IZ Gateway: Exchange High-quality, High-value Data to Improve Public Health

AIRA National Meeting 2022

April 26, 2022

Agenda

Topic	Time	Presenter
Background	3:40 – 3:45 ET	Jennifer Ratliff, CDC
Innovation and Standardization	3:45 – 3:50 ET	Michelle Rubin, Audacious Inquiry, IZ Gateway Contractor
Looking Forward	3:50 – 4:00 ET	Susan Pierce-Richards, CDC

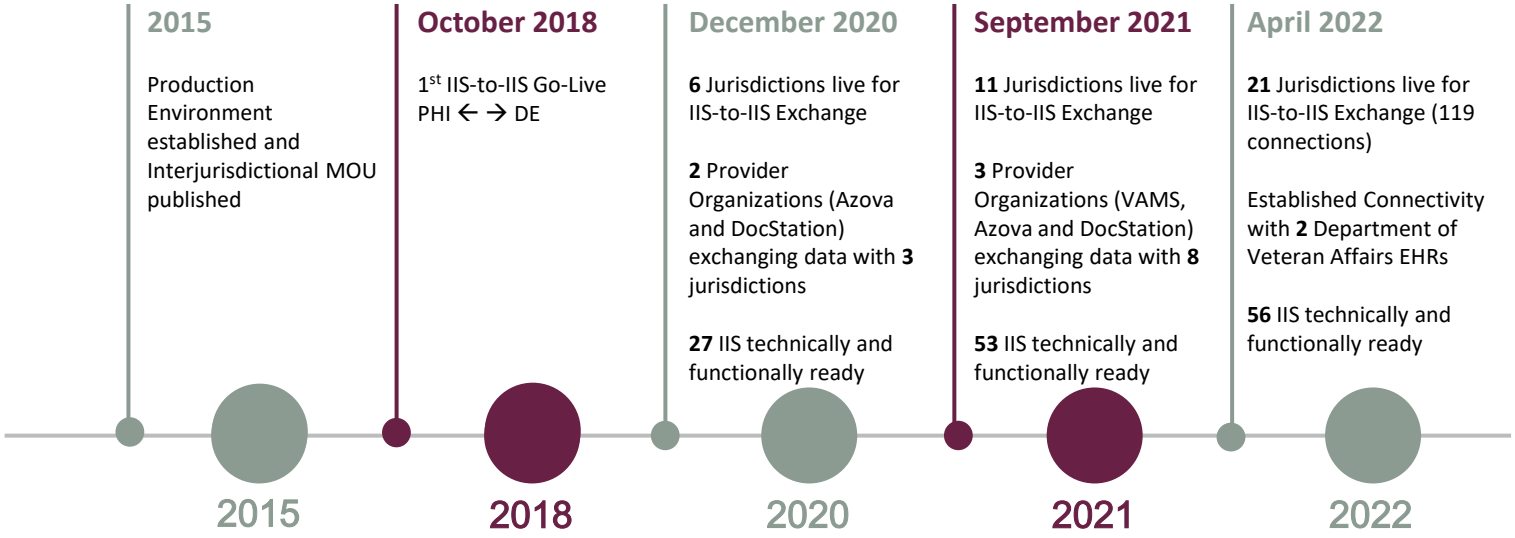
Objective: The objective of the IZ Gateway session is to engage the IIS community to provide IZ Gateway background and progress to date. The team will discuss how standardization reduces burden for establishing data exchange partnerships, upcoming enhancements, and opportunities for community feedback on technology and service offerings.

IZ Gateway: Background

Jennifer Ratliff (CDC)

IZ Gateway Background

The IZ Gateway serves as a consolidated integration hub for data sharing between IISs and provider systems, federal agencies, consumers, and other IISs.



Over 90% of IISs in the US have connected to the IZ Gateway and are ready to receive data.

15,542,675 messages have been exchanged through the IZ Gateway since Sept 2021 (all use cases).

IZ Gateway Use Cases

Data Exchange between Multijurisdictional Vaccine Provider Organizations and IISs

Data Exchange between IISs

Data Exchange between IIS and Consumer Applications Offering Patients Access to their Immunization Record

Use Case 1: Exchange Data between IIS and Multijurisdictional Vaccine Provider Organizations

Benefits

- Data exchange **supports submission of data to IIS**
- **Enhances completeness of IIS data**
- Enables a connection between IISs and vaccine provider organizations that improves provider access to data
- Allows providers to **query patient immunization records to inform clinical decisions**

Current Status

- **95% of IIS** are functionally and technically ready for provider-to-IIS data exchange
- 3 organizations with **68 facilities in 8 jurisdictions** are exchanging data with IISs

Next Steps

- Onboarding and initiating **data exchange between VHA EHRs and IISs**
- Continue planning conversations with **DOD and BOP** about onboarding activities

Use Case 2: Exchange Data Between IIS

Benefits

- IIS-to-IIS data exchange allows IIS to **submit and query for immunization data with another IIS**
- IIS-to-IIS Data Exchange **improves IIS data completeness**
- Within IIS and at point of care, providers can **access complete and accurate patient immunization history**

Current Status

- **47% of IIS** are functionally and technically ready for IIS-to-IIS data exchange
- **21 jurisdictions** are actively engaged in interjurisdictional data exchange

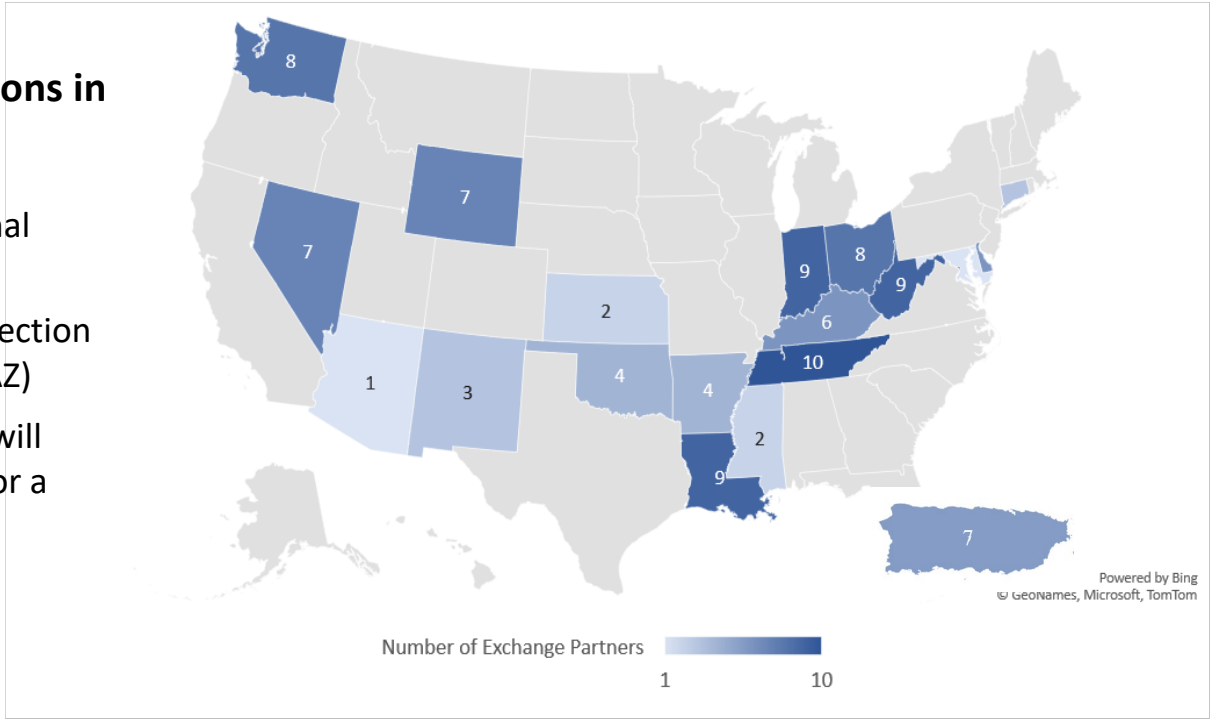
Next Steps

- Facilitating technical and functional readiness for IIS
- Preparing USVI, NJ, NYC, and RI for data exchange by September 2022

Jurisdictions Live Performing IIS-to-IIS Data Exchange

119 IIS-to-IIS connections in 21 jurisdictions

- 118 active bi-directional connections
- 1 uni-directional connection in Production (TN → AZ)
- USVI, NJ, NYC, and RI will connect by fall 2022 for a total of 25



Use Case 3: Data Exchange between IIS and Consumer Applications

Benefits

- IIS-to-Consumer App or Patient Portal provides patients with **direct access to their immunization records**
- Patients have access to **complete and accurate immunization record** for proof of vaccination and vaccination schedule adherence
- Jurisdictions respond to **fewer record requests** via phone call and email

Current Status

- NJ, UT, and MN provide residents access to immunization records by using the Docket consumer application via the IZ Gateway

Next Steps

- AK and ID will go live for data exchange with Docket in spring 2022

Innovation and Standardization

Michelle Rubin (Contractor)

IZ Gateway's Goal

To support *improved exchange* of vaccine information leveraging:

Streamlined technology through **centralized infrastructure**

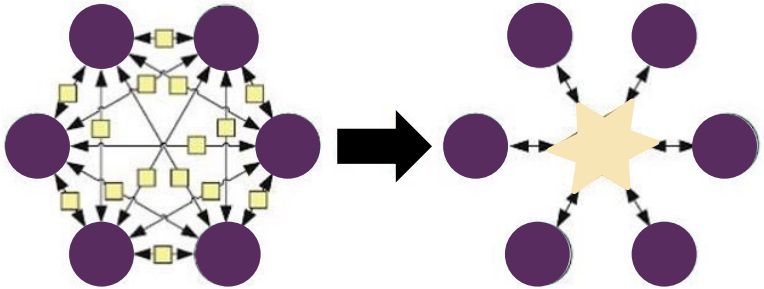
Unified **project management** processes and services for testing and onboarding

Established **policy framework** for data exchange partners

Streamlined technology through centralized infrastructure

Single Connection Point

- Integration testing consolidated and completed once with one hub
- Eliminates need to connect to jurisdictions individually (point-to-point connections)



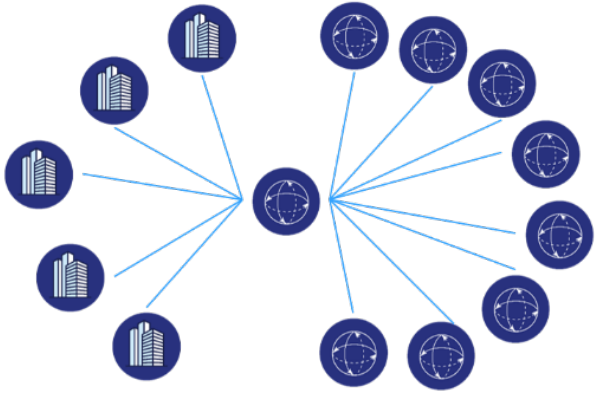
Established policy framework for data exchange partners

Streamlined Legal Agreements

- Established legal infrastructure supporting immunization data exchange amongst IIS and Provider Organizations
- Legal assistance offered through IZ Gateway team to help Immunization and IIS program managers discuss the legal agreements with their counsel and support signature.

Updated Legal Framework

Further Minimizes Needed Agreements for Exchange Entities

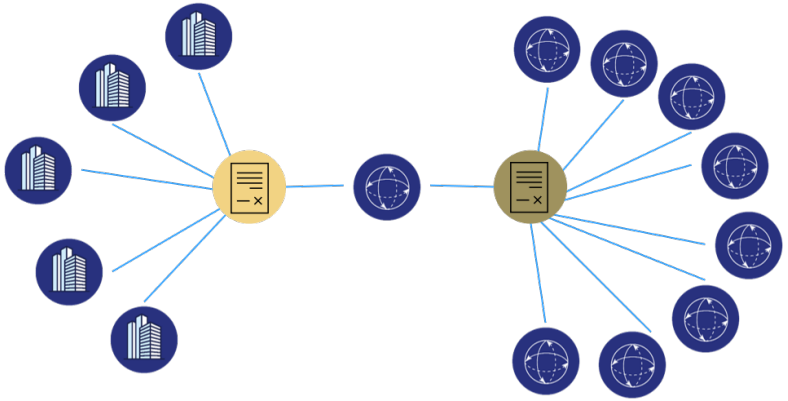


14 Agreements

5 Agreements with MJPO

8 MOUs with other IIS

1 DUA with APHL



3 Agreements

1 PJA with MJPO

1 MOUs with other IIS

1 DUA with APHL

Unified project management processes and services for testing and onboarding

IZ Gateway Team Support

- Standardized assessment and testing procedures maximize resource staff time and reduce burden making multiple data exchange connections
- Tested series of steps and processes for successful onboarding with multiple IISs and provider organizations
- Liaisons with IISs and Provider Organizations to facilitate communication while navigating policy and technology onboarding steps including variances across all data exchange partners

Established Consolidated Requirements and Testing

- Functional Requirements
- Technical Requirements
- Checklist and Test Plans per use case

IZ Gateway IIS-to-IIS Standardization

Automated VXU

Sending data and receiving data

Manual QBP

Initiating a manual query and receiving a response

Responding to a query

Automated QBP

Initiating an automated query

Responding to a query automatically

Prerequisites

1. General System Requirements (e.g., Initial sync, HL7 IZG IG conformance, IZG WSDL, etc.)
2. Signature of APHL DUA, Interjurisdictional MOU, and APHL DUA "Share" Task Order
3. Complete Functional and Technical Readiness Assessment
4. Error Handling Plan/process to identify and handle different errors

IZ Gateway Provider-to-IIS Standardization

Preliminary Technical Work

IIS and IZ Gateway Team confirm IIS's Test and Prod **connections are active**

IIS provides IIS-specific facility identifiers, or confirms use of NPI facility IDs, for Multijurisdictional Vaccine Provider Organization to **map to their facility lists per jurisdiction**

IIS reviews and provides feedback on HL7 comparison spreadsheet provided by IZ Gateway Team

IZ Gateway Team **updates test cases per IIS** with facility IDs and local address information

Prerequisites

1. Signature of Association for Public Health Laboratories Data Use Agreement (APHL DUA)
2. Signature of Provider-Jurisdiction Agreement (PJA)
3. Completion of Readiness Checklist
4. Completion of integration testing in Test and Prod environments

IIS's Journey for Exchanging Data – IZ Gateway did the heavy lifting for you!

	Pre-IZ Gateway	Post-IZ Gateway
Project Management	• Outreach to each IIS to assess interest • Individual communication	• "Matchmaking" done by IZG Team • IZG provides supporting documents
Legal Agreements	• 6+ months of developing and signing legal agreements (e.g., DUAs, MOUs) with multiple IIS *and/or* multijurisdictional vaccine provider organizations	• One time review and signature of the Interjurisdictional MOU *and/or* Provider-Jurisdiction agreement
Infrastructure	• Establish connections with each data exchange partner who may have various preferences • Negotiate and develop test plans with each data exchange partner	• 1x set up with clear definition and instruction through the IZ Gateway • Defined test plans that can be modified to meet specific needs or requirements

Looking Forward

Susan Pierce-Richards (CDC)

IZ Gateway Upcoming Enhancements and Initiatives

Independent Verification & Validation (IV&V)

- CDC contracted Sparksoft to conduct an objective review of the IZ Gateway to **ensure it is meeting the needs of the IIS community**.
- Sparksoft will get community partner **input** to inform recommendations for **advancing the infrastructure.**
- Target community partners include Immunization Program Managers, IIS Managers, and IIS Technology Partners.
- Ask questions like:
    - Are we building the *right* system?
    - Are we building the *system right*?

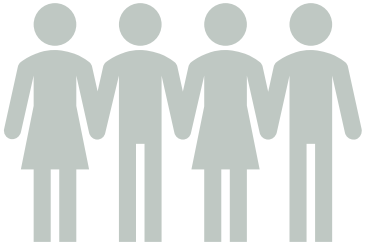
Operations & Maintenance Enhancements (O&M)

- CDC supports ongoing operations and maintenance and is engaging community partners for **feedback and pilot testing** for planned enhancements
    1. Multijurisdictional Query
    2. Self-Service Configuration Portal
    3. Data Submission to CDC

Community Feedback Informs IZ Gateway Priorities

"Multijurisdictional queries would close a significant gap for clinical care to patients who moved from state to state."

Feedback showed strong interest in **multijurisdictional query**



46 individuals participated in live polling during 2021 AIRA National Meeting

When asked, most participants ranked the following as their highest priority:

"Enable the ability for a provider organization, EHR, or IIS to request the results of a query of 2 or more jurisdictions (multijurisdictional query)."

Proposed Enhancement: Multijurisdictional Query

Initial Capability: Providers and/or IIS will be able to query multiple jurisdictions from a single source system and immediately receive a consolidated responses that allows the receiver to identify which jurisdiction returned each immunization record.

Benefits:

- Enables Providers and IIS to provide more complete and accurate immunization records to patients vaccinated in more than one jurisdiction
- Eliminates the need for Provider Organizations to connect with multiple IIS (single integration point)

Future Improvements:

- Synchronous or Asynchronous Resolved Response will allow Providers and/or IIS to receive non-home jurisdiction immunization records through a home jurisdiction query.

Proposed Enhancement: Configuration Portal

Initial Capability: IIS and their supporting technology partners will be able to perform basic technical readiness tasks, including testing connectivity to the IZ Gateway, and other basic onboarding configuration steps through a self-serve portal.

Benefits:

- Enhances jurisdiction ability to perform self-service activities in an automated fashion
- Reduces burden on IZ Gateway technical team for simple connectivity tasks
- Reduce onboarding and service management times by reducing number of handoffs and requests of IISs to provide information
    - Expected timeline efficiency: Existing 2+ week turnaround will be reduced to *less than 2 days!*

Future Improvements:

- Deployable Configuration enables a jurisdiction to request an update to their configuration and facilitates the operational deployment process.
- Certificate Store Update enables Operations staff to deploy updates to certificate trust relationships without requiring an IZ Gateway restart.

Proposed Enhancement: Data Submission to the CDC

Initial Capability: This enhancement provides reporting entities – including jurisdictions, federal agencies, and pharmacies – a transport mechanism to submit routine, seasonal, and emergency vaccination data to the CDC via the IZ Gateway where data sharing agreements allow.

Benefits:

- Eliminates the needs for jurisdictions to manually submit CVRS daily
- Eliminates the need for IIS to maintain an additional point-to-point connection (IIS to Data Lake) and leverages the IZ Gateway connection

Future Improvements:

- Redaction Service incorporates automated redaction of content into the submission process based on jurisdiction requested features.
- Privacy Preserving Record Linking Service identifies and links records that correspond to the same entity based on matching attributes, without revealing the actual values.

Priorities for the IZ Gateway

Opportunities for Engagement

Ensure the IZ Gateway is meeting its public health goals through Independent Verification and Validation (IV&V) and organize and conduct pilot testing on planned enhancements such as data submission to CDC

VHA Onboarding and Data Exchange with IIS

Work with VHA to meet project timelines and start exchanging data with IIS

Other Federal Agency Engagement

Engage with additional federal agencies through kick off conversations

Increased Interjurisdictional Data Exchange

Onboard and conduct testing with additional IIS

Increased Patient Access to online IZ Records

Prioritize planned enhancements including those pertaining to consumer access

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

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.