AIRA
AMERICAN IMMUNIZATION REGISTRY ASSOCIATION

Immunization Information System (IIS) Information Session

Thursday, April 15, 2021

4:30pm ET

Goals for today

1. Review the history & purpose of IIS
2. Describe key principles & functionality of an IIS

3

Describe the national and local policies & their impact on IIS

Review IIS Standards Adoption and Improvement

4

5

Discuss possible role of IIS in supporting immunization credential initiatives

Q & A

Time to answer your questions

What AIRA does

Purpose

Promote the development, implementation and interoperability of Immunization Information Systems

Collaborate

Provide a way to work collaboratively to develop standards, best practices, strategies and provide education about IIS

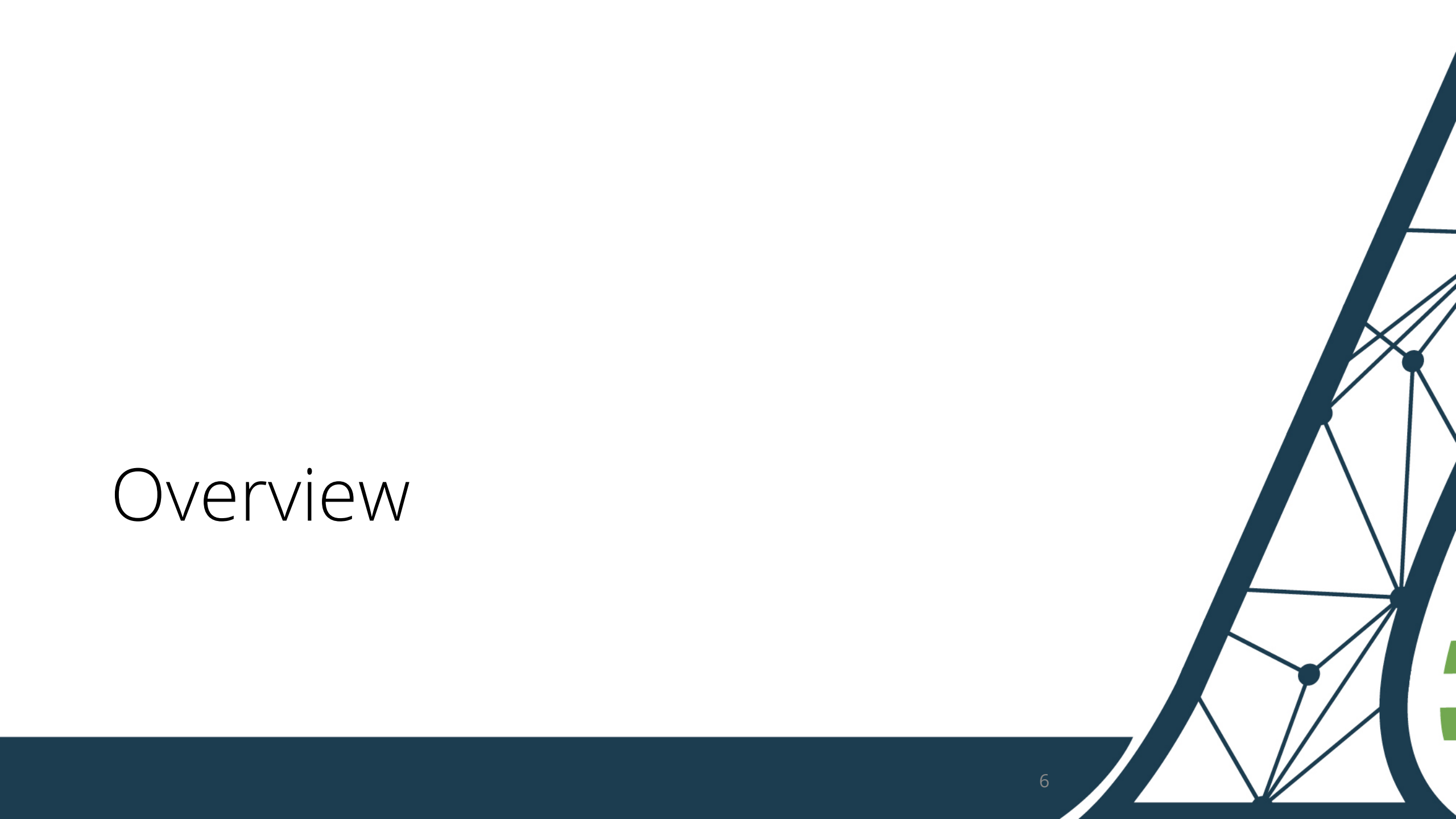
Measurement & Improvement

Identify the key aspects of an IIS that can be evaluated and measured
Provide technical assistance to IIS programs to foster improvement

Support

Support IIS and immunization programs through education, targeted assistance, and advocacy

Overview



IIS…

are confidential, population-based, computerized databases that record all immunization doses administered by participating providers to persons residing within a given geopolitical area.

- Confidential
- Population-based
- Identify pockets of need
- Exchange data with multiple providers
- Assist schools & child care providers
- Help improve vaccination rates & Reduce vaccine-preventable disease

History & Purpose

- The modern concept of IIS emerged in the midst of the 1989-1990 measles epidemic
- IIS are service-oriented public health systems
- They are population-based

Purpose

- Provide a central repository for consolidating records from a variety of sources that can be accessed by authorized users
- Support the functions of immunization programs

Every state operates an IIS

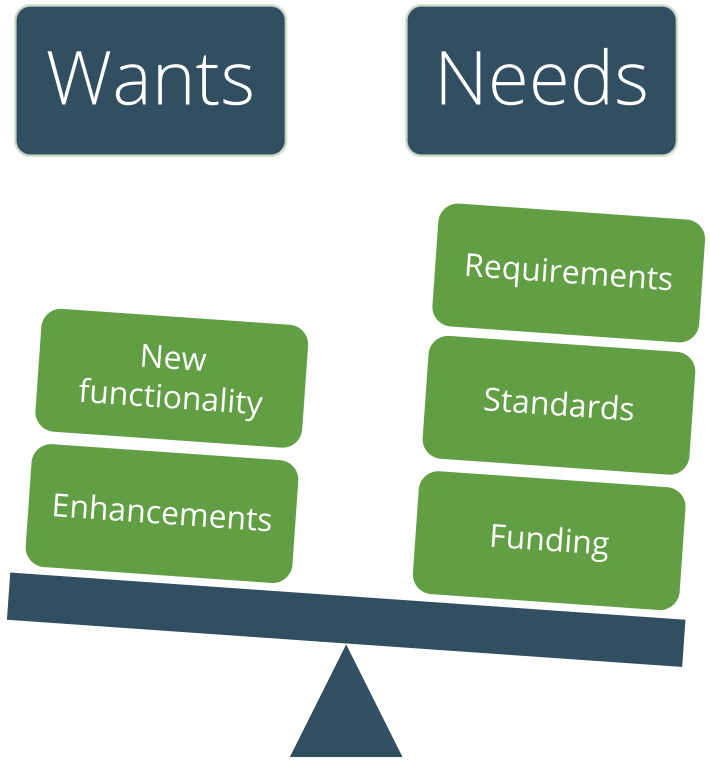
IIS are also in:

- New York City
- Philadelphia
- Washington D.C.
- San Diego
- San Joaquin County (RIDE)

- American Samoa
- Guam
- Marshall Islands
- Micronesia
- North Mariana Islands
- Palau
- Puerto Rico
- U.S. Virgin Islands

Operational Environment

- Immunization programs have competing program priorities (grant and local)
- CDC funds 64 immunization awardees
  - ALL immunization program activities, including IIS, are supported using these funds
- Less than 50% of jurisdictions have local/state funding for IIS maintenance, operations, and enhancements
- Staffing
  - Hiring freezes
  - Adequate workforce development
  - Appropriate compensation



Policies That May Affect Interoperability and/or Functionality

Authorized Users

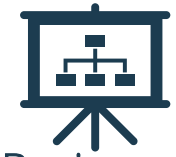
Local law/ policy may govern who can access data, including consumers

Consent

Opt-in or opt-out policies may impact data exchange and data completeness

Mandates to Report

Reporting COVID doses is mandatory, requirements for reporting other vaccines varies



Business Needs

Program components supported by the IIS may vary among jurisdictions

Maturity

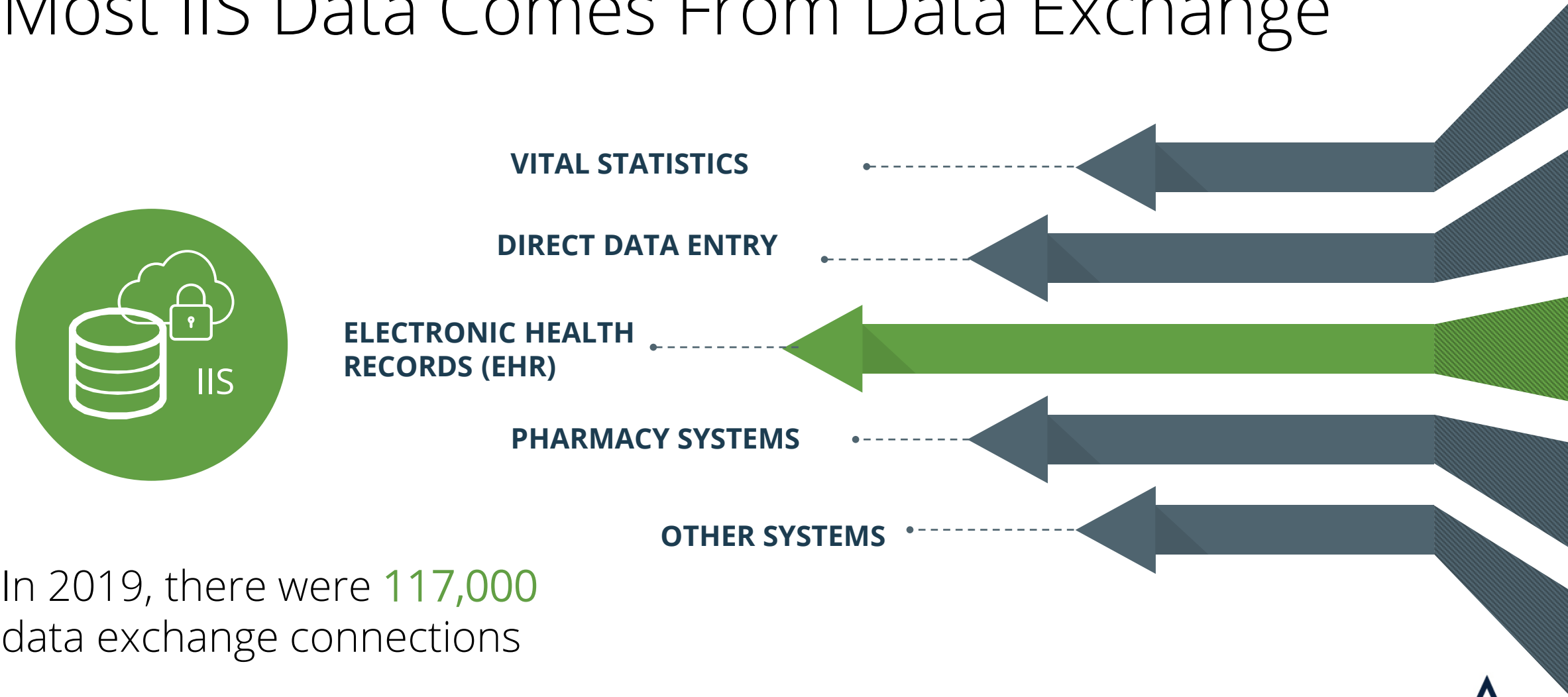
Standards adoption, saturation, or data quality may be affected

Data Capture Across All IIS - 2019

- Participation for children and adolescents requires two or more vaccines
- Participation for adults requires at least one adult vaccine

CDC IIS Annual Report Data: https://www.cdc.gov/vaccines/programs/iis/annual-report-iisar/index.html

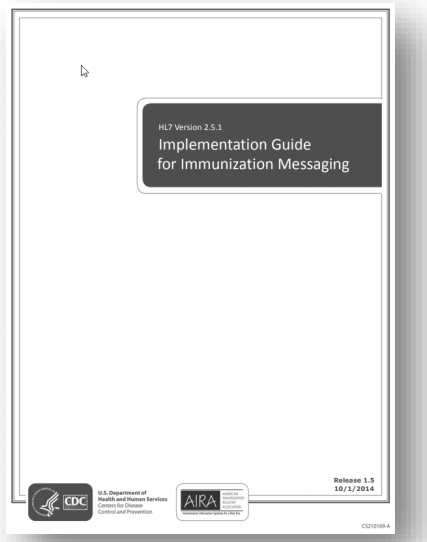
Most IIS Data Comes From Data Exchange



In 2019, there were 117,000 data exchange connections

What Data Are Contained In An IIS?

- **Patient Data:** Lifespan immunization capture from public and private clinics, hospitals, pharmacies, etc.
- **Immunization Data:** All ACIP-recommended immunizations, including COVID
- **Immunizing Provider Data:** facility administering vaccines



HL7 Implementation Guide: https://www.cdc.gov/vaccines/programs/iis/technical-guidance/hl7.html

Standards Adoption & Improvement

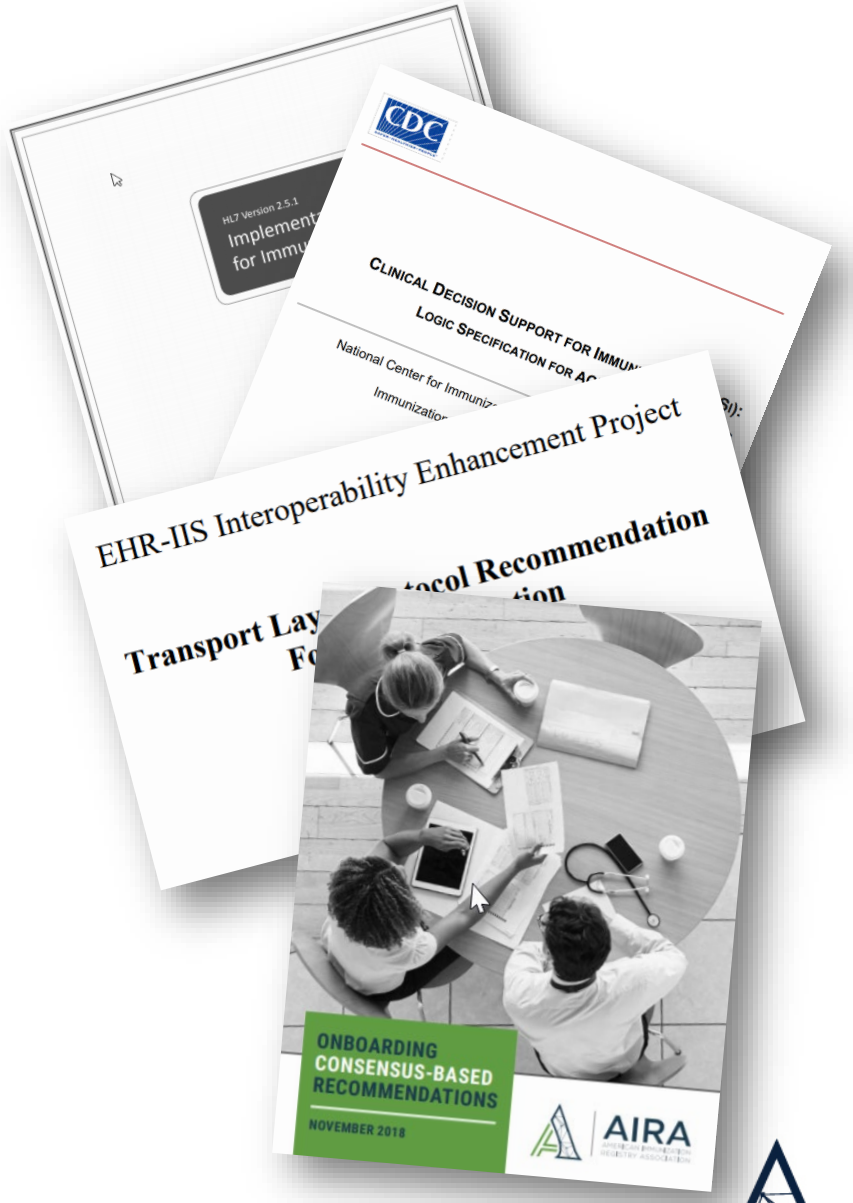
IMMUNIZATION DATA TRANSACTIONS USING THE HEALTH LEVEL SEVEN (Version 2.3) STANDARD PROTOCOL

National Immunization Program
Data Management Division
Version 1.0.2
May 1997
with CVX Vaccine Table and MVX Manufacturer Table updated January 14, 1998

Standards, 1997

Standards, 2021

- HL7 Implementation Guide V2.5.1 R1.5
- SOAP Web Services/CDC WSDL
- Clinical Decision Support for Immunizations (CDSi) Specifications
- Guidance documents, consensus-based recommendations, business process documentation, etc.

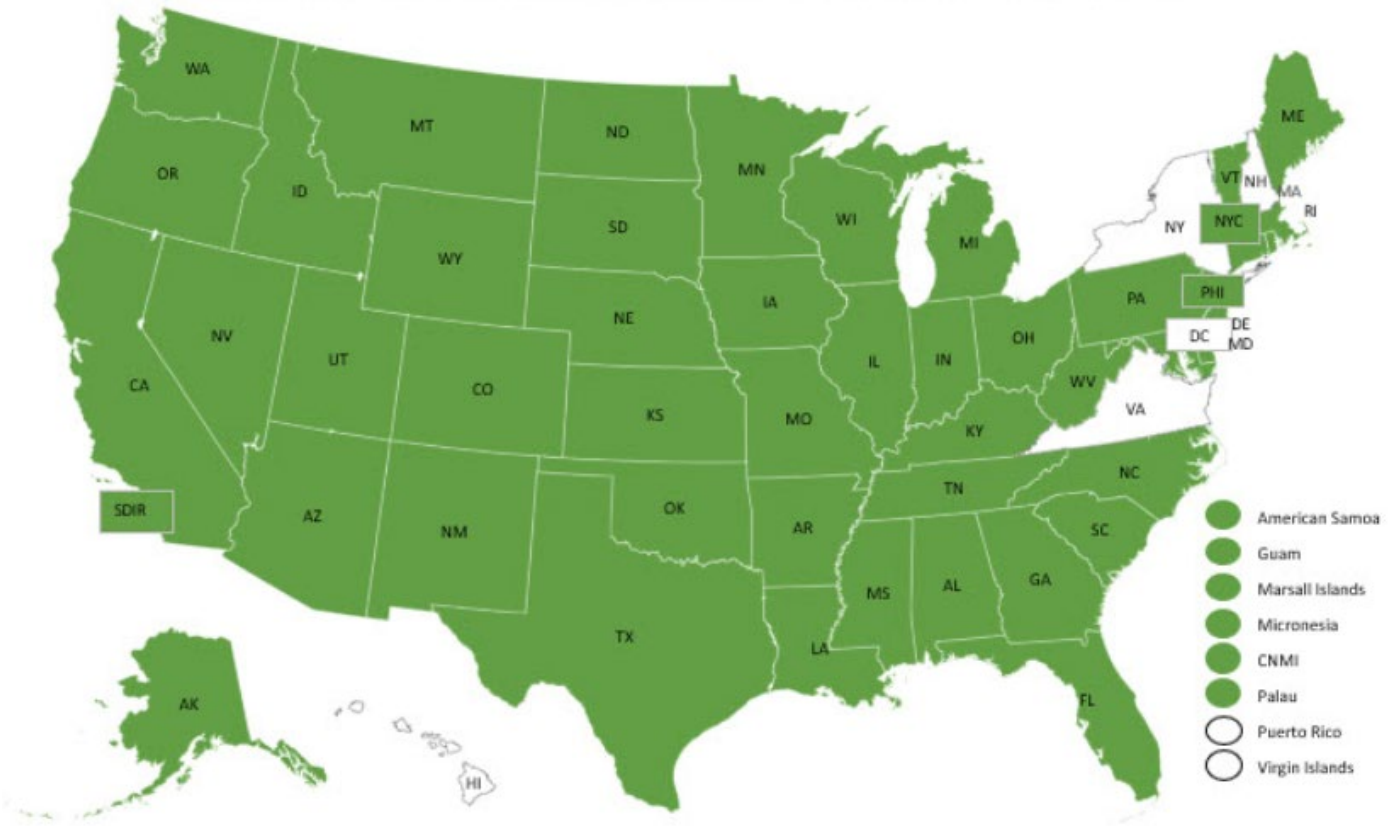


Testing and Strengthening Standards Adoption

- **Goal**: A nationwide network of systems
- Measurement & Improvement 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, through:
  - Connecting with pre-production systems, or analyzing deidentified data

Voluntary Measurement – High Participation

- Participation is strong and increasing
- Improvements in standardization across IIS are broadly recognized



2021 Results

Submission & Acknowledgement

47 of 51 tested IIS were able to process an administered vaccine for a patient in full alignment with standards

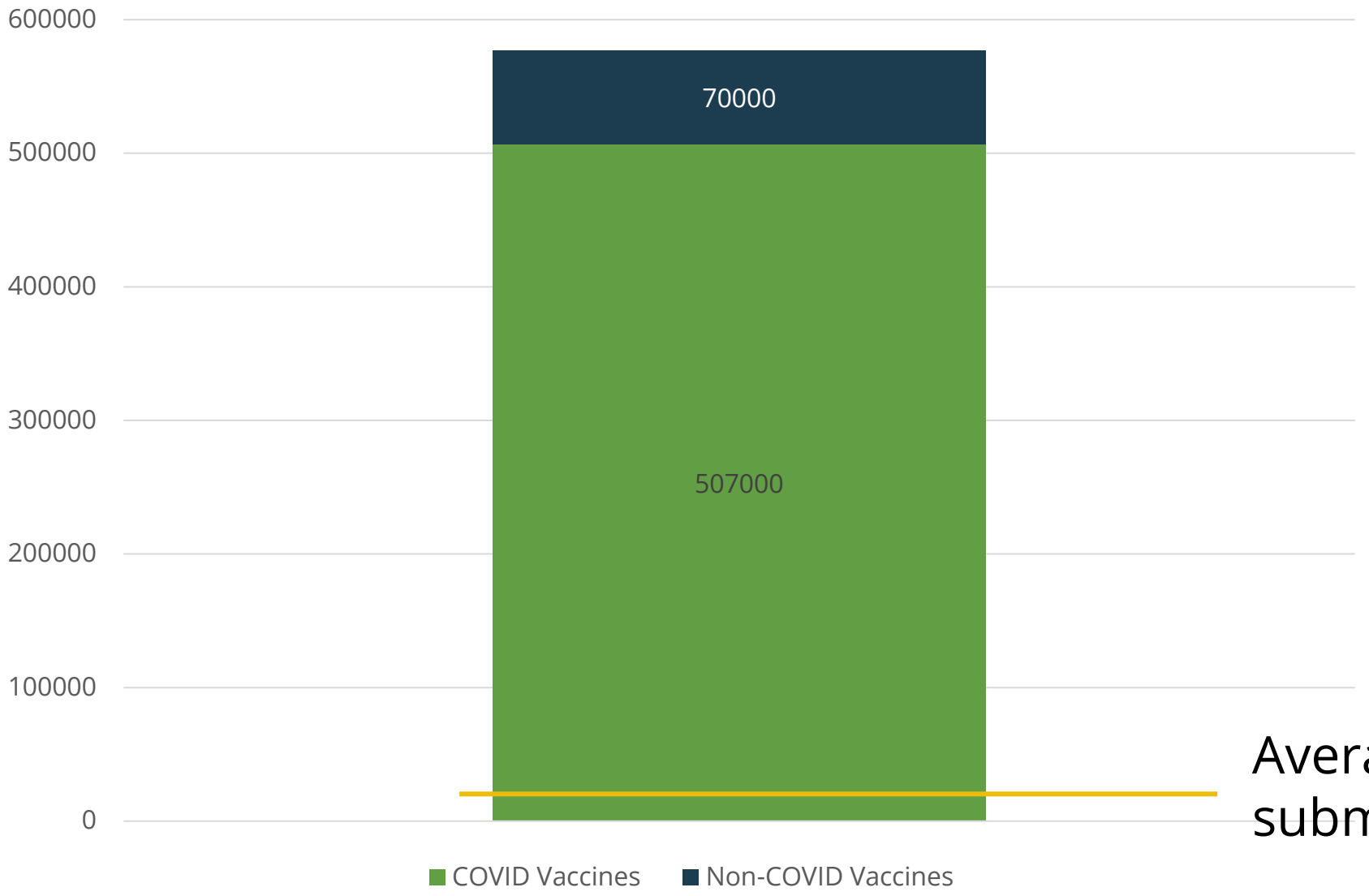
- Up from 19 when testing began

2021 Results

Query & Response

46 of 47 tested IIS were able to provide the complete immunization record in response to a query

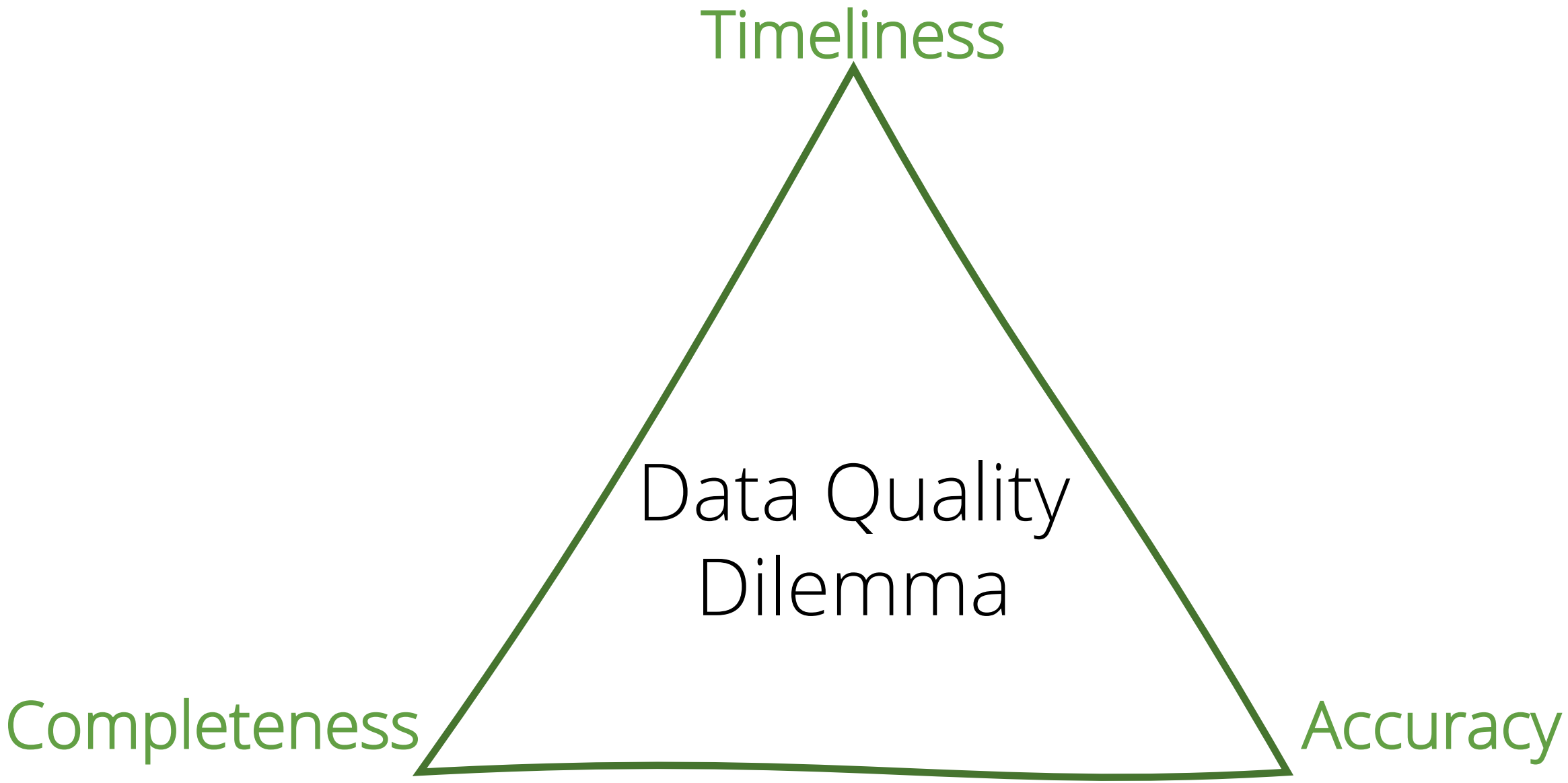
- Up from 21 when testing began



Snapshot of Growth in Volume of Daily Submissions

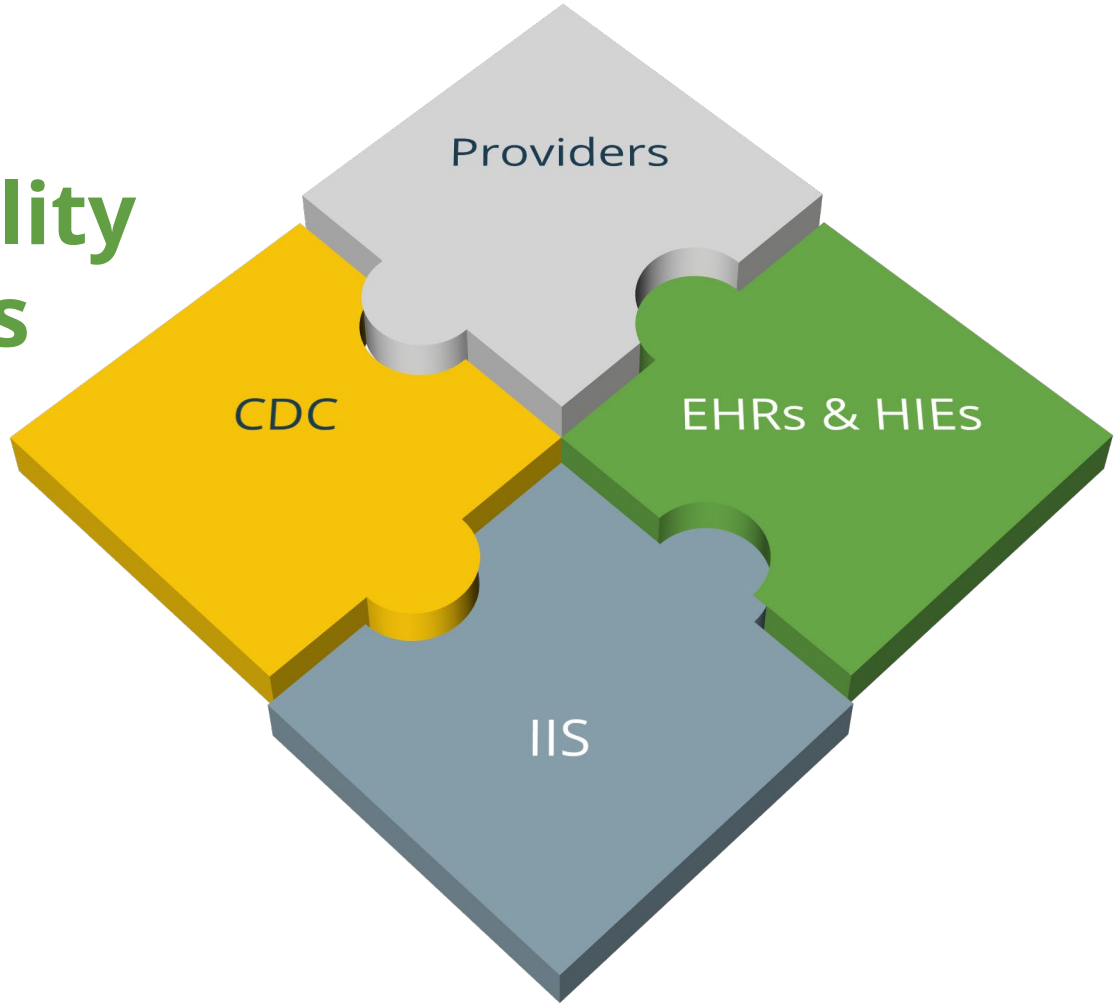
Average pre-COVID daily submissions = **17,000**

AIRA Survey March 2020, AIRA member conversations, April 2021


Timeliness
Data Quality Dilemma
Completeness
Accuracy

Timeliness

Data Quality is: **a shared responsibility across all partners**



Completeness

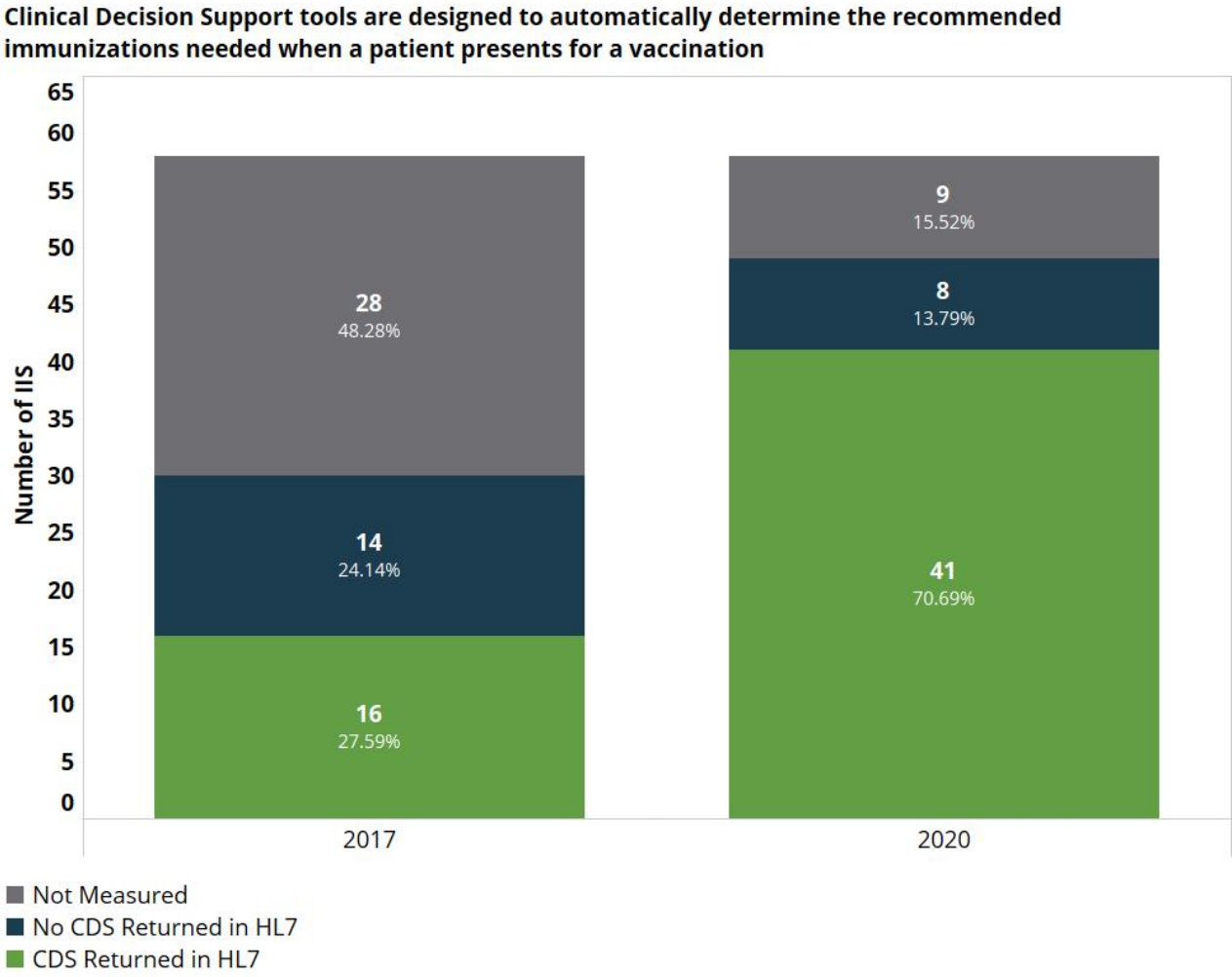
Accuracy

Remaining Content Areas for Measurement

Transport	Does the IIS offer to exchange data using the formally defined transport specification, SOAP/Web Services and the CDC WSDL?
Clinical Decision Support	Can the IIS determine and return evaluated and recommended immunizations that align with ACIP?
Data Quality	Do Incoming/Ongoing Data, Data At Rest, Provider Participation and Patient Deduplication meet quality standards?

Clinical Decision Support (CDS)

- Returned CDS allows medical providers to make informed decisions based on current and accurate data
- In 2017, **16 IIS** returned CDS via HL7
- In 2020, **41 IIS** returned CDS via HL7

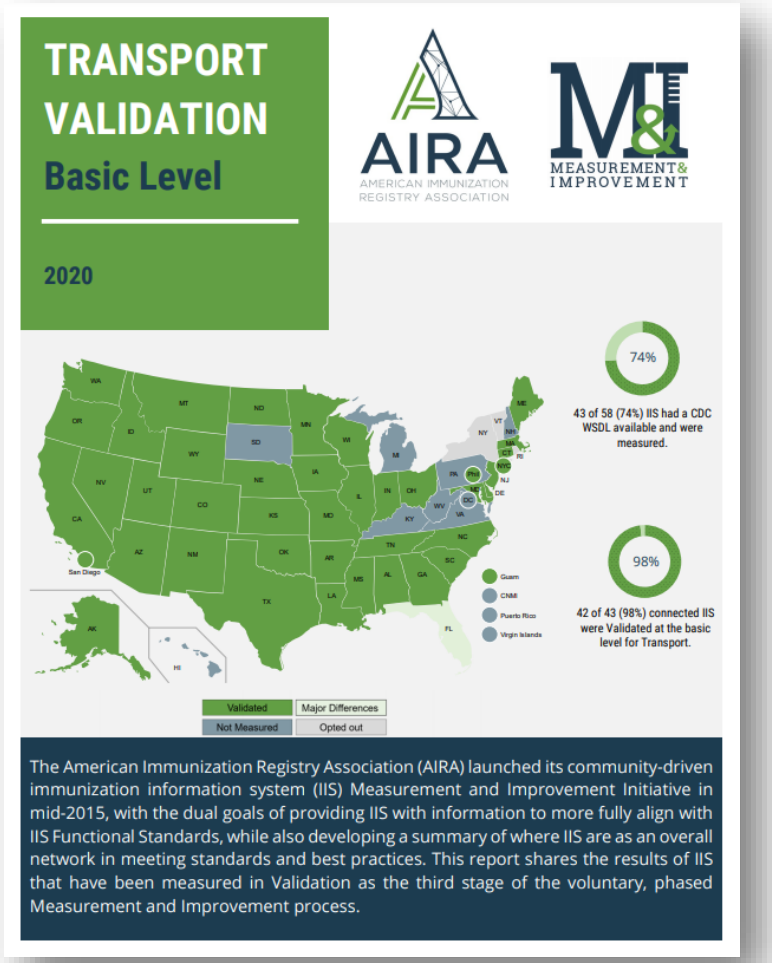


Data at Rest

- 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 pilots, AIRA is measuring:
- 24 Completeness Indicators
- 18 Validity Indicators
- 2 Timeliness Indicators

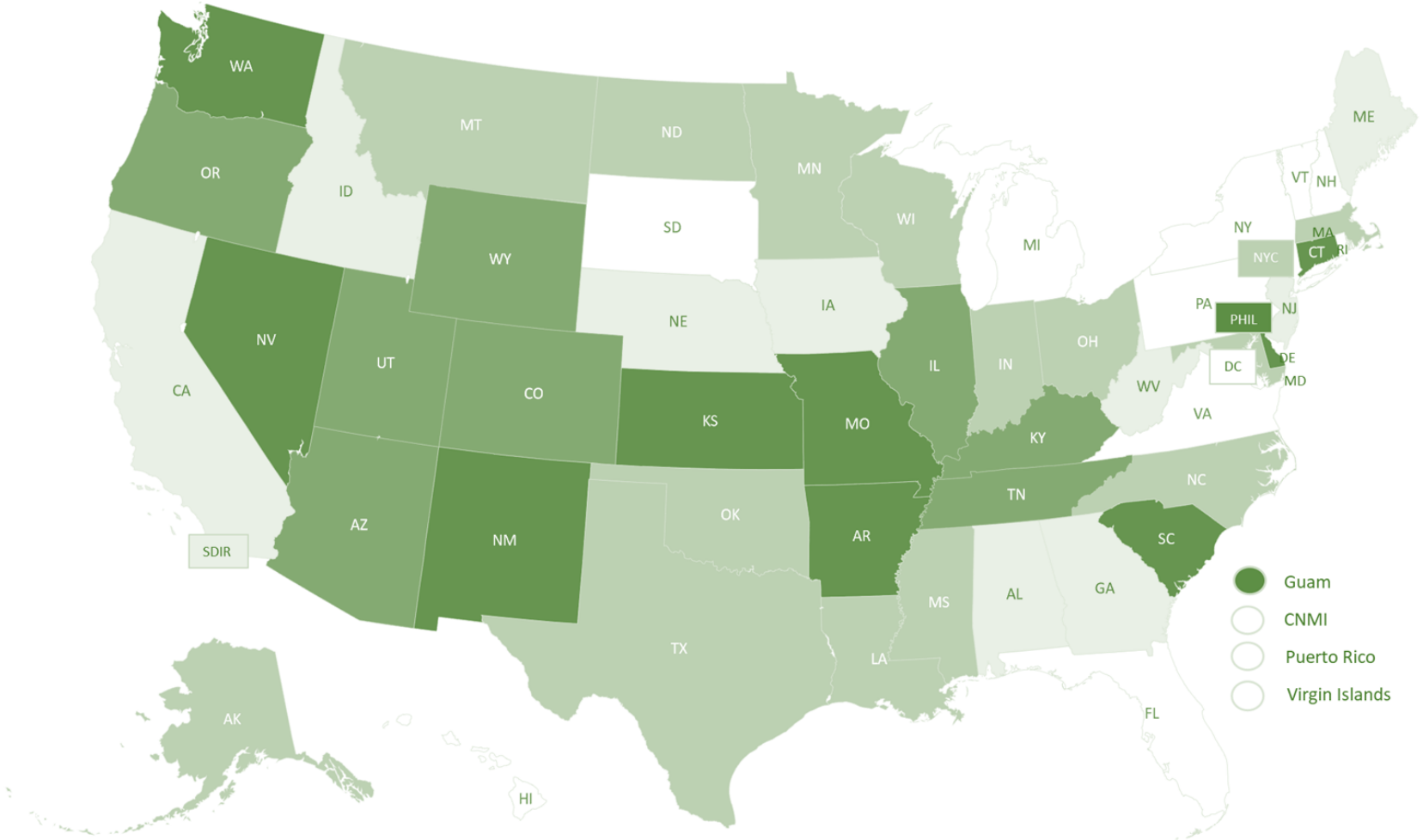
Nationwide Validation Reports – Now Available

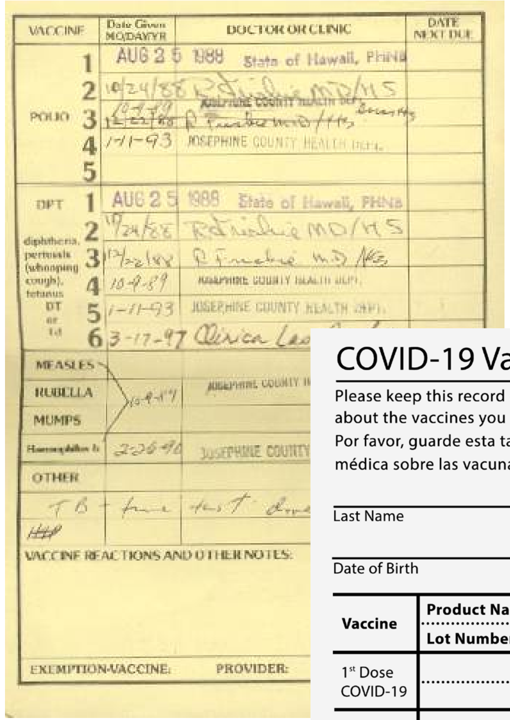
- Gradations of “validated with minor differences” and “major differences”
- Quarterly maps with gradations that clarify policy differences

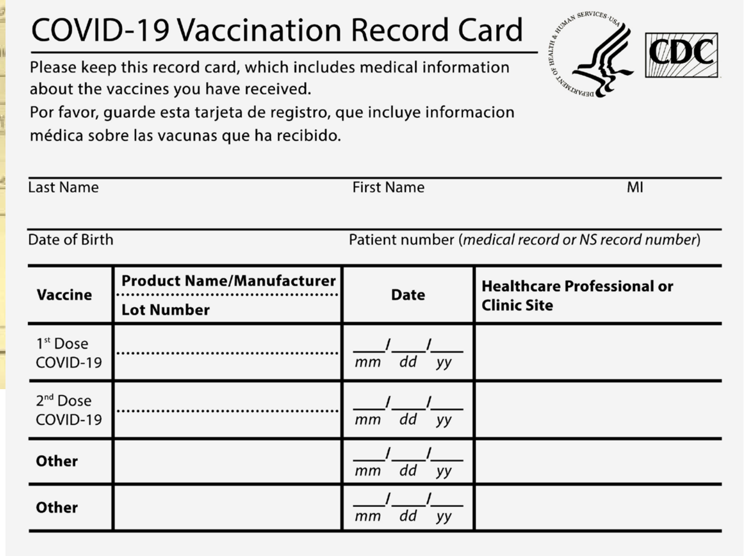


AIRA Website: www.immregistries.org/validation

44 IIS Validated In At Least One Content Area






COVID-19 Vaccination Record Card

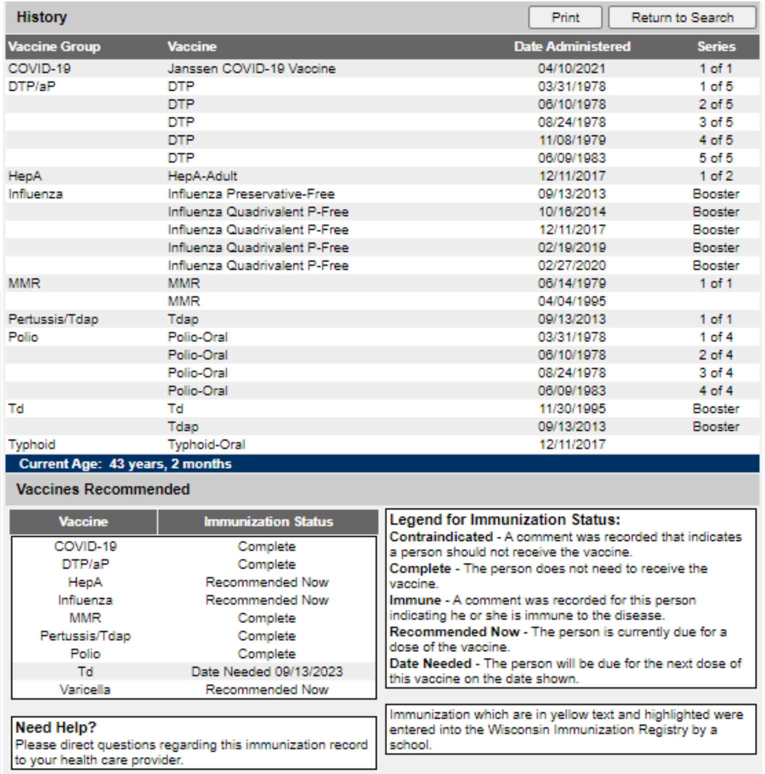
Please keep this record card, which includes medical information about the vaccines you have received.

Por favor, guarde esta tarjeta de registro, que incluye informacion médica sobre las vacunas que ha recibido.

Last Name | First Name | MI

Date of Birth | Patient number (*medical record or NS record number*)

Vaccine	Product Name/Manufacturer Lot Number	Date	Healthcare Professional or Clinic Site
1st Dose COVID-19		___/___/___ mm dd yy	
2nd Dose COVID-19		___/___/___ mm dd yy	
Other		___/___/___ mm dd yy	
Other		___/___/___ mm dd yy	


History Print Return to Search

Vaccine Group	Vaccine	Date Administered	Series
COVID-19	Janssen COVID-19 Vaccine	04/10/2021	1 of 1
DTP/aP	DTP	03/31/1978	1 of 5
	DTP	06/10/1978	2 of 5
	DTP	08/24/1978	3 of 5
	DTP	11/08/1979	4 of 5
	DTP	06/09/1983	5 of 5
HepA	HepA-Adult	12/11/2017	1 of 2
Influenza	Influenza Preservative-Free	09/13/2013	Booster
	Influenza Quadrivalent P-Free	10/16/2014	Booster
	Influenza Quadrivalent P-Free	12/11/2017	Booster
	Influenza Quadrivalent P-Free	02/19/2019	Booster
	Influenza Quadrivalent P-Free	02/27/2020	Booster
MMR	MMR	06/14/1979	1 of 1
	MMR	04/04/1995	
Pertussis/Tdap	Tdap	09/13/2013	1 of 1
Polio	Polio-Oral	03/31/1978	1 of 4
	Polio-Oral	06/10/1978	2 of 4
	Polio-Oral	08/24/1978	3 of 4
	Polio-Oral	06/09/1983	4 of 4
Td	Td	11/30/1995	Booster
	Tdap	09/13/2013	Booster
Typhoid	Typhoid-Oral	12/11/2017	

Current Age: 43 years, 2 months

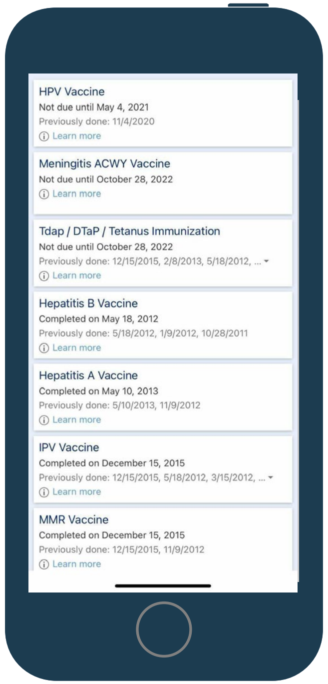
Vaccines Recommended

Vaccine	Immunization Status
COVID-19	Complete
DTP/aP	Complete
HepA	Recommended Now
Influenza	Recommended Now
MMR	Complete
Pertussis/Tdap	Complete
Polio	Complete
Td	Date Needed 09/13/2023
Varicella	Recommended Now

Legend for Immunization Status:
Contraindicated - A comment was recorded that indicates a person should not receive the vaccine.
Complete - The person does not need to receive the vaccine.
Immune - A comment was recorded for this person indicating he or she is immune to the disease.
Recommended Now - The person is currently due for a dose of the vaccine.
Date Needed - The person will be due for the next dose of this vaccine on the date shown.

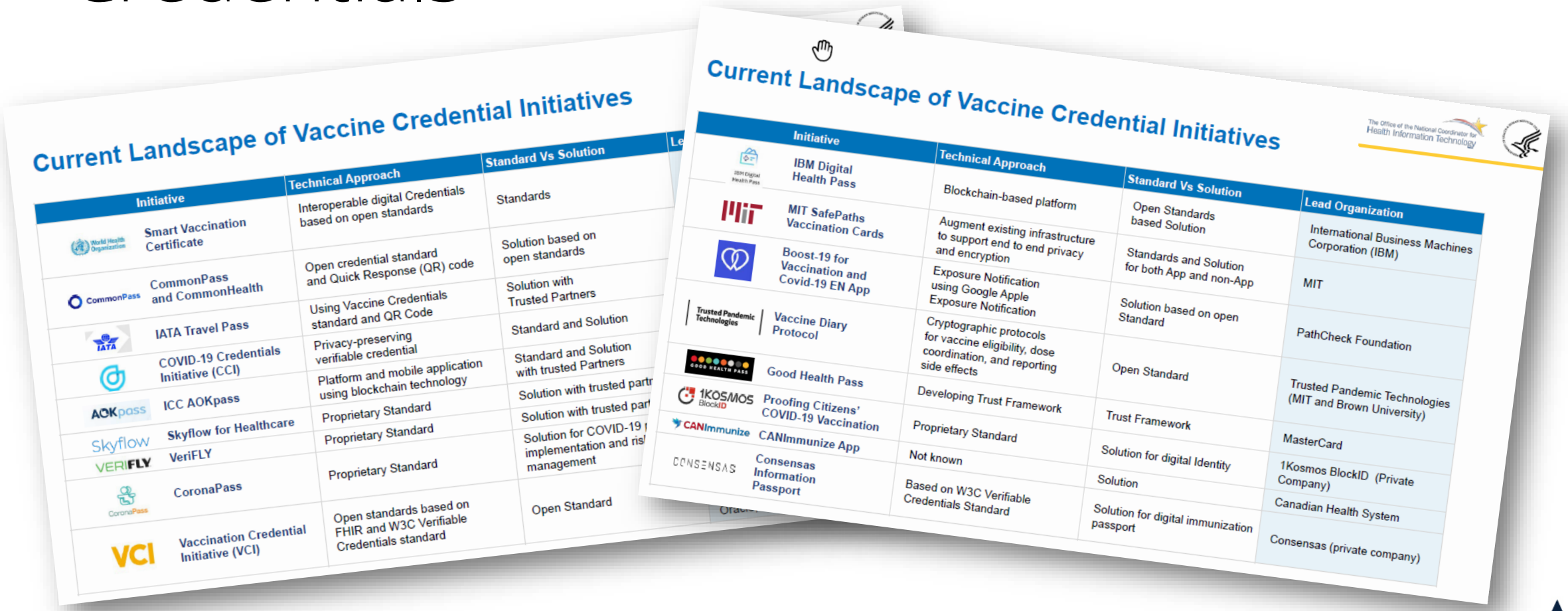
Need Help?
Please direct questions regarding this immunization record to your health care provider.

Immunization which are in yellow text and highlighted were entered into the Wisconsin Immunization Registry by a school.



Digital Vaccine Credentials

Growing Focus on Digital Vaccine Credentials



Current Landscape of Vaccine Credential Initiatives

Initiative	Technical Approach	Standard Vs Solution	Lead Organization
IBM Digital Health Pass	Blockchain-based platform	Open Standards based Solution	International Business Machines Corporation (IBM)
MIT SafePaths Vaccination Cards	Augment existing infrastructure to support end to end privacy and encryption	Standards and Solution for both App and non-App	MIT
Boost-19 for Vaccination and Covid-19 EN App	Exposure Notification using Google Apple Exposure Notification	Solution based on open Standard	PathCheck Foundation
Vaccine Diary Protocol	Cryptographic protocols for vaccine eligibility, dose coordination, and reporting side effects	Open Standard	Trusted Pandemic Technologies (MIT and Brown University)
Good Health Pass	Developing Trust Framework	Trust Framework	MasterCard
Proofing Citizens' COVID-19 Vaccination	Proprietary Standard	Solution for digital Identity	1Kosmos BlockID (Private Company)
CANImmunize App	Not known	Solution	Canadian Health System
Consensas Information Passport	Based on W3C Verifiable Credentials Standard	Solution for digital immunization passport	Consensas (private company)

Current Landscape of Vaccine Credential Initiatives

Initiative	Technical Approach	Standard Vs Solution	Le
Smart Vaccination Certificate	Interoperable digital Credentials based on open standards	Standards	
CommonPass and CommonHealth	Open credential standard and Quick Response (QR) code	Solution based on open standards	
IATA Travel Pass	Using Vaccine Credentials standard and QR Code	Solution with Trusted Partners	
COVID-19 Credentials Initiative (CCI)	Privacy-preserving verifiable credential	Standard and Solution	
ICC AOKpass	Platform and mobile application using blockchain technology	Standard and Solution with trusted Partners	
Skyflow for Healthcare	Proprietary Standard	Solution with trusted partn	
VeriFLY	Proprietary Standard	Solution with trusted part	
CoronaPass	Proprietary Standard	Solution for COVID-19 implementation and ris management	
Vaccination Credential Initiative (VCI)	Open standards based on FHIR and W3C Verifiable Credentials standard	Open Standard	

Federal Health IT Coordinating Council Discussion, March 2, 2021, Accessed 4/14/2021, https://context-cdn.washingtonpos-38be-4ddd-8cc3-5ba945ae5573/note/2374cc92-8967-4f40-b35f-f03773dfe64f.

Considerations for Leveraging IIS for Vaccine Credentialing

Strengths

- Broad standards adoption
  - HL7
  - SOAP Transport
- Hundred thousand+ existing interfaces
- Decades of data capture and record consolidation

Potential Development Needed

- Processing capacity
- FHIR adoption
- Consumer authentication
  - Records access for individual, spouse, children, aging parents

One Jurisdiction's Experience

Dave McCormick

Take Home Messages

IIS are managing enormous volumes of data & new users

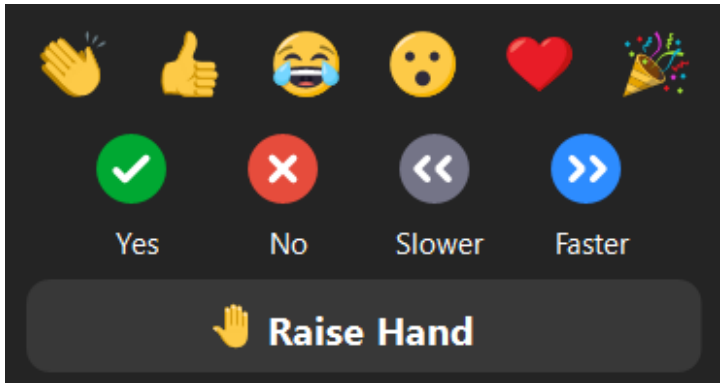
Systems are responding to increased thresholds for timely data and broader data use

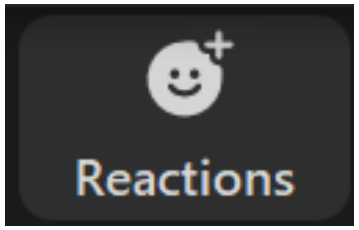
IIS are invested in ensuring access to vaccine credentials where needed

Q & A

Questions

- How do I ask a question?
- Three options
  - Unmute in Zoom
  - Type question into the chat box
  - Click on the reactions button at the bottom of the screen and select the “raise hand” option from the pop-up





Q & A

Thank You!

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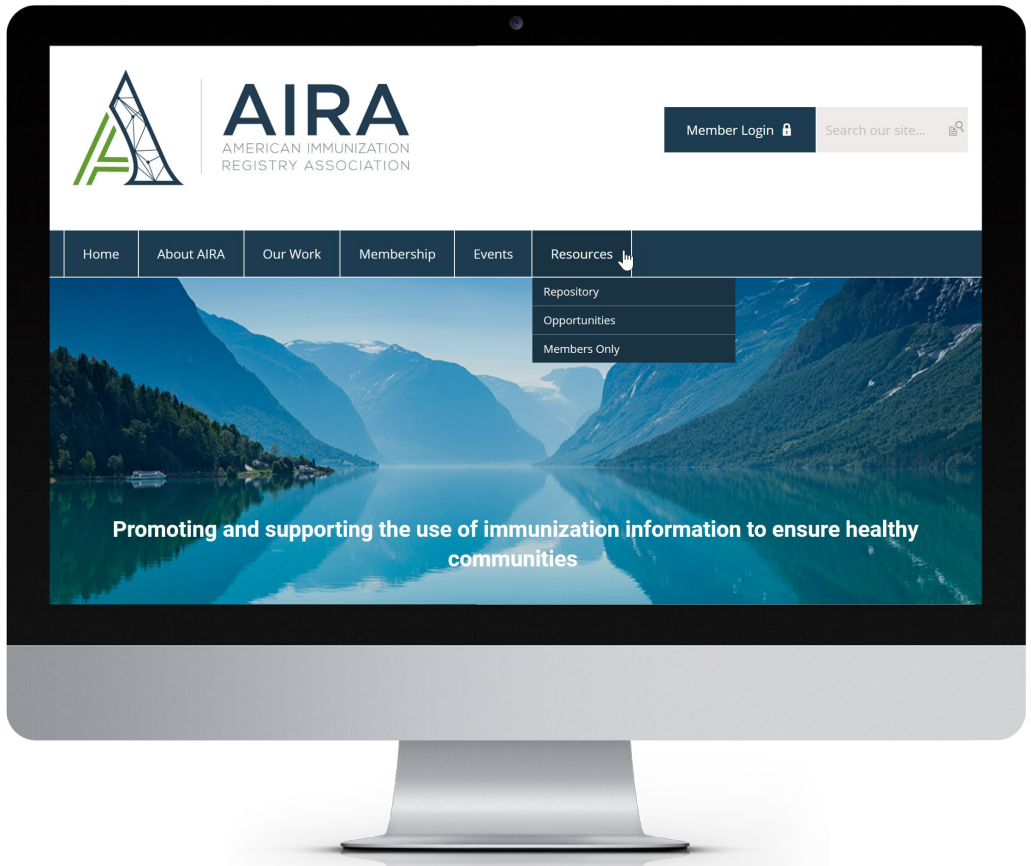

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