MASSACHUSETTS IMMUNIZATION INFORMATION SYSTEM

MIIS

Onboarding Process: Electronic Data Exchange

Version 1.2017

Last Updated: 9/26/2017

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Introduction

This document outlines the onboarding process for providers submitting data to the Massachusetts Immunization Information System (MIIS) though electronic data exchange via Health Level 7 (HL7) messaging. The MIIS application is hosted on the Executive Office of Health and Human Services Virtual Gateway (EOHHS VG). The MIIS clinical and technical teams complete the onboarding process with healthcare provider sites and/or medical groups in collaboration with the Massachusetts Health Information HIway. This document describes the onboarding steps and workflows necessary for both clinical and technical integration needed to (1) comply with MIIS legislation, (2) establish an HL7 data exchange interface with electronic health/medical record systems, as well as an optional (3) one-time flat file upload of legacy patient immunization data to the MIIS.

The MIIS clinical and technical teams work with healthcare provider sites to achieve technical and clinical readiness respectively. The onboarding timeframe for each site is dependent on the engagement of the site clinical representatives in tandem with their EHR vendor and/or other technical resources. A checklist for onboarding can be found in the document addendum.

MIIS Contact Information

Massachusetts State Public Health Laboratory
Immunization Program
MIIS Helpdesk
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Phone: 617-983-4335
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E-mail: miishelpdesk@state.ma.us
Web: MIIS Application: www.mass.gov/vg
       ContactMIIS Resource Center: www.contactmiis.info

High Level Steps to Onboarding

Onboarding with the MIIS can be broken down into 4 phases:

Preparation → **Technical & Clinical Integration** → **Data Review** → **MIIS Go-Live**

Phase 1: Preparation

- Registration
- Data Exchange Profile
- HL7 Message Pre-testing Validation
- MIIS Onboarding Invitation
- Onboarding Kick-off Call

Phase 2: Technical and Clinical Integration

- Technical – EHR to MIIS Certification Environment Connection
- Technical – Data Review in Certification Environment
- Clinical – MIIS Materials and Clinical Workflow based on MIIS Legislation
- Clinical – Staff Training
- Clinical – Vaccine Manager Education

Phase 3: Data Review

- EHR to MIIS Production Environment Connection
- Data Review in Production Environment

Phase 4: Go-Live

- Workflow Implementation
- Quarterly Data Quality Review
- On-going User Management

1. *Registration*
2. *Data Exchange Profile*
3. *HL7 Message Pre-testing Validation*
4. *MIIS Onboarding Invitation*
5. *Onboarding Kick-off Call*

Task 1: Registration

A site or group must complete one-time registration for both the MIIS and the Virtual Gateway (VG) online through the **ContactMIIS Resource Center** (www.contactmiis.info). During this process a number of registrations take place concurrently:

- Virtual Gateway Site/Group Registration – creates site/group account within the *Virtual Gateway*.
- Virtual Gateway Access Administrator (AA) Registration – ability to manage other users on behalf of the created site/group.
- MIIS Site/Group Registration – creates site/group account within the *MIIS*.
- MIIS User Registration – creates user account in the *Virtual Gateway* with access to the *MIIS* application.
- ContactMIIS Resource Center Registration – creates an account within the *ContactMIIS Resource Center*, with access to:
  - Group/Site/User registration forms
  - MIIS User permissions and management
  - Identify a *Clinical Champion*(s) – person(s) with clinical knowledge who will serve as a roll-out site/group lead
  - Identify a Technical Lead(s) – person(s) with in depth knowledge of HL7 messaging and the EHR system
  - Meaningful Use tools (see further detail in the Meaningful Use section below)

Prior to beginning online registration, please review our Registration Overview for further details on the registration process and please consider the following before making your selection on what type of registration should be completed:

- **Group Registration**: Medical groups, Medical Organizations or Affiliations and Pharmacy Chains. See the Group Registration Guide for step-by-step instructions. **Note**: Medical groups must submit a site list of all locations that administer vaccine to the MIIS Helpdesk via email: miishelpdesk@state.ma.us.
- **Site Registration**: Single-site healthcare provider, local health department, public school district, independent or charter school, or single pharmacy. See the Site Registration Guide for step-by-step instructions. **Note**: Registration may have already been completed for a site, in such cases contact a registered Access Administrator (AA) to first be identified as a new MIIS User or additional AA, and then complete MIIS User Registration.
- **MIIS User Registration**: Individual that belongs to a site/group that is already registered for the MIIS. See the User Registration Guide for step-by-step instructions. **Note**: registered Access Administrator (AA) must first identify the individual as a new MIIS User or additional AA before MIIS User Registration can be completed.

Meaningful Use

If a site/group wants to attest for Meaningful Use (MU) based on electronic data exchange between their EHR and the MIIS, their *Registration of Intent* may be completed online during the initial MIIS Site registration process. If site registration has already been completed, the *Registration of Intent* can be completed on the *ContactMIIS Resource Center.* Please see the MU Registration of Intent Guide for a Single Site or Group for step-by-step instruction.

Note: if login access to the *ContactMIIS Resource Center* is unavailable please contact an Access Administrator from the site/group to be identified as an authorized user. If you need more information please call the MIIS Helpdesk at 617-983-4335.

Task 2: Data Exchange Profile

The *Data Exchange Profile* is required technical information that must be completed before moving forward in the onboarding process and provision of this information is integrated into site/group registration on the *ContactMIIS Resource Center*. If it was not completed during the initial registration it must be completed before the onboarding process can move forward.

Task 3: HL7 Message Pre-testing Validation

EHR data must be converted into Health Level 7 (HL7) messages to be successfully transmitted and received by the MIIS. For this reason HL7 message pre-testing validation takes place before moving forward with the onboarding process. An online validation tool is used to confirm properly formatted HL7 messages and can assist in identifying any errors or warnings. The tool is located on the *ContactMIIS Resource Center* please refer to the MIIS HL7 Transfer Specifications for HL7 message requirements.

When pre-testing validation is passed, the MIIS Helpdesk is automatically alerted that onboarding eligibility is approved and a site/group can expect to receive an email invitation from the MIIS Helpdesk to begin the onboarding process.

Task 4: MIIS Onboarding Invitation

After receiving an email invitation to onboard it must be *accepted* online on *the ContactMIIS Resource Center*. Once accepted, preferred date(s) and time(s) are shared to schedule an official onboarding kick-off call with a MIIS Roll-Out Support Specialist.

Task 5: Onboarding Kick-off Call

An Onboarding Kick-off Call is the official start to the process of onboarding with the MIIS. It establishes the main contacts at the organization as well as the EHR vendor (or internal technical teams) to work with the MIIS team. During this call the organization will be presented with the onboarding stages and participants are encouraged to ask questions to ensure that all understand the onboarding process and what is expected of both the clinical and technical teams. During this step the MIIS Roll-Out Specialist will need information on the organizational structure and day-to-day workflows to make recommendations and customize the onboarding process to the unique needs of the organization and EHR in use. **Note**: the Onboarding Kick-off call requires a 1-hour commitment from participants and includes an online presentation, so access to the internet and computer is needed.

6. *Technical – EHR to MIIS Certification Environment Connection*
7. *Technical – Data Review in Certification Environment*
8. *Clinical – MIIS Materials and Clinical Workflow based on MIIS Legislation*
9. *Clinical – Staff Training*
10. *Clinical – Vaccine Manager Education*

Please Note: Technical and Clinical Integration tasks are usually performed *concurrently.*

Technical Integration:
Task 1: EHR to MIIS Certification Environment Connection

The MIIS Certification environment (cert) is a secure site that can accommodate Patient Health Information (PHI). Internal organizational technical leads or EHR representatives work to connect and send *real patient immunization data* via properly formatted HL7 messaging from the EHR to the MIIS certification environment. The MIIS Roll-Out Technical Coordinator will review these messages for a number of factors, including message counts and accuracy, timeliness and completeness.

Technical Integration
Task 2: Data Review in Certification Environment

Once there is a sufficient amount of data in the certification environment (cert) reviewing the data is a critical next step. The Roll-Out Specialist will schedule a call with the identified *Clinical Champion(s)* and explain the process necessary to review a sampling of the data in cert to ensure accuracy, timeliness and completeness. In the event of errors the group/site technical and clinical leads will work with the MIIS roll-out team to resolve these issues and, when necessary, conduct additional rounds of data review to ensure the all issues have been addressed before moving forward in the onboarding process.

Clinical Integration
Task 3: MIIS Materials and Clinical Workflow based on Legislation

All administered immunization data must be reported to and documented in the MIIS. Healthcare providers are mandated by law (M.G.L. Chapter 111, Section 24M) to discuss this mandate with their patients and their parents or guardians (for those under 18 years of age), known as the *Provider's Duty to Inform*. The law also stipulates that patients and their parents or guardians have the right to object (or withdraw a previous objection) to sharing their or their child's immunization data with other non-MDPH users of the MIIS, knowns as the *Patient's Right to Object (or Withdraw previous Objection) to Data Sharing*.

Provider's Duty to Inform:
In order to comply with the legislation many MIIS Materials have been created to support this need, such as: MIIS Factsheets, Posters, Sample Letters, etc. All of these materials are available on the *ContactMIIS Resource Center*.

Patients' Right to Object (or Withdraw a previous Objection) to Data Sharing:
After being informed about the MIIS, patients and their parents or guardians may decide to object (or withdraw a previous objection) to sharing their or their child's immunization data with other non-MDPH MIIS users; this request may be made at any point in time any number of times. To complete this request they will need to complete an Objection (or Withdrawal of Objection) Form (PDF | RTF), available on the *ContactMIIS Resource Center*, to change their "data sharing status" in the MIIS. See the Training Video 2: Data Sharing or Quick Reference Guide Data Sharing for step-by-step instruction of the process within the MIIS.

In this step a decision will be made and documented on how the *Provider's Duty to Inform* and the *Patient's Right to Object (or Withdraw previous Objection) to Data Sharing* will be implement for the site/group. The MIIS Roll-Out Specialist will ensure:

- The group/site Clinical Champion(s) reviews the MIIS legislation and regulations and submits a *Clinical Workflow* outlining (1) the steps clinicians and staff will take to inform patients that their immunization records are being shared in the MIIS and (2) the steps necessary to process patient requests to object (or withdrawals of previous objections) to data sharing in the MIIS.
- The Roll-Out Specialist will provide a Sample Clinical Workflow that can be customized to fit the operations of the site/group.

Note: The MIIS Clinical Workflow is documented and submitted in this stage, but actually implemented after a site/group's go-live.

Task 4: Staff Training

The MIIS has developed a variety of training tools and materials, all available on the *ContactMIIS Resource Center*, to assist MIIS Users in understand the system and help them learn how to navigate and use key functions and features.

- The MIIS Training Videos are the foundation of our MIIS training tools, and we recommend that all users view each, in sequential order, at least once prior to using the system. Each video provides a quick and easy way to learn specific functions.
- The MIIS Quick Reference Guides (QRGs) are supplementary materials to the MIIS Training Videos, serving as quickly accessible, easy-to-print, reminders of the steps necessary for completing specific functions.
- The MIIS User Manual provider very detailed definitions, descriptions and step-by-step instructions on all functionality.

Task 5: Vaccine Manager Education

The MIIS system is comprised of several well integrated modules, including the Immunization Registry module and the Vaccine Management module. Each immunization event that is reported to the Immunization Registry by a site is automatically compared to the same site's vaccine inventory stored in Vaccine Management assuming all required data elements needed are being sent. If there is a match, a dose of the vaccine is deducted from the inventory. This system feature helps manage vaccine inventory and usage for the Vaccine Manager. Since the system is potentially constantly updating the vaccine inventory and usage, the Vaccine Manager needs to have a solid understanding of how this occurs and what tools are available to assist with reconciliation. This should be comprised of, but not limited to the following:

- How and when are vaccine data being sent to the MIIS
- How their EHR is set up to handle immunization entries (ex. Drop down selection, free text fields, 2-D bar code scanner)
- What is their process when receiving state supplied vaccines and how does the information get into their EHR
- Demonstration of how inventory deduction works
- What happens to inventory when deleted immunization events are sent
- How to use the Inventory Decrementing Tool
- Who to contact when help is needed

Vaccine Manager Education is scheduled to be 1-hour and will be completed via GoToMeeting, so the participant will need access to a computer and internet access. Once training has been completed, it will be indicated on the site/group profile as a completed step in the onboarding process.

Phase 3: Data Review

1. *EHR to MIIS Production Environment Connection*
2. *Data Review in Production Environment*

Once Phase 2 is complete the next phase is to move the organization into the MIIS Production Environment (prod), which is the live MIIS environment. In order to ensure the data is being sent, transmitted and received accurately, this Data Review step is necessary.

Task 1: EHR to MIIS Production Environment Connection

- MIIS Roll-Out Specialist and Roll-Out Technical Coordinator confirm that from both a clinical and technical standpoint, a site/group is ready to transmit data from their EHR to the MIIS.
- Technical authorization is given for sending data to prod by adding the site's PIN to the MIIS application via the user interface.
- EHR systems can connect to the MIIS via a Local Area Network Device (LAND) installation or a Simple Object Access Protocol (SOAP) interface set up through the Mass HIway. For more information on these transport mechanisms to make the best choice for your technical integration visit the Mass HIway Connections Options website.
- The chosen transport mechanism credentials and production endpoint is shared with technical leads of site/group.
- The official "Production Date" is set in the MIIS application and *ContactMIIS Resource Center* on the site/group profile.

Provide Production Credentials

- EHS Technical Operations provides production credentials directly to site/vendor.
    - For SOAP, EHS Technical Operations emails AIMS username and password directly to the site/vendor.
    - For SOAP XDR and LAND, the Mass HIway Onboarding Team works with the site/vendor to communicate the production endpoint. Since LAND does not provide Acknowledgments during Certification testing, the HIway Onboarding Leads ensure LAND users are able to retrieve Acknowledgments in production.

Begin Production transport

- The site/vendor updates the Web Services Definition Language (WSDL) with the appropriate production endpoint and initiates sending HL7 messages to prod. Initial message count verification is completed by the Roll-Out Technical Coordinator.

Task 2: Data Review in Production Environment

The site/group Clinical Champion(s) and/or other designated individual(s) complete a data review in production to compare demographic and immunization in the MIIS with data entered into EHR on or after their official "Production Date" (that was set in the system). The MIIS Roll-out Specialist will provide the methodology and tools to assist with this process. If any data problems are found, all teams work together to research the cause and correct the problem. Once it is adequately established that the data is accurately being reported to the MIIS, the site/group determines an official MIIS "Go-Live Date".

Phase 4: MIIS Go-Live

1. *Workflow Implementation*
2. *Quarterly Data Quality Review*
3. *On-going User Management*

Upon completion of all of these steps in the onboarding process an email confirmation of ongoing submissions and go-live status will be sent to the site/group. If any questions arise, contact the MIIS Helpdesk at: miishelpdesk@state.ma.us or 617-983-4335.

Task 1: Workflow Implementation

The determined "Go-Live Date" is set in the site/group profile in MIIS application and *ContactMIIS Resource Center*. Any immunization records transmitted to the MIIS on or after this date will now be accessible in the MIIS. Therefore, the site/group must now implement their documented Clinical Workflow to inform patients about the MIIS and processes requests to object (or withdraw a previous objection) to data sharing in the system.

Task 2: Quarterly Data Quality Review

All sites/groups reporting immunization data to the MIIS are encouraged to conduct ongoing data quality reviews at least on a quarterly rotation, to ensure data is being transmitted appropriately. We recommend that sites review back-end warning/error reports provided by their vendor/technical leads and fix any problems that occur. Optionally, upon request, the MIIS can send an automated weekly HL7 Message Summary email indicating any errors that may require further inquiry. It is also recommended that up-to-date CDC IIS Standard Code Sets for CVX and MVX code tables and VIS publication dates is maintained for proper reporting.

Task 3: On-going User Management

As mentioned previously during the *Registration* and *Clinical Integration* phases, MIIS User Management is possible throughout the onboarding process, but it will also be an on-going task necessary for maintaining as a sites/groups experience staff transition. It is important to both identify new staff needing access to the MIIS as well as deactivating staff that no longer needs access to the system. This ensures access to MIIS data is kept secure and only those employed by a registered site/group and with individual registered access are able to log into the MIIS.

 Note: Allowing staff access to the MIIS is strongly encouraged as an understanding of the system and the available tools can assist staff with clinical decision making and help increase overall immunization coverage rates at your organization.

Registered Access Administrators (AAs) of a site/group manages all MIIS Users via the *ContactMIIS Resource Center*, where they can:

- Identify additional staff to register to become AAs and/or MIIS users
- Deactivate an existing AA or MIIS User that no longer needs access to the MIIS
- Identify or edit additional site/group contacts, such as technical leads, site managers, etc.

Note: Sharing Virtual Gateway and MIIS usernames and passwords is a violation of the signed services agreements and will result in termination of an organization's account with the Virtual Gateway and the MIIS.

Abbreviations

AA *– Access Administrator*

Cert *– MIIS Certification Environment*

EHR *– Electronic Health Record*

EOHHS *- Executive Office of Health and Human Services*

HIway *– Massachusetts Health Information Highway*

HL7 *– Health Level 7*

LAND *– Local Area Network Device*

MIIS *– Massachusetts Immunization Information System*

Prod *– MIIS Production Environment*

SOAP *– Simple Object Access Protocol*

VG *– Virtual Gateway*

WSDL *– Web Services Description Language*

MIIS Onboarding Checklist

*This document outlines the high level steps sites must complete to transmit data to the MIIS through electronic data exchange. The onboarding checklist is categorized into **4 distinct phases***:

Preparation	Technical & Clinical Integration	Data Review	MIIS Go-Live

Site Name:		EHR Vendor/Company:	
Site PIN:		EHR Product & Version:	
Site Address:		EHR Vendor Rep Name:	
Site Phone:		EHR Vendor Rep Phone:	
Site Email:		EHR Vendor Rep Email:	

PHASE 1: Preparation

MIIS CLINICAL REGISTRATION	MIIS TECHNICAL REGISTRATION	HIWAY REGISTRATION
☐ Review MIIS Legislation & Regulations	☐ Complete the Data Exchange Profile	
☐ Obtain buy-in from site leadership	☐ Establish HL7 2.5.1 compliant message through Pre-testing/Message Formatting Validation	
☐ Respond to On-boarding invitation	☐ Identify technical leads for testing	
☐ Identify **Clinical** "**Champion(s)**"	☐ MIIS IT connects site's IT/Vendor with HIway leads	☐ Initial HIway registration
☐ Complete MIIS registration & Meaningful Use registration of intent (if applicable)		

PHASE 2: Technical & Clinical Integration

MIIS CLINICAL INTEGRATION	MIIS TECHNICAL INTEGRATION	HIWAY INTEGRATION
☐ Submit site's informing process workflow (with instructions for handling objection / withdrawal of objection forms) to MIIS	☐ Decide if and how site will complete legacy immunization load	☐ Setup transport protocols with authorization to MIIS CERT
☐ Train on MIIS functionality	☐ MIIS IT sets up site in CERT and begins receiving test data	☐ Complete testing
☐ Set tentative timelines and Go-Live date	☐ Complete CERT testing and notify MIIS Clinical Lead	☐ HIway indicates it is ready for connectivity
☐ Conduct data quality checks in CERT	☐ Assist with any DQ issues identified	

PHASE 3: Data Review

MIIS CLINICAL TEAM	MIIS TECHNICAL TEAM	HIWAY TEAM
☐ Conduct Data Quality Checks in Production	☐ MIIS IT notifies HIway site ready to be moved to Production	☐ HIway provides production credentials & confirms connectivity

PHASE 4: Go-Live

MIIS CLINICAL TEAM	MIIS TECHNICAL TEAM	HIWAY
☐ Confirm ready to Go-Live	☐ Confirm ready to Go-Live	☐ Confirm ready to Go-Live
☐ MIIS Lead enters Go-Live Date		
☐ Go-Live and implement workflows		

References

The following are documents that are useful references for the onboarding process and roll-out teams:

Technical Onboarding Documents	Link
• **HL7 Checklist and Mapping Table** • **HL7 Transfer Specifications** • **CDC Certification WSDL** • **Transport Instructions for Soap Web Services** • **Provider Test Cases and Guidelines** • **HL7 Sample Test Message** • **Flat File Specifications**	**https://www.contactmiis.info/onboarding.asp**
Clinical Onboarding Documents	
• **MIIS Registration Guide**	**https://www.contactmiis.info/enrollmentType.asp**
• **Regulations**	**http://www.mass.gov/courts/docs/lawlib/104-105cmr/105cmr222.pdf**
• **Materials for MIIS Clinical Integration**	**https://www.contactmiis.info/clinicalIntegration.asp**
CDC	
• **Vaccine and Manufacturer Code Sets**	**http://www2a.cdc.gov/vaccines/iis/iisstandards/vaccines.asp?rpt=cvx**