AIRA
AMERICAN IMMUNIZATION REGISTRY ASSOCIATION

Select AIRA 2020 National Meeting Presentations: M&I

Tuesday, September 22, 2020

3-4 PM ET

AIRA
AMERICAN IMMUNIZATION REGISTRY ASSOCIATION

Moving the Needle:
IIS Community Success, Data at Rest Pilots, and Measurement and Improvement (M&I) 2020 Validation Recognition

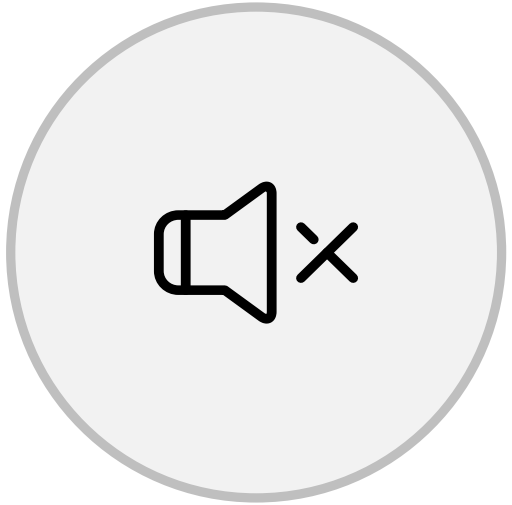
AIRA Webinar Series

- Each Tuesday
- Now through September 22, 2020
- 3-4 PM ET
- Join Us!

Webinar Series at a Glance

Week 1	CDC Panel Discussion: Advancing IIS Together
Week 2	The Immunization Gateway Portfolio
Week 3	Data Quality
Week 4	Data Use
Week 5	Working with End Users
Week 6	IIS Operations
Week 7	Global Perspectives
Week 8	Measurement and Improvement

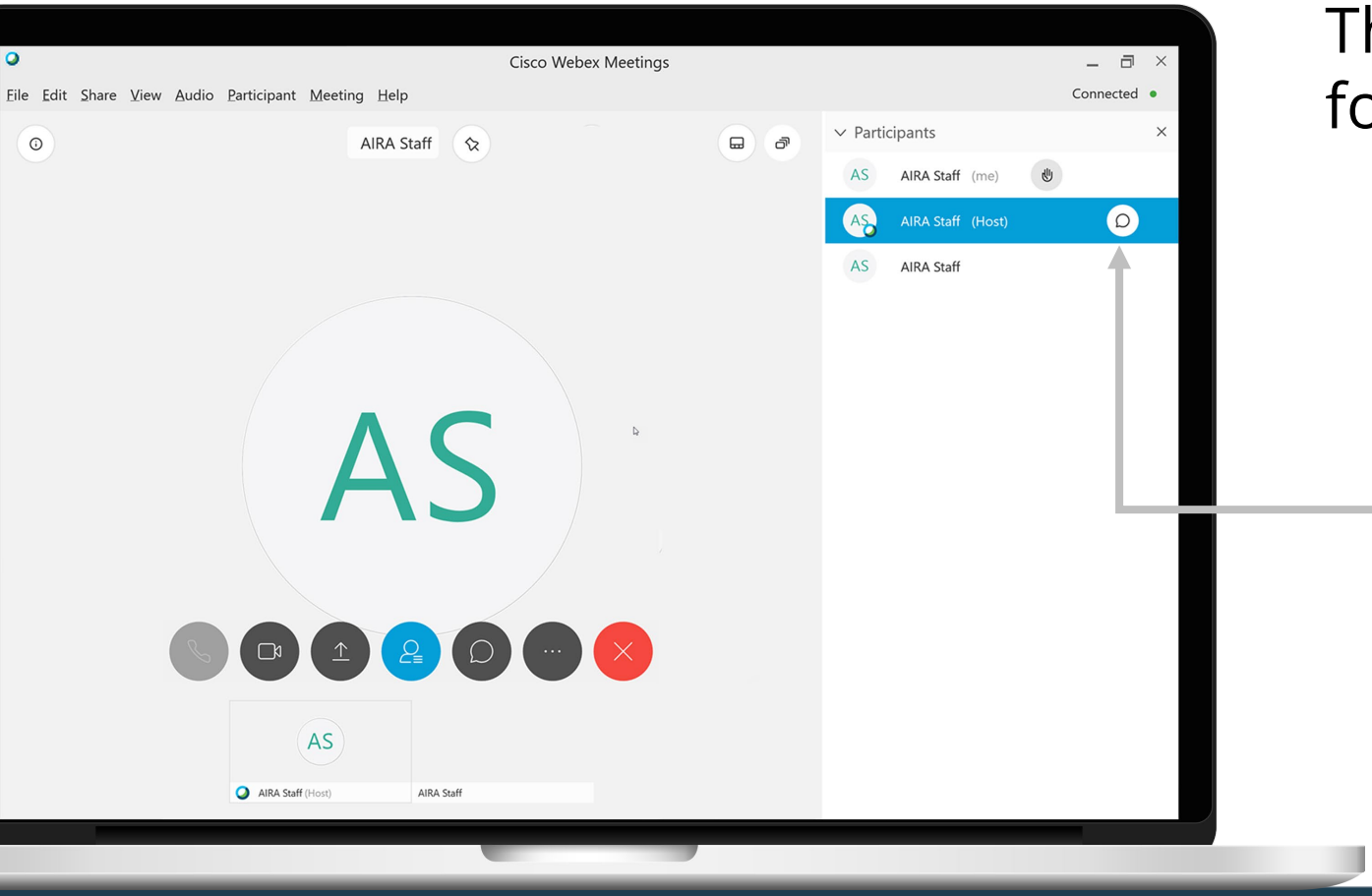
Before We Get Started



All phone lines
are muted

This meeting is being recorded
and will be posted on the
AIRA repository

Question & Answer



How do I ask a question?

There will be time allotted for Q&A following the presentation.

Send an e-mail to:
info@immregistries.org

Select the chat icon next to the host and type question into the chat box.

Today's Speakers

- **Kevin Snow,** MACAW Co-Chair
- **Eric Larson,** AIRA
- **Heather Crawford, MPH,** Oregon Health Authority

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Measurement & Improvement (M&I): Impact and Outcomes

September 2020

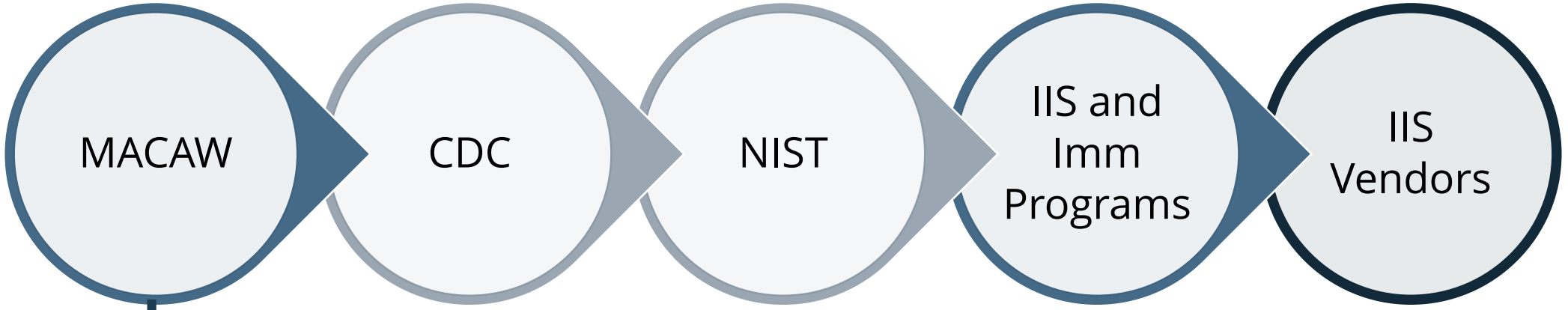
Overview

- What is **Measurement and Improvement**, and who is engaged in it?
- Within a patient's immunization visit, what is the role of the IIS?
- How can M&I improve that experience?

Measurement and Improvement Initiative – What Is it?

- M&I is a **community-led** effort to:
  - Objectively test IIS alignment with standards
  - Provide IIS with information and assistance to improve
- All testing is conducted by AIRA staff, through:
  - Connecting with test or pre-production systems, or analyzing deidentified data

Who is Supporting the M&I Process Along with AIRA?

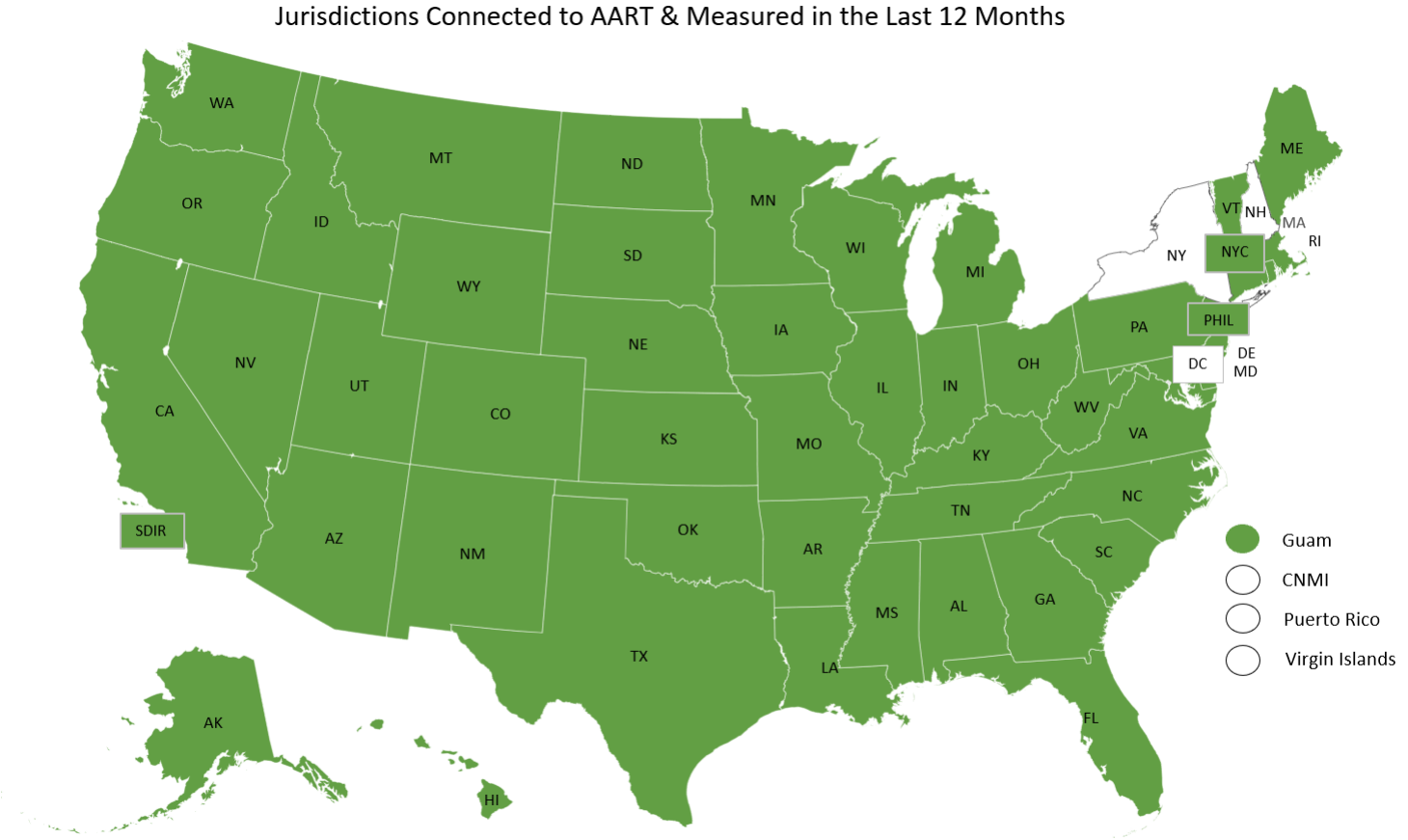


Roger Aikin (AZ), Aaron Bieringer (MN), Shannon Coleman (STCHealth), Jillian Doss-Walker (IHS), LaTreace Harris (CDC), Josh Hull (MI), Dave McCormick (IN), Amy Metroka (NYC), Wendy Nye (MI), John Robinson (Phil), Eric Schuh (DXC), Rob Snelick (NIST), Kevin Snow (Envision)

- Members of MACAW

Great Engagement

- Community-wide participation is strong and increasing!
- Partners are publicly recognizing improvements in standardization across IIS



The Impact of M&I at the Point of Care: The Start of our Story

It’s time for a patient’s annual exam.

He arrives at the doctor’s office and is shown to the exam room.

While he is waiting, his physician prepares for the visit.

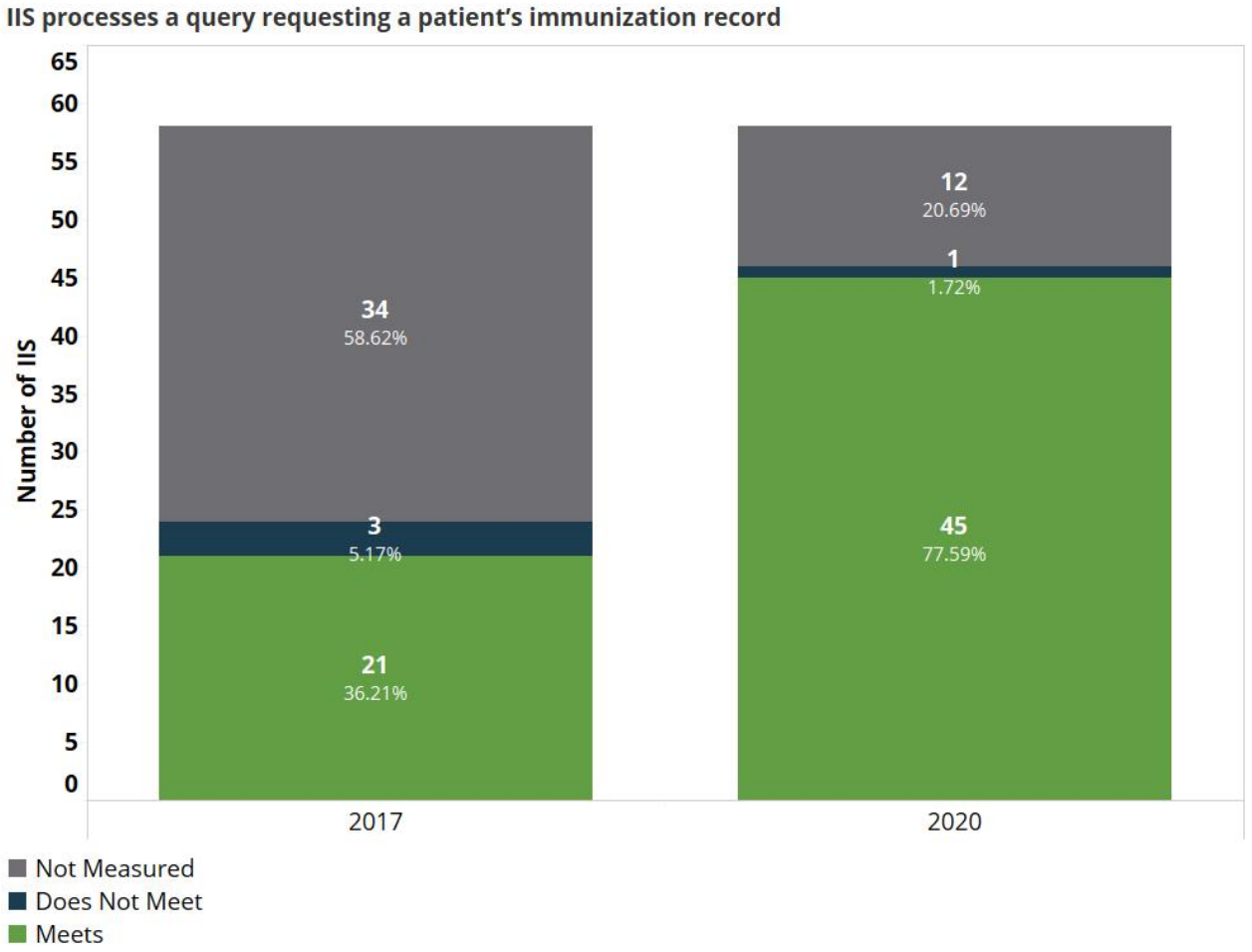
His physician accesses the EHR and searches for the patient’s record.

Query and Response

- The patient's provider wants to ensure she has the full record, and to see if her patient needs any vaccinations today during his visit.
- Because there is an EHR-IIS interface, the patient's doctor will query the IIS to obtain the patient's immunization history.

Query and Response

- When queried, an IIS should respond with a complete immunization record response profile (RSP Z32) for the patient.
- In 2017, **21 IIS** were able to provide the complete immunization record.
- In 2020, **45 IIS** were able to provide the complete immunization record.



DISCLAIMER

- Are all these improvements a direct result of M&I?
  - **Probably not**
- Is it likely that M&I has helped to focus IIS Programs and Vendors, as well as Immunization Program staff, on much needed and high priority improvements, and has accelerated improvements?
  - **We think so!**

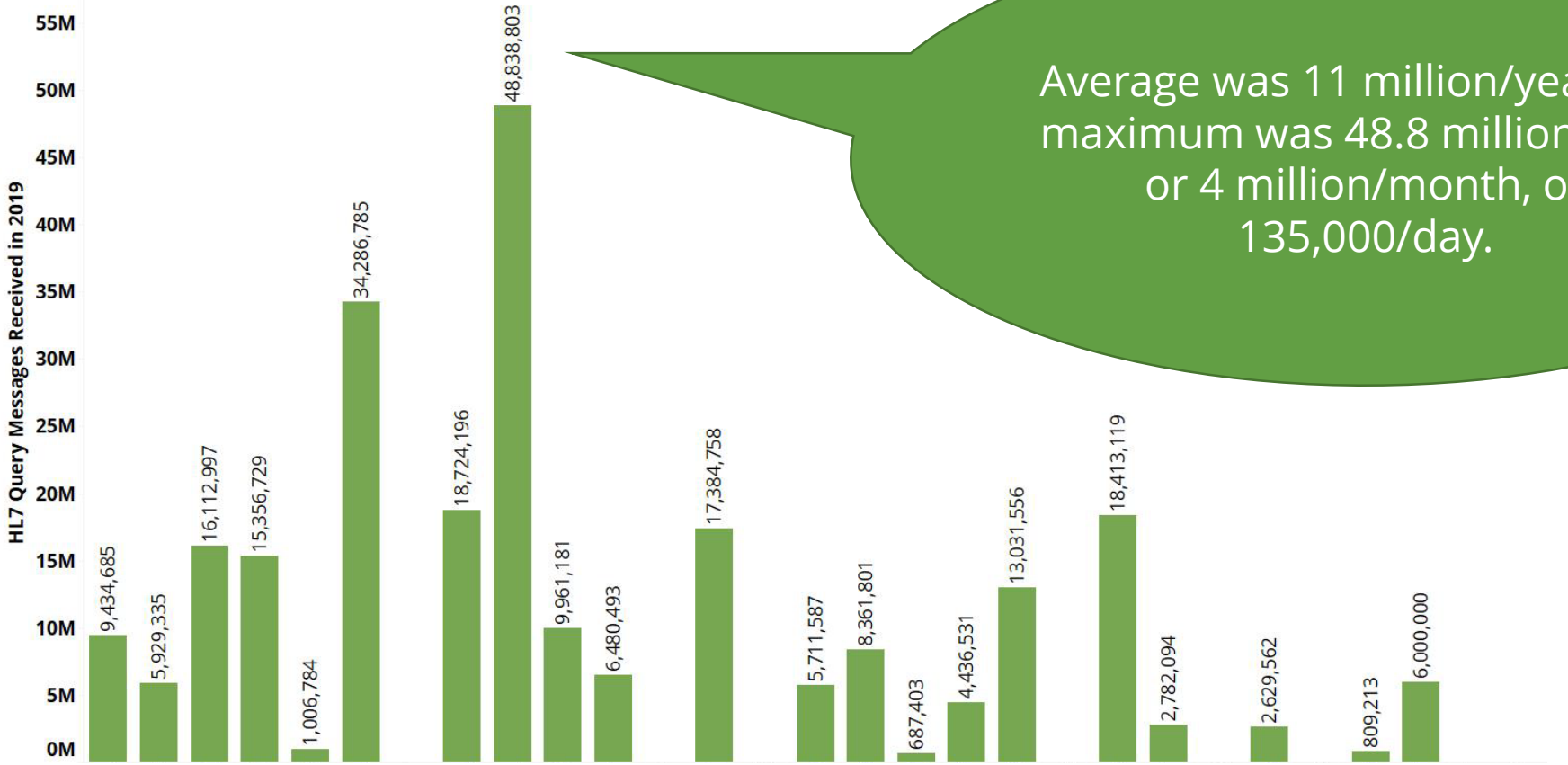
Gathering information from the IIS Community

- In Spring 2020, AIRA sent out a survey to the IIS community to gather data and success stories.
- Survey questions included information about current interoperability volumes.
- Out of the 58 IIS encouraged to participate in M&I, 29 IIS responded.

Query and Response

Of the 29 respondents, 21 IIS reported numbers on query messages received in 2019

Query and Response – Query Messages Received 2019



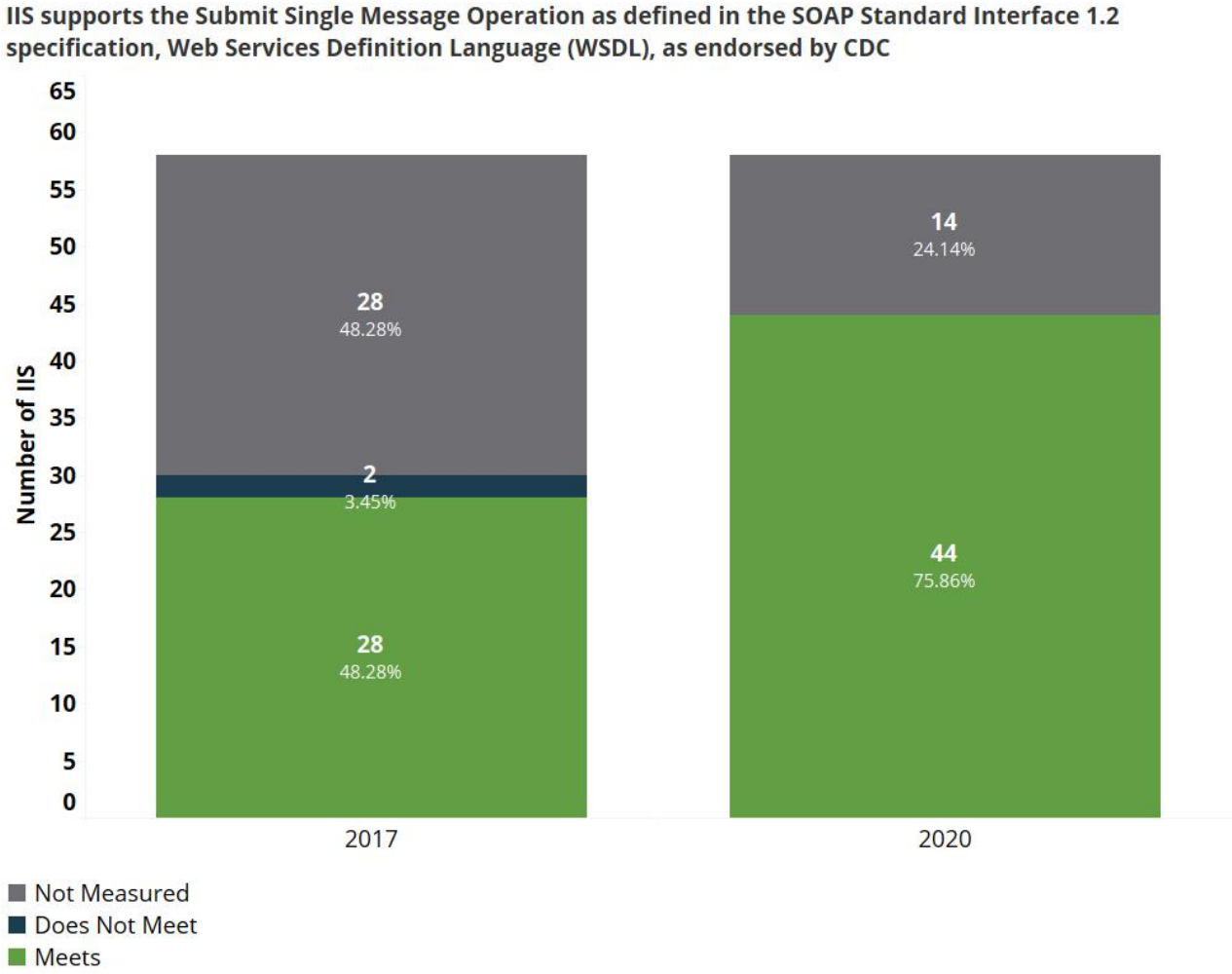
Average was 11 million/year, but maximum was 48.8 million/year, or 4 million/month, or 135,000/day.

Transport

- Standardized transport protocols allow the office's EHR and IIS to both exchange data electronically and to use the exchanged data.
- The use of the agreed upon transport layer promotes interoperability.
- Our patient's physician is able to query the IIS using an HL7 message sent via SOAP.

Transport

- The **Submit Single Message** measure is designed to carry an HL7 message with authentication parameters that make data exchange possible.
- Between 2017 and 2020, there was an increase of 16 IIS that were able to respond with a conformant response.

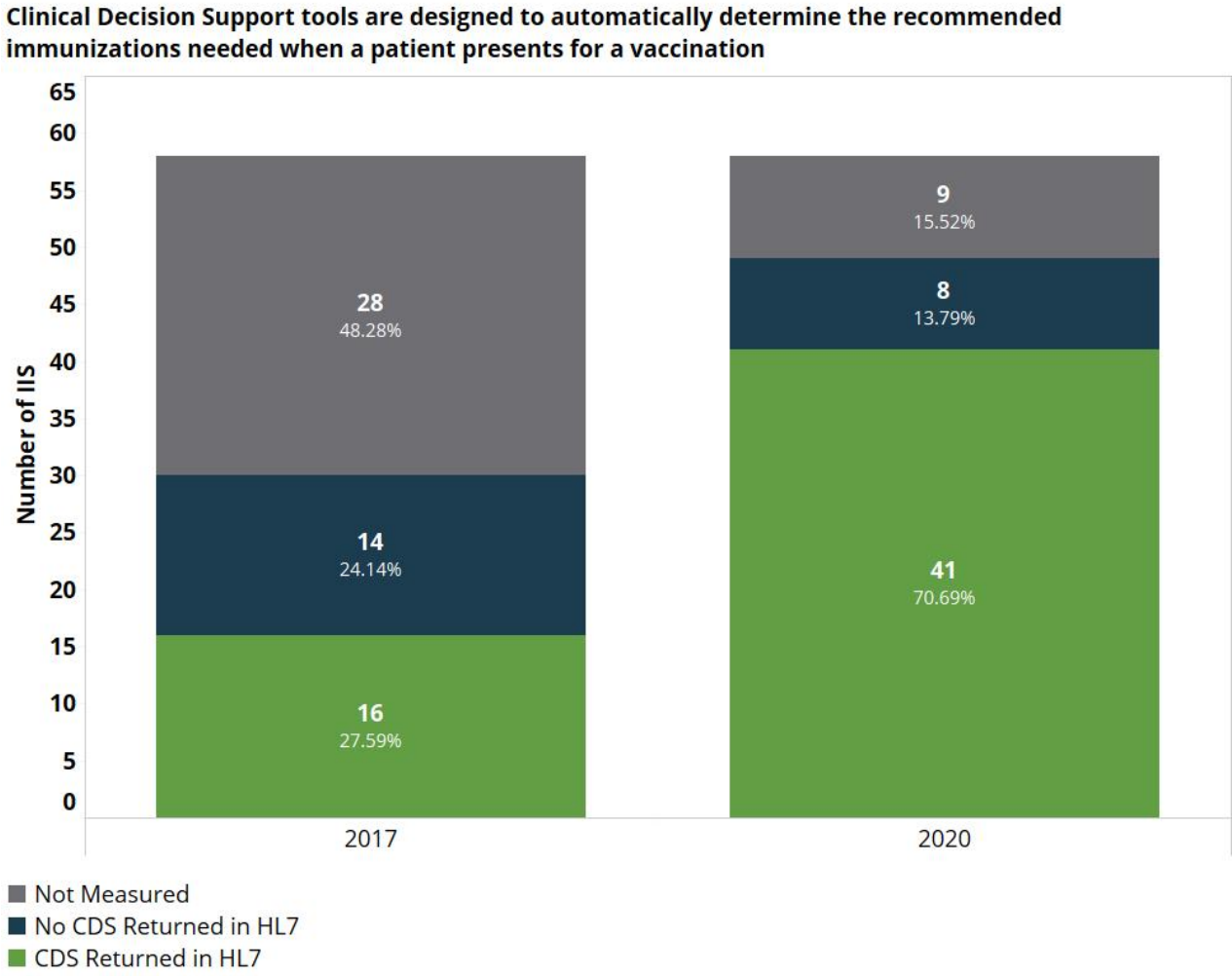


Clinical Decision Support (CDS)

- Clinical Decision Support tools are designed to automatically determine the recommended immunizations needed when a patient presents for a vaccination.
- The recommendations are developed by the Advisory Committee on Immunization Practices (ACIP) and are updated regularly throughout the year by ACIP.

Clinical Decision Support (CDS)

- When an IIS returns CDS, it allows medical providers to make informed decisions based on current and accurate immunization data.
- In 2017, **16 IIS** returned CDS in their HL7.
- In 2020, **41 IIS** returned CDS in their HL7.

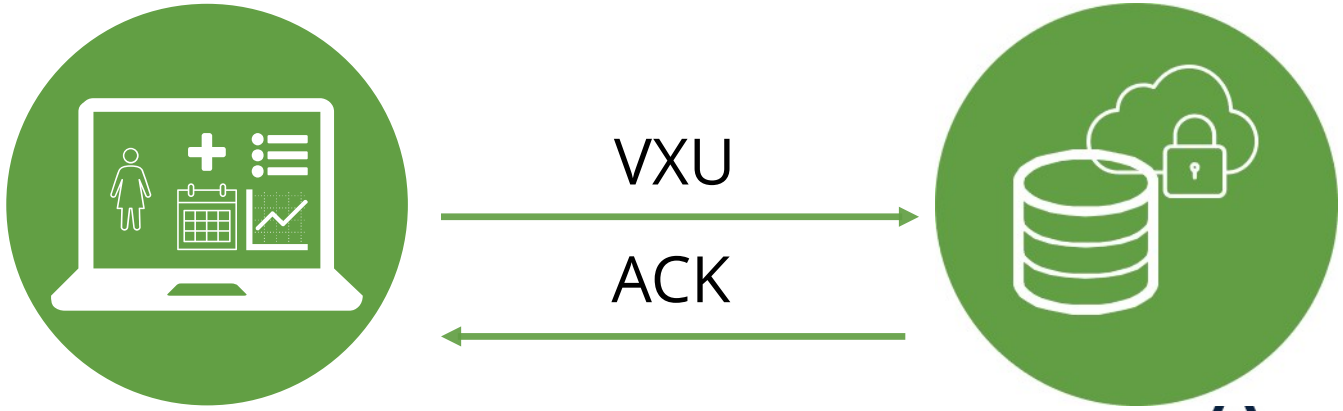


Submission and Acknowledgement

- After querying the IIS, our patient discovers that he should receive a flu vaccine and a shingles vaccine today during his visit.
- After discussing everything with his doctor, our patient decides to proceed based on recommendations.

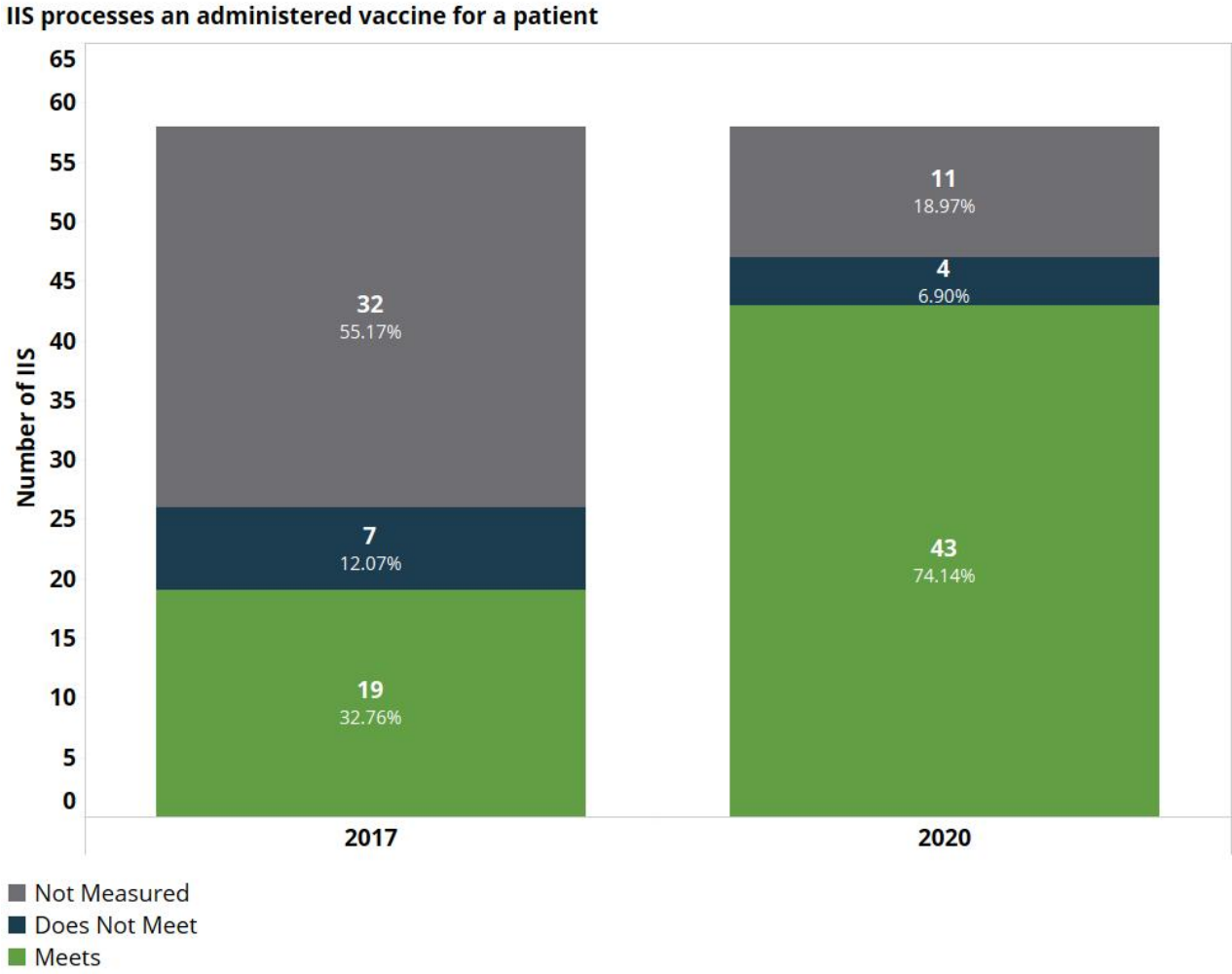
Submission and Acknowledgment

- His provider administers the vaccines.
- The immunizations are administered and recorded in the EHR and automatically sent to the IIS.
- Because the HL7 message contained the conformant demographic and vaccination data, the message was accepted, and the IIS sent back an ACK to the EHR and the provider's office.



Submission and Acknowledgement

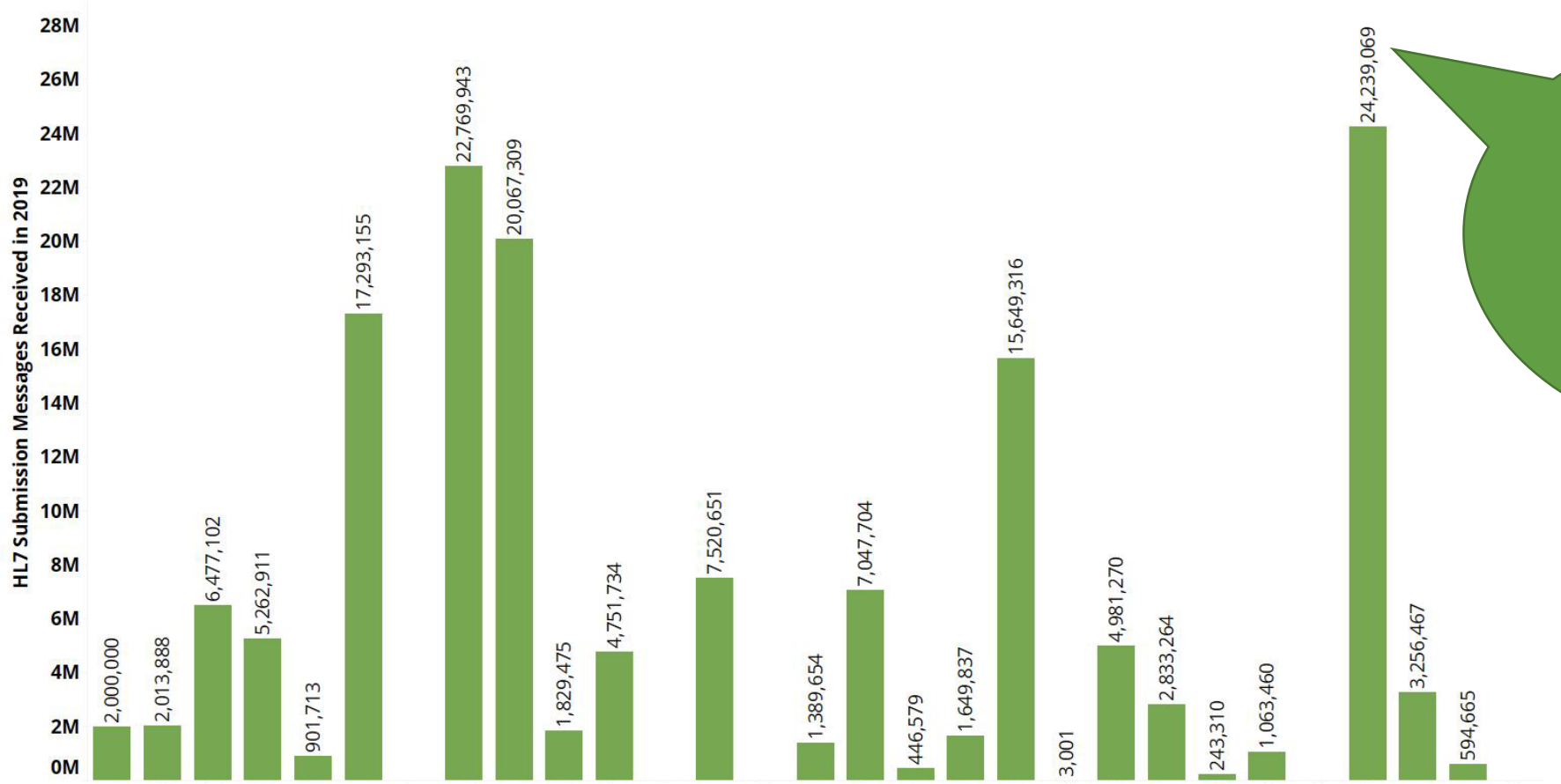
- An IIS should be able to process and accept administered vaccination events in full alignment with standards.
- In 2017, **19 IIS** were able to process an administered vaccine for a patient.
- In 2020, **43 IIS** were able to process an administered vaccine for a patient.



Submission and Acknowledgement

24 IIS reported numbers on submission messages from 2019

Submission and Acknowledgement



Average was 6.4 million/year, but maximum was 24.2 million/year, or 2 million/month, or 66,000/day.

Take Home Messages

GREAT PARTICIPATION

MEASURABLE PROGRESS

CLEAR DIRECTION FOR CONTINUED IMPROVEMENT

A Look into Data at Rest (DAR)

Eric Larson, AIRA

Heather Crawford, Oregon Health Authority

Project Overview

AIRA's first Measurement and Improvement data quality content area is Data at Rest.

Data at Rest is the measurement of data residing in the IIS database regardless of how it arrived there.

This content area puts into practice data quality indicators found in the May 2018 IIS Data Quality Practices document.

For the Proof of Concept, AIRA will be measuring:

- 24 Completeness Indicators
- 18 Validity Indicators
- 2 Timeliness Indicators

The 30,000 Foot View

Data at Rest in Four Steps

Extract

- IIS staff will pull a pre-defined cohort of patients from their production database into a flat file.

Transform

- IIS staff will run an AIRA-provided tool on their extracted data. This tool will assess for data quality indicators. The output of this tooling will be a set of aggregate detections void of identifiable patient data.

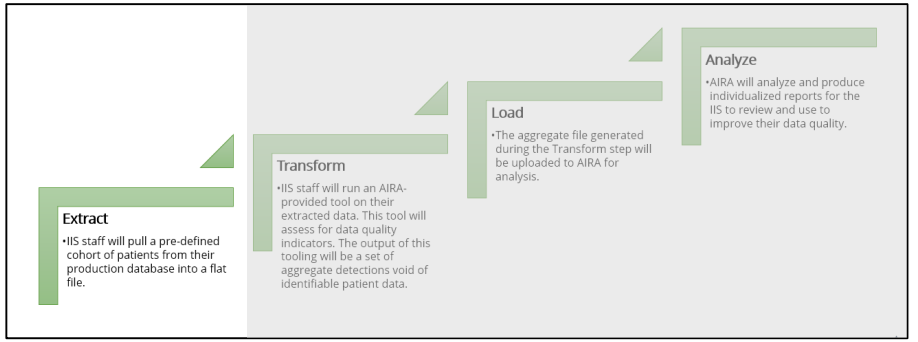
Load

- The aggregate file generated during the Transform step will be uploaded to AIRA for analysis.

Analyze

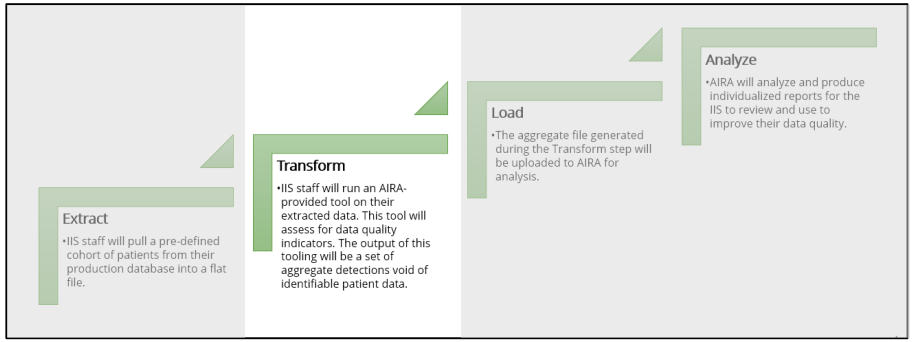
- AIRA will analyze and produce individualized reports for the IIS to review and use to improve their data quality.

Extract



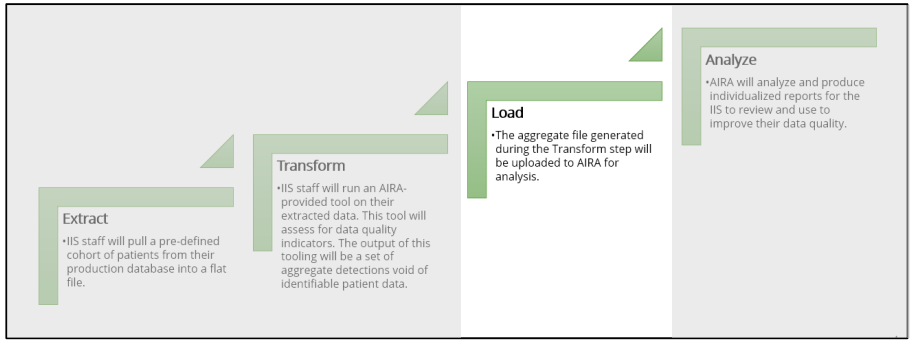
Goal	AIRA Provides	IIS Activities	Outcome
Extract data into a pre-defined flat file format. The extract shall only include patient and immunization records based on a birth date range. Further, the extract shall only include data elements necessary for the defined indicators	• Flat file extract specification • DAR Pilot Extract Specification • DAR Extract Job Aid • Example Extract Queries • Technical Assistance	• Determine which data elements can/can't be extracted either due to technical or policy limitations • Determine which field(s) in the database will be used per data element • Perform extract of data per specifications	Two files will be created and used in the next step (Transform) • One patient file • One immunization file

Transform



Goal	AIRA Provides	IIS Activities	Outcome
Transform the patient and immunization file into a new file which is: • Free of record level data • Free from identifiable data • An aggregate summary of the data quality indicators selected for measurement	• Data Quality Detection Tool to transform the extracted record-level data into aggregate data quality detections • Technical Assistance	• Ensure leadership support to use the Data Quality Detection tool • Execute tool against previously extracted patient and immunization files	Two artifacts will be generated by the tool • Summary Report • Encrypted aggregate detections file You can ensure the extract worked as intended by reviewing the Summary Report The encrypted aggregate detections file will be used in the next step (Load)

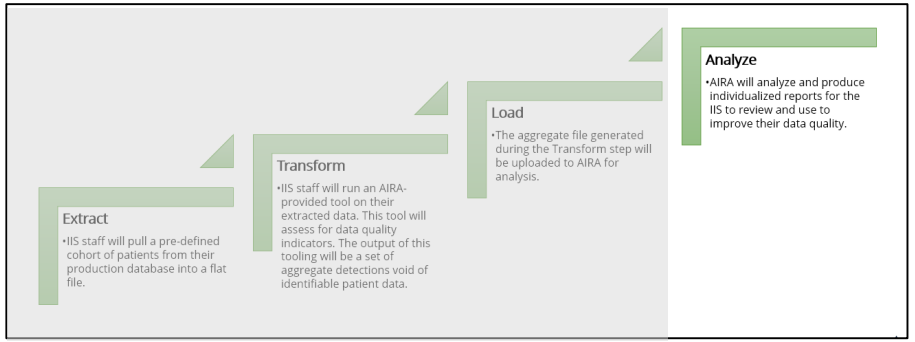
Load



Goal	AIRA Provides	IIS Activities	Outcome
Submit the aggregate detections file to AIRA	• For the purpose of the Pilot, AIRA will work with each IIS to determine the best means to transmit the file to AIRA for analysis. • Based on this feedback, AIRA will formalize one or more methods.	• IIS works with AIRA to move the aggregate detections file to AIRA.	AIRA has the aggregate detections file which is used in the next step.

Analyze

This step is performed by AIRA using the IIS supplied aggregate detections file. Two distinct reports are generated for the IIS.



IIS-Wide Report

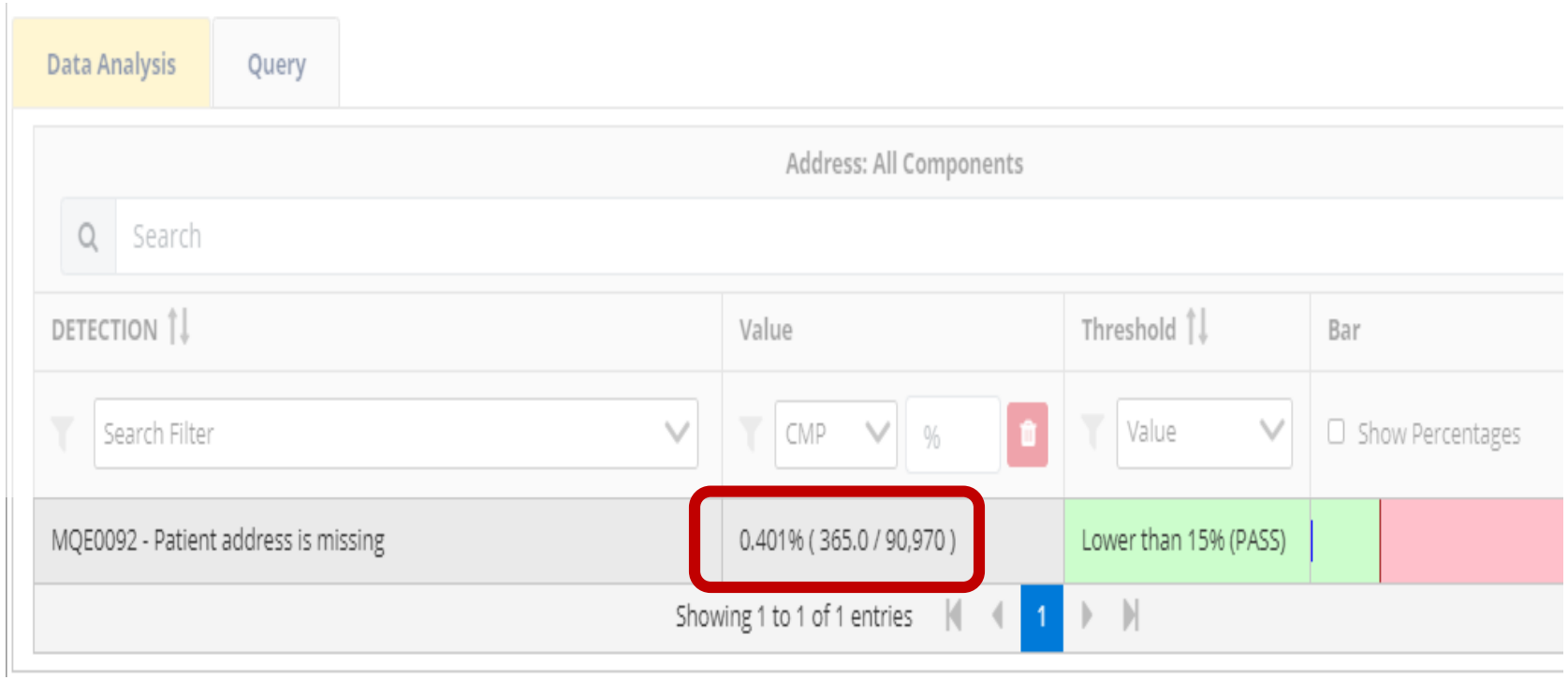
- The IIS-Wide report looks at the entire cohort of data across the selected data quality indicators.
- This report gives a good view of the overall picture of the completeness, validity, and timeliness of the IIS data

Provider Breakdown Report

- The Provider Breakdown report stratifies the entire cohort of data by provider.
- This report gives a view of providers which may be contributing to data quality issues and can be used by the IIS for follow-up.

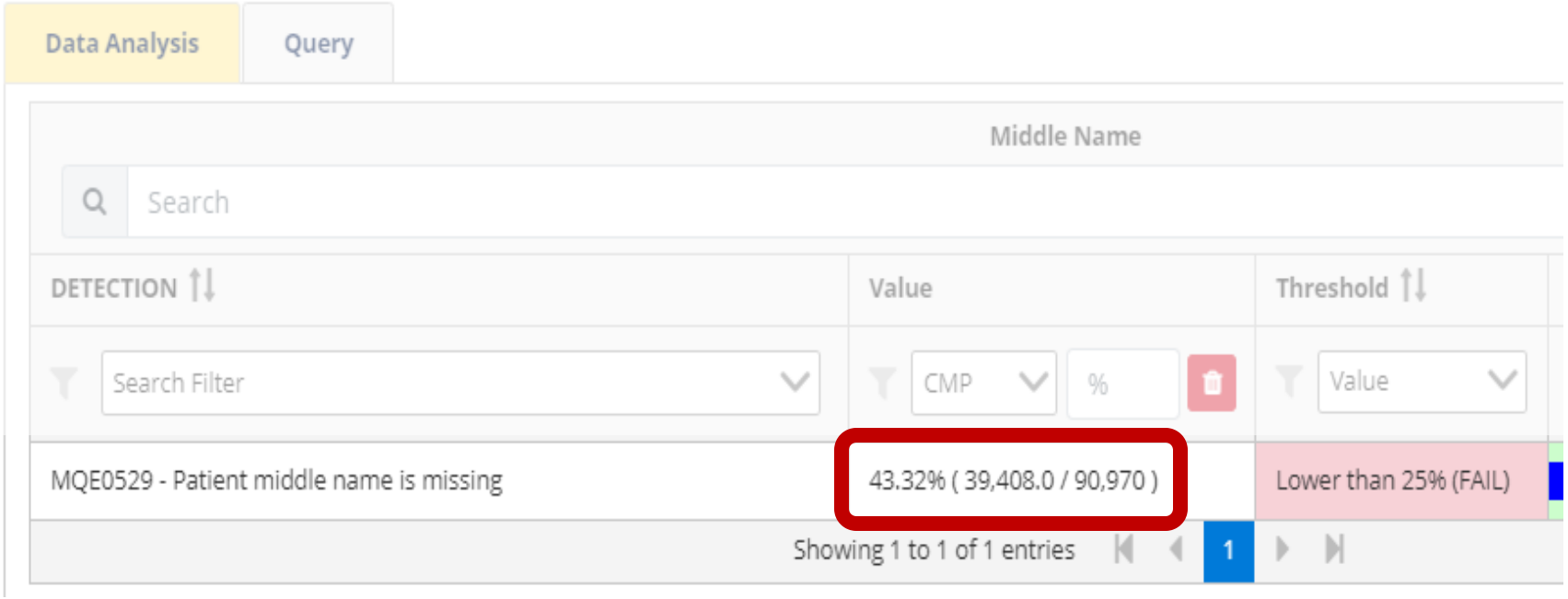
Analyze

- Address Review



Analyze

- Patient Middle Name



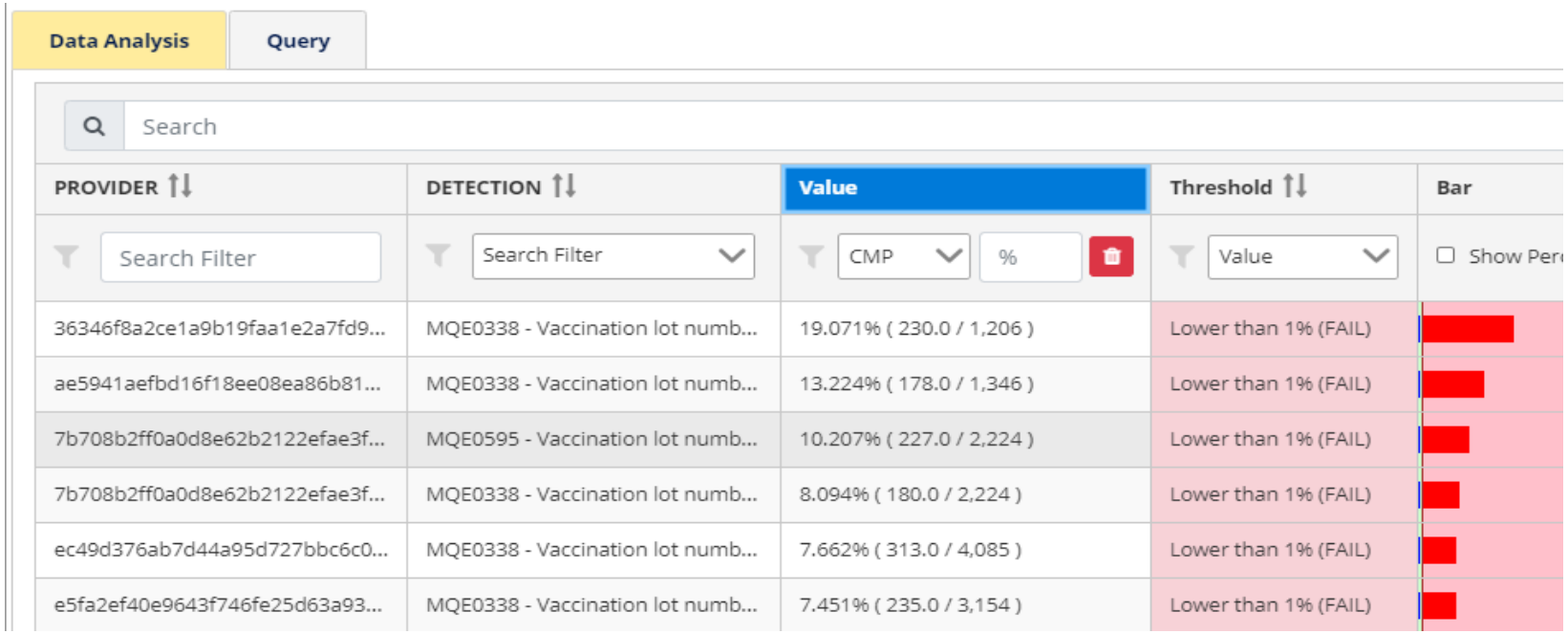
Analyze

- Vaccine Lot Review – details evaluated

MQE0338 - Vaccination lot number is invalid	0.261% (2,721.0 / 1,042,752)
MQE0592 - Vaccination lot number has invalid prefixes	0% (0.0 / 1,042,752)
MQE0593 - Vaccination lot number has invalid suffixes	0.028% (293.0 / 1,042,752)
MQE0594 - Vaccination lot number has invalid infixes	0% (0.0 / 1,042,752)
MQE0595 - Vaccination lot number is too short	0.053% (554.0 / 1,042,752)

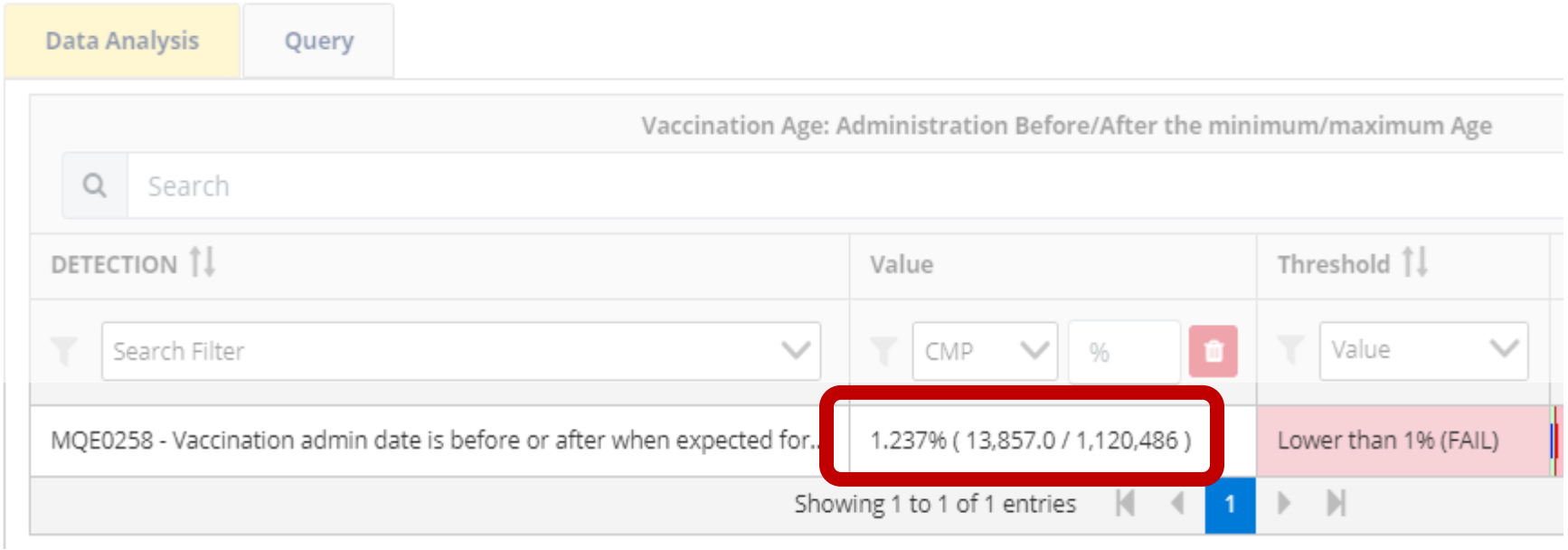
Analyze – Provider Level Detail

- Vaccine Lot % Good for IIS
  - Specific providers need outreach



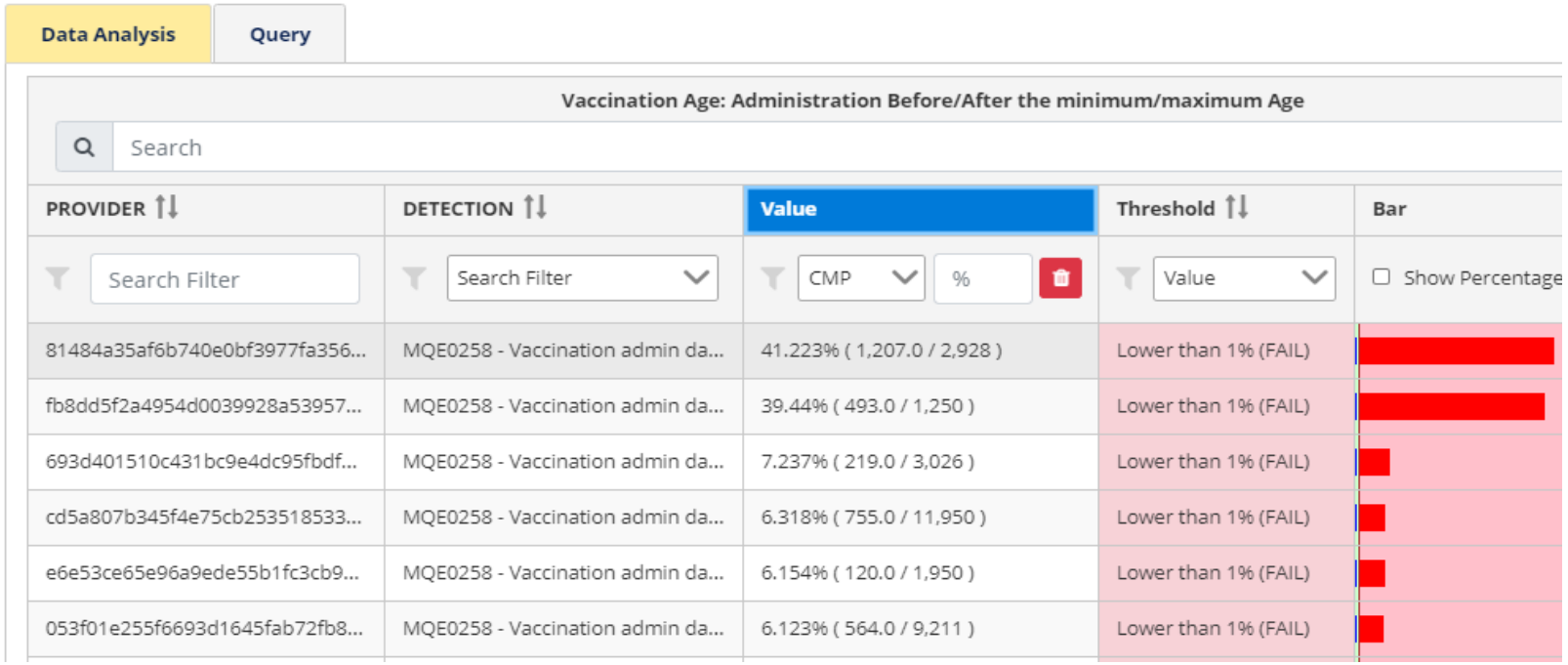
Analyze

- Administration Date Appropriate for Min/Max Age
  - Approximately 14,000 vaccines were not given within the expected age range



Analyze – Provider Level Detail

- Unexpected vaccine for patient Age
  - Identify high % providers and review data for conflict



Next Steps for DAR

2020	2021	
Testing and Discovery	Define Measures	Begin Assessment

Validation Recognition

Mary Beth Kurilo

Content Areas for Validation in 2020

Since 2018

Transport

Does the IIS offer to exchange data using the formally defined transport specification, SOAP/Web Services and the CDC WSDL?

Since 2018

Submission/Ack

Can update messages be received according to current HL7 standards, and can data exchange partners be notified of the outcome?

Since 2018

Query/Response

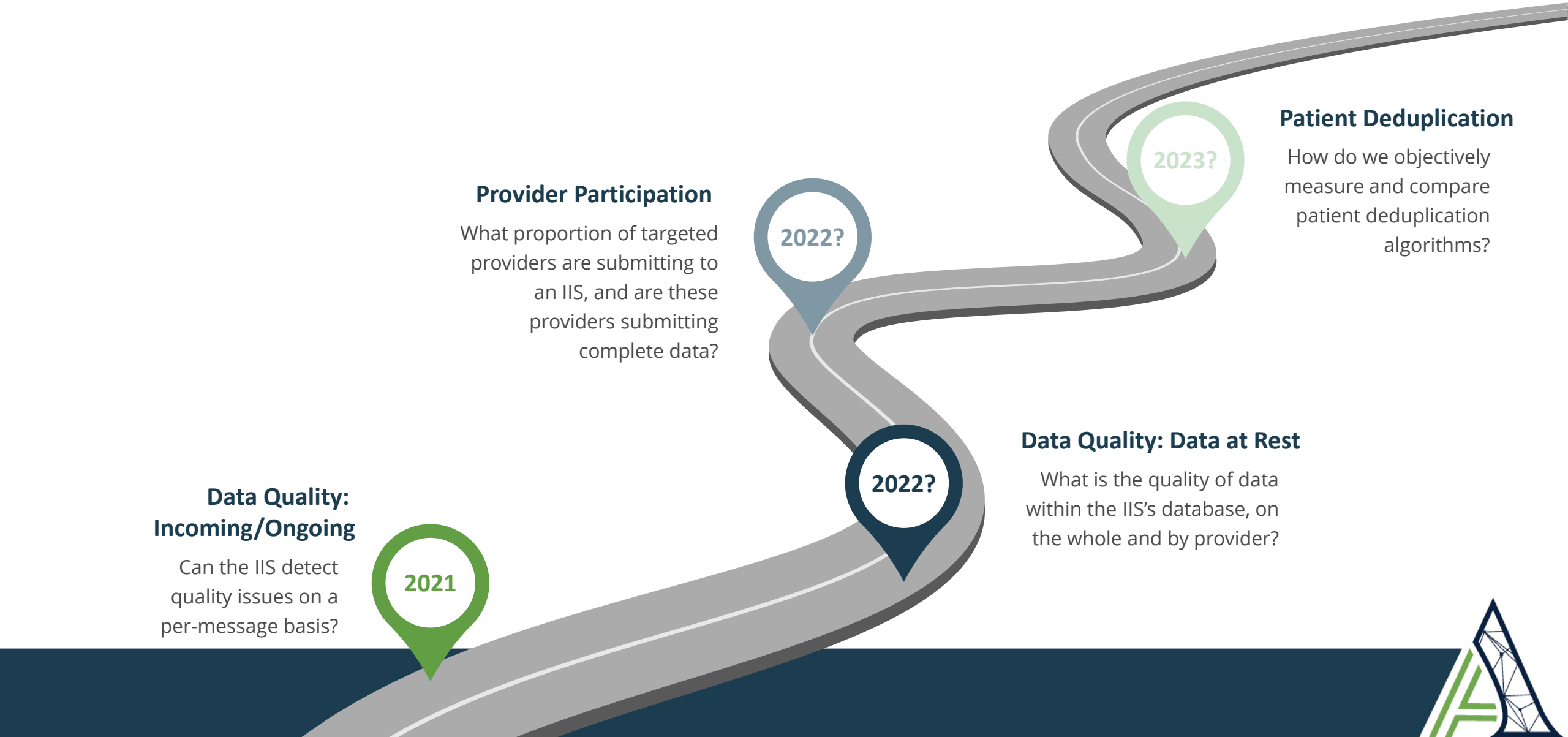
Can query messages be received according to current HL7 standards, and can data exchange partners receive standardized responses at the point of care?

Since 2020

Clinical Decision Support

Can the IIS determine and return evaluated and recommended immunizations that align with ACIP?

Areas Planned for Upcoming Validation



Data Quality: Incoming/Ongoing

Can the IIS detect quality issues on a per-message basis?

2021

Provider Participation

What proportion of targeted providers are submitting to an IIS, and are these providers submitting complete data?

2022?

Data Quality: Data at Rest

What is the quality of data within the IIS's database, on the whole and by provider?

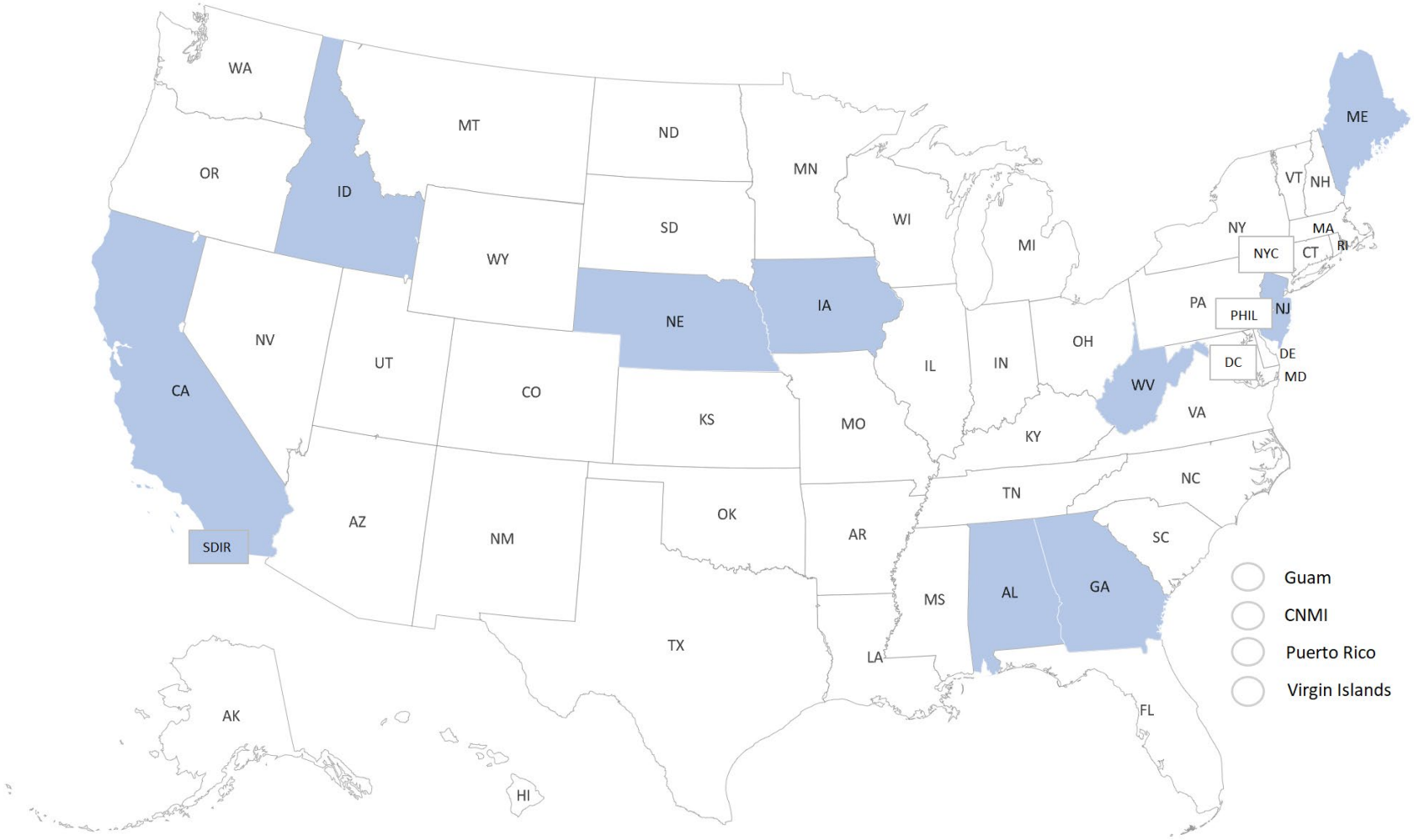
2022?

Patient Deduplication

How do we objectively measure and compare patient deduplication algorithms?

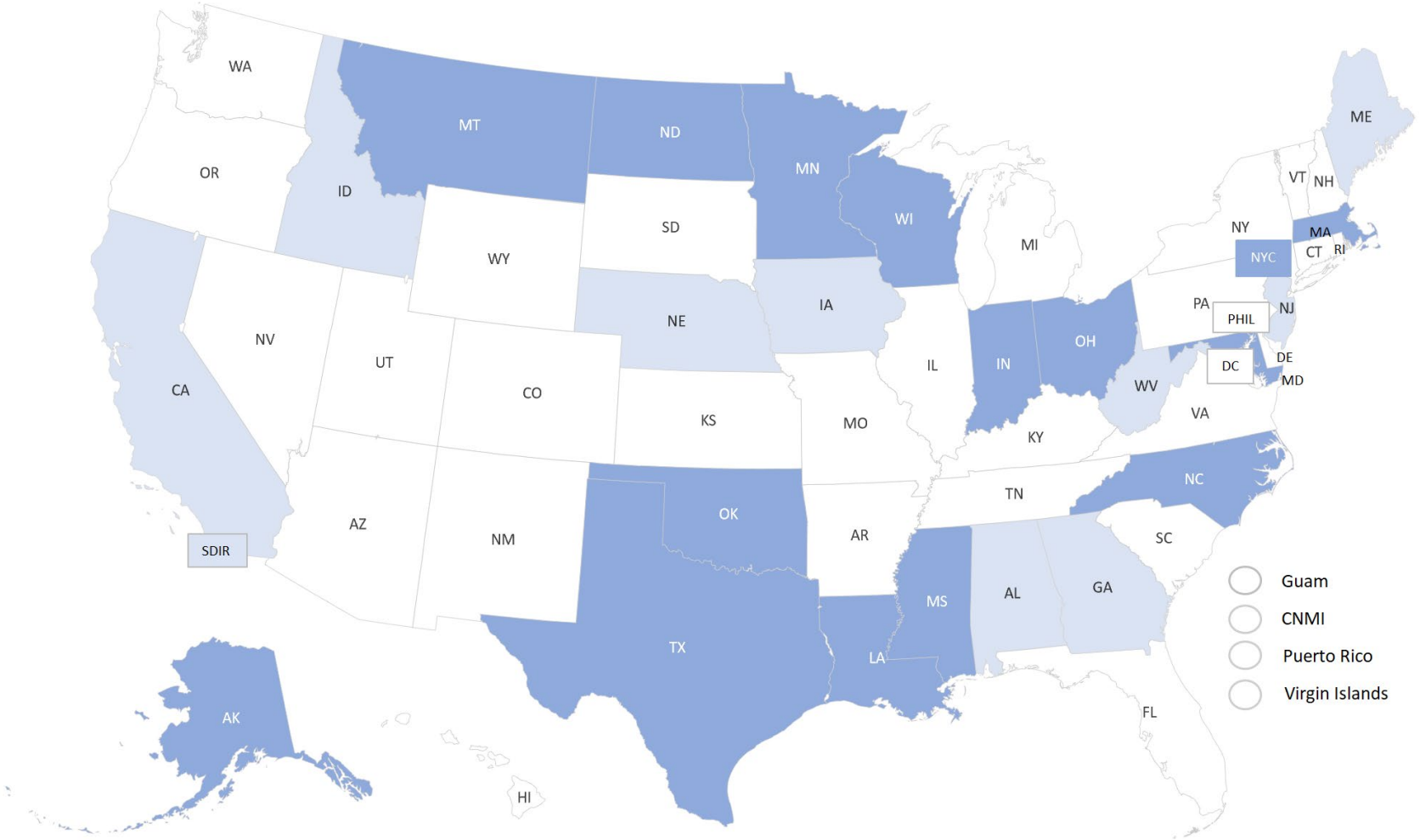
2023?

IIS Validated in One Content Area (n=10)



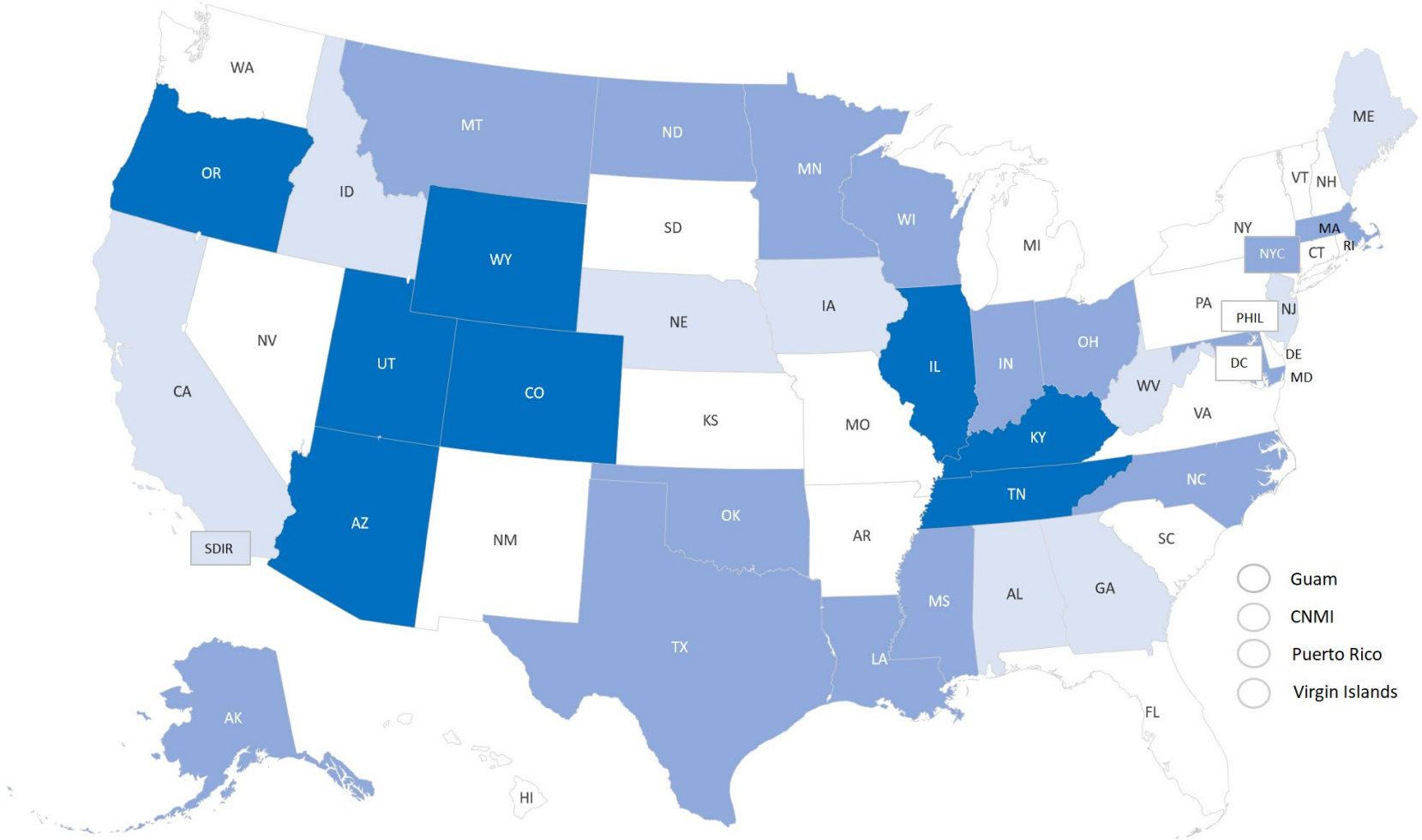
- Alabama
- California
- Georgia
- Iowa
- Idaho
- Maine
- Nebraska
- New Jersey
- San Diego
- West Virginia

IIS Validated in Two Content Areas (n=15)



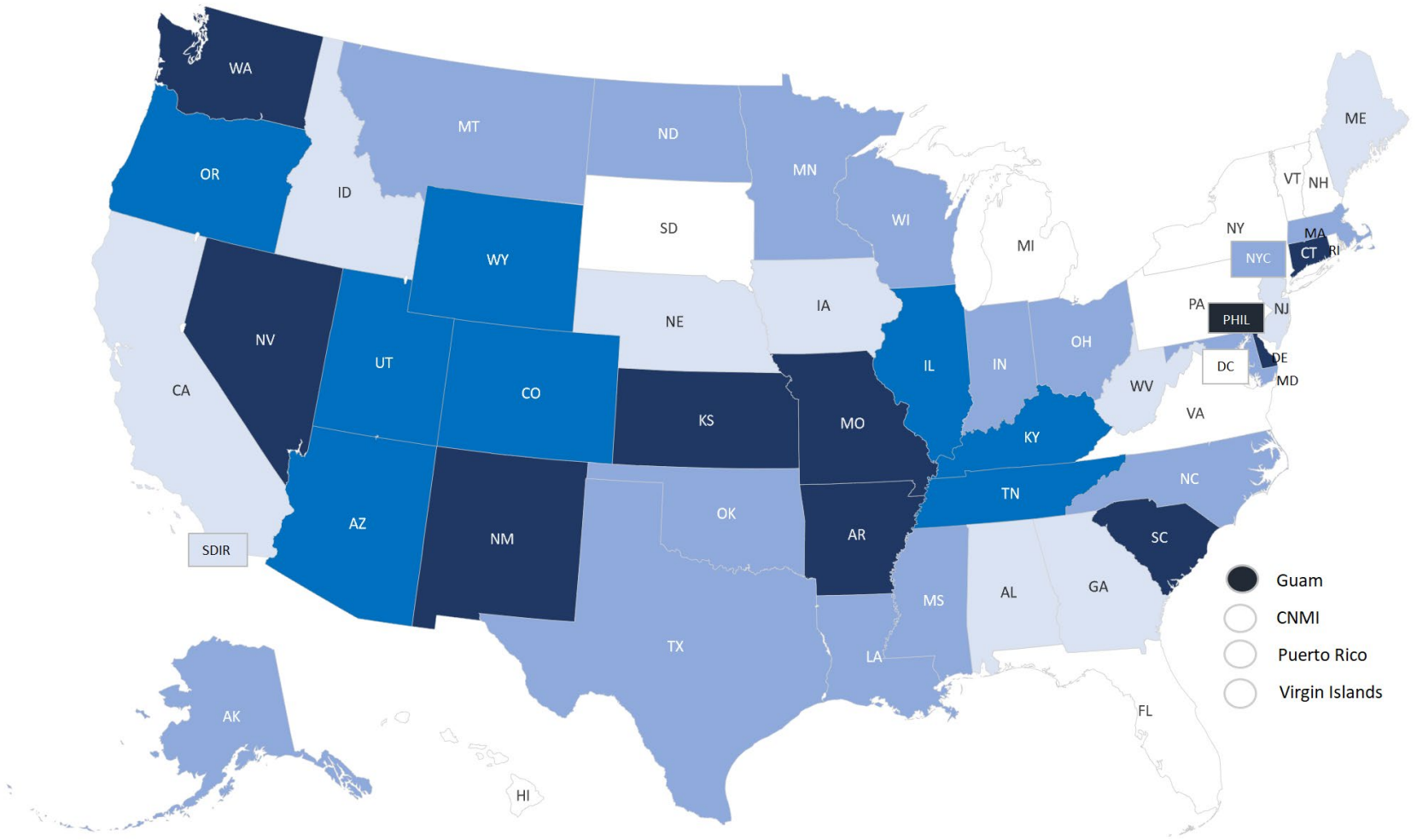
- Alaska
- Indiana
- Louisiana
- Maryland
- Massachusetts
- Minnesota
- Mississippi
- Montana
- North Carolina
- North Dakota
- Ohio
- Oklahoma
- Texas
- Wisconsin
- New York City

IIS Validated in Three Content Areas (n=8)



- Arizona
- Colorado
- Illinois
- Kentucky
- Oregon
- Tennessee
- Utah
- Wyoming

IIS Validated in Four Content Areas (n=11)



- Arkansas
- Connecticut
- Delaware
- Guam
- Kansas
- Missouri
- New Mexico
- Nevada
- Philadelphia
- South Carolina
- Washington

Congratulations

And we appreciate all your hard work!

- You are at the forefront of moving our community forward, ensuring:
  - Public Health and IIS have compiled high-quality data
  - Partners can easily access and use these data
  - Ultimately, patients are protected from vaccine preventable diseases

Thank you for all you do!

Questions?

- Join us on Mentimeter! www.menti.com
- Use the code: 43 95 87 4
- Submit your questions
- Scroll and vote (👍) for the questions you want answered
- Or you can still click the chat icon (💬) to submit a question in WebEx

IIS Well Visit Reminder

It's time to schedule your 30-minute virtual AART Clinic appointment!

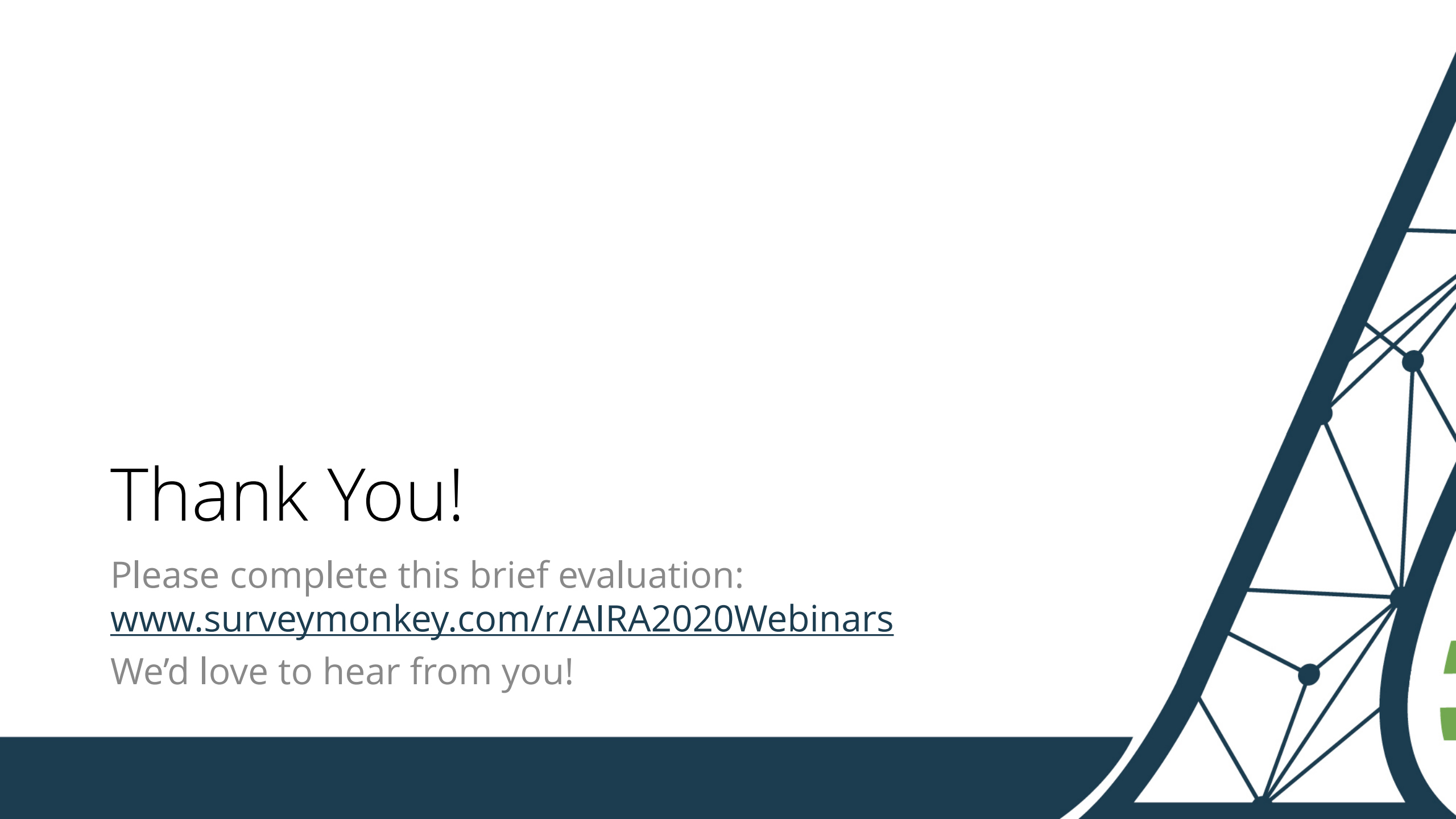
AART Clinics provide a full checkup of your IIS, which may include:

- Screening your IIS functionality compared to national standards and best practices
- Guidance on action steps you can take to become better aligned with standards
- Education on how to use the AART tool
- Review of your IIS readiness for the novel COVID vaccine

Clinic appointments will be available 11/02 through 12/04

Sign up now at:
https://www.signupgenius.com/go/70A054DA9A82DA0F49-virtual

Thank You!

Please complete this brief evaluation:
www.surveymonkey.com/r/AIRA2020Webinars

We'd love to hear from you!