



Public Health Impact of Interjurisdictional Immunization Data Exchange

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Today's Speakers:



Jennifer Ratliff
CSM PMP

IT Specialist and IZ
Gateway Lead
CDC



Beth S. Cox

Public Health Analyst
and IIS Subject Matter
Expert
CDC



Kelly Gulley, MPH

Senior Health IT Policy
Manager
Audacious Inquiry, a
PointClickCare Company



Mary Beth Kurilo
MPH, MSW

Senior Director of
Health Informatics
AIRA

Agenda

- 1 | IZ Gateway Overview
- 2 | IIS-to-IIS Data Exchange Current Onboarding Process
- 3 | IIS Member Perspectives
- 4 | Future Vision of IIS-IIS Data Exchange

IZ Gateway Overview

Introducing the IZ Gateway

The Immunization (IZ) Gateway is a **policy framework, standardized testing and integration framework**, and cloud-based **message routing system** that facilitates data exchange among Immunization Information Systems (IIS), vaccine providers, and direct-to-consumer applications.



The IZ Gateway DOES

- ✓ **Serves as a message router** with standardized testing and onboarding procedures and a consolidated policy framework
- ✓ **Exchanges data** among and between IISs and Multi-jurisdictional Vaccine Providers
- ✓ **Enables more complete records** of patient immunization history for IISs, providers, and consumers
- ✓ Message routing technology applies consistent **data quality assurance, messaging, and security industry standards** and best practices for all participants

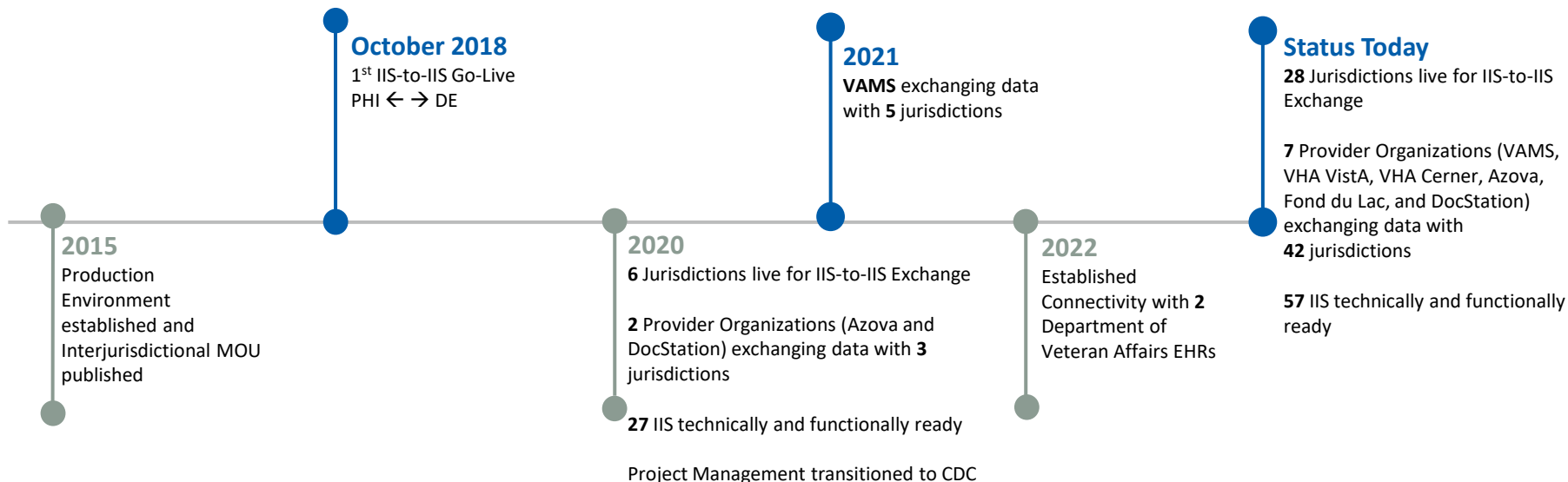


The IZ Gateway DOES NOT

- ✗ Act as a message repository, data lake or pool
- ✗ Access or store any messages

IZ Gateway Background

Currently, **60%** of all jurisdictions are exchanging data through the IZ Gateway participating in one or more use cases.



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

More than 15.5 million messages have been exchanged through the IZ Gateway since Sept 2021 (all use cases).

IZ Gateway Streamlines IIS Data Exchange

	Without IZ Gateway	With IZ Gateway
Project Management	<ul style="list-style-type: none">• Outreach to each IIS to assess interest• Individual communication	<ul style="list-style-type: none">• "Matchmaking" done by IZG Team• Supporting documents streamline onboarding (e.g., Companion Guides to the National Implementation Guide 2.5.1)
Legal Agreements	<ul style="list-style-type: none">• 6+ months of developing and signing legal agreements (e.g., DUAs, MOUs) with multiple IIS <i>and/or</i> multijurisdictional vaccine provider organizations	<ul style="list-style-type: none">• One time review and signature of the Interjurisdictional MOU and/or Provider-Jurisdiction agreement
Infrastructure	<ul style="list-style-type: none">• Establish connections with each data exchange partner who may each have various preferences• Negotiate and develop test plans with each data exchange partner	<ul style="list-style-type: none">• One time set up with clear definition and instruction through the IZ Gateway• Defined test plans that can be modified to meet specific needs or requirements

The Public Health Data Goals

Core public health mission



Strengthen the core of public health data

Ensure Core Data Sources¹ are more complete, timely, rapidly exchanged, and available to support the integrated ability to detect, monitor, investigate and respond to public health threats

Accelerate access to analytic and automated solutions to support public health investigations and advance health equity

Make tools available so STLTs and public health decision-makers can better use public health data to address health disparities

Visualize and share actionable insights to inform public health action

Serve as a trusted source for near real-time visualizations and offer situational awareness for the public and decision-makers to understand risks, make decisions and direct resources

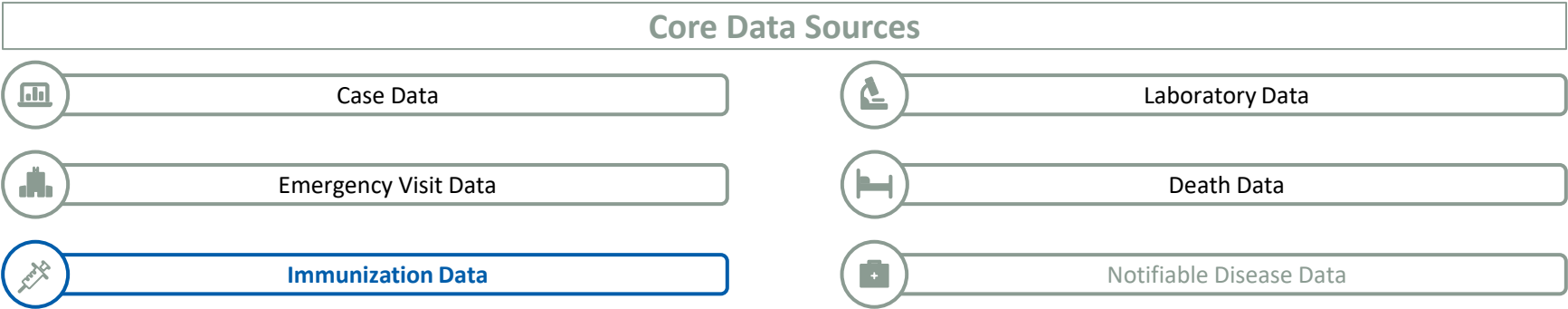
Ensure more open and interoperable public health data

Enable exchange of interoperable data so that healthcare, STLTs, federal agency partners, and CDC programs can access and use data they need, when they need it

1. Case (including Electronic Case Reporting eCR), Lab (including Electronic Lab Reporting ELR, Electronic Test Orders and Results ETOR), Syndromic (including National Syndromic Surveillance Program NSSP emergency department data), Vital statistics, Immunization, Healthcare capacity (including National Healthcare Safety Network NHSN data)

Current and Planned Data Modernization and Immunization Systems

With data modernization, CDC is creating new and more automated pathways for core data sources that handle cases, lab results, deaths, notifiable diseases, immunizations, and emergency visits.



Current and Planned IZ Gateway Use Cases



Connecting Data Modernization, NSA, and IZ Gateway

IZ Gateway builds on CDC's data exchange capabilities that are part of the Data Modernization Initiative and in alignment with the North Star Architecture (NSA).

Public Health Data Goal #1

- **Strengthen the core of public health data:** Supports complete, timely, rapidly exchanged, and available data.

North Star Architecture

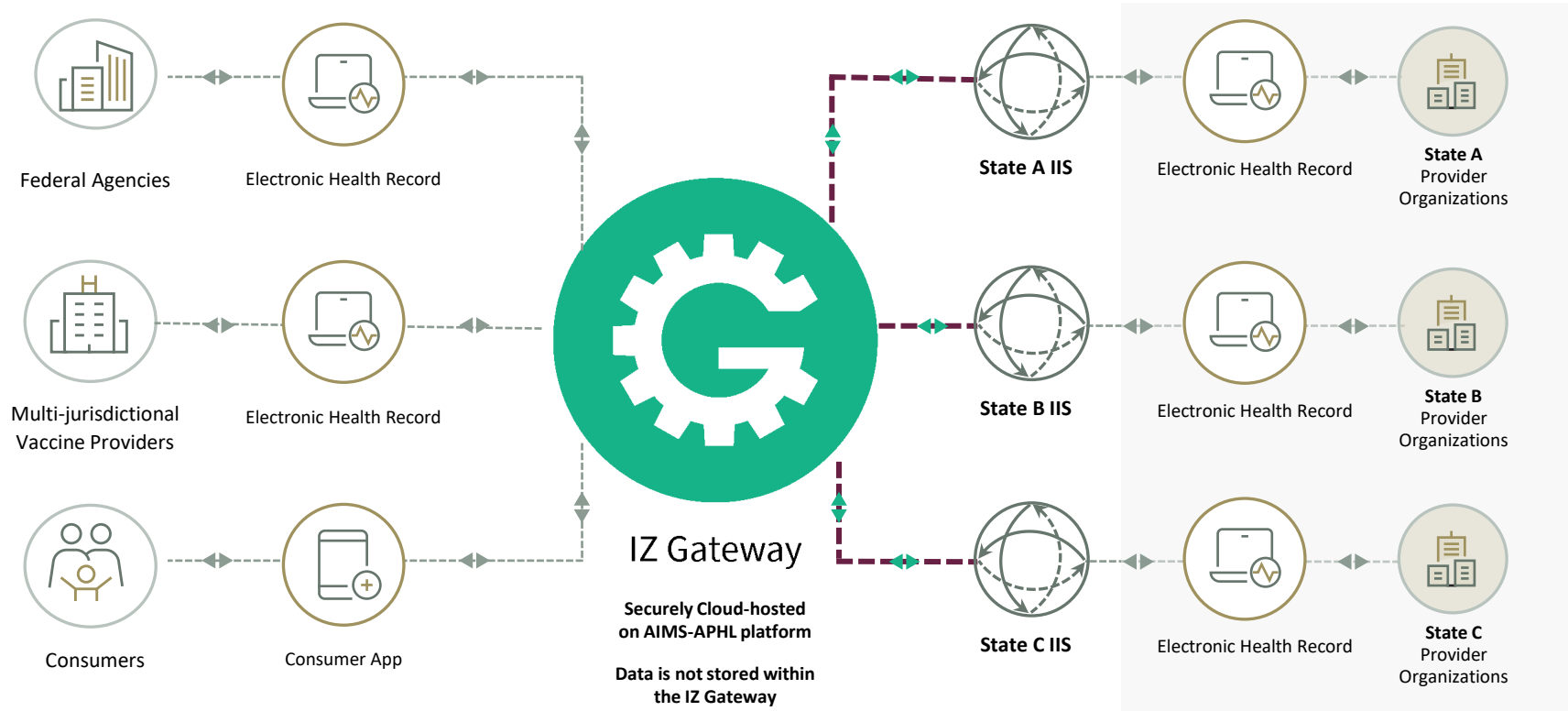
- A critical piece of CDC's work to advance interoperability for public health.
- Guides how CDC will make data available for decision-makers when they need it by providing a common framework for providing and accessing data.

IZ Gateway

- IZ Gateway is being built, using the NSAs framework, to serve as an interoperable, secure, and cloud-based message routing service that ***enables data exchange*** among jurisdiction IIS and multijurisdictional vaccine provider systems, while also facilitating consumer access to their immunization data.
- IZ Gateway will enable more complete immunization data to be available for public health decision-making.

IIS-to-IIS Data Exchange Current Onboarding Process

Use Case: Exchange Data with Other IIS



The IZ Gateway does not replace existing connections with state immunization information systems

Use Case: Exchange Data with Other IIS

What are the sub-use cases?

- **Automated VXU:** IIS automatically sends vaccine data to partner IIS through IZ Gateway.
- **Manual QBP:** IIS uses queries for vaccine history based on patient's address information or conversation with the patient.
- **Automated QBP:** IIS automatically queries for vaccine history using patient's current out-of-jurisdiction address (triggered by a new vaccine or updated demographics).

What is required of the IIS?

- **Complete baseline onboarding connection testing.**
- Sign the required **policy documents**
 - Data Use Agreement (DUA) with Association of Public Health Laboratories (APHL), including Appendix A ("Share" Task Order)
 - Interjurisdictional Memorandum of Understanding (MOU)
- Meet **functional and technical readiness criteria.**
- Complete **end-to-end testing** with data exchange partner.



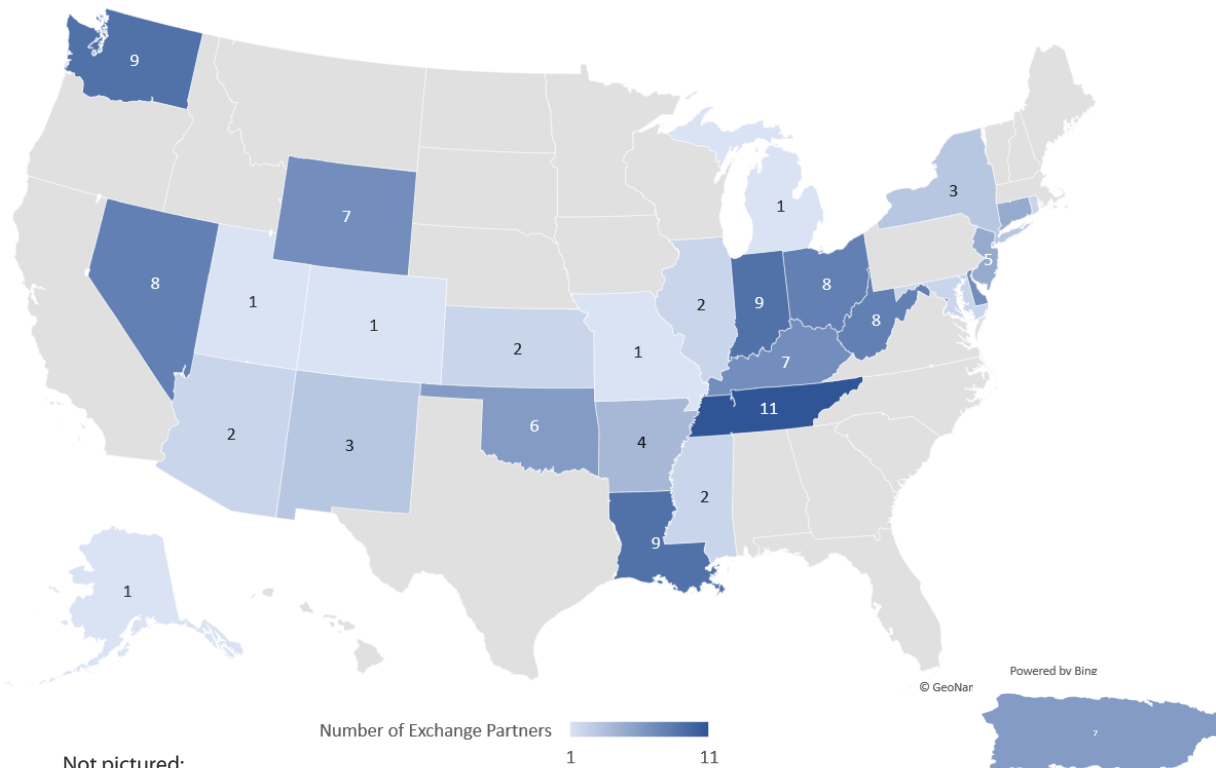
Use Case: Exchange Data with Other IIS

What are the benefits?

- 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**
- Improve **clinical decision making**
- Informs **public health decision-making** at all levels.
- Provides more accurate and complete **understanding of vaccine coverage** in jurisdictions and better identifications of populations at risk for vaccine-preventable disease, and respond to public health emergencies.



IIS-to-IIS Metrics



IIS-to-IIS Connections

Active IIS	28
Active bidirectional connections	148
Active single-direction connections	1

IIS-to-IIS Data Exchange Metrics *last 6 months*

Total Messages	7,828,619
VXU messages	7,728,564
QBP messages	100,055

Jurisdictional Policy Impacts

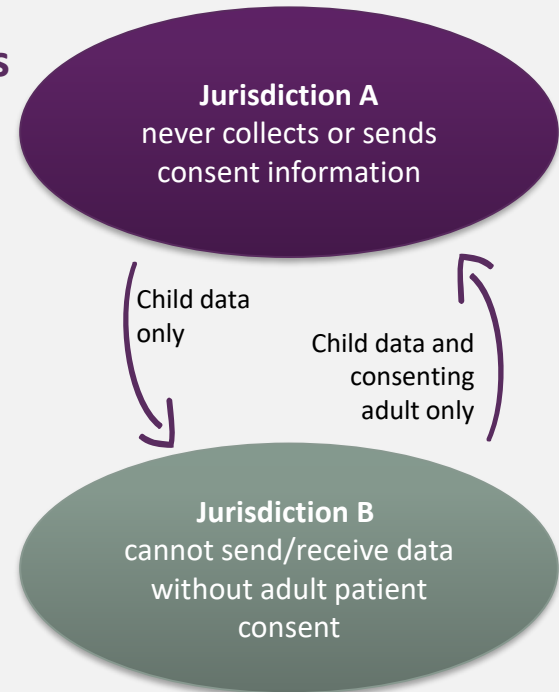
IZ Gateway ensures compliance with jurisdictional policy which can dictate which types of data are shared. Certain policies may result in suboptimal exchange partners.

Example I: Jurisdictional specific consent requirements

Due to policy restrictions on jurisdiction B and lack of consent information collected in jurisdiction A

- IIS A cannot send adult data to IIS B.
- Only data for adult residents who opted in while obtaining a vaccination while in jurisdiction B would flow from IIS B to IIS A. This is likely a small amount of data.
- Data flow for children would flow without restriction

These IIS would not be a productive data exchange pairing.



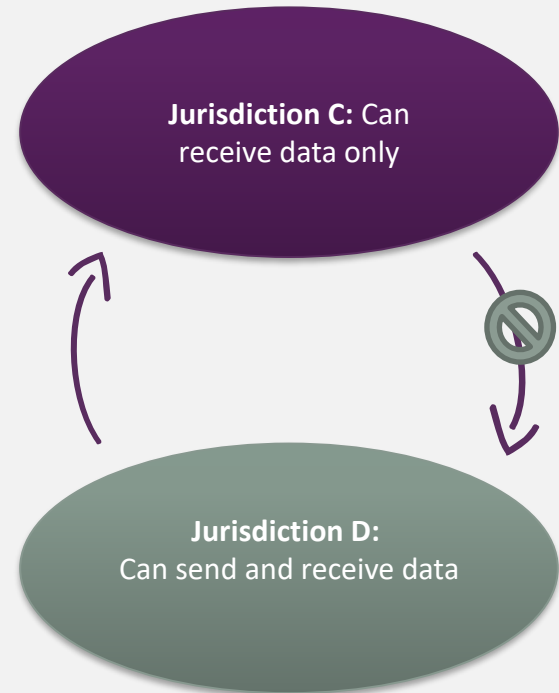
Jurisdictional Policy Impacts

IZ Gateway ensures compliance with jurisdictional policy which can dictate which types of data are shared. Certain policies may result in suboptimal exchange partners.

Example II: State specific requirement to not send any data

- IIS C
 - Has a state law prohibiting sharing resident vaccination data
 - But is willing and able to receive data from other jurisdictions
 - Unidirectional and limited data flow

Other jurisdictions may not be as interested in this less fruitful connection



IIS-to-IIS Onboarding Process

Readiness/Engagement

1

IIS Engagement

- Introduce and identify which IZ Gateway IIS-to-IIS exchange sub-use cases will be enabled.
- Identify testing partner(s).
- Ensure all agreements are signed.
- Add IIS to the Predictive Queue.

Level of effort: 1 week

2

IIS Functional and Technical Readiness

- Work to get IIS functionally ready.
- Ensure IIS is technically ready (HL7 and IZG technical readiness).

Level of effort: 1-8 weeks

Onboarding

3

Kick Off

- Set up partners and introduce project team members.
- Introduce onboarding and testing.
- Establish a communication plan.
- Confirm sub-use cases.
- Exchange MSH- 3, 4, 5, 6.

Level of effort: 1 hour

4

Testing with Partner IIS

- Establish connectivity in Test.
- Complete Test Plans for relevant use cases to include HL7 messages produced by the IIS platforms.
- Resolve any issues.
- Obtain signoff when successful testing is complete.

Level of effort: 4-5 weeks

5

Going Live & Monitoring

- Establish connectivity in Production.
- Enable data exchange between IIS.
- Create historical file load for one-time sync.
- Monitor for issues (ongoing).

*Level of effort: 1 week
Monitoring is ongoing*

IIS-to-IIS Challenges

Readiness/Engagement

1

IIS Engagement

- Introduce and identify which IZ Gateway IIS-to-IIS exchange use cases will be enabled.
- Identify testing partner(s).
- Understanding impacts of data exchange between each partner jurisdiction.
- Ensure all agreements are signed.

Level of effort: 1 week

2

IIS Functional and Technical Readiness

- Work to get IIS functionally ready.
- Ensure IIS is technically ready (HL7 and IZG technical readiness).
- Add IIS to the Predictive Queue.

Level of effort: 1-8 weeks

Onboarding

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Kick Off

- Set up partners and introduce project team members.
- Introduce onboarding and testing.
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- Exchange MSH- 3, 4, 5, 6.

Level of effort: 1 hour

4

Testing with Partner IIS

- Establish connectivity in Test.
- Complete Test Plans for relevant use cases to include HL7.
- Resolve any issues.
- Obtain signoff when successful testing is complete.

Level of effort: 4-5 weeks

5

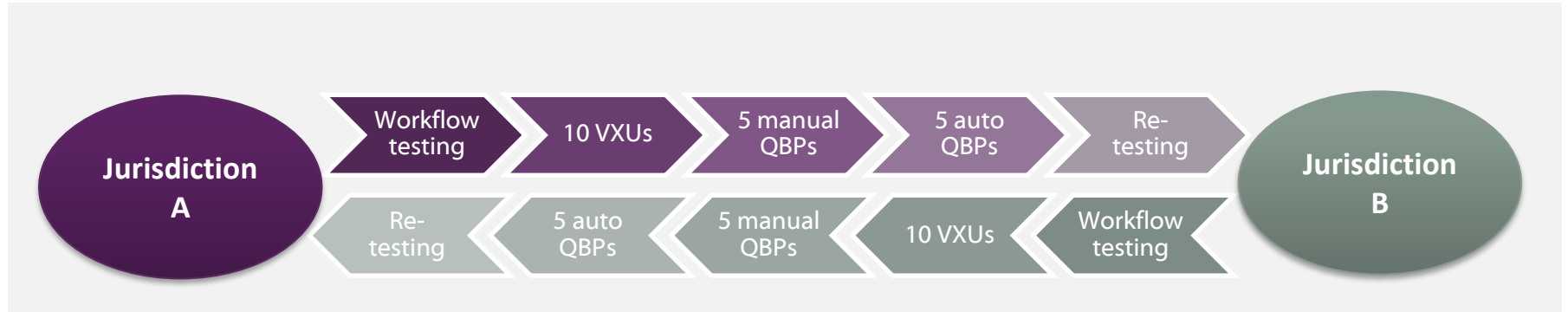
Going Live & Monitoring

- Establish connectivity in Production.
- Enable data exchange between IIS.
- Create historical file load for one-time sync.
- Monitor for issues (ongoing).

*Level of effort: 1 week
Monitoring is ongoing*

Additional IIS-to-IIS Onboarding Challenges

- Testing must be conducted for each IIS partner jurisdiction
- Testing has many steps that can take a lot of time (*see diagram*)
- Activities stop and start to address functional and technical issues
- First time users of specific IZ Gateway use cases may take longer than more experienced jurisdictions



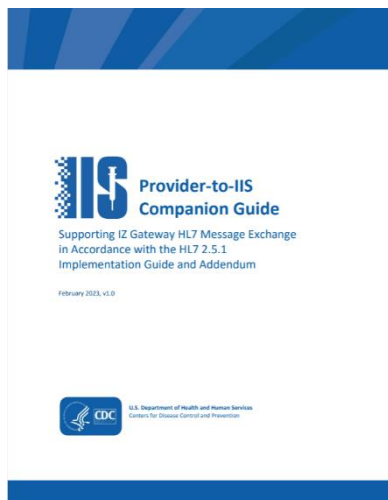
IIS Member Perspectives

Expediting IIS-IIS Progress to Date

- In April 2023, AIRA, Audacious Inquiry and CDC kicked off a **small group to explore efforts to accelerate IIS-to-IIS data exchange** through the IZ Gateway.
- The **goal**:
 - Convene a representative group of IIS programs and partners to develop a scored, evaluated list of potential approaches for the IZ Gateway Independent Verification and Validation (IV&V) contractor to consider and refer to CDC for inclusion in future funding opportunities.
- The group's **outputs** are in process and will be sent for comment via AIRA's Standards and Interoperability Steering Committee (SISC) – **stay tuned!**

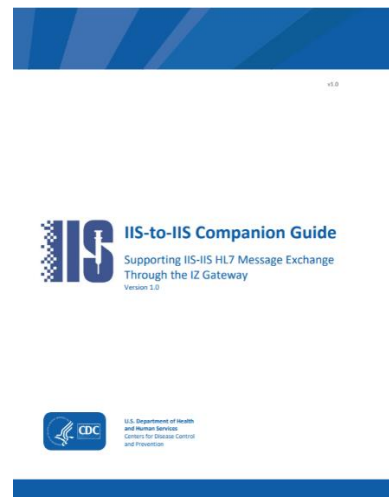
Guidance to help with IIS Exchange through the IZ Gateway

In collaboration with CDC and Audacious Inquiry, AIRA published two resources that work in concert with the National HL7 Immunization Implementation Guide (IG) and Addendum.



The Provider-IIS Companion Guide

Aims to support development and decision-making for provider-IIS data exchange through the IZ Gateway.



The IIS-IIS Companion Guide

Identifies jurisdiction specific requirements to ensure consistent and successful message processing between IIS submitters and receivers.

Documents are available on the [ISD Awardees SharePoint site](#) and for vendors in the [IIS Partners site](#).

Opportunities to Hear/Share about IIS-IIS Exchange



Monthly Interjurisdictional Community of Practice

- Meets most first Mondays at 1pm ET
- Hear from:
 - Jurisdictions about their experience with IIS-IIS exchange
 - Partners who support IIS-IIS exchange (CDC, Audacious Inquiry, ASTHO, AIM, NHPL, etc.)



Monthly Pacific Northwest Regional Meeting

- Meets most second Fridays at 2pm PT/5pm ET
- Hear from:
 - Oregon, Washington, California, Alaska and Idaho about their progress and successes with IIS-IIS exchange

Future Vision of IIS-to-IIS Data Exchange

IZ Gateway Future



Vision: By fall 2026, all jurisdictions are connected to all other jurisdictions of choice and to all bordering jurisdictions



How We Get There

- Ask your team – what can we do now?
 - Be **HL7 2.5.1 compliant**
 - Review the **IIS to IIS Companion Guide** to streamline onboarding
 - Complete your **checklist** for IIS-to-IIS readiness
 - Know about **all legal agreements** and sign new ones in a timely manner
- Communicate with your IIS SME and the IZ Gateway Team about participation