set of allowable US, MR and CT studies that are included in the criteria
2. There is a value set defining "peripheral arteries" and it is the same for all studies
3. The result is captured numerically (e.g., as a percentage) and the reported result would not interfere with the measurement – e.g., instead of stenosis, if the report stated "occlusion" or something like that.

First question:
Is there a standard set of reporting parameters that includes elements such as % stenosis or one or more arteries?

- Unlike laboratory reports or defined evaluation forms (e.g., the PHQ-9 for depression, or other calculators), I am not aware of standard imaging study. There are LOINC codes (panels) describing some imaging studies, all of which have the same attributes (each with LOINC codes) - however LOINC codes are not available for each type of imaging study, and for US, address only 2 peripheral arteries. So I don't think it will help with your needs. (See table below)

69379-5 Femoral artery and Popliteal artery US
44173-3 Peripheral artery US limited
ASSOCIATED OBSERVATIONS

LOINC#	LOINC Name	R/O/C
72230-6	Diagnostic imaging report - recommended CDA sections	
18782-3	Radiology Study observation (findings)	R
55107-7	Addendum	O
55108-5	Patient presentation	O
55109-3	Complications	O
55110-1	Conclusions	O
55111-9	Current imaging procedure descriptions Document	O
11329-0	History general	O
55113-5	Key images	O
55114-3	Prior procedure descriptions	O
19005-8	Radiology - Impression	O
18834-2	Radiology Comparison study - observation	O
18785-6	Radiology Reason for study	O
18783-1	Radiology Study recommendation	O
55115-0	Request (Radiology)	O
55112-7	Summary	O

- DICOM and HL7 CDA R2 allow specification of a quantity element as part of a result if the imaging result is shared as structured element but it is not clear if current workflow reports information in this manner.
- IHE similarly has structure for coded results but it is not clear if workflow exists to create the content you want (http://www.ihe.net/uploadedFiles/Documents/Radiology/IHE_RAD_Suppl_MRRT.pdf)

So, the first question is whether the information exists in a format other than might be available using natural language processing (NLP) or chart abstraction. That would be a significant feasibility issue for the measure as an eCQM.

Let's assume the data exists in structured form. And that assumption will carry over to any other type of data you seek as a component of a report. I did understand your question to cover the issue that the clinicians want to be sure that reports, assessments or consults contain required information to make them valuable to the receiver.

Following the thread of the attached example, I think what you really want is:
For each "Diagnostic Study, Performed: US of peripheral arteries (result: >50% stenosis)" (and substitute MR or CT for US – or perhaps include all US, MR and CT is one value set if possible).
I like Rute's comment on 11/8/2013 3:34 PM – use the SNOMED-CT concept [397442008] % diameter reduction — because it is the desired answer in this example
Perhaps we do need a modification to QDM, however, to address an attribute of an attribute – you are really looking for the report of the imaging study to contain a fully expressed observation (or assessment) - and that observation is "% diameter reduction" which has a value. "Diagnostic Study, Performed: US of peripheral arteries (Assessment: % diameter reduction (result < 50%)" - That is a change to QDM.

We also have a good question for CQL logic.
I think we might need to take each use case you have individually. While there is a pattern, the issue of an imaging result Vs and assessment component (e.g., the consult report included <a> physical exam of the legs, <b> review of the imaging studies, and <c> a recommendation of how to proceed). A provider-generated report such as a consult has more complexity with respect to structured information.

Hopefully this answer is more helpful. Should we set up time to discuss?

Thanks
Floyd
Floyd Eisenberg, MD, MPH, FACP

Senior Advisory, Standards

ESAC, Inc.

Floyd.Eisenberg@esacinc.com

202 643-6350

From: Kimberly Smuk <Kimberly.Smuk@ama-assn.org>
Date: Thursday, April 14, 2016 at 7:49 AM
To: Floyd Eisenberg <floyd.eisenberg@esacinc.com>
Cc: Kendra Hanley <Kendra.Hanley@ama-assn.org>, Jamie Jouza <Jamie.Jouza@ama-assn.org>, Yvette Apura <Yvette.Apura@ama-assn.org>, Jorge Belmonte <Jorge.Belmonte@ama-assn.org>, Bryn Rhodes <bryn@databaseconsultinggroup.com>, Chris Markle <chris.markle@esacinc.com>, Nadia Ramey <nadia.ramey@esacinc.com>, Yan Heras <yanheras@gmail.com>, "qdm@esacinc.com" <qdm@esacinc.com>
Subject: RE: CQL - Expression of Concepts

Hi Floyd,

To address your 4/11 11:12 AM message, the Lipid panel was used as an example because it is a clinical scenario that many are familiar with (as opposed to the example that was attached to the message). The items proposed are going to be dependent on the measure narrative.

I would like to highlight that PCPI is not seeking changes to the current QDM, but rather we are interested in hearing how the introduction of CQL might make these types of clinical scenarios easier to express.

PCPI has measures that are patient based, as well as episode based. An episode based measure can 'count' different items – we call this the 'unit of analysis'. For example, a 'Percentage of visits …' measure would count each visit separately in the IP/D or a measure based on a procedure would count each procedure individually in the IP/D; there may be more than one reportable event for a given patient during the measurement period. Similar to these examples, we have had clinical expert workgroups that insist on 'counting' each report – diagnostic study report or pathology report – as the IP/D. We can appreciate that this is much like counting the actual procedure, but the clinical experts have stressed to us as a measure developer that the quality action for the measures should be that something is present in the report, because the report is what is used to communicate to other providers. Linking the report, the procedure and any fields in the report and the results for the fields is difficult and clunky using the current standards. It is hard to address the message from 4/11 12:15 given that each measure scenario may require a different consideration, and the example provided was really just an example (and not an actual concept PCPI is working on).

Ultimately, the PCPI is looking to share these difficulties with the ESAC team to inform CQL development and enhancement, and share areas of interest to PCPI with regard to CQL capabilities.

Thanks,

Kim

From: Eisenberg ESAC [mailto:floyd.eisenberg@esacinc.com]
Sent: Tuesday, April 12, 2016 4:02 PM
To: Kimberly Smuk; qdm@esacinc.com
Cc: Kendra Hanley; Jamie Jouza; Yvette Apura; Jorge Belmonte; Bryn Rhodes; Chris Markle; Nadia Ramey; Yan Heras
Subject: Re: CQL - Expression of Concepts

Kim,

Can you let me know if this is an issue for the QDM user group call next week? And does my explanation help or am I missing something?

Thanks

Floyd

Sent from my iPhone

On Apr 11, 2016, at 1:15 PM, Floyd Eisenberg <floyd.eisenberg@esacinc.com> wrote:

Kim,

I did not respond to your last issue in my last email. I'm trying to understand the "Percentage of reports" without understanding some use cases. I think there are a few options and you can add other considerations:

1. # of "Laboratory tests performed: *lab test*" concurrent with "Encounter performed: ambulatory encounter"
2. Proportion of "Laboratory tests performed: *lab test*" (denominator) compared with "Laboratory tests performed: *lab test (result is present – OR result =* value set)" (numerator)
3. Perhaps design a continuous variable, e.g., Count, Median

It will help to understand the need.

Thanks

Floyd

From: Kimberly Smuk <Kimberly.Smuk@ama-assn.org>
Date: Friday, April 8, 2016 at 4:02 PM
To: "qdm@esacinc.com" <qdm@esacinc.com>
Cc: Floyd Eisenberg <floyd.eisenberg@esacinc.com>, Kendra Hanley <Kendra.Hanley@ama-assn.org>, Jamie Jouza <Jamie.Jouza@ama-assn.org>, Yvette Apura <Yvette.Apura@ama-assn.org>, Jorge Belmonte <Jorge.Belmonte@ama-assn.org>
Subject: FW: CQL - Expression of Concepts

Hi ESAC Team,

Please confirm receipt of the message below.

We appreciate your time.

Best,

Kim

312-464-4252

From: Kimberly Smuk
Sent: Thursday, March 24, 2016 3:00 PM
To: qdm@esacinc.com
Cc: Floyd Eisenberg (floyd.eisenberg@esacinc.com); Kendra Hanley; Jamie Jouza (Jamie.Jouza@ama-

assn.org); Yvette Apura; Jorge Belmonte
Subject: CQL - Expression of Concepts

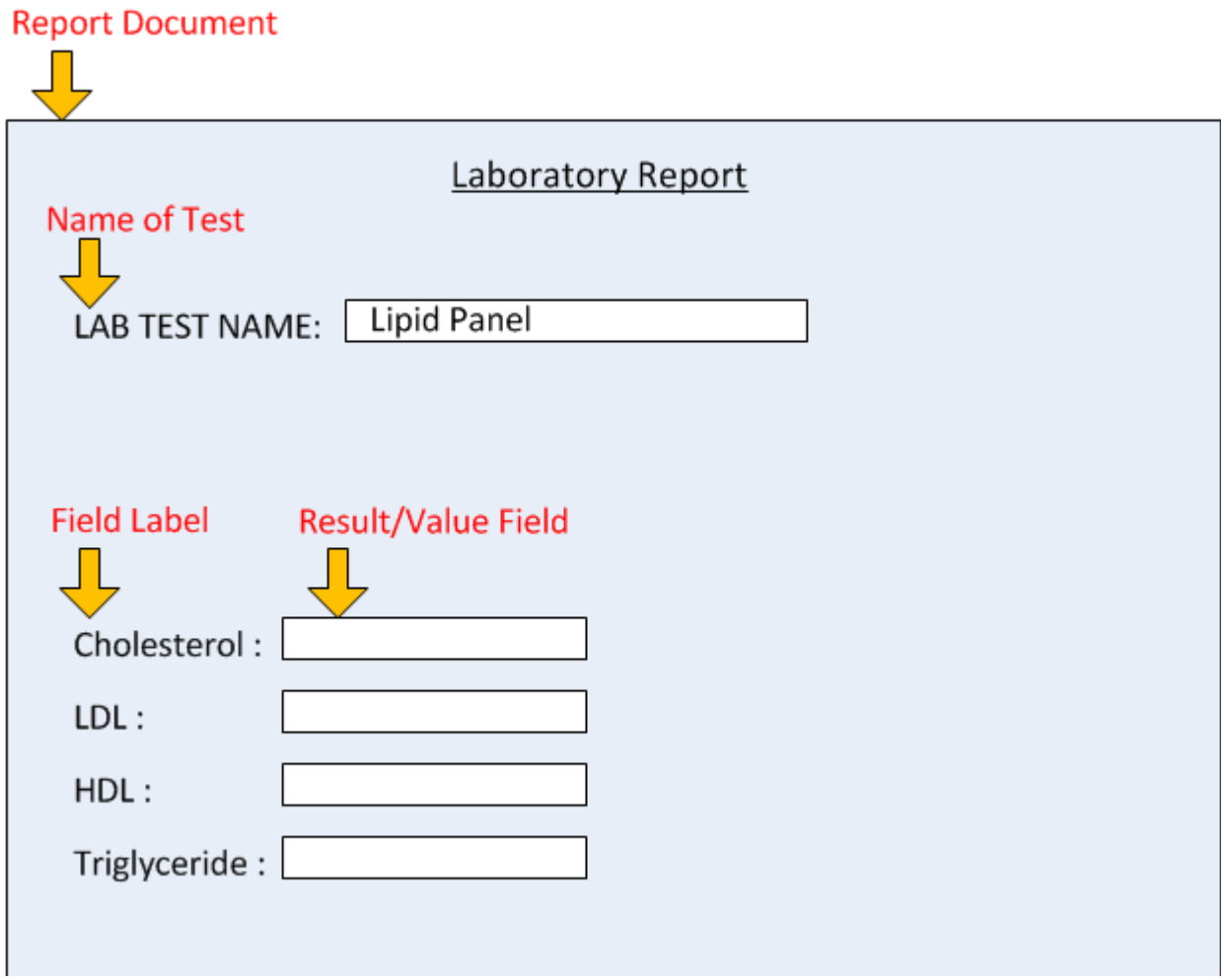
Good Afternoon ESAC Team,

For quite some time, the PCPI has struggled to capture instances of a test (both labs and diagnostics) that can yield multiple findings with respective results. Below, as well as in the attached message, the PCPI has attempted to explain two measure scenarios that are difficult to capture using the current eCQM standards. We share this information in hopes that CQL will be able to express measure concepts of a similar nature with better precision in the future.

Here is an example:

if we wanted to capture lipid panel reports with an LDL < 130mg/dL.

The Lipid Panel has an LDL result. The data element LDL has a result of <130mg/dL – all from the same event.



Using current logic constraints – we would need to link the following data elements to a single event:

Laboratory Test, Performed: Lipid Panel → this would use a LOINC code

Laboratory Test, Performed: LDL → this would use a LOINC code, this is technically a result attribute of the Lipid Panel, but it is also the data element that the numeric result attribute should be tagged to; one 'thing' can't be occurrenced as both a data element and an attribute.

Laboratory Test, Result: < 130mg/dL → there would be no associated value set, numeric result expected; this is a result attribute of the LDL

To combine and link each of these elements back to the same event, is difficult & clunky, because the LDL is a result of the Lipid Panel, but the numeric result is a result of the LDL:

Occurrence A of "Laboratory Test, Performed: Lipid Panel (result: LDL)" during MP

Occurrence A of "Laboratory Test, Performed: Lipid Panel (result: <130mg/dL)" starts during Occurrence A of "Laboratory Test, Performed: Lipid Panel (result: LDL)"

OR

Occurrence A of “Laboratory Test, Performed: Lipid Panel” satisfies all:

- during MP
- result: LDL
- result: <130 mg/dL

The problem with both of these constructs is that the numeric result could, technically, pull from any of the ‘Result/Value Fields’ in the Laboratory Report – it is in no way limited to looking for LDL’s < 130 mg/dL (the two ‘results’ are not linked). Current standards don’t allow for an attribute to have an attribute of its own.

We have been struggling with how to capture these types of constructs since Nov2013 – see attached email string for an additional example.

In an ideal world, what we would say is:

Occurrence A of “Laboratory Test, Performed: Lipid Panel (result: LDL, result: <130mg/dL)”

Additionally, the PCPI has really struggled with being able to express logic surrounding a report document – like a laboratory report, a radiology report or a pathology report. We have had instances where physicians very specifically want the measure to be ‘Percentage of pathology reports …’ or ‘Percentage of diagnostic study reports …’, because each report should be counted individually in the IP/D. Our physician experts have stressed to us as a measure developer that the quality action for the measures should be that something is present in the report, because the report is what is used to communicate to other providers. So using the Lipid Panel example above, imagine adding a data element for ‘Laboratory Test Report’ to the mix and try to link all 4 data elements to a single event.

To conclude, PCPI would be interested in hearing how the introduction of CQL will make these types of clinical scenarios more/less easy to express.

Best,

PCPI Specifications Team

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Kimberly L. Smuk, RHIA

Senior Policy Analyst

Measures Implementation & Informatics, Performance Improvement

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<image001.png>

<image002.png>

---------- Forwarded message ----------
From: Kendra Hanley <Kendra.Hanley@ama-assn.org>
To: Chengjian Che <chengjian.che@lantanagroup.com>, Matt Humphrey <MHumphrey@telligen.org>, Ana Rute Martins Baptista <AMartinsBaptista@jointcommission.org>
Cc: Bob Dolin <bob.dolin@lantanagroup.com>, Christopher Millet <cmillet@qualityforum.org>, Lindsey Wisham <LWisham@telligen.org>, Kimberly Smuk <Kimberly.Smuk@ama-assn.org>, Anu Gupta <Anu.Gupta@ama-assn.org>
Date: Fri, 22 Nov 2013 22:55:38 +0000
Subject: RE: Assistance with stenosis data element eMeasure

Chris, Rute, Matt and Cheng,

I wanted to send a very belated thanks to you all for your feedback on the stenosis data element issue.

We really appreciate your guidance on this issue!

Have a great weekend and Happy (early) Thanksgiving!

Kendra

From: Chengjian Che [mailto:chengjian.che@lantanagroup.com]
Sent: Monday, November 11, 2013 11:46 AM
To: Matt Humphrey; Kendra Hanley; Ana Rute Martins Baptista
Cc: Bob Dolin; Christopher Millet; Lindsey Wisham
Subject: RE: Assistance with stenosis data element eMeasure

Thanks Matt, it makes sense. The current QDM only describes attributes w/o cardinality and conformance constraints and therefore, we have to use the logical operators to fulfill those requirements. I think the way you recommended is best to eliminate ambiguities.

Cheng

From: Matt Humphrey [mailto:MHumphrey@telligen.org]
Sent: Monday, November 11, 2013 9:31 AM
To: 'Kendra Hanley'; Ana Rute Martins Baptista
Cc: Bob Dolin; Chengjian Che; Christopher Millet; Lindsey Wisham
Subject: RE: Assistance with stenosis data element eMeasure

Let's make it 6 cents!

Whatever solution you adopt, I would make a strong argument for only using one attribute per QDM element per line of logic. Regardless of what is actually supported, I will always argue the following:

A relationship B (c, d)

A and B are QDM elements while c and d are attributes of B. We must say that we are always talking about either the QDM element (B) or the attribute when one exists. The above would be valid if we are talking about B and not its attributes, and therefore it means:

A relationship B

However, and I would argue this is the required meaning, if we are talking about B's attributes then it is not clear which attribute we are speaking about. Does A relationship B (c, d) mean A relationship B.c or A relationship B.d? There is no way to specify.

This makes it explicit:

AND: A relationship Occ B.c

AND: Occ B.d

Matt

>>> "Martins Baptista, Ana Rute" <AMartinsBaptista@jointcommission.org> 11/8/2013 3:34 PM >>>

Hi Kendra:

Have you considered modeling the arteries as part of the diagnostic test name instead of using the anatomical structure attribute? I would assume that information has to be part of the test order (e.g. MRI of the brain).

As far as the result goes, I think the main issue is to convey that the 50% relates to a reduction in the diameter of the artery. I see two options here:

1. Don't model the quantitative finding of the reduction the diameter and go with a "stenosis" finding instead. This would only work if you are confident that no one would document stenosis without reaching the 50% threshold.

2. Use two results as Chris suggested, but instead of using the term "stenosis", use a lovely SNOMED-CT concept that is so incredibly appropriate it almost seems too good to be true: [397442008] % diameter reduction

You're the proud owner of 4 cents now ☺ Have a great weekend, everyone!

-Rute

From: Christopher Millet [mailto:cmillet@qualityforum.org]
Sent: Friday, November 08, 2013 2:01 PM
To: 'Kendra Hanley'; 'Bob Dolin'; 'chengjian.che@lantanagroup.com'; 'Matt Humphrey'; 'Lindsey Wisham <LWisham@telligen.org> (LWisham@telligen.org)'; Martins Baptista, Ana Rute
Subject: RE: Assistance with stenosis data element eMeasure

Hi Kendra,

Here are my 2 cents:

The problem with option b is that the value set defines the QDM category of the QDM element. So in option b, the category would be Diagnostic Study but the value set would contain codes for stenosis. I think a slightly altered version of option a should be allowed, something along the lines of:

OR:

AND: Occ A Diagnostic Study, Result: US (result: stenosis, anatomical structure: peripheral arteries)

AND: Occ A Diagnostic Study, Result: US (result: >50%)

…(repeat for the MRI and CT criteria)

I believe the Occurrence A should allow you to tie two different result criteria(1. The stenosis value set criteria, and 2. The > 50% criteria) to the same instance of the diagnostic study. We should also run this by someone who can speak to this from perspective of Cypress and Certification to make sure we are all interpreting it the same way.

Chris

From: Kendra Hanley [mailto:Kendra.Hanley@ama-assn.org]
Sent: Friday, November 08, 2013 2:39 PM
To: Bob Dolin; Christopher Millet; chengjian.che@lantanagroup.com; Matt Humphrey; Lindsey Wisham <LWisham@telligen.org> (LWisham@telligen.org); Martins Baptista, Ana Rute
Subject: Assistance with stenosis data element eMeasure

Dear eMeasure colleagues,

We are working on the development of an eMeasure and are encountering some challenges with one of the data elements needed for the measure.

We would appreciate any input/guidance you have on how to specify the following concept—using QDM and HQMF logic structure.

We are looking to capture patients who have stenosis of a peripheral artery. The measure indicates "patients with abnormal non-invasive test demonstrating stenosis in any peripheral artery."

The tests include: ultrasound, magnetic resonance, or computed tomography imaging

Stenosis is considered to be >50% diameter stenosis of any of the following arteries: aorta, iliac, femoral, popliteal, tibial, peroneal

Assumption:

MRI/MRA,CT/CTA & Ultrasound are the only diagnostic imaging methods to identify stenosis of a peripheral artery.

Option A---What We Want to Specify, in logic structure but don't believe this is allowable in HQMF structure:

OR:

AND: Occ A Diagnostic Study, Result: US (result: stenosis) (result: >50%) (anatomical structure: peripheral arteries)

AND: Occ A Diagnostic Study, Result: MRI (result: stenosis) (result: >50%) (anatomical structure: peripheral arteries)

AND: Occ A Diagnostic Study, Result: CT (result: stenosis) (result: >50%) (anatomical structure: peripheral arteries)

Option B--An alternate approach that we think will work in HQMF logic structure [meaning, we recognize HQMF/MAT limitations around attributes]:

OR:

AND: Occ A Diagnostic Study, Result: Stenosis (result: >50%)

AND: Occ A Diagnostic Study, Result: Stenosis (anatomical structure: peripheral arteries)

The downside of Option B is that we use QDM "Diagnostic Study, Result", but aren't explicit to the type of study. Is this a problem?

Is it acceptable to only include the result (ie, stenosis) with a qualifier of (result > 50%), with a second line of logic that further constrains the artery where the stenosis is present?

Questions:

1. In your opinion, does Option B capture what we're looking for in this example? Does Option B create any QDM/HQMF modeling violations?

2. Can the logic we think is feasible be entered into the MAT?

3. Are there alternatives you can recommend that will express what we need for this measure?

Thanks for your input!

Regards,

Kendra, Kim, Anu

PCPI Team

AMA

Kendra Hanley, MS

Project Manager

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