



Washington State
Department of Health
Electronic Laboratory Reporting
Onboarding Guide

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Document Summary

This document is a guide for the implementation of clinical data exchange from laboratories to the Washington Department of Health (WA DOH), for reporting notifiable conditions, as required in Washington Administrative Code (WAC) [Chapter 246-101](#). This is a supplemental document to the [HL7 2.5.1 Implementation Guide: Electronic Laboratory Reporting to Public Health Release 1](#). Health Level 7 (HL7) is a globally recognized standard of electronic data exchange for healthcare environments. The [HL7 2.5.1 Standard](#) explains the order and structure of all the different data fields for all healthcare related data, and the HL7 2.5.1 Implementation Guide contains specifics relating to Public Health reporting. This guide contains WA DOH requirements and constraints regarding Electronic Laboratory Reporting (ELR) only. This document is a supplement only, and not intended to include all HL7 data fields which may be transmitted to WA DOH.

WA DOH requires the use of Logical Observation Identifiers Names and Codes (LOINC®) for laboratory procedure (test) codes/names and laboratory order codes/names and Systematized Nomenclature of Medicine – Clinical Terms (SNOMED CT®) for the descriptions of findings, notably organism names, discrete result values, and the description of Specimen sources. Anyone submitting ELR data to WA DOH must use these code standards and any local codes used in the HL7 messages must be mapped from local codes into these standards.

For Healthcare Organizations seeking Promoting Interoperability certification for ELR with WA DOH, the use of HL7 2.5.1 Version 1 standard is required. The ELR team also requires submitters to use the [NIST ELR HL7 2.5.1 Validation Tool](#) to test their own HL7 messages prior to sending them to WA DOH. Most errors in format and content can be identified by this tool, however, most errors will be avoided by following the HL7 Version 2.5.1 Implementation Guide: Electronic Laboratory Reporting to Public Health.

Introduction

Participating in Electronic Laboratory Reporting (ELR) allows incoming laboratory data to be translated, processed, and routed to appropriate public health recipients (Local Health Departments and State Programs) for swift public health action. ELR allows facilities (hospitals and laboratories) to report test results for reportable infectious diseases through an automated and secure process. Washington DOH requires ELR data to be sent in the HL7 Format and must be configured according to [HL7 2.5.1 version 1](#). Facilities export data from their laboratory information systems in a standard HL7 file format and send it to the Washington State Department of Health (DOH) electronically through a secure transport method.

Benefits of ELR:

- Automation of reporting reduces lab person hours and duplicate data entry
- Single data depository removes need for multiple county faxes and phone calls
- Faster, more accurate data lead to improved public health efficacy
- Reduced burden for Local Health Jurisdiction (LHJ)

ELR will replace paper-based reporting for lab reporting for notifiable conditions. **There are four phases to ELR: registration, onboarding preparation, validation, and Go-Live in production.** Eligible hospitals must continue traditional reporting practices (i.e., fax, mail, web submitter) during implementation of electronic laboratory reporting until they complete all onboarding and quality assurance processes. Do not turn off traditional reporting methods until notified to do so.

Washington Department of Health strictly adheres to the WAC reporting requirements when onboarding and may be [found here](#).

Note:

ELR **does not meet** the time frame required by Washington State law for reporting immediately notifiable conditions. Even if an eligible hospital is participating in ELR, all results that are immediately notifiable **must continue to be reported by phone**.

Registration

Facilities interested in attesting to [Medicare Promoting Interoperability](#) measures, may [register their intent here](#). This includes registering for other Public Health and Data Exchange measures.

Onboard Preparation

- [Electronic Laboratory Reporting | Washington State Department of Health](#)
- [Supplemental Guidance to ELR Submitters](#) outlines changes required to accommodate the State Board of Health rule changes which took effect January 1, 2023.
- [NIST ELR Validation Suite](#) - The NIST Electronic Lab Reporting (ELR) Validation Suite is intended to be used for Health IT ONC 2015 Edition certification testing. This is the best tool to use when preparing HL7 ELR test messages to Public Health. Use the Context-based Validation Tab for ONC certification testing of de-identified message data.

Please test each of the following result types:

- Coded result
 - Numeric result
 - Structured numeric result (if produced by your system)
 - Text result (if produced by your system)
-
- Listserv – The Listserv provides general information related to WA-specific electronic laboratory reporting, national updates, frequently asked questions, and future listening sessions. Emails will be sent out as needed and likely be between 1-2 emails per Month max. You can subscribe to the listserv [here](#).

Facility Specifics

- Facilities with multiple locations: If your facility reports for more than one location, fill out the Multiple Facilities Locations Worksheet (Appendix E) Provide Clinic Name, Address, City, State and CLIA# and return as soon possible to the ELR team.

Validation

Once DOH has dedicated resources to begin onboarding your facility for ELR we will set up a kickoff presentation to review the onboarding process.

Kickoff Presentation:

The kickoff will be to discuss the onboarding process, review requirements, confirm data transport options and set a timeline for GoLive.

Connection

DOH requires submitters to submit data electronically via OneHealthPort (OHP) or APHL Informatics Messaging Services (AIMS). Once the connection is established with either of these options, they will work with you to send a test file for confirmation WA DOH is receiving the data.

- [OneHealthPort Health Information Exchange](#) (OHP) is the Washington State Health Information Exchange (HIE) and DOH preferred transport method. Washington State's Health Information Exchange provides healthcare organizations a secure, low-cost means to share standardized messages with trading partners on a system-to-system basis.
 - To begin register here [OHP HIE Support Request Form - Formstack](#) to submit a ticket, select “HIE Contracting” under the *Support Request* action. Type “We would like to begin submitting ELR data to WA DOH” into the text box that appears.
 - There is a nominal fee to use this service.
 - OHP distributes clinical data to multiple DOH agencies including Syndromic Surveillance, Immunizations and Cancer Registry in addition to ELR.
- [AIMS Platform \(aphl.org\)](#) [APHL Informatics Messaging Services](#) (AIMS): AIMS is a secure, cloud-based platform that accelerates the implementation of health messaging by providing shared services to aid in the visualization, interoperability, security and hosting of electronic data.
 - To begin, complete intake form here [AIMS Centralized ELR Customer Intake Form](#). AIMS distributes test results to all states.
 - Once the Healthcare Organization is onboarded with AIMS, they must continue to report manually to WA DOH until ELR is onboarded into our Production environment. Going live with AIMS does not mean you are live with WA DOH.

Structural Validation Process

During this testing stage, the submitter will send production level reportable condition messages to WA ELR through the electronic connection set up to our test system.

- In the first stage of validation, Department of Health staff will review the structure of your ELR messages. This review checks to make sure your messages follow HL7 standards as required in the [HL7 Version 2.5.1 ELR Implementation Guide](#); WA supports ELR 2.5.1 release 1. ELR will work with submitter to correct any problems that do not meet message structure requirements.
- Beyond HL7, DOH programs may require other information basics not listed in the HL7 Implementation Guide
- Conditions with low volume may require the onboarding team to request test cases to properly validate rare and seasonal conditions.

Content Validation Process

- Based on review of ANC (All Notifiable Conditions) worksheet, validation staff will verify the performed tests and quantity.
- Submitters are required to send production-level messages daily. ELR requires a sufficient volume of data to complete validation.
- Process will continue until ELR has a successful sampling of all messages listed on the ANC worksheet.
- Submitters are expected to respond within two business days to failures.

Production Preparation

Once the Onboarding team has validated the data is ready to be moved into Production, confirmation will take place with the submitter for Go-Live date and needed steps. During this time, typically 2 weeks, we require the submitter to continue manual reporting of all notifiable conditions to give the LHJ's, DOH ELR and Epidemiologists time to confirm receipt of all results. We call this period Parallel Production.

- Data Exchange onboarding team coordinates the changeover to the production system.
- Once an eligible hospital has completed validation they will receive an acknowledgement of their success and be placed into production status. At this point, eligible hospitals may discontinue traditional reporting of non-immediately notifiable conditions, as well as discontinue sending parallel paper for validation.
- ELR Production does not meet the WAC requirement for Immediate Notifiable Conditions, and those must continue to be reported manually in addition to ELR.

Production Live

Submitters live in production will continue to be monitored for any changes or errors during submission. At this point the onboarding process is complete and the submitters are in Production Support.

- WA ELR production support will continue to reach out to the submitter contact(s) to correct messages or follow up on missing laboratory data.
- WA ELR would appreciate communication when any changes or upgrades occur with your system or transmission to monitor accuracy of reporting. Please send an email to dataexchange@doh.wa.gov

Appendix A

| MESSAGE HEADER SEGMENT (MSH) for Electronic Laboratory Reporting (ELR) in WA State. <i>Do not use for Syndromic Surveillance.</i> | | | |
|--|---------|-------|--|
| Element Name | Field | Usage | Comments |
| MSH-4, MSH-5 and MSH-6 implementation differs depending on message transport | | | For facilities sending data via OneHealthPort HIE: |
| | | | For facilities sending data directory to WA DOH via SFT or PHIN-MS: |
| Sending Facility | MSH-4 | R | Unique identifier of the facility that is sending the message. |
| Namespace ID | MSH-4.1 | RE | Use the organization ID provided for your facility during registration with OneHealthPort. *Vendors and Healthcare Systems: Use the individual hospital's OneHealthPort ID. <u>Maximum length: 50 characters</u> |
| | | | Use a business name abbreviation descriptive enough to clearly identify the sending facility <u>Maximum length: 50 characters</u> |
| Universal ID | MSH-4.2 | R | Use the OID confirmed with OneHealthPort. *Vendors and Healthcare Systems: Use the individual hospital's OneHealthPort OID. |
| | | | OID or CLIA is preferred |
| Universal ID Type | MSH-4.3 | R | Use literal value "ISO" |
| | | | Use literal value "ISO" for OID, "CLIA" for CLIA |
| Receiving Application | MSH-5 | R | Field that uniquely identifies the receiving application for messaging purposes (usually the receiving system message brokering instance). |
| Namespace ID | MSH-5.1 | RE | Use literal value "WADOHPHRED" |
| | | | Use literal value "PHRED" |
| Universal ID | MSH-5.2 | R | Use literal value "2.16.840.1.113883.3.237.4.2" |
| | | | Use literal value "2.16.840.1.113883.3.237.4.2" |
| Universal ID Type | MSH-5.3 | R | Use literal value "ISO" |
| | | | Use literal value "ISO" |
| Receiving Facility | MSH-6 | R | Unique identifier of the facility that is to receive the message. |
| Namespace ID | MSH-6.1 | RE | Use literal value "dn1fro00" |
| | | | Use literal value "WADOH" |
| Universal ID | MSH-6.2 | R | Use literal value "1.3.6.1.4.1.38630.2.1.1.19" |
| | | | Use literal value "2.16.840.1.113883.3.237" |
| Universal ID Type | MSH-6.3 | R | Use literal value "ISO" |
| | | | Use literal value "ISO" |

[WashingtonMessageHeaderSegmentElectronicLaboratoryReporting.pdf](#)

Appendix B

Definitions and Abbreviations

WDRS: Washington Disease Reporting System (WDRS) is an electronic disease surveillance system that allows public health staff in Washington State to receive, enter, manage, process, track and analyze disease-related data. This information comes from various places including, but not limited to, health care entities such as clinics, laboratories, hospitals and local health care providers, as well as other non-health care sources.

ELR: (Electronic Laboratory Reporting) Electronic Laboratory Reporting (ELR) is the electronic transmission from laboratories to public health of laboratory reports that identify notifiable conditions. The Washington State Department of Health maintains an ELR system (WELRS), which provides data to public health disease investigators across the state.

HL7: <https://www.hl7.org/>: Health Level Seven International is one of several American National Standards operating in the healthcare arena authority on standards for interoperability of health information technology with members in over 55 countries.

LOINC - <http://loinc.org> : Logical Observation Identifiers Names and Codes identify the laboratory observation. LOINC applies universal code names and identifiers to medical terminology related to the electronic health record. The purpose is to assist in the electronic exchange and gathering of clinical results (e.g. laboratory tests, clinical observations, outcomes management, research). [RELMA mapping tool \(http://loinc.org/relma\)](http://loinc.org/relma)

SNOMED: A system of standardized medical terminology developed by the College of American Pathologists. It can be described as comprehensive clinical terminology covering diseases, clinical findings, and procedures that allow for a consistent way of indexing, storing, retrieving and aggregating clinical data across specialties and sites of care. SNOMED helps provide structure and computerize the medical record, reducing the variability in the way data is captured, encoded and used for clinical care of patients and research. The following link provided points to a maintained subset of SNOMED codes identified for their applicability to reportable conditions, also known as the Reportable Condition Mapping Table (RCMT). [Code System Concept \(cdc.gov\)](#)

PHIN VADS - The Public Health Information Network Vocabulary Access and Distribution System (PHIN VADS) is a vocabulary repository and server which allows CDC's public health partners to browse, search and download vocabulary concepts required for PHIN messaging and applications. This includes LOINC, SNOMED CT and other codes.

[PHIN VAD Database \(https://phinvads.cdc.gov/vads/SearchVocab.action\)](https://phinvads.cdc.gov/vads/SearchVocab.action)

Specific codes used for Specimen Source and Specimen Site [PHIN VADS SPM4](#) or [PHIN VADS SPM8](#) -

Appendix C

Helpful Resources

WA State DOH goes by HL7 Version 2.5.1 Implementation Guide: Electronic Laboratory Reporting to Public Health, Release 1 (US Realm)

[The HL7 Version 2.5.1 Implementation Guide](http://www.hl7.org/implement/standards/product_brief.cfm?product_id=98)

(http://www.hl7.org/implement/standards/product_brief.cfm?product_id=98)

National Institute of Standards and Technology (NIST) Electronic Lab Reporting Validation Suite website – Documentation and Sample Messages

NIST validation testing is for organizations that plan to submit HL7 V2 2.5.1 ELR messages. This tool allows for pre-validation (including structural and limited vocabulary/content validation) of standard HL7 messages. Users are able to download a validation report documenting detailed review of HL7 test message. [NIST Validation Tool \(https://hl7v2-elr-testing.nist.gov/mu-elr/\)](https://hl7v2-elr-testing.nist.gov/mu-elr/)

Object Identifiers (OIDs)

OIDs are required for all fields identified as Universal Identifier in the HL7 v2.5.1 guide. Each organization submitting or receiving a message must have an assigned OID. Likewise, each LIMS and software data system from which information is obtained to construct the message must have assigned OIDs. OIDs must be obtained if it is not already available. Check with your electronic health record (EHR) system administrators for OIDs already assigned to your organization.

Learn more about registering or getting an OID through the Introduction for the [HL7 OID Registry \(https://www.hl7.org/oid/\)](https://www.hl7.org/oid/)

Appendix D

Onboarding Preparation Checklist

| Use this checklist to make sure you have completed the steps to prepare for ELR data exchange. | |
|--|--|
| <input type="checkbox"/> | Register your intent to work on an ELR interface with WA ELR at Promoting Interoperability Registration - General Questionnaire (wa.gov) |
| <input type="checkbox"/> | Review the WA statutes governing reportable diseases to WA ELR at https://app.leg.wa.gov/WAC/default.aspx?cite=246-101 |
| <input type="checkbox"/> | Review HL7 Version 2.5.1 Implementation Guide: Electronic Laboratory Reporting to Public Health, Release 1 at HL7 V2.5.1 (http://www.hl7.org/implement/standards/product_brief.cfm?product_id=98) . |
| <input type="checkbox"/> | Complete and submit the All Conditions Worksheet to confirm which tests are performed in-house and which test are sent out to the reference lab. |
| <input type="checkbox"/> | If reporting for more than one facility, fill out the ELR Onboarding Submitter-Multilocation. |
| <input type="checkbox"/> | Complete NIST Test Message Preparation and Validation for ELR using the NIST website (https://hl7v2-elr-testing.nist.gov/mu-elr/) . |

