

IIS ONBOARDING GUIDE

Introduction and Overview

If you have questions about onboarding with I-CARE, please reach out to the IIS team at CDPH.HL7@CITYOFCHICAGO.ORG or 312-520-9105.

The onboarding process involves four main steps, as outlined in Figure 1. The process outlined within this document assumes both submission and query messaging; see [Special Topics: Query-only interfaces](#) if the interface will not include submission to the IIS.

Figure 1. Overview of the steps in the onboarding process



Onboarding Responsibilities

A successful onboarding process relies on the engagement of representatives from the IIS, the provider organization, and the EHR/health IT system technical team. The following table provides general information about the responsibilities of each of the primary stakeholders during and after the onboarding process.

Stakeholder	Responsibilities during onboarding	Responsibilities post onboarding (ongoing monitoring)
IIS and immunization program staff	<ul style="list-style-type: none"> Provide general coordination/project management, communication, and customer service. Provide specific contacts with technical and programmatic expertise. 	<ul style="list-style-type: none"> Provide training on effective use of the IIS. Communicate ongoing expectations regarding maintaining the production interface. Monitor data feeds for errors. Notify organizations of any changes or outages that may

	<ul style="list-style-type: none"> • Provide an appropriate testing/validation platform. • Communicate details about the onboarding process and thresholds for success. • Make onboarding documentation easily accessible/readily available and ensure that it is always up to date. • Provide timely feedback on message conformance and data quality. • Assist with issue identification and troubleshooting. • Manage expectations about process, milestones, and timelines. • Inform stakeholders of any system updates/changes. • Provide input on VFC requirements. 	<p>impact existing interfaces. Note: this should be done as early as possible so other partners can properly prepare and execute any changes required on their end.</p> <ul style="list-style-type: none"> • Continue to post updated documentation as requirements and standards evolve.
<p>Provider organization staff</p>	<ul style="list-style-type: none"> • Complete all necessary enrollment forms/paperwork and engage the EHR vendor to get onboarding resources assigned. • Identify a primary representative to be an active participant in all elements of the onboarding process and attend meetings/conference calls as appropriate. 	<ul style="list-style-type: none"> • Verify initial setup is correct and data from the EHR is successfully populating the production IIS. • Monitor ACK interface and appropriate EHR/IIS reports to identify changes in volume or quality of messages or anything else that raises red flags about the interface. • Immediately report issues to the IIS and EHR contacts for assistance in troubleshooting.

	<ul style="list-style-type: none"> • Provide production or production-quality data for testing and validation. • Coordinate appropriate staff for end-user testing and troubleshooting. • Identify and resolve issues caused by improper workflows or poor data entry that adversely impact data quality. • Work with EHR vendor or organizational technical staff to resolve issues with the interface or submitted messages. 	<ul style="list-style-type: none"> • Correct data entry errors and establish appropriate policies/procedures to address issues with workflow and data quality; train staff as needed. • Communicate with IIS about any system changes/updates or outages that may impact existing interfaces. • Provide updated contact information for staff changes at either the organization or EHR vendor. • Notify the IIS of any mergers, acquisitions, or closures. • Keep vaccinating!
EHR/health IT system vendor/ technical staff	<ul style="list-style-type: none"> • Provide project management and technical expertise (testing and development) on behalf of the EHR team. • Be an active participant in all elements of the onboarding process and attend all meetings/conference calls. • Ensure the EHR system aligns with HL7 transport and messaging standards. • Work with IIS to identify, troubleshoot, and quickly resolve any issues with the interface or submitted messages. • Help IIS manage expectations about process, milestones, and timelines with the provider organization. 	<ul style="list-style-type: none"> • Assist provider organization with proper configuration of its EHR. • Train provider organization staff on how to monitor their interface (performance and ACKs) and resolve issues or seek assistance as needed. • Facilitate transition from the onboarding/implementation team to the long-term support team. • Assist with maintaining the connection and monitoring the interface for performance and errors. • Provide technical support to the provider organization and resolve any technical issues. • Maintain conformance with HL7 transport and messaging standards.

	<ul style="list-style-type: none">• Assist provider organizations with proper configuration of their EHR.	<ul style="list-style-type: none">• Notify provider organization (and possibly IIS) of any changes or outages that may impact existing interfaces.
	<ul style="list-style-type: none">•	

IIS Onboarding Checklist

Step/Activity	Resources	Status
Step 1: Discovery and Planning		
Step 1a: Readiness		
Enroll in the IIS		
Ensure technical capabilities to support immunization data exchange		
Complete the Onboarding Registration		
Complete the Onboarding Questionnaire		
Prepare for onboarding and data exchange with the IIS		
Step 1b: Kickoff		
Ensure resource allocation		
Participate in a kickoff call		
Step 2: Development and Testing		
Step 2a: Connectivity		
Implement credentials to connect with the IIS testing environment		
Troubleshoot to resolve issues as needed		
Step 2b: Testing		
Submit production messages to the IIS testing environment for message and data review		
Complete query testing		
Implement changes and resolve issues as needed to meet expectations		
Prepare legacy data and submit for data quality review		
Step 3: Production Approval and Go-Live		
Implement credentials to connect with the IIS production environment		
Enable and monitor the production interface		
Clinically confirm query and response messaging		

Troubleshoot to resolve issues as needed to meet expectations		
Submit legacy data		
Confirm onboarding close		
Step 4: Ongoing Monitoring		
Conduct ongoing interface monitoring		
Resolve errors		
Conduct ongoing interface maintenance		
Maintain quality data submission		

Interpreting ACK Messages¹

MSA-1 Value	Description	National IG Description	ERR segment(s) and ERR-4 severity	Understanding of IIS Response	Sender Follow-up Expectation
AA	Application acknowledgment: accept	Message accepted and processed.	No error (ERR) segments.	Message accepted.	No action needed.
			ERR segment(s) with severity of "I" for information . (No severity "W" or "E" errors).	Message accepted with returned information.	
AE	Application acknowledgment: error	Message accepted and processed, and errors are being reported.	At least one ERR segment with severity of "W" for warning . (No severity "E" errors)	Message accepted, but there may be issues. These may include nonfatal errors with potential for loss of data.	Take action to correct issue(s) in sending system.*
			At least one ERR segment with severity of "E" for error .	Message and/or data rejected. The IIS rejected data that it views as important.	Take action to correct issue(s) in sending system and resubmit.*
AR	Application acknowledgment: reject	Message rejected due to: <ul style="list-style-type: none"> • Unsupported message type • Unsupported event code • Unsupported processing ID • Unable to process for reasons unrelated to format or content 	At least one ERR segment with severity of "E" for error , with 1 of 4 conditions specified.	Message rejected. The message was not processed.	Take action to correct issue(s) in sending system and resubmit.*

¹ Adapted from [Guidance for HL7 Acknowledgement Messages to Support Interoperability](#)

*If the cause of the issue is determined to be the sending system. In some cases, the issue may be due to the IIS; work with IIS staff to identify the cause of the issue and appropriate next steps.

Message and Data Review

Organizations are expected to submit messages with minimal critical errors, failures, or significant issues. These messages must contain high-quality data representing your patients and immunization practices. During Step 2b: Message and data review, IIS staff will provide feedback on message and data review findings, including issues that must be addressed prior to proceeding in the process. Testing is expected to be completed within a two-week period; however, this timeline will be extended in one-week increments until issues are sufficiently addressed. Provider organization and EHR/health IT representatives are expected to work in collaboration with IIS staff to resolve issues identified in testing.

Sample items reviewed during message and data review are noted below.

Message review

- Conformance to HL7 specifications, including local requirements:
 - Appropriate use of delimiters
 - Appropriate cardinality (presence and repetition of elements)
 - Appropriate implementation of usage
 - Appropriate element length
 - Appropriate use of data types
 - Appropriate codes/values for coded elements
- Minimal critical errors, failures, or significant issues, as indicated in ACK messages:
 - No messages resulting in AR (application reject)
 - Minimal messages resulting in AE due to severity "E" and severity "W" errors

Data review

Validity and accuracy

- Vaccines administered by the organization are represented in the data received by the IIS.
- Administered vaccinations have active and specific CVX/NDC codes (not "unspecified" CVX codes).
- Historical vaccinations have historically correct CVX codes.
- Vaccination encounter date must not be before a patient date of birth.
- Vaccination encounter date must be less than or equal to (before or the same as) the submission date.
- Every administered vaccine should be recorded as a single vaccination event (i.e., a combination vaccine should be recorded as one event rather than separate events for each antigen).
- Vaccination encounter date should not be the same as the patient date of birth, unless it is recommended for administration on the date of birth, e.g., hepatitis B.
- Manufacturer and CVX/NDC code should not contradict one another.
- Route and site should not contradict each other for a given vaccine type and patient age.

Completeness

- The volume of vaccines submitted appropriately reflects the organization's immunization practice for a given time.
- Submission of data from each facility/site is associated with the organization, appropriately identified in HL7 messages, and mapped to the organization/facility/site record within the IIS.
- Submission reflects appropriate proportion of historical and administered vaccinations, given the organization's immunization practice.
- Submission of key data elements associated with patient immunizations includes:
 - Medical record number/client ID
 - Patient name (first and last)
 - Mother's maiden name (if the patient is a minor)
 - Patient date of birth
 - Patient race
 - Patient ethnicity
 - Patient gender
 - Patient address
 - Patient phone
 - Mother/father/guardian, aka next of kin (if the patient is a minor)
 - Vaccination encounter date
 - Vaccine administered product type (CVX/NDC)
 - Administered/historical indicator (unless refused/not administered)
- Submission of key data elements for administered vaccines includes:
 - Lot number
 - Vaccine lot expiration date
 - Dosage (administered amount)
 - Manufacturer
 - Dose-level vaccine eligibility, aka vaccine funding program eligibility
 - Vaccine funding source
 - Route
 - Body site

Depending on data review findings, provider organizations may also be asked to participate in patient record review so as to compare IIS data to the originating medical record. IIS staff will work with you if needed to complete this record review/chart audit.

