



Joint Development of an IIS Shared Service Layer for Immunization Gateway

Michael Berry (HLN), Jeff Goggin (RI),
Stan Markov (HLN), Emily Martinez (NYC)

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Agenda

- Background: Immunization Gateway (IZ Gateway)
- What's new for IIS?
- IIS Implementation Options
- Immunization Gateway Service (IZG Service)
- Onboarding
- Results

Background: Immunization Gateway (IZ Gateway)

- Centralized data exchange hub
- IIS connect to exchange HL7 messages with each other and federal partners
- Leverages the same message and transport standards as point-to-point IIS messaging
- Authentication, routing, and onboarding are different

IZ Gateway: Transport and Routing

- IIS \square IZG:
 - All messages sent to IZ Gateway SOAP endpoint
 - Partner Destination ID specified in SOAP request
- IZG \square IIS:
 - All messages sent to IIS from IZ Gateway
 - Standard IIS SOAP request
- Self-identified, national identifiers
 - MSH-3 & 4: Sending App & Facility
 - MSH-5 & 6: Receiving App & Facility

IZ Gateway: Authentication

- IIS ↔ IZG: IIS authenticates to IZG with Client Certificate
- IZG ↔ IIS: IZG authenticates to IIS with one or both of:
 - Client Certificate
 - Facility Username and Password in standard IIS SOAP request

IZ Gateway: Onboarding

- Client certificate
- National identifiers
- IIS Facility username and password for IZ Gateway
- Automated VXU, Manual QBP, Automated QBP
- IIS-to-IIS differences / local IGs / mapping
- Test and production environments
- Testing

What's new from the IIS Perspective?

- Outbound VXU and QBP
- Authenticate IIS ↔ IZG with Certificate
- Inbound VXU and QBP:
 - Authenticate IZG ↔ IIS with facility/password **or** Certificate
 - MSH-4 identifies sender, *not* facility in SOAP request
 - Sender may not confirm to local IG
- Need to prevent loops
- IZ Gateway availability

Options for IIS

- Traditional Approach:
 - Develop new outbound VXU and QBP functionality
 - Modify existing HL7 service to handle the different inbound messages
 - Implement loop prevention
- Service Layer Approach:
 - IZG-aware service provides inbound and outbound functionality and loop prevention
 - Layer in front of existing HL7 service to intercept inbound messages and modify them to be accepted by existing service

Approach: IZG Service

- Generates outbound messages and sends to IZ Gateway
- Layer in front of existing inbound HL7 service:
 - Receive & authenticate messages from IZ Gateway
 - Transform and pass to HL7 service as if from any other partner
- Audit logging
- Message queueing
- Loop prevention

Approach: IZG Service

- Jointly developed by NYC CIR and RI RICAIR
- Service runs in Docker containers
- Requires no changes to the IIS itself
- Components:
 - IZG Service
 - HL7 Transformation Service
 - Audit Service
 - Foreign Jurisdiction Service
- Uses MongoDB for audit and RabbitMQ for queueing

Onboarding

- Existing HL7 service:
 - Create partner IIS facility ID and password per usual workflow
- IZG Service configuration:
 - Map partner IIS facility ID and password to IZG Partner Destination ID
 - Enable/disable VXU and/or QBP
 - HL7 transformation: Map MSH-4, MSH-22, RXA-11.4, and any other elements as needed based on IZG Partner ID and content
- Test and monitor logs

Results

- IZG Service go-live:
 - NYC on May 23, 2022
 - Rhode Island on July 12, 2022
- Exchanged 400,000+ messages between NYC and RI, and with the CT, NJ, Philadelphia IISs, and VHA.
- Same software in NYC and RI
 - Automated cloud-based container deployment workflow
 - Enhancements developed for NYC automatically benefit RI, and vice versa.
- Onboarding is easy!

Thank you!

- Contact berrym@hln.com if you have any questions