



# **Maryland Department of Health**

## **Electronic Laboratory Reporting (ELR)**

### **Onboarding Guide**

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<https://health.maryland.gov/phpa/OIDEOR/CIDSOR/pages/Home.aspx>

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## **Purpose**

This guide outlines the steps and requirements for onboarding with the Maryland Department of Health (MDH) for electronic laboratory reporting (ELR) of notifiable conditions. It ensures compliance with public health reporting laws and promotes high data quality and security. This guide is specifically designed for facilities that will be sending data via HL7.

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## **1. Prerequisites**

Before beginning ELR onboarding, labs must:

- Possess a valid CLIA number
  - Be capable of producing HL7 v2.5.1 messages
  - Have a secure data transport method (e.g., SFTP, AIMS, CRISP)
  - Have a designated technical and/or program contact
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## **2. Documents to Review**

- [MDH Validation Specifications](#)
  - [Maryland Reportable Diseases and Conditions List](#)
  - [HL7 2.5.1 ELR Implementation Guide](#)
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## **3. Onboarding Steps**

### **a. Enrollment/Pre-testing: Initial Contact**

- Complete [ELR Enrollment Form](#) or contact the MDH ELR team at [mdh.elronboarding@maryland.gov](mailto:mdh.elronboarding@maryland.gov)
- A MDH ELR team member will be assigned to your project
- Once assigned, a kick-off call will be scheduled to begin the onboarding process.

### **b. Enrollment/Pre-testing: Kick-off Call**

- Introductions and project overview
  - Review message content, transport, validation steps, and timeline

### c. Enrollment/Pre-testing: Compendium Request and Review

- The MDH ELR team will request a lab compendium.
  - The lab compendium should include all tests done in-house and the test codes ([LOINC](#)s) associated with these tests. If panel tests are reported, the ordered test code and the resulted test codes for each analyte needs to be included.
  - If send-outs are included in the compendium, they should be noted as such and include the performing facility/lab. The ordering facility will need to ensure that the performing facility can electronically report to MDH. If not, the ordering facility will need to include the send-out results in their electronic feed.

### d. Acceptance Testing: Test Message Submission

- The lab should send HL7 v2.5.1 test messages covering a range of [MD reportable conditions](#). Depending on what type of tests are run in the laboratory, the following may be requested:
  - Culture results including susceptibilities for tuberculosis, Carbapenem-resistant Enterobacteriaceae (CRE), and Carbapenem-resistant *Acinetobacter baumannii* (CRAB)
  - PCR tests (This includes panels such as BioFire Blood Culture Identification)
  - Tests with titers (ex. Rapid Plasma Reagin)
  - Tests with quantifiable results (ex. Hepatitis C RNA)
- MDH will also expect during testing that corrected messages are sent to demonstrate the laboratory is able to send them when needed. **To re-send a final result as a corrected result after making changes in the message to resolve the errors, update OBR-25 and OBX-11 from "F" for final to "C" for corrected.**
- MDH will validate structure, vocabulary ([LOINC](#), [SNOMED](#)), and content.
- The [NIST validation tool](#) may be useful for testing.
- Sample messages can be found in MDH's [HL7 specifications document](#).

**e. Acceptance Testing: Feedback and Corrections**

- MDH will review error logs and provide feedback to the lab.
- The lab will need to correct issues and re-submit until test messages are validated.
- Once the MDH ELR team has sufficiently evaluated the messages, the lab will be approved for production.

**f. Production: Parallel Production**

- The lab should submit HL7 messages while sending results in an alternative method (line list, fax) for comparison.
- This process validates real-time processing and ensures consistency.

**g. Production: Go-Live**

- MDH and the lab will monitor for 2–4 weeks to ensure complete and accurate reporting.
- After this review is complete and MDH gives approval, the lab can transition to full production ELR.

**h. Maintenance**

- Once the lab is solely reporting electronically, this is considered the maintenance phase.
- The lab must notify MDH of any changes to test codes, addition of new tests, and changes in message structure.
- When new tests are being added, MDH encourages sending test messages first to confirm there are no issues.
- During the maintenance phase, the MDH ELR team may conduct maintenance reviews at any time to ensure the ongoing accuracy and effectiveness of the reporting process.
- Any major changes, such as a new LIS, will require the lab to undergo a validation process again. Please reach out to your assigned MDH contact in advance to notify them of any anticipated changes.

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**4. Transport**

- **Approved Methods:** SFTP, AIMS, CRISP
  - MDH will provide SFTP credentials to the lab once approved for production.

- If using AIMS, the filename must accurately reflect whether TEST or PROD messages are being sent.
  - [CRISP](#) is Maryland's health information exchange (HIE). If CRISP will be the intermediary between the reporting facility and MDH, the facility will need to coordinate with CRISP.
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## 5. Data Quality Expectations

- **Timeliness:** Report result within 24 hours.
    - [MDH's Reportable Disease list](#) includes the timeline in which different conditions should be reported, and whether the lab is required to submit a clinical specimen to the Maryland Public Health Laboratory (MDPHL).
  - **Completeness:** All required fields must be populated.
    - Please review the [MDH Validation Specifications](#) document.
  - **Accuracy:** Use approved vocabulary ([LOINC](#), [SNOMED](#), [PHIN VADS](#)).
    - LOINCs are required for OBX-3 (Resulted Test). LOINCs should also be used in OBR-4 as much as possible.
    - SNOMEDs should be used for microorganisms and qualitative results.
    - PHIN VADS [sex](#), [race](#) and [ethnicity](#) value sets should also be used. Currently, our system cannot accept expanded value sets.
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## 6. Troubleshooting and Support

Contact your assigned MDH ELR team member for troubleshooting and support.

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## 7. Contact

Please send any ELR inquiries to [mdh.elronboarding@maryland.gov](mailto:mdh.elronboarding@maryland.gov)

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