2024

Onboarding Guide

MCIR
Michigan Care Improvement Registry

Process and activities for provider organizations to establish and test an electronic data interface with the Michigan Care Improvement Registry (MCIR).

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INTRODUCTION AND OVERVIEW

Purpose

This guide provides detailed instructions for establishing and testing an electronic data exchange interface between an electronic health record/health information technology (EHR/health IT) system and the Michigan Care Improvement Registry (MCIR). This process, known as "onboarding," is crucial for provider organizations, their representatives, and technical vendors to connect with MCIR effectively. By following this guide, organizations can prepare for each step in the onboarding process, meet testing expectations, and ensure a smooth and efficient onboarding experience.

For questions regarding onboarding, please contact the MCIR team at MDHHS-HL7@michigan.gov.

Onboarding Process

The onboarding process consists of four main steps, illustrated in Figure 1. This guide assumes using both submission (VXU) and query (QBP) messaging. If your facility does not provide immunizations, refer to the "Special Topics: Query-only interfaces" section for relevant information.

Figure 1

Completing the required activities associated with each step outlined in this guide is essential to onboard and maintain a quality interface with MCIR successfully. The initial activities in Step 1, Discovery and Planning, focus on ensuring readiness to onboard and exchange data with MCIR. You can initiate an onboarding project kickoff by following the readiness activities highlighted in the Online Provider Checklist and completing the HSTR registration.

Working intensively with the MCIR staff, from the onboarding project kickoff through the onboarding project close (Step 1: Discovery and Planning through Step 3: Production Approval), should take approximately six weeks if each step is correctly followed. The process is provider-driven and can take more than six weeks to complete. After the close of the onboarding project, you are expected to monitor and maintain the connection for the lifetime of the interface (Step 4: Ongoing Monitoring).

Resource Allocation

Organizations must allocate resources to support onboarding and ongoing monitoring across the following roles. Depending on the size of your organization, these roles may be fulfilled by one or more individuals:

- **Onboarding Project Lead**: Responsible for overseeing and coordinating the organization's onboarding efforts.
- **Onboarding Technical Lead/Interface Technician**: This person establishes and tests the interface between the EHR/health IT system and MCIR. The representative from the EHR/health IT vendor typically does this.
- **Immunization Lead**: Responsible for ensuring immunization data quality and confirming clinical information in query and response messaging.
- **Interface Production Technical Lead**: Responsible for maintaining and monitoring the production interface once it is established.

To ensure efficient progress, organizational representatives must respond to MCIR requests and questions during an onboarding project. Projects may be placed on hold if organizations are only responsive once sufficient resources are allocated. Appendix A provides additional information on responsibilities across stakeholders during and after the onboarding process.

Onboarding Steps and Activities

For a successful onboarding project, it's important to review Figure 2, Onbarding Steps and Activities, which provides additional detail on the activities associated with each step in the onboarding process. The accompanying narrative offers further insight into these activities. Additionally, Appendix B contains a list of onboarding activities presented in checklist format, which can be used to support project planning and resource allocation. These resources will help ensure that your organization completes all necessary steps and achieves a smooth onboarding process.

Figure 2

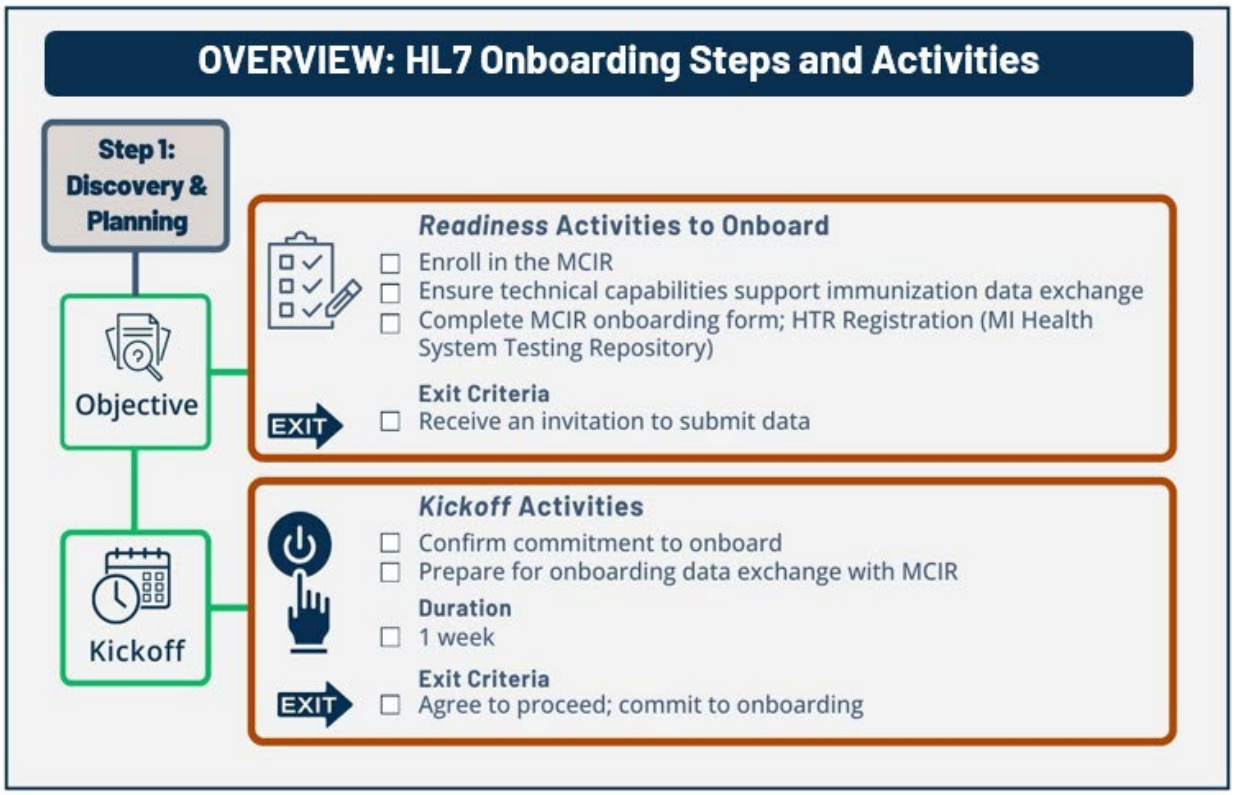
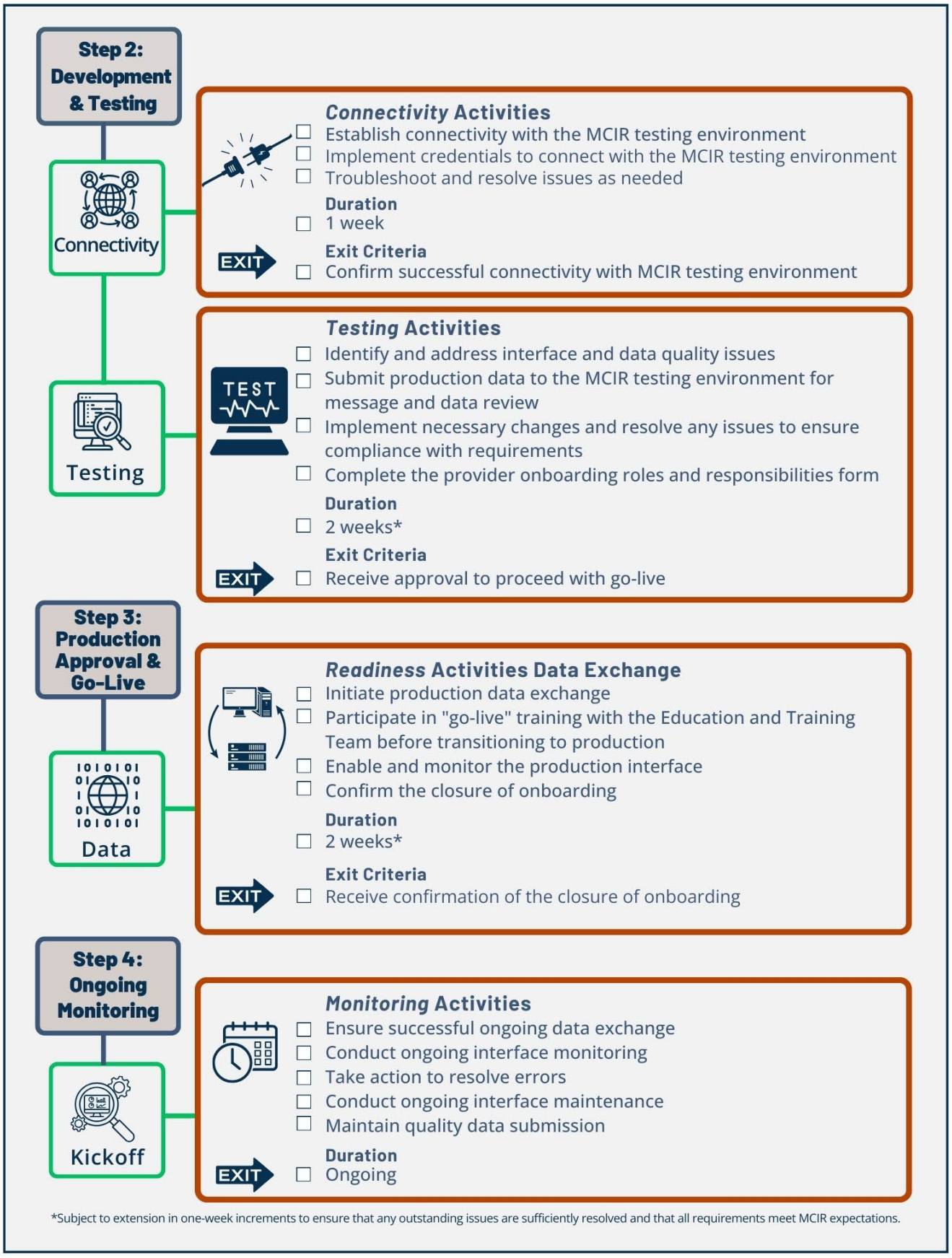


Figure 2 continued



DETAILED ONBOARDING PROCESS

Step 1: Discovery and Planning (Week one)

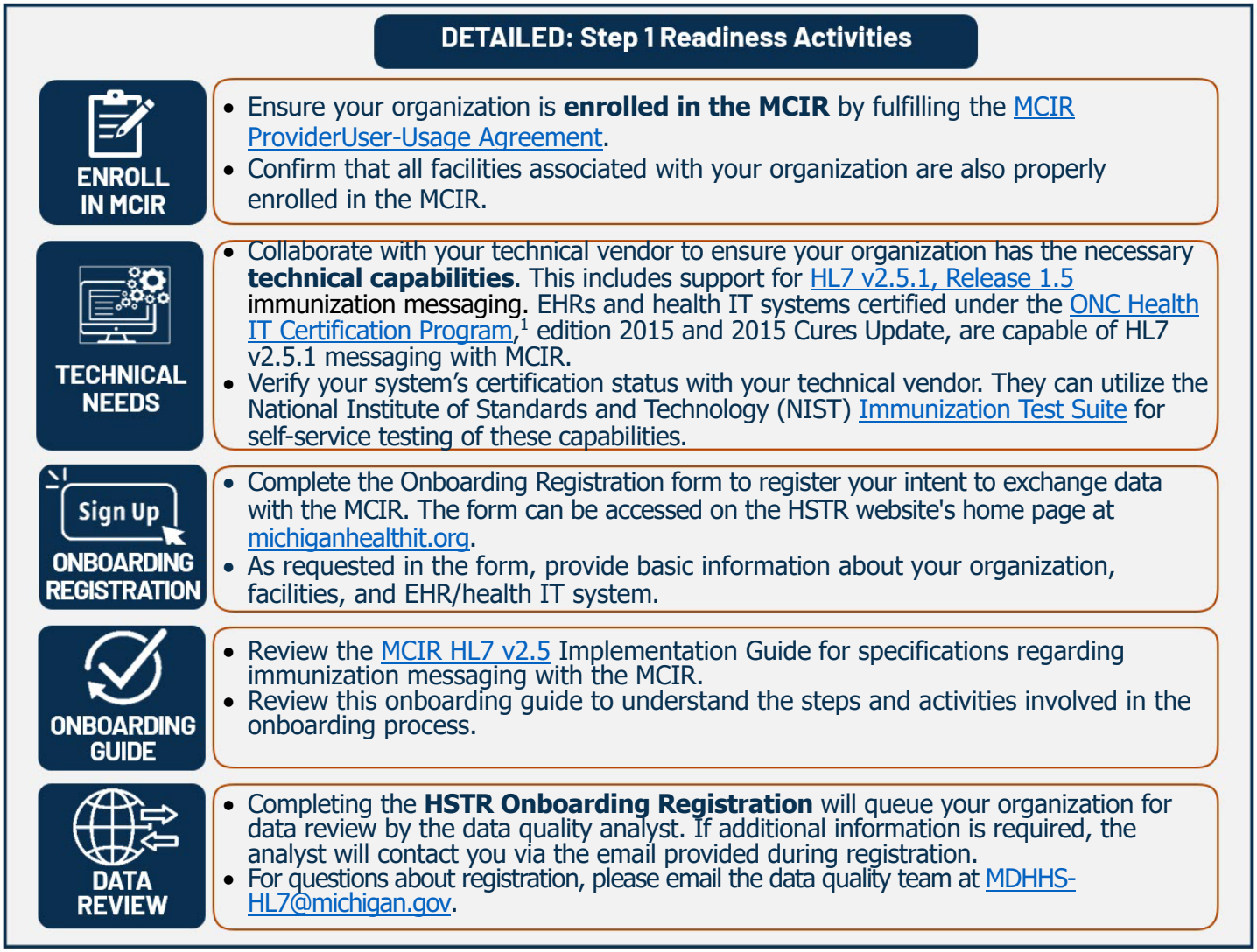
Objective: Demonstrate Readiness to Onboard

The Discovery and Planning phase is a two-part process designed to demonstrate readiness for onboarding to HL7 data exchange with MCIR. Refer to Figure 3, Readiness Activities, for a detailed process explanation. Upon completion of the HSTR registration, you will receive an invitation with credentials from a member of the data quality team to submit live patient data to the MCIR test environment.

Complete:

1. **Verify MCIR Enrollment**: Ensure your organization is currently enrolled in the MCIR by completing the MCIR Provider User-Usage Agreement.
2. **Technical Requirements**: Ensure technical capabilities to support immunization data exchange:
   - Work with your technical vendor to ensure technical capabilities, including support for HL7 v2.5.1 Release 1.5 Immunization Messaging.
   - Your technical vendor can use the National Institute of Standards and Technology (NIST) Immunization Test Suite to complete self-service testing of these capabilities.
3. **MCIR Onboarding Form**: Complete the Onboarding Registration form to register your intent to exchange data with the MCIR. Provide basic information about your organization, facilities, and EHR/health IT system.

Figure 3



Step 2: Testing

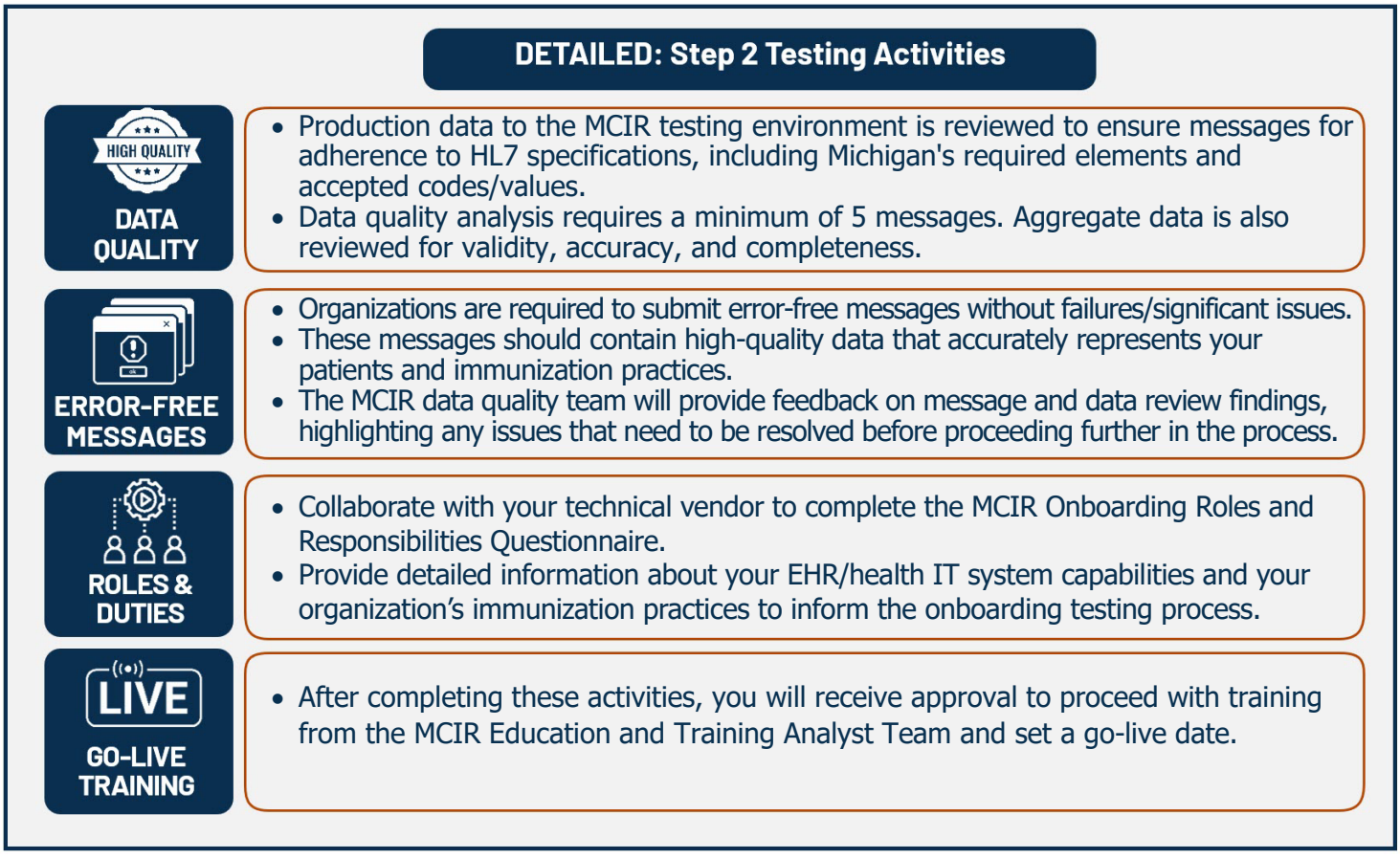
Objective: Identify and Address Interface and Data Quality Issues

After establishing connectivity, the next step is to test the EHR/health IT system's production messages and data in the MCIR testing environment. Utilizing real patient data provides the most accurate representation of the data exchange quality between the two systems in a production environment.

Upon successful completion of the testing process, the data quality analyst assigned to your onboarding project will notify you. They will then request that you collaborate with your technical vendor to complete the MCIR Onboarding Roles and Responsibilities Questionnaire. This questionnaire requires detailed information about your EHR/health IT system capabilities and your organization's immunization practices after onboarding testing.

Please note that during the testing phase, sites must continue using their current data entry method (hand entry) until their go-live date.

Figure 4

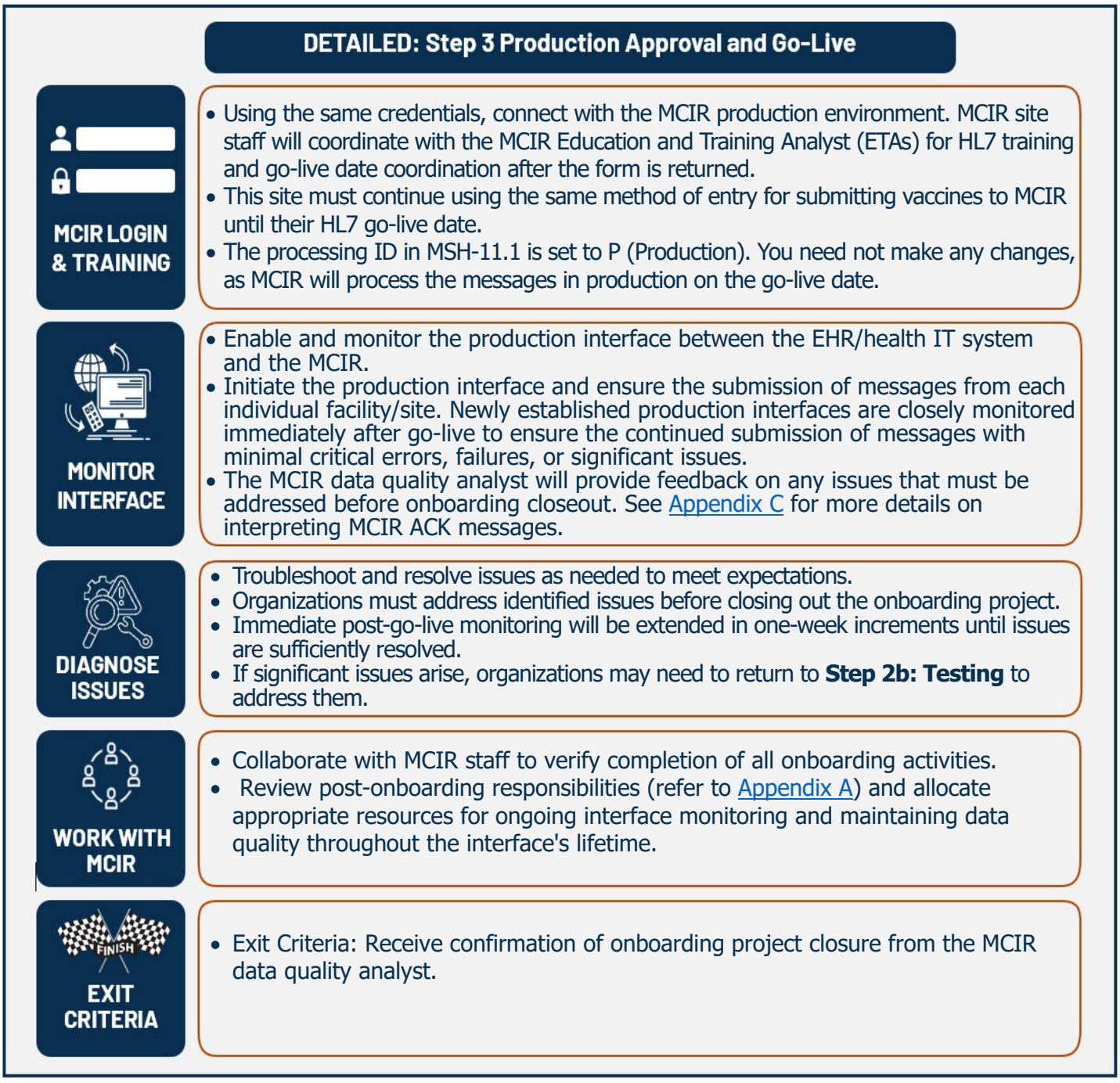


Step 3: Production Approval and Go-Live

Objective: Initiate Production Data Exchange

It is time to establish an interface with the MCIR production environment and conduct initial monitoring to ensure continued interface success. See Figure 5 for activities associated with Step 3, Production Approval and Go-Live.

Figure 5

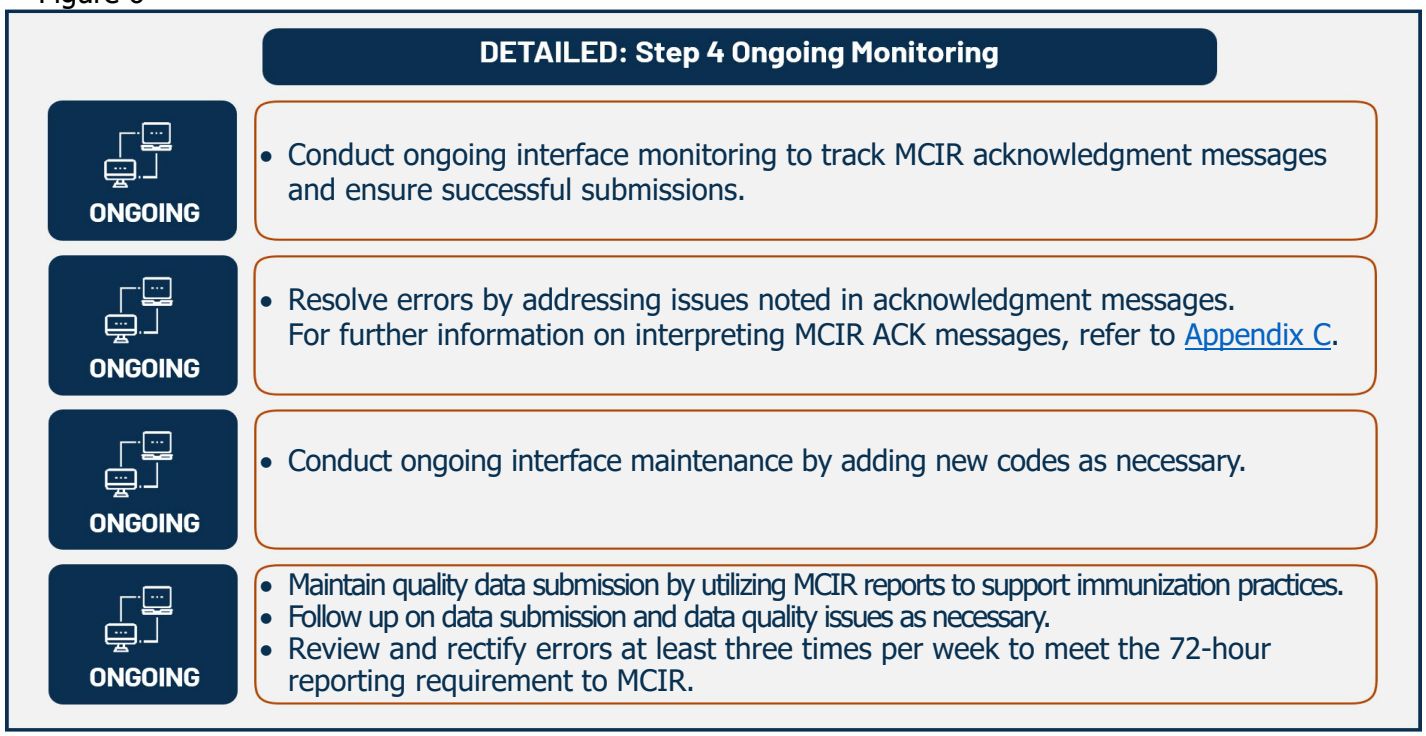


Step 4: Ongoing Monitoring

Objective: Ensure successful ongoing data exchange.

The last step of the onboarding process involves transitioning to ongoing monitoring and maintenance for the lifetime of the interface. See Figure 6 below for detailed activities associated with Step 4, Ongoing Monitoring.

Figure 6



SPECIAL TOPICS

Query-only Interfaces

A query-only interface is being developed to cater to facilities that do not administer vaccinations but require access to patient immunization records and vaccine forecasts. This interface facilitates connectivity through query and response (QBP/RSP) messaging, allowing for an abbreviated onboarding process. If you believe a query-only connection would benefit your organization, please register on HSTR and contact the MCIR analyst at MDHHS-MCIRQueryHelp@michigan.gov to seek approval and discuss further steps.

To ensure the successful implementation of query and response messaging in the production environment, physicians or clinical users must confirm its functionality clinically. This confirmation includes verifying that query responses are correctly displayed in the EHR/health IT system user interface and are appropriately consumed by the EHR/health IT system, if applicable.

Changes to Existing Interfaces: Retesting

Abbreviated testing protocols are employed to address changes, such as adding new facilities that utilize the same EHR/health IT system or the inclusion of query messaging to an existing submission interface. Contact the Data Quality team at MDHHS-HL7@michigan.gov. MCIR staff will collaborate with your organization to ensure retesting completion in these scenarios.

Re-Onboarding

Re-onboarding may be necessary to change the EHR/health IT system, message format, or transport. To start this process, complete an Onboarding Registration form on the HSTR. Re-onboarding (or the full onboarding process) may be required for unresolved production interface issues.

APPENDICES

APPENDIX A: Onboarding Responsibilities

A successful onboarding process hinges on the active involvement of representatives from the MCIR team, the provider organization, and the EHR/health IT system technical team. The tables below outline the key responsibilities of each primary stakeholder throughout and following the onboarding process.

Figure A1: MCIR and Immunization Program Staff

STAKEHOLDER: MCIR and Immunization Program Staff

Responsibilities During Onboarding	Responsibilities Post Onboarding (Ongoing Monitoring)
Coordinate and manage the project, ensuring effective communication and customer service.	Conduct training for efficient use of the MCIR.
Provide a suitable testing and validation platform.	Maintain ongoing communication regarding expectations for production interface upkeep
Clearly communicate onboarding process details and success criteria.	Monitor data feeds for errors.
Ensure accessibility and currency of onboarding documentation.	Notify organizations promptly of any changes or outages that could affect existing interfaces.
Provide timely feedback on message conformance and data quality.	Alter partners of pending changes immediately allowing for adequate prepare and implementation on their end.
Assist in identifying and troubleshooting issues.	Regularly update documentation as requirements and standards evolve.
Set and maintain clear expectations for the process, milestones, and timelines.	
Keep stakeholders informed of system updates and changes.	
Offer input on Vaccine for Children (VFC) requirements.	

Figure A2: Provider Organization Staff

STAKEHOLDER: Provider Organization Staff

Responsibilities During Onboarding	Responsibilities Post Onboarding (Ongoing Monitoring)
Ensure enrollment forms/paperwork are complete; work with EHR vendor to assign onboarding resources.	Confirm the initial setup is accurate and that data from the EHR is correctly populating the production MCIR.
Designate a primary representative to actively participate in all onboarding process aspects.	Monitor the ACK interface to detect any changes in message volume or quality.
Primary representative should attend all relevant meetings/conference calls.	Review relevant EHR/MCIR reports regularly to identify any issues that may indicate problems with the interface.
Supply production or production-quality data for testing and validation.	Report issues to Data Quality Team, MCIR Education & Training team, and EHR contacts to troubleshoot.
Coordinate suitable staff for end-user testing and troubleshooting.	Correct data entry errors; establish policies and procedures to direct workflow and data quality; train staff as needed.
Identify and resolve issues stemming from improper workflows or poor data entry that affect data quality.	Inform MCIR of any system changes, updates, or outages that could affect existing interfaces.
Collaborate with the EHR vendor or organizational technical staff to address interface or message errors.	Keep contact information current for organizational staff or EHR vendor; submit new roles and responsibility form to record changes.
	Notify MCIR of any mergers, acquisitions, or closures.
	Continue administering vaccinations!

Figure A3: EHR/Health IT System Vendor/Technical Staff

STAKEHOLDER: EHR/Health IT System Vendor/Technical Staff	
Responsibilities During Onboarding	Responsibilities Post Onboarding (Ongoing Monitoring)
Offer project management and technical expertise (testing and development) on behalf of the EHR team.	Support the provider organization in configuring its EHR appropriately.
Actively participate in all aspects of the onboarding process and attend all meetings/conference calls.	Train provider staff to monitor their interface (performance and ACKs) and resolve issues or seek assistance as needed.
Ensure alignment of the EHR system with HL7 transport and messaging standards.	Facilitate transitioning from the onboarding/ implementation team to the long-term support team.
Collaborate with MCIR to identify, troubleshoot, and promptly resolve any interface or message-related issues.	Assist in maintaining the connection and monitoring the interface for performance and errors.
Aid MCIR in managing expectations regarding processes, milestones, and timelines with the provider	Offer technical support to the provider organization and resolve any technical issues.
Assist provider organizations in configuring their EHR correctly.	Ensure conformance with HL7 transport and messaging standards.
	Notify the provider organization (and possibly MCIR) of any changes or outages that may impact existing interfaces.

Figure A4: Health Information Exchange

STAKEHOLDER: Health Information Exchange	
Responsibilities During Onboarding	Responsibilities Post Onboarding (Ongoing Monitoring)
Support connectivity testing and troubleshooting (staffing and infrastructure).	Assist provider organizations in configuring their connection correctly.
Offer project management and technical expertise on behalf of the HIE team.	Offer ongoing support for monitoring and maintaining connectivity.
Actively participate in onboarding and attend meetings/conference calls as appropriate.	Provide technical support to resolve any connectivity issues.
Ensure the HIE aligns with HL7 transport and messaging standards.	Ensure all MCIR ACKs are returned to the sender/provider organization.
Ensure all MCIR ACKs are returned to the provider organization/EHR.	Communicate with MCIR regarding any system changes/ updates or outages that may affect existing interfaces.
Work with MCIR, EHR vendor/provider, to identify, diagnose, and resolve interface/message-related issues promptly.	Provide the MCIR with updated contact information for staff changes.
Aid MCIR in managing expectations regarding processes, milestones, and timelines with the provider organization.	
Assist the EHR vendor/provider organization with the proper configuration of the EHR.	

APPENDIX B: Provider MCIR Onboarding Checklist

Figure B1

Step 1: Discovery and Planning		
STEP/ACTIVITY	RESOURCES	STATUS
Step 1A: Readiness		
Enroll in MCIR		
Ensure technical capabilities to support immunization data exchange		
Complete the Onboarding Registration IN HSTR		
Step 1B Kickoff		
Prepare for onboarding and data exchange with MCIR		
Step 2: Development and Testing		
Step 2A: Connectivity		
Implement credentials to connect with the MCIR testing environment		
Troubleshoot to resolve issues as needed		
Step 2 B: Testing		
Submit production and data messages to MCIR's testing environment for review.		
Complete the Onboarding Roles and Responsibilities document		
Continue hand-entering vaccine data directly into MCIR during the Testing phase		
Step 3: Production Approval and Go-Live		
Participate in a "Go Live Training" with MCIR Education and Training Analyst		
Enable and monitor the production interface		
Confirm onboarding close		
Step 4: Ongoing Monitoring		
Conduct ongoing interface maintenance and monitoring		
Resolve errors		
Maintain quality data submission		

APPENDIX C: Interpreting ACK Messages

Figure C1

Interpreting ACK Messages*					
MSA-1 Value	**Application Acknowledgement**	**National IG Description**	**ERR Segment(s) and ERR-4 Severity**	**Understanding of MCIR Response**	**Sender Follow-up Expectation**
AA	**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	**ERROR**	Message accepted and processed; errors are reported.	At least one ERR segment with severity of "**W**" for **warning**. (No severity "E" errors)	Message accepted, but potential issues may include nonfatal errors that could lead to data loss.	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 MCIR rejected data it deems important.	Take action to correct issue(s) in sending system and resubmit. **
AR	**REJECT**	Message rejected for: ·Unsupported message type ·Unsupported event code ·Unsupported processing ID ·Unable to process due to reasons not related to format or content.	At least one ERR segment with severity of "**E**" for **error**, with 1 of 4 conditions specified.	Message was rejected and not processed.	Take action to correct issue(s) in sending system and resubmit. **

*Adapted from Guidance for HL7 Acknowledgement Messages to Support Interoperability

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

APPENDIX D: Message and Data Review

Organizations must submit messages without critical errors, failures, or significant issues, containing high-quality data representing patients and immunization practices. In **Step 2B: Message and Data Review**, MCIR staff will provide feedback, including issues that must be addressed before proceeding. Testing should be completed within two weeks, but this timeline may be extended in one-week increments until issues are sufficiently addressed. The provider organization and EHR/health IT representatives are expected to collaborate with MCIR staff to resolve the issues identified during testing.

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

Figure D1

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 element

Figure D2

DATA REVIEW

Validity and Accuracy

- Vaccines administered by the organization are represented in the data received by the MCIR.
- Administered vaccinations have active and specific CVX/NDC codes (not "unspecified" CVX codes).
- Vaccination encounter date must not be before a patient's 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).
- The date of the vaccination encounter should not be the same as the patient's date of birth unless it is recommended for administration on the date of birth, e.g., for 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.

Figure D3

DATA REVIEW

Completeness

- The volume of vaccines submitted appropriately reflects the organization's immunization practice for a given time.
- Submitting 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 MCIR.
- Submission reflects the appropriate proportion of 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