Data at Rest

AIRA Discovery Session and Town Hall

October 3, 2022

4-5 PM EST

Agenda

M&I Overview – Kevin Snow, Co-Chair, MACAW

Data at Rest (DAR): Introduction - Assiatou Diallo, AIRA

DAR Project Experience - **Katie Cruz, NMSIIS**
Peter Dieringer, WA IIS
Katy Riter, WA IIS

DAR into IIS Assessment – Eric Larson, AIRA

Questions/Discussion/Open Forum – All
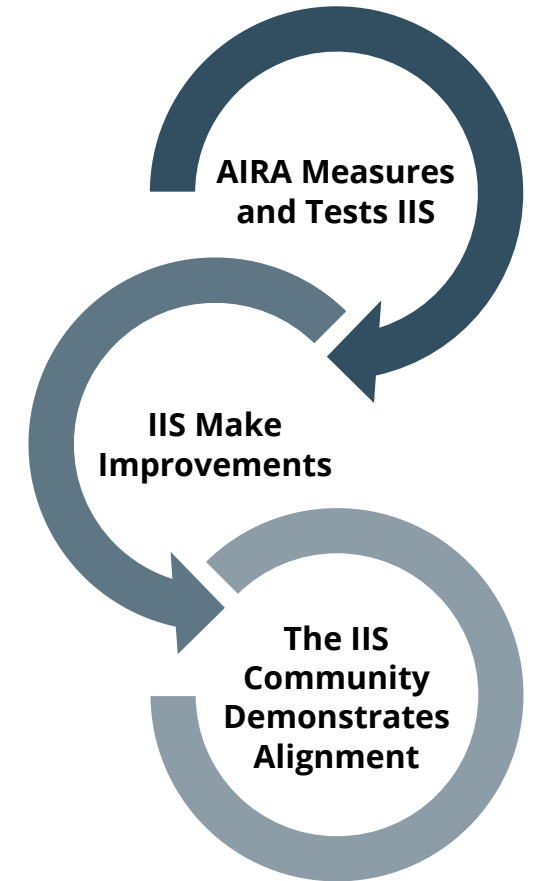
Wrap Up – Kristi Siahaya, AIRA

Measurement & Improvement Overview

Kevin Snow, MACAW Co-Chair

Measurement and Improvement Initiative – What is it?

- The IIS Measurement and Improvement (M&I) Initiative began in 2015 in collaboration with CDC as an effort to:
  - Test IIS alignment with standards
  - Provide IIS with information and assistance to improve
- All testing is conducted by AIRA through:
  - Connecting with pre-production systems or analyzing deidentified data

AIRA Measures and Tests IIS

IIS Make Improvements

The IIS Community Demonstrates Alignment

Who is Supporting This Process Along with AIRA?

MACAW

The Measurement for Assessment and Certification Advisory Workgroup, made up of IIS, Immunization Program Managers IIS Vendors, and Federal Partners

CDC

Centers for Disease Control and Prevention, our funders, supporters, and collaborators

NIST

National Institute of Standards and Technology, who collaborate with AIRA to develop tooling to support measurement
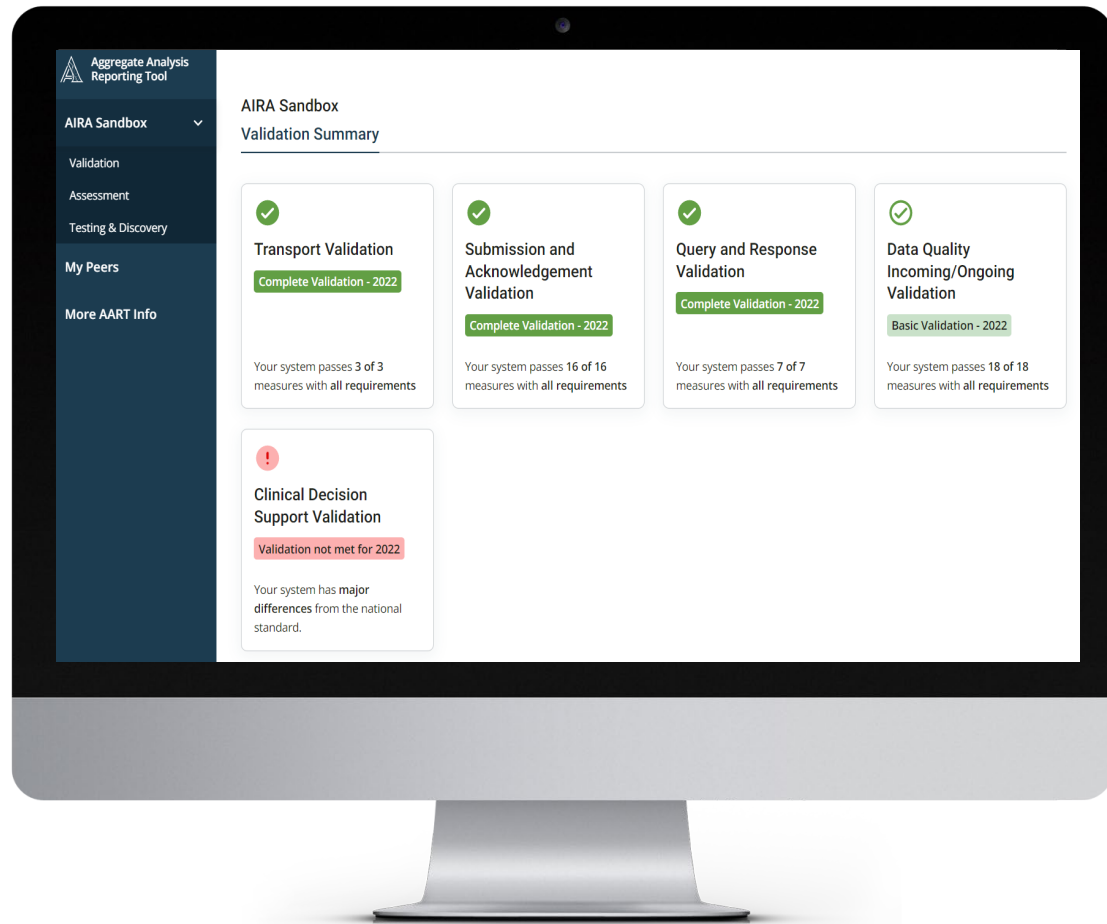
IIS and Imms Programs

IIS and Immunization Programs do the heavy lifting of analysis, planning, funding, and implementation

IIS Vendors

IIS Vendors support IIS and Immunization Programs in planning and implementation

The AART Dashboard – Your Gateway To Data

Click to drill down to:

- Measure results and information
- Test case outcomes – expected and actual
- Historical perspectives
- Results from your peers who have shared their data and information

M&I Measure Development and Approval Process

Measures Created

MACAW prioritizes, discusses, and develops measures

1

Measures Shared

Measures are shared with IIS Community for review and input

2

← **We are here!**

Measures Refined, Updated

Comments are compiled and measures updated

3

Measures Implemented

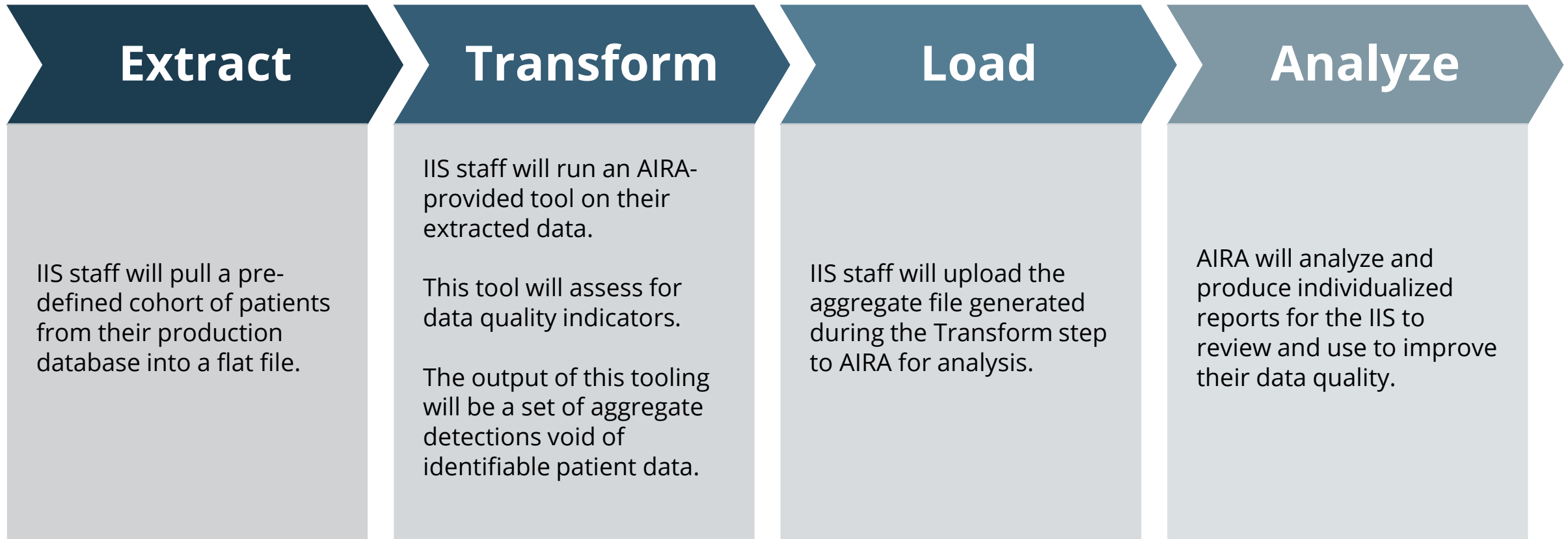Testing occurs and results are available in AART

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Data at Rest Overview

Assiatou Diallo, AIRA

Data at Rest is the measurement of data that has been accepted into the IIS production environment.

Measuring Data at Rest

Extract	Transform	Load	Analyze
IIS staff will pull a pre-defined cohort of patients from their production database into a flat file.	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.	IIS staff will upload the aggregate file generated during the Transform step to AIRA for analysis.	AIRA will analyze and produce individualized reports for the IIS to review and use to improve their data quality.

Cohort

Two views available for your data

IIS-Wide Report

Provides a view of the overall picture of the completeness, validity, and timeliness of the IIS data.

Provider Breakdown Report

Stratifies the entire cohort of data by provider.

Presentations from Testing & Discovery

New Mexico, NMSIIS
• Katie Cruz, IIS Manager

Washington State, WAIIS
• Peter Dieringer

• Katy Riter

New Mexico
Data at Rest (DAR) Project

Kathryn Cruz, NMSIIS Manager

October 3, 2022

Project Initiation – First Steps

- AIRA National Meeting 2021
- NM requested information in January 2022
- Notified Envision to obtain data extraction scripts
- DAR Kickoff call recording
- DAR webpage: steps, resources, reference guides

Testing and Discovery

- Data Extraction – completed 02/09/2022
- Data Transformation #1 – completed 2/14/2022
  - Minor difficulties with Command Line Prompt Tool
- Data Upload #1 – completed 03/11/2022
- Release of updated version of Command Line Tool to address issue of age groupings
- Data Transformation #2 – completed 3/24/22
- Data Upload #2 – completed 3/24/22

Data Analysis - Reviewing Results

- Error rate of 0.50%

- Biggest area of concern is regarding timeliness of reporting

- Most demographic fields have a high rate of providers not meeting the 85% threshold for reporting required

Measure	Measure Title	Meets	Does Not Meet
1	Completeness Indicators	9	12
2	Validity Indicators	16	3
3	Timeliness Indicators	1	7

Summary Recap

- Staff – 1 person
- Time
  - Data Extraction: ~6 hours
  - Data Transformation: ~10 hours
  - Data Uploads: ~1 hour
- Resources
  - Download Command Line Tool
  - DAR Website
  - Eric and Assi

KEEP CALM BECAUSE WE GOT THIS

Data Quality Improvement:
Next Steps

1. Hire temporary contact health educators (2)
2. Identify priority areas
3. Obtain feedback on barriers or reasons for poor reporting
4. Transition any to data exchange, if possible
5. Develop and/or refine resources
6. Establish benchmark so we can track progress
7. Rerun annually with same cohort

Kathryn Cruz

Kathryn.Cruz@state.nm.us

Washington Data at Rest (DAR) Project

Katy Riter, Peter Dieringer

October 3, 2022

WA DAR Participation

- Participation began in 2019 with the pilot project
  - Extract
    - first year core database via SQL, 2022 replica
  - Transform and load
    - initial issue with raw file; troubleshooting resolved issue
    - PowerShell used to transform, ensuring removal of spaces in file names

- Data analyst conducted the analysis on 6/15/2022

WA DAR Results – IIS Wide

- Patient completeness
  - Mother's maiden name, race, ethnicity and email
- Vaccination completeness
  - Lot number, financial eligibility
  - Expiration and funding to be re-queried
- Timeliness
  - 88% under 30 days

WA DAR Results – Provider Breakdown

1. Completeness

1.10. Patient mother's maiden name is present ⚠

1.11. Patient race is present ⚠

1.12. Patient ethnicity is present ⚠

1.14. Patient email is present ⚠

1.18. Vaccination lot number is present ⚠

1.19. Vaccination lot expiration date is present ⚠

1.20. Vaccination financial eligibility code is present ⚠

1.21. Vaccination funding source code is present ⚠

1.11. Patient race is present ⚠

Data Analysis	Query

Group ⇅	Grc REI ⇅	DETECTION_TYPE ⇅	Value	Threshold ⇅	Bar
		Search Filter	CMP ∨ % 🗑	Value ∨	
253	9	MQE0698 - Patie...	25.6% (1,500 / 5,864)	Higher than 95% (FAIL)	
286	d	MQE0698 - Patie...	29.6% (570 / 1,928)	Higher than 95% (FAIL)	
216	5	MQE0698 - Patie...	34.9% (475 / 1,362)	Higher than 95% (FAIL)	

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WA DAR Programmatic Impact

- One of multiple tools to assess/monitor data quality
- Inform further analysis
- Identify metrics for data quality dashboard
- Identify areas of focus
- Prioritize outreach to providers

WA Next Steps

- Implement data quality dashboard
- Monitor measures over time
- Outreach to providers with high errors
- Provider scorecards

DAR into Assessment

Eric Larson, AIRA

Data at Rest Content Area

In Scope

- Data quality of patient-level data elements
- Data quality of vaccine-level data elements

Out of Scope

- Data quality of HL7 messages
- Data quality of provider-level data elements
- Coverage reports
- Inventory management

DAR Measures from T&D to Assessment

24
Completeness

20
Validity

1
Timeliness

Completeness

Completeness is the degree to which full information about a data set, record, or individual data element is captured in the IIS, i.e., the proportion of stored data measured against the potential of "100% complete."

The following measure the percent of patient or vaccination records in which the data element was present (e.g., had a value).

Completeness - Patient

- First name
- Middle name
- Last name
- Birth date
- Gender
- Address
  - Street line 1
  - City
  - State
  - Zip
  - Complete Address

- Race
- Ethnicity
- Phone number
- Email
- Mother's maiden name
- Responsible person
  - First name
  - Last name

Completeness - Vaccination

All Doses

- Vaccine administration code
- Vaccine administration date
- Vaccine information source

Administered Doses

- Vaccine lot number
- Vaccine lot expiration date
- Vaccine eligibility code
- Vaccine funding source

Validity

The degree to which the data conforms to the syntax (i.e., format, type, range) of its definitions, (e.g., to the rules of what is accepted or expected by the IIS)

Validity - Patient

- Patients born on:
  - the **first of the month** do not exceed normal distribution of birth dates.
  - the **15th of the month** do not exceed normal distribution of birth dates.
  - the **last day of the month** do not exceed normal distribution of birth dates.
- Patient has more vaccinations than expected.

Validity - Vaccination

Vaccine administration date(s)…

- is after vaccine lot expiration date.
- is before birth date.
- on the first day of the month do not exceed normal distribution of administration dates.
- on the 15th of the month do not exceed normal distribution of administration dates.
- on the last day of the month do not exceed normal distribution of administration dates.

Vaccine administration code…

- was administered at an improbable age.
- is unspecified for an administered vaccination event.

Validity – Vaccination continued

- Vaccine lot number has an invalid prefix.
- Vaccine lot number has an invalid infix.
- Vaccine lot number has an invalid suffix.
- Vaccine lot number is invalid.
- Vaccine lot number is too short.
- Vaccine administration code is unrecognized.
- Vaccine Manufacturer is unrecognized.
- Vaccine Administration route is unrecognized.
- Vaccine Body site is unrecognized.

Timeliness

The amount of time between the occurrence of the real-world event and its documentation in the IIS, (i.e., the time lag between the date of vaccination or birth and the date the record is received by the IIS)
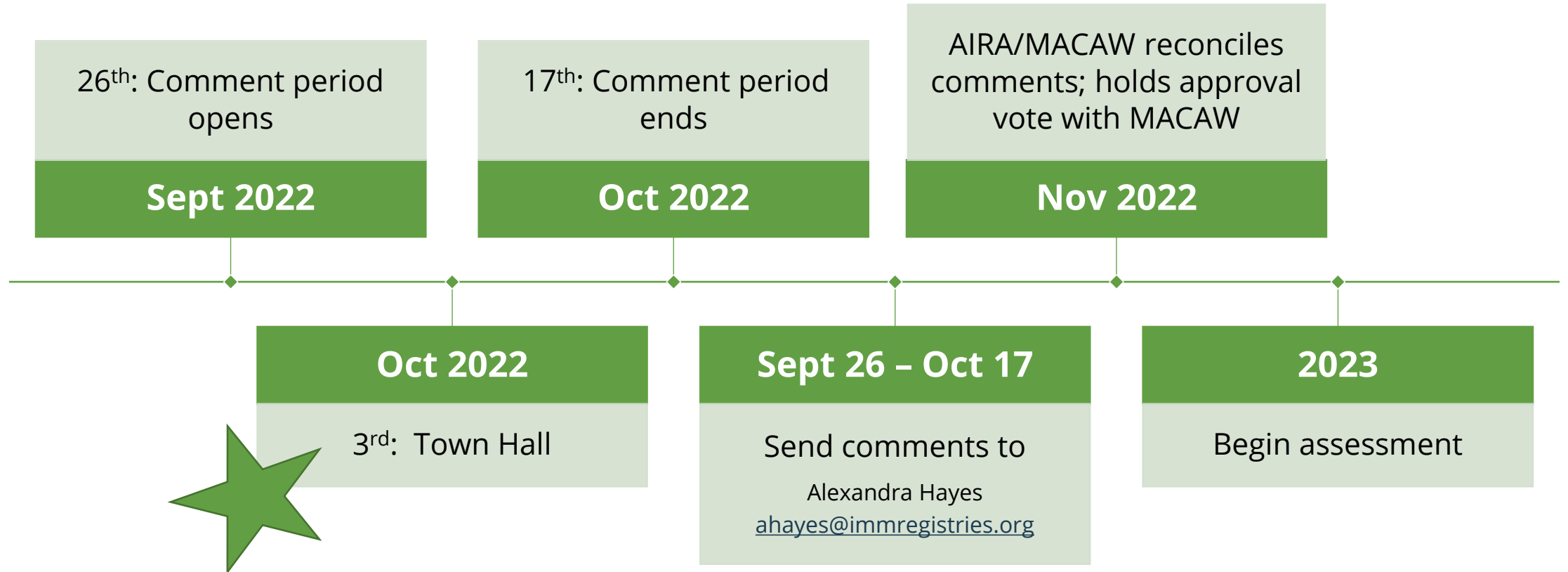
Timeliness - Vaccination

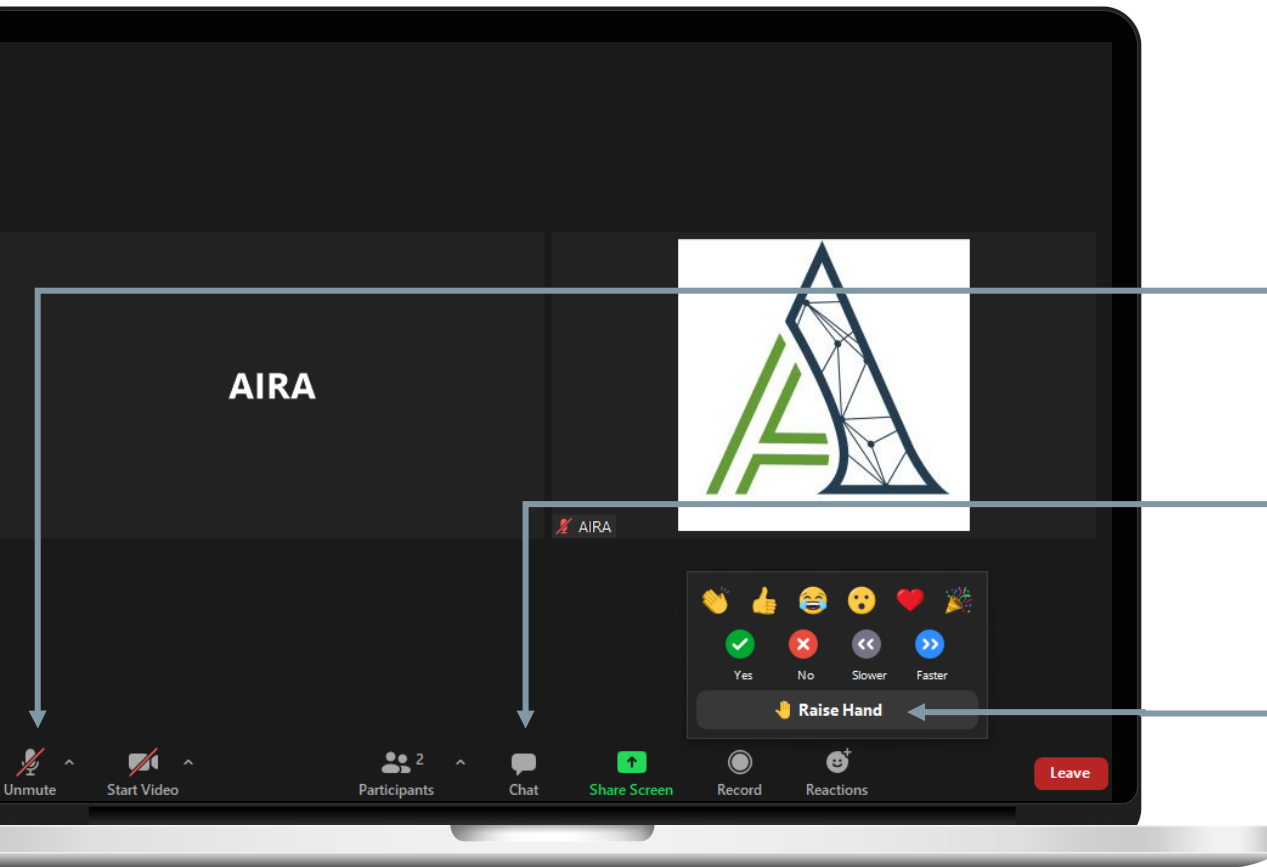Administered vaccination events are entered into the IIS within one (1) calendar day from administration date.

Timeline

Sept 2022	Oct 2022	Nov 2022
26th: Comment period opens	17th: Comment period ends	AIRA/MACAW reconciles comments; holds approval vote with MACAW

Oct 2022	Sept 26 – Oct 17	2023
3rd: Town Hall	Send comments to Alexandra Hayes ahayes@immregistries.org	Begin assessment

Questions/Discussion
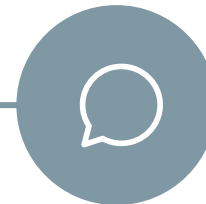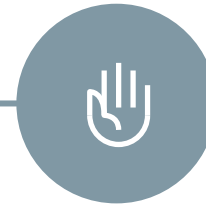# Open Forum

All

Question & Answer

How do I ask a question?

Select the unmute icon and ask your question verbally.

Select the chat icon and type your question into the chat box.

Select the reactions icon, select "Raise Hand," and you will be called on.

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Wrap Up/Next Steps

Kristi Siahaya, AIRA

Thank you for joining us, for your input, and for your continued improvement work!

Kevin Snow: ksnow@envisiontechnology.com

Eric Larson: elarson@immregistries.org

Assiatou Diallo: adiallo@immregistries.org

Thank you to our presenters, and thanks to all of you for joining us!

Please complete a brief evaluation survey.

The next Discovery Session
will be on **October 24, 2022**