

Onboarding Guide

Process and activities for provider organizations to establish

and test an electronic data interface with RICAIR/KIDSNET

RICAIR/KIDSNET

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# Introduction and Overview

## Purpose

This guide provides information about the process to establish and test an electronic data-exchange interface between an electronic health record/health information technology (EHR/health IT) system and the Rhode Island immunization information system (IIS), KIDSNET/RICAIR. This process is referred to as “onboarding.” This guide is intended for use by provider organizations and representatives associated with these organizations or their technical vendors to support establishing and testing these interfaces. Review this guide to help your organization prepare for each step in the onboarding process, meet testing expectations, and ensure an efficient process.

If you have questions about onboarding with KIDSNET/RICAIR, please reach out to the IIS team at RIDOH.RICAIROnboarding@health.ri.gov.

## Onboarding process

The onboarding process involves four main steps, as outlined in Figure 1. The process outlined within this document assumes both submission and query messaging.

**Figure 1. Overview of the steps in the onboarding process**



Complete required activities associated with each step, as detailed in this guide, to successfully onboard and maintain a quality interface with the IIS. The initial activities in Step 1: Discovery and Planning are focused on ensuring readiness to onboard and exchange data with the IIS. Complete the readiness activities as highlighted in the [Readiness Checklist](https://health.ri.gov/forms/registration/RICAIR-KIDSNET-Readiness-Checklist.docx) to initiate an onboarding project kickoff with the IIS staff.

The time spent working intensively with the IIS staff, from onboarding project kickoff through onboarding project close (Step 1: Discovery and Planning through Step 3: Production Approval), should take approximately six weeks. After close of the onboarding project, you will be expected to monitor and maintain the connection for the lifetime of the interface (Step 4: Ongoing Monitoring).

## Resource allocation

Organizations are expected to ensure resource allocation across the following roles to support onboarding and ongoing monitoring. Depending on the size of your organization, these roles may be fulfilled by one or more individuals:

* **Onboarding project lead**: Person responsible for oversight and coordination of the organization’s onboarding efforts
* **Onboarding technical lead/interface technician**: Person responsible for establishing and testing the interface between the EHR/health IT system and IIS (usually an EHR/health IT vendor representative)
* **Immunization lead**: Person responsible for immunization data quality and ensuring clinical confirmation of query and response messaging
* **Interface production technical lead**: Person responsible for maintaining and monitoring the production interface once established

Organizational representatives must be responsive to IIS requests and questions during an onboarding project to ensure the process moves forward efficiently. Organizations that are not responsive will have their onboarding projects placed on hold until sufficient resources are allocated. Review [Appendix A](#_Appendix_A._Onboarding) for additional information on responsibilities across stakeholders, during and after the onboarding process.

## Onboarding steps and activities

Additional detail on the activities associated with each step in the onboarding process is provided in Table 1. Review this table and the accompanying narrative to help ensure a successful onboarding project. Refer to [Appendix B](#_Appendix_B._Provider) for a list of onboarding activities presented in checklist format, which can support project planning and resource allocation.

**Table 1. IIS onboarding steps and activities**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Step | 1: Discovery and Planning | | 2: Development and Testing | | 3: Production Approval & Go-Live | 4: Ongoing Monitoring |
| **1a: Readiness** | **1b: Kickoff** | **2a: Connectivity** | **2b: Testing** |
| **Objective** | Demonstrate readiness to onboard | Confirm commitment to onboard | Establish connectivity with the IIS testing environment | Identify and address interface and data quality issues | Initiate production data exchange | Ensure successful ongoing exchange |
| **Duration** |  | 1 week | 1 week | 2 weeks\* | 2 weeks\* | Ongoing |
| **Required Activities** | * Enroll in the IIS * Ensure technical capabilities to support immunization data exchange * Complete IIS onboarding forms: registration and questionnaire * Prepare for onboarding and data exchange with the IIS | * Ensure resource allocation * Participate in an onboarding kickoff call | * Implement credentials to connect with the IIS testing environment * Troubleshoot to resolve issues as needed | * Submit production data 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 | * 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 | * Conduct ongoing interface monitoring * Take action to resolve errors * Conduct ongoing interface maintenance * Maintain quality data submission |
| **Exit Criteria** | * Receive an invitation to onboard | * Agree to proceed; commit to onboarding | * Confirm successful connectivity with IIS testing environment | * Receive approval to proceed with go-live | * Receive confirmation of onboarding close |  |

**\*Subject to extension in one-week increments to ensure issues are sufficiently resolved to meet IIS expectations**

# Step 1: Discovery and Planning

Step 1: Discovery and Planning includes two sub-steps, 1a: Readiness and 1b: Kickoff.

## Step 1a: Readiness

Objective: Demonstrate readiness to onboard

Complete readiness activities to prepare for onboarding and data exchange with the IIS. Table 2 lists additional details for each of the required activities. Once these activities are completed and as IIS resources allow, you will receive an invitation to participate in an onboarding kickoff call with IIS staff.

If there is a wait list to schedule the onboarding kickoff with the IIS, organizations will be prioritized based on several considerations, including:

* Completion of the readiness activities
* Desired data submission format and transport (bidirectional exchange in HL7 2.5.1 using the CDC WSDL & SOAP Web Services or HTTPs Post Transport is preferred)
* Participation in the Vaccines for Children (VFC) program
* Volume of immunizations administered
* Types of immunization(s) administered
* Number of associated facilities
* Organization type
* Patient population served
* Length of time in the onboarding queue

**Table 2. Step 1a: Readiness activities**

|  |  |  |
| --- | --- | --- |
| Complete | Activity | Description |
|  | Enroll with the State Supplied Vaccine (SSV) Program | Ensure your facilities/sites associated with your organization are currently enrolled with the SSV Program by completing necessary Immunization program related agreement(s). |
|  | Ensure technical capabilities to support immunization data exchange | Work with your technical vendor to ensure technical capabilities, including support for [SOAP Web Services using the CDC WSDL](https://www.cdc.gov/vaccines/programs/iis/technical-guidance/soap/services.html) OR [HTTPs Post Transport](https://kidsnet.health.ri.gov/hl7processor-play/recv.hl7)  and support for [HL7 v2.5.1, Release 1.5 immunization messaging](https://repository.immregistries.org/resource/hl7-version-2-5-1-implementation-guide-for-immunization-messaging-release-1-5-1/).  EHRs and health IT systems certified under the ONC Health IT Certification Program,[[1]](#footnote-1) editions  2015 and 2015 Cures Update, are capable of HL7 v2.5.1 messaging with IIS. Check with your technical vendor about your system’s certification status.  Your technical vendor can use the National Institute of Standards and Technology (NIST) [Immunization Test Suite](https://hl7v2-iz-r1.5-testing.nist.gov/iztool/#/home) to complete self-service testing of these capabilities. |
|  | Complete IIS onboarding forms: [registration](https://health.ri.gov/forms/registration/RICAIR-KIDSNET-Onboarding-Registration.docx) and [questionnaire](https://health.ri.gov/forms/registration/RICAIR-KIDSNET-Onboarding-Questionnaire.docx) | First, complete the [Onboarding Questionnaire form](https://health.ri.gov/forms/registration/RICAIR-KIDSNET-Onboarding-Questionnaire.docx) to register your intent to exchange data with the IIS. Provide basic information about your organization, your facilities, and your EHR/health IT system.  Next, work with your technical vendor to complete the [Onboarding Questionnaire](https://health.ri.gov/forms/registration/RICAIR-KIDSNET-Onboarding-Questionnaire.docx). Provide detailed information about your EHR/health IT system capabilities and your organization’s immunization practices to inform onboarding testing. |
|  | Prepare for onboarding and data exchange with the IIS | Review the Rhode Island HL7 v2.5.1 [Local Implementation Guide Addendum](https://health.ri.gov/forms/registration/RICAIR-KIDSNET-Implementation-Addendum.docx) for local specifications for immunization messaging with the IIS.  Review this onboarding guide to understand the steps and activities involved in the onboarding process. |
| Exit Criteria | Receive an invitation to onboard | Completion of the IIS enrollment, the Onboarding Registration, and the Onboarding Questionnaire will place your organization in queue to be invited to an onboarding kickoff call as IIS resources allow. |

## Step 1b: Kickoff

Objective: Confirm commitment to onboard

The onboarding kickoff initiates the process of working with IIS staff to create and test an interface connection. See Table 3 for activities associated with the onboarding kickoff.

**Table 3. Step 1b: Kickoff activities**

|  |  |  |
| --- | --- | --- |
| Complete | Activity | Description |
|  | Ensure resource allocation | Ensure resource(s) are identified and allocated to fulfilling the following roles:   * Onboarding project lead * Onboarding technical lead/interface technician * Immunization lead * Interface production technical lead |
|  | Participate in an onboarding kickoff call | Ensure the full project team is available to participate in the onboarding project kickoff call. The kickoff will provide an opportunity to discuss provider organization readiness, review the onboarding process, discuss onboarding expectations, discuss options for submission of legacy data, and address questions. |
| Exit Criteria | Agree to proceed; commit to onboarding | If you are ready to proceed with the process as outlined in the onboarding kickoff and have resources committed to the project, IIS staff will invite you to proceed with Step 2. |

# 

# Step 2: Development and Testing

Step 2: Development and Testing consists of two sub-steps, 2a: Connectivity and 2b: Testing.

## Step 2a: Connectivity

Objective: Establish connectivity with the IIS testing environment

Once an organization participates in an onboarding kickoff call and commits to proceeding, the next step is to establish connectivity between the EHR/health IT system and the IIS environment used for testing. Table 4 lists additional details for each of the required activities associated with this step.

**Table 4. Step 2a: Connectivity activities**

|  |  |  |
| --- | --- | --- |
| Complete | Activity | Description |
|  | Implement credentials to connect with the IIS testing environment | IIS staff will provide the IIS testing endpoint (also known as the WSDL URL), an IIS username and IIS password specific to your organization, and IIS facility IDs for each facility/site to be included in the interface. Use these credentials to connect with the IIS testing environment and ensure all facilities/sites are included in the interface. |
|  | Troubleshoot to resolve issues as needed | Provider organizations are expected to troubleshoot connectivity issues until connectivity is confirmed. |
| Exit Criteria | Confirm successful connectivity with IIS testing environment | IIS staff will work with you to confirm successful connectivity. |

## Step 2b: Testing

Objective: Identify and address interface and data quality issues

After connectivity is established, the next step involves testing EHR/health IT system production messages and data in the IIS testing environment. Use of real patient data gives the best depiction of the quality of exchange between the two systems in production. Table 5 lists additional details for each of the required activities associated with this step.

**Table 5. Step 2b: Testing activities**

|  |  |  |
| --- | --- | --- |
| Complete | Activity | Description |
|  | Submit production data to the IIS testing environment for message and data review | Messages are reviewed to ensure conformance with HL7 specifications, including submission of locally required elements and locally accepted codes and values. In addition, aggregated data from submitted messages is reviewed to ensure validity, accuracy, and completeness.  ***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. IIS staff will provide feedback on message and data review findings, including issues that must be addressed prior to proceeding in the process***.  See [Appendix C](#_Appendix_C._Interpreting) for further information on interpretation of IIS ACK messages. See [Appendix D](#_Appendix_E._Message) for further details on message and data review expectations. |
|  | Complete query testing | Query testing ensures the ability to query the IIS and receive expected responses in return. Query for patients previously submitted in VXU messages and new patients to understand IIS responses (exact match, not found/no match, and too many matches). |
|  | Implement changes and resolve issues as needed to meet expectations | Issues identified in testing can have several causes and may require changes to the EHR/health IT system, the interface, and/or workflow. Once changes have been made, messages will be retested to ensure that the issues have been satisfactorily resolved. Organizations are required to address these issues before receiving an approval to proceed with go-live. ***Testing will be extended in one-week increments until issues are sufficiently addressed.*** |
|  | Prepare legacy data and submit for data quality review | Legacy data refers to data already held in the EHR/health IT system on patients with previously administered and historical vaccinations known to your organization. Submission of these data to the IIS helps ensure completeness of IIS immunization histories and accuracy of IIS clinical decision support for all users. See the AIRA guidance document, *Importing Legacy Data to Improve IIS Saturation*[[2]](#footnote-2) for further information. |
| Exit Criteria | Receive approval to proceed with go-live | Once you have completed these activities, you will receive an approval to proceed with go-live. |

# Step 3: Production Approval and Go-Live

Objective: Initiate production data exchange

Step 3 involves establishing an interface with the IIS production environment and initial monitoring to ensure continued interface success. See Table 6 for activities associated with this step.

**Table 6. Step 3: Production approval and go-live activities**

|  |  |  |
| --- | --- | --- |
| Complete | Activity | Description |
|  | Implement credentials to connect with the IIS production environment | IIS staff will provide the IIS production endpoint (WSDL URL), an IIS username and IIS password specific to your organization, and IIS facility IDs for each facility/site to be included in the interface. Use these credentials to connect with the IIS production environment and ensure all facilities/sites are included in the production interface. |
|  | Enable and monitor the production interface | Initiate the production interface between the EHR/health IT system and the IIS. Ensure submission of messages from each facility/site. New production interfaces are monitored closely immediately after go-live to ensure continued submission of messages with minimal critical errors, failures, or significant issues. See [Appendix C](#_Appendix_C._Interpreting) for further information on interpretation of IIS ACK messages.  ***IIS staff will provide feedback on any issues that must be addressed prior to onboarding closeout.*** |
|  | Clinically confirm query and response messaging | A physician or clinical user must confirm successful query and response messaging in the production environment, i.e., query responses are appropriately displayed in the EHR/health IT system user interface, and query responses are appropriately consumed by the EHR/health IT system if applicable. |
|  | Troubleshoot to resolve issues as needed to meet expectations | Organizations are required to address identified issues before closing out the onboarding project. ***Immediate post-go-live monitoring will be extended in one-week increments until issues are sufficiently addressed.***  If there are significant issues identified at this step, an organization may be required to go back to Step 2b: Testing to address problems. |
|  | Submit legacy data | Work with IIS staff to submit legacy data. |
|  | Confirm onboarding close | Work with IIS staff to confirm all activities associated with onboarding are complete. Review post-onboarding responsibilities (see [Appendix A](#_Appendix_A._Onboarding)). Ensure appropriate resources are allocated to ongoing interface monitoring and maintaining quality data submission for the lifetime of the interface. |
| Exit Criteria | Receive confirmation of onboarding project close | IIS staff will notify you of onboarding project close. |

# Step 4: Ongoing Monitoring

Objective: Ensure successful ongoing exchange

**The final step of the onboarding process is to transition to ongoing monitoring and maintenance for the lifetime of the interface. Detailed activities associated with this step are outlined in Table 7 below.**

**Table 7. Step 4: Ongoing monitoring activities**

|  |  |  |
| --- | --- | --- |
| Complete | Activity | Description |
| Ongoing | Conduct ongoing interface monitoring | Monitor IIS acknowledgment messages to ensure successful submission. |
| Ongoing | Resolve errors | Follow up on and address errors noted in acknowledgment messages as needed. See [Appendix C](#_Appendix_C._Interpreting) for further information on interpretation of IIS ACK messages. |
| Ongoing | Conduct ongoing interface maintenance | Maintain the interface by ensuring new codes are added as applicable. |
| Ongoing | Maintain quality data submission | Use IIS reports to support immunization practice. Follow up on data submission and data quality issues as needed. |

# Special Topics

## Changes to existing interfaces: retesting

Abbreviated testing protocols are used to address changes to an existing interface, including:

* Addition of new facilities (that use the same EHR/health IT system)
* Addition of query messaging to an existing submission interface
* Addition of dose-decrementing from IIS vaccine inventory

Contact the IIS team at [RIDOH.RICAIROnboarding@health.ri.gov](mailto:RIDOH.RICAIROnboarding@health.ri.gov) if any of these situations apply. IIS staff will work with your organization to complete retesting in these scenarios.

## Re-onboarding

Re-onboarding, or completion of the full onboarding process to establish a new interface, is required when there is a change in any of the following:

* EHR/health IT system
* Message format
* Transport

Complete an [Onboarding Registration form](https://health.ri.gov/forms/registration/RICAIR-KIDSNET-Onboarding-Registration.docx) to initiate the process of re-onboarding.

Note, re-onboarding may be required when there are significant issues with a production interface that are not resolved through regular outreach and follow-up.

# Appendices

## Appendix A. 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.

**Table 8. Stakeholder responsibilities during and after the IIS onboarding process**

|  |  |  |
| --- | --- | --- |
| Stakeholder | Responsibilities during onboarding | Responsibilities post onboarding (ongoing monitoring) |
| IIS and immunization program staff | * Provide general coordination/project management, communication, and customer service. * Provide specific contacts with technical and programmatic expertise. * 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. | * 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 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. * Continue to post updated documentation as requirements and standards evolve. |
| Provider organization staff | * 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. * 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. | * 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. * 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 | * 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. * Assist provider organizations with proper configuration of their EHR. | * 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. * Notify provider organization (and possibly IIS) of any changes or outages that may impact existing interfaces. |
|  |  |  |

## Appendix B. IIS Onboarding Checklist

**Table 9. Provider organization 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 |  |  |

## Appendix C. Interpreting ACK Messages[[3]](#footnote-3)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **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)  If RXA21 Action Code is not equal to Blank or A (Add), then severity of “I” for **information**. | 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:   * 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.\* |

\*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..

## Appendix D. 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.

1. <https://www.healthit.gov/topic/certification-ehrs/certification-health-it> [↑](#footnote-ref-1)
2. <https://repository.immregistries.org/resource/importing-legacy-data-to-improve-iis-saturation/> [↑](#footnote-ref-2)
3. Adapted from [Guidance for HL7 Acknowledgement Messages to Support Interoperability](https://repository.immregistries.org/resource/guidance-for-hl7-acknowledgement-messages-to-support-interoperability/) [↑](#footnote-ref-3)