Advancing Immunization Data and Technology

PHII Leadership Summit

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Overview

1 | Vision for the IIS

2 | Current State of Immunization Data

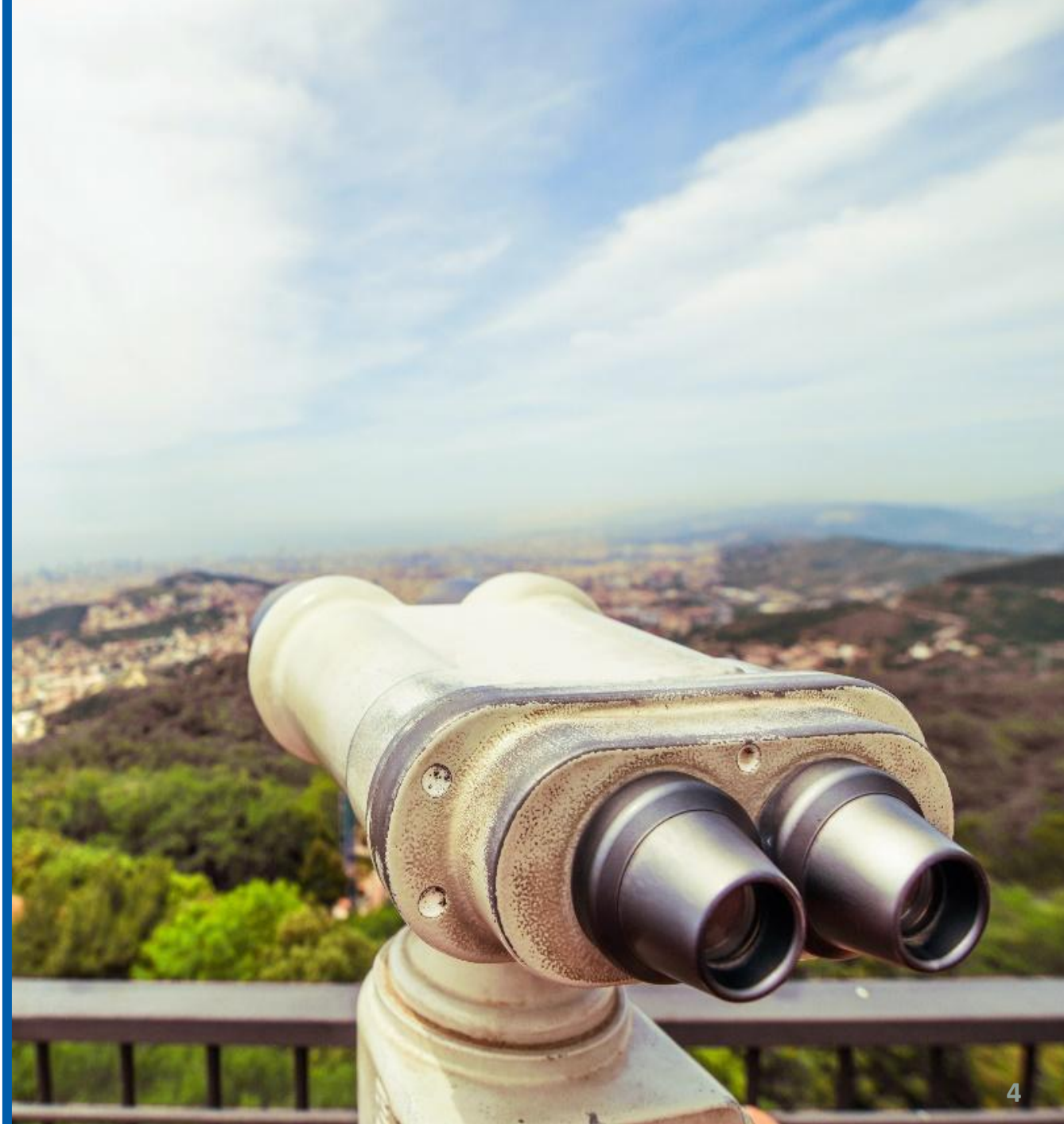**3** | Moving Forward: Select Initiative Updates

CDC's Vision for the IIS

CDC's Vision for IISs

IISs support the standardized capture and exchange of high-quality, individual-level immunization data for all doses of ACIP*-recommended vaccines

These data are linked across jurisdictions, providers, and partners, and to other individual-level data sources to inform public health action

* ACIP: Advisory Committee on Immunization Practices

CDC's Immunization Data Evolution

Pre-COVID

- Longtime emphasis on system functionality; beginning to shift to emphasis on data quality
- A limited number of jurisdictions reported routine and seasonal influenza vaccination data to CDC through Vaccine Coverage Assessment Project (N=13)
- Use of data was limited by a restrictive data use agreement

Submission cadence:

- Routine data: <18 years quarterly; >18 years twice annually
- Seasonal influenza data: monthly

COVID-19 Response

- Significant emphasis on data sharing and data quality
- CDC received COVID-19 vaccination data from all 64 jurisdictions, as well as multiple federal health and pharmacy partners using the COVID-19 Vaccine Reporting Specification (CVRS)
- Use of data limited by moderately restrictive data use agreement

Submission cadence:

- December 2020 – June 2022: daily
- June 2022 – Present: weekly

Limitations:

- Some jurisdictions permitted to share data only under emergency declaration or only in aggregate data

Present/Future

- New cooperative agreement requirements to improve data quality and data sharing
- New technology to facilitate data exchange and ensure security
- Increased emphasis on IIS platform-level improvements to benefit from economies of scale
- Initiated collection of routine vaccination data across the lifespan from all jurisdictions

Submission cadence:

- Routine data: all ages quarterly
- Seasonal influenza data: monthly

Limitations:

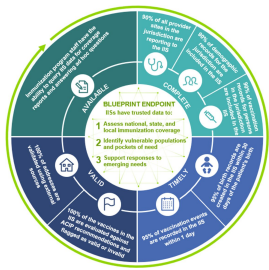- Variations in reporting policies will impact data completeness

Initial set of routine data elements identified and collected

New technologies developed and CVRS dataset created

New DUA and submission methodology identified

Current State

IIS Data Quality Improvements*

Complete

Between 2020 and 2021, small decrease for all categories of providers (Vaccines for Children (VFC), non-VFC, all providers) reporting to IIS, may be a result of a decrease in COVID-19 reporting.

- **79%** of all VFC providers report data, consistent with **79%** in 2021
- **54%** of all non-VFC providers report data, down from **60%** in 2021
- **59%** of all providers report data, down from **64%** in 2021

Timely

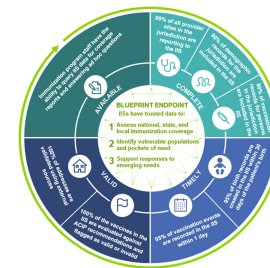**Small increase in timely posting of vaccines administered**

- From 2021 to 2022, the percent of vaccine administration posted to production within 1 day increased from **73%** **to 76%**

High percentage of birth records established in a timely fashion

- **90%** of birth records established within 30 days of birth, consistent with 2021 data

*2022 data assessments are preliminary.

IIS Data Quality Improvements*

Available

IIS data are used to generate disseminated coverage reports

- **95% share population-based coverage assessment reports** with stakeholders in jurisdiction

  96% in 2021

- **70%** generated population-based coverage assessments for a **public facing website**

  73% in 2021

IIS staff <u>can and do</u> run ad-hoc reports of IIS data.

- **91%** of IIS produced provider level coverage assessments **based on user criteria**

  93% in 2021

Valid

Use of an external entity to validate addresses increased from 2021 to 2022

- **58%** of IIS used residential addresses standardized and validated as USPS addresses, compared to 52% in 2021

*2022 data assessments are preliminary.

Current IIS Data Policy Landscape

Since 2020, **ten** jurisdictions made changes to consent policies and **17** changed reporting mandates.

Consent

14 jurisdictions do **not** allow guardians to opt out of their children's records reported to IIS.

12 do **not** allow adults to opt out.

43 include recipients under 18 unless guardian opts them out.

42 include adult recipients unless they opt out.

Reporting

20 jurisdictions **mandate reporting** by all providers and all vaccines to IIS.

16 mandate reporting for specific ages (e.g., under 18).

15 mandate reporting for specific provider types.
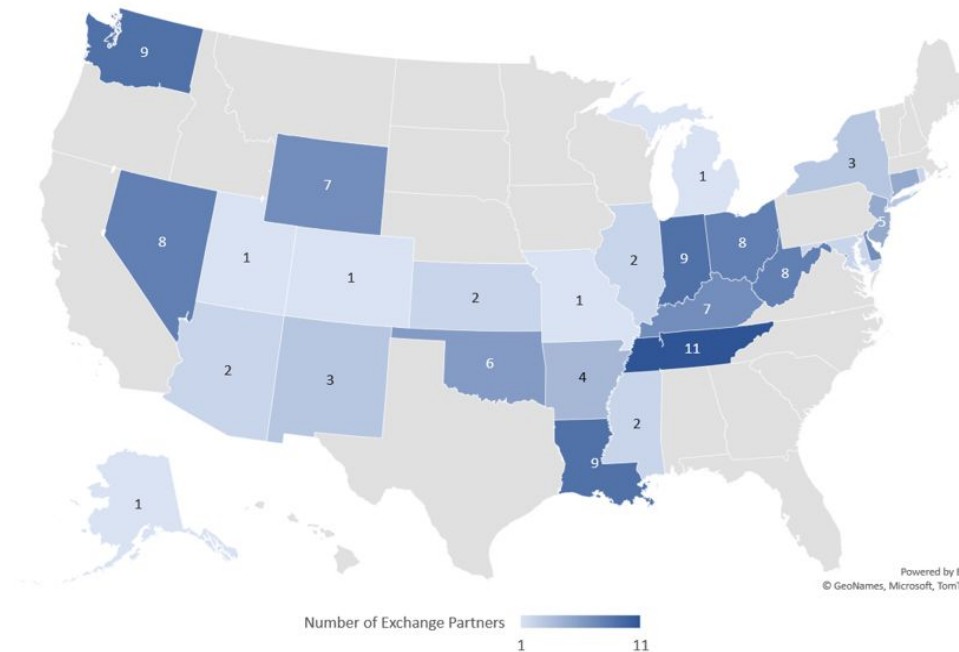
Sharing

Data sharing policies vary more widely across jurisdictions and are still evolving.

21 require a data use agreement of memorandum of understanding

15 allow only for specific use(s) (e.g., disease surveillance)

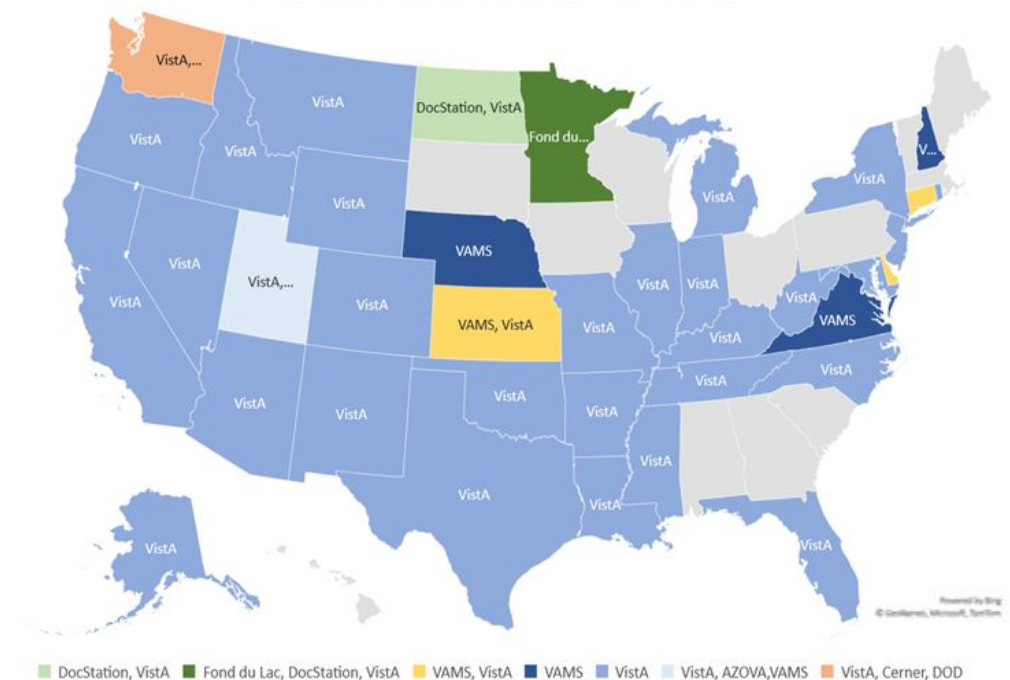# Current State of IZ Gateway Data Exchange

IIS-IIS Metrics

Number of Exchange Partners
1   11

Active IIS-to-IIS Connections

IIS-to-IIS Data Exchange
(last 6 months)

- IIS: **30**
- Bidirectional connections: **162**
- Single-direction connections: **1**

- Total Messages: **7,108,449**
- VXU Messages: **7,016,619**
- QBP Messages: **91,830**

Provider-IIS Metrics

DocStation, VistA   Fond du Lac, DocStation, VistA   VAMS, VistA   VAMS   VistA   VistA, AZOVA,VAMS   VistA, Cerner, DOD

Connected to **7** Providers/EHRs

4,206 facilities in **42** jurisdictions

50,006 immunization messages exchanged in the past week

Moving Forward: Select Initiative Updates

CDC's Vision for IISs

IISs support the **standardized capture** and **exchange** of high-quality, individual-level immunization data for all doses of ACIP*-recommended vaccines

These data are **linked** across jurisdictions, providers, and partners, and to other individual-level data sources to **inform public health action**
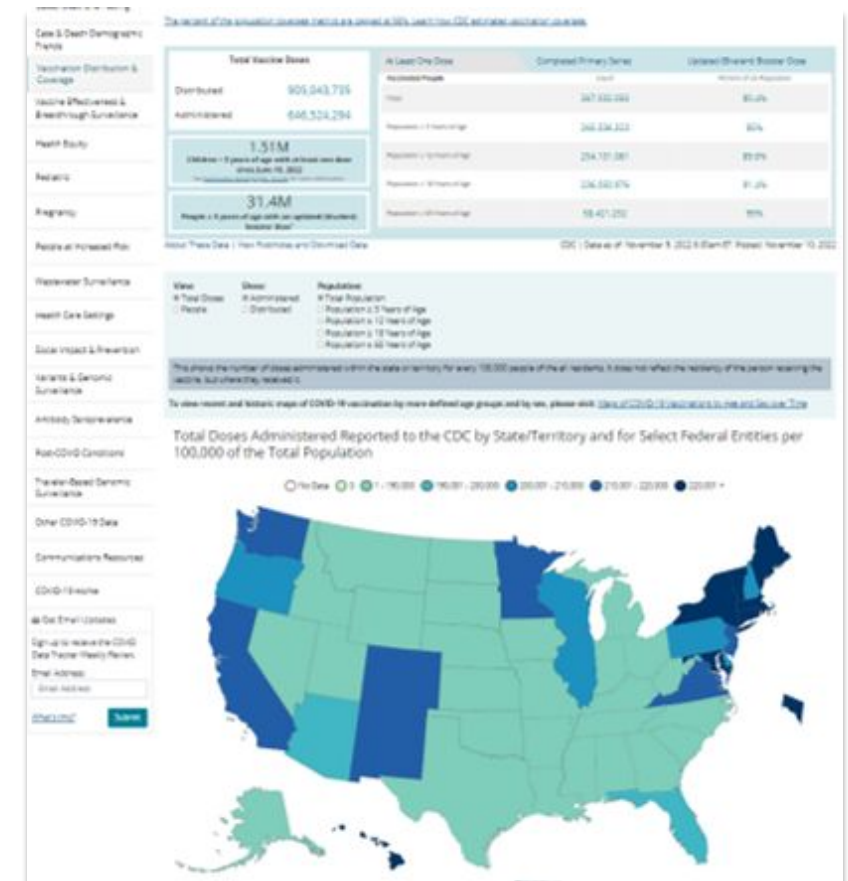
* ACIP: Advisory Committee on Immunization Practices

Understanding Immunization Data for Public Health

Building on advancements made during the COVID-19 pandemic, we seek *to understand* the following at the national level:

- Vaccination coverage at the national and jurisdiction level

- Areas of low vaccination coverage

- Populations at risk of vaccine preventable disease

- Characteristics of populations with high/low coverage

- Quality of IIS data (available, timely, complete, valid, accurate, consistent, unique)

Focus Areas and Initiatives

IDAB Focus Areas Defined

Data Collection & Management
Develop governance, policy and strategy, and data and quality standards in support of collecting, managing, and sharing national IIS data

Data Use
Assess, analyze, and use **high-quality data** to drive public health action across the IIS community, including jurisdictions, providers, and partners

Technology & Standards
Identify and develop new systems, tools, and standards, and support and modernize existing systems to improve performance, ensure consistency, and achieve mission goals

Community Engagement & Support
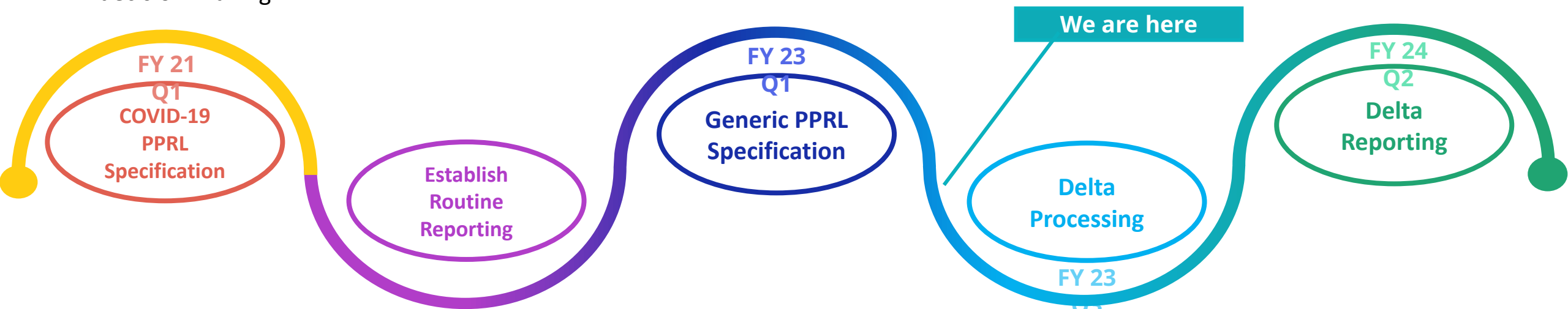Accelerate the enhancement and performance of IIS through technical assistance and by convening key stakeholders to develop guidance, identify best practices, and collaboratively solve problems

Initiative Updates

- **National Immunization Surveillance System**

- **IIS Data Quality Evaluation and Certification**

- **Immunization Gateway**

- **Technical Assistance**
- **Resources and Partnerships**

National Immunization Surveillance System

CDC is establishing a National Immunization Surveillance System by collaborating with partners to build and maintain a national dataset with record-level, de-identified routine and influenza vaccine administration data that is analyzed and used for public health decision-making

We are here

FY 21 Q1
COVID-19 PPRL Specification

Establish Routine Reporting

FY 23 Q1
Generic PPRL Specification

Delta Processing

FY 23 Q3

FY 24 Q2
Delta Reporting

MILESTONE

Roll out COVID-19 PPRL engine to awardees

Benefit

Address data quality and linkage issues for COVID-19 response

MILESTONE

Establish data use agreements and set up SFTP sites for data submission

Benefit

Enable submission of routine vaccination data

MILESTONE

Roll out Privacy-Preserving Record Linkage (PPRL) generic engine to awardees

Benefit

Support multiple use cases without additional coding

Ready to handle routine & emerging needs

MILESTONE

Implement Delta processing for routine immunization data at CDC

Benefit

Reduces computation burden and improves reporting metrics

Shortens time from submission to feedback

MILESTONE

Implement Delta reporting by awardees (only new events since last quarter)

Benefit

Reduces awardee's reporting burden

Requires only new events to be reported

Legal Agreements for National Surveillance

Top Priorities

DUA for Routine and Seasonal Flu Vaccination Data

Establishes basic terms and conditions concerning access, sharing, protection, and use of routine and influenza vaccination data submitted by jurisdiction and received by ISD.

Administrator: CDC

46 jurisdictions complete; 2 under review

PPRL Software License Agreement

Enables the jurisdiction or their technology partner to install PPRL software for use in submitting deidentified record-level routine vaccination data to CDC.

Administrator: HealthVerity, Inc.   26 jurisdictions

Using HealthVerity for PPRL service ensures data can be exchanged and matched across jurisdictions.

High Priorities

APHL IZ Gateway Data Use Agreement

Allows the jurisdiction to participate in the IZ Gateway.

Administrator: Association of Public Health Laboratories

62 jurisdictions

APHL IZ Gateway IIS to CDC Task Order

Allows the jurisdiction to use the IZ Gateway as the transport mechanism to automate submission of routine and influenza vaccination data to CDC.

Administrator: APHL

9 jurisdictions

IZ Gateway for Routine Vaccination Data Submission

The IIS-CDC use case replaces the Routine Vaccination Data Submission (RVDS) manual upload of routine and flu files via SFTP with submission via the IZ Gateway. This use case is currently in the pilot phase.

- Leverages established IZ Gateway integration and certificates
- Routes a jurisdiction's routine quarterly and monthly flu files to CDC via the IZ Gateway

Pilot Participants

Seven jurisdictions with four technology partners are pilot testing data submission.

- AK, KY, NV, NM – Envision Technology
- NYC – HLN
- LA – STC
- CA – self supported

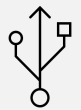## Pilot Status

Technical development is complete.

Testing status

- Two vendors successfully submitted files for 6 jurisdictions to National Data Lake Platform (NDLP) storage container
- Three vendors successfully submitted files in test environment and are preparing for production testing in coming weeks
- One jurisdiction (one vendor) is conducting onboarding testing

IIS Data Quality Evaluation and Certification

IDAB is developing and planning the implementation of a Jurisdiction IIS Program Data Quality Certification program to supplement ONC's planned public health systems certification program.

Program Components

System Functionality Certification
Systems will be certified as part of ONC's public health surveillance system certification program. System vendors will be accountable for certification.

Data Quality Certification
CDC will focus on assessing and certifying data quality. Jurisdictions are responsible for IIS data quality.

The IIS Certification Program

Purpose
Improve jurisdictional IIS data quality and standardization

Action
Evaluate jurisdiction IIS data against established metrics and standards to determine quality
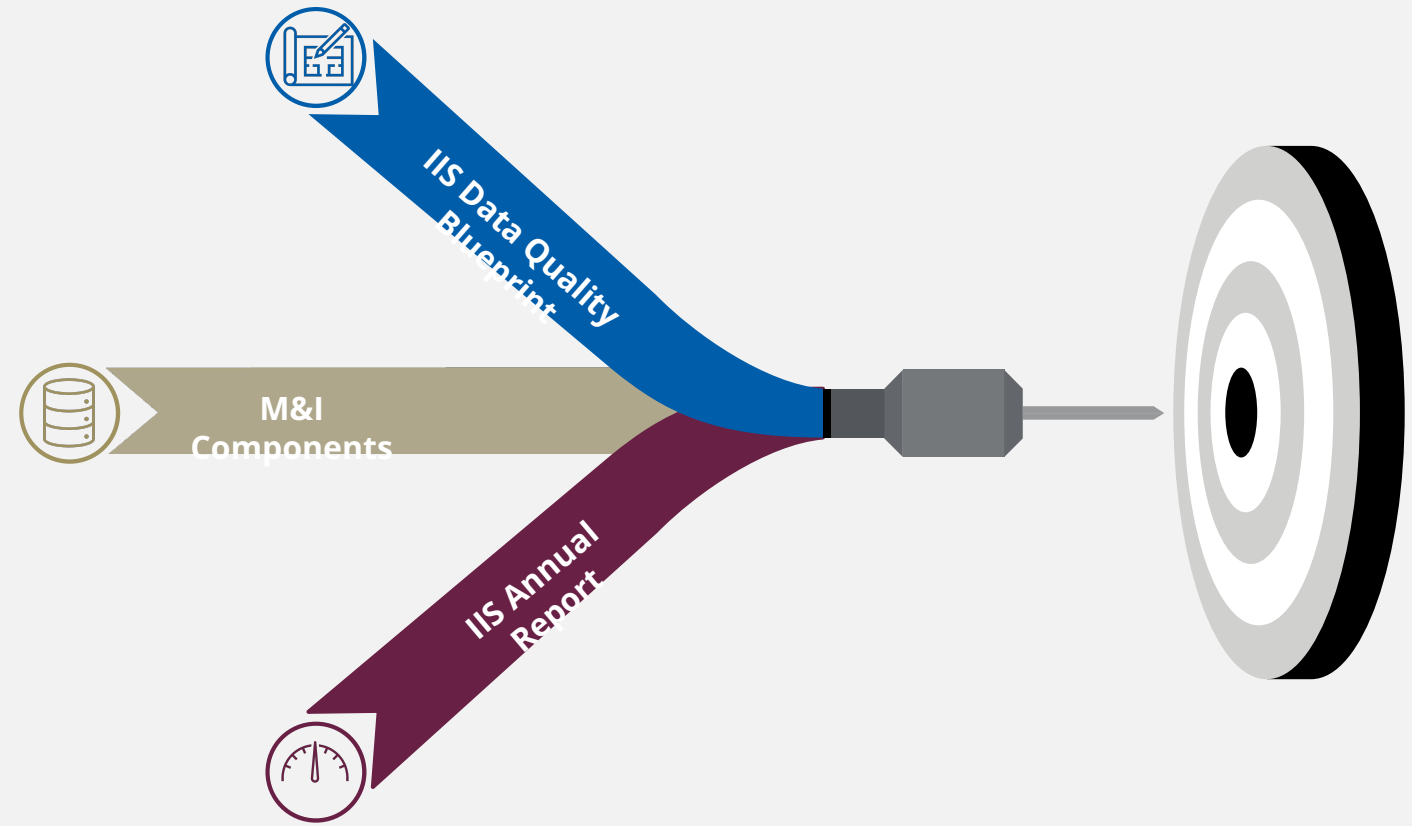
Outcome
High confidence in and increased usefulness of IIS data

IIS Data Quality Evaluation and Certification

IIS data quality certification will validate that data stored (data at rest) in the IIS and reported by the jurisdiction to CDC meets defined criteria. The program leverages existing foundational work done through the National Center for Immunization and Respiratory Diseases (NCIRD) Immunization Integration Program (IIP) and the Measurement and Improvement Initiative (M&I).

Data quality certification will leverage standards defined in the **IIS Data Quality Blueprint**, the **components of M&I** that deal specifically with measuring data quality (e.g., Data at Rest (DAR) project) and the **IIS Annual Report** that aim to ensure the availability, completeness, timeliness, validity, consistency, and uniqueness of IIS data.

IIS Data Quality Blueprint

M&I Components

IIS Annual Report

The program will be jurisdiction-based and focused on improving immunization data quality and ensuring data is available for public health decision-making.

Resources & Partnerships to Support the IIS

CDC provides financial, technical, and staff support to immunization programs for their IIS activities aligned to priorities.

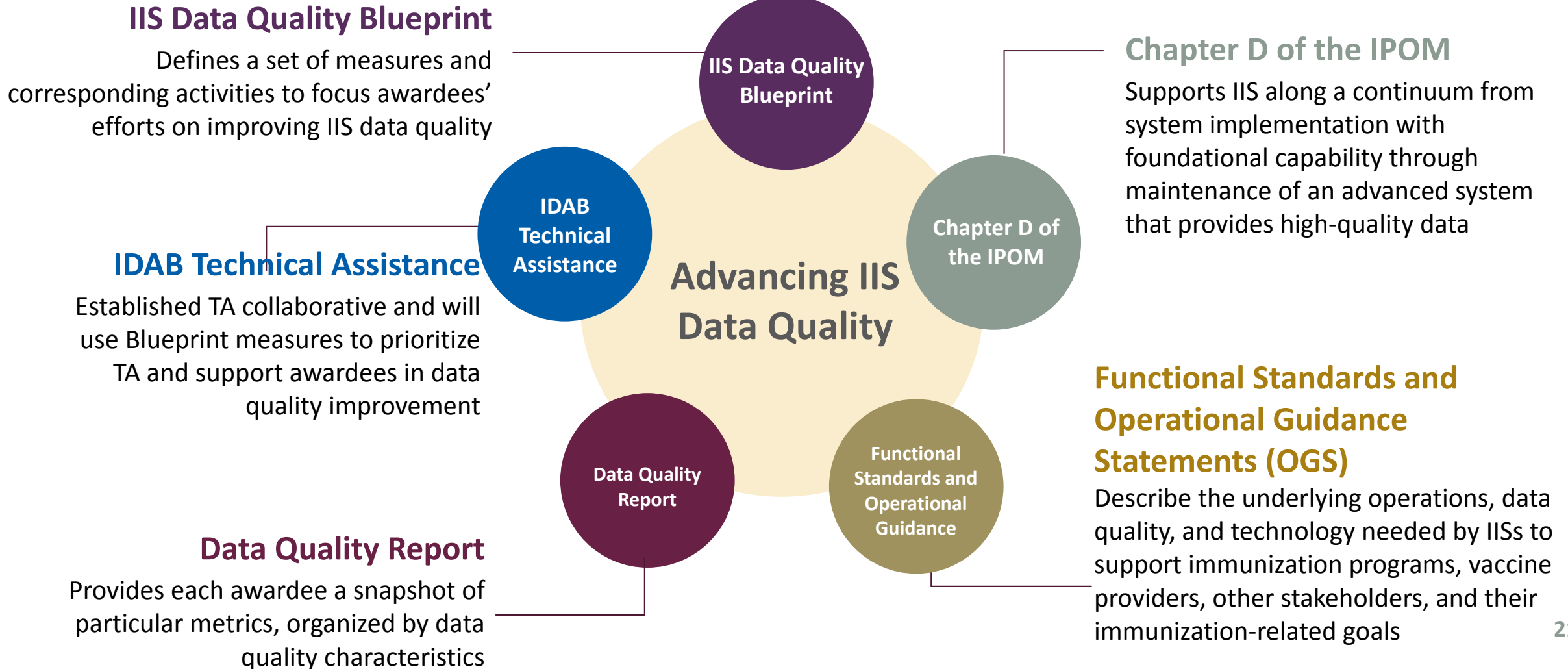| Dedicated, non-competitive IIS CoAg funding	Direct vendor contracts	Short-term staffing support & surge	Partner funding
$114M dedicated IIS funding	**$12.2M** direct vendor funding	**43,206 staff hours** 25 jurisdictions	**$1.1M PHII funding** **$6.1M AIRA funding**

Technical Assistance

CDC provides assistance and resources to support the advancement of IIS data quality.

IIS Data Quality Blueprint

Defines a set of measures and corresponding activities to focus awardees' efforts on improving IIS data quality

IDAB Technical Assistance

Established TA collaborative and will use Blueprint measures to prioritize TA and support awardees in data quality improvement

Data Quality Report

Provides each awardee a snapshot of particular metrics, organized by data quality characteristics

Chapter D of the IPOM

Supports IIS along a continuum from system implementation with foundational capability through maintenance of an advanced system that provides high-quality data

Functional Standards and Operational Guidance Statements (OGS)

Describe the underlying operations, data quality, and technology needed by IISs to support immunization programs, vaccine providers, other stakeholders, and their immunization-related goals

Advancing IIS Data Quality

- IIS Data Quality Blueprint
- IDAB Technical Assistance
- Chapter D of the IPOM
- Data Quality Report
- Functional Standards and Operational Guidance

Questions and Discussion

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348   www.cdc.gov