
Electronic Laboratory Report (ELR) Implementation Guide

Introduction

The state of West Virginia requires both the ordering hospital and the reporting facility to send the results of reportable diseases to the West Virginia Bureau for Public Health (WVBPH). This document serves to outline the steps that will be undertaken with each laboratory, working toward ELR implementation of reportable diseases to WVBPH. Please note the relevant links in the *Pre-Engagement Assessment* in the next section of this document for supplemental guidance.

The WVBPH utilizes the National Electronic Disease Surveillance System (NEDSS) Base System (NBS) is a CDC-developed integrated information system used to conduct surveillance, case management, and analysis of reportable diseases. The West Virginia Electronic Disease Surveillance System (WVEDSS) can receive HL7 Version 2 ELR messages. Messages can be submitted through the West Virginia Health Information Network (WVHIN) or directly to WVBPH through the PHIN-MS transport mechanism. WVBPH will specifically recommend onboarding through the WVHIN if the reporting facility's transfer volume is low, or technical capabilities necessitate.

Hospitals seeking Meaningful Use milestones through the CMS Promoting Interoperability Program (PI) are required to register their intent to attest utilizing the [WVBPH online registration system](#). Transitioning to ELR provides a benefit to WVBPH in that laboratory results are received in a critical, timely manner and there will be a decline in data entry errors. Laboratory benefits include reduction in cost and undue waste via faxing, mailing, and printing of paper records, decreased data entry, increased automation, and increased data security. Importantly, hospitals can also meet desired ELR Meaningful Use milestones with their transition and compliance.

ELR implementation in West Virginia will vary by laboratory, but it is comprised of four major comprehensive phases which will require a strategic amount of time, and resource allocation and a final ongoing phase to insure continued operation. Each phase follows the preceding such that resources may be distributed in a timely manner. Participants transferring data through the WVHIN, processes may be slightly different as the WVHIN may manage some of these phases on behalf of their participants. It will be necessary for WVHIN Participants to submit a test file as part of the pre-implementation activity.

Process




1 CONTACT!

WV Bureau for Public Health partners with your clinical data management for ELR.



CONNECTION!

2 Establish a secure connection with WV Bureau for Public Health through partners or directly.

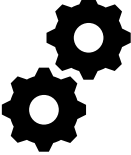


3 VALIDATION!

Testing, testing, testing. Assuring lab data is of good quality, complete and usable.


4 PRODUCTION!

Smooth, automated operation of electronic lab result submissions to the WV Bureau for Public Health. data management for ELR.



5 MAINTENANCE

Keeping in touch WV Bureau for Public Health regarding any changes that would impact ELR.



Onboarding



1. The engagement phase begins when an interested laboratory contacts WVBPH or the WVHIN or is contacted to begin ELR implementation because of their on-line registration. There are a series of questions that will need to be discussed before a hospital can move further with implementation. For every ELR received, we must receive a full validation copy of the lab report and for every lab report we must receive an ELR. WVBPH will need the name and contact information for the person responsible for sending validation copies.



CONNECTION!

2. Phase 2 begins once all elements from Phase 1 are collected. In Phase 2, WVEDSS asks laboratories to test the connection between the EHR/LIS and the WVEDSS. West Virginia only supports connection through WVHIN or PHIN-MS. PHIN-MS is free and can be obtained from the CDC at <http://www.cdc.gov/phin/tools/PHINms/installation.html> and support is also offered via the PHIN help desk at 800-532-9929 or phintech@cdc.gov. Please note that a certificate required for PHIN-MS expires annually and will need to be replaced, WVBPH ELR coordinator will assist in this action. WVHIN Participants will use Minimal Lower Layer Protocol (MLLP) + VPN. Certificates are not required. WV requires that laboratories test their HL7 2.5.1 message via the CDC Message Quality Framework (MQF) or the National Institute of Standards and Technology (NIST) tools. The MQF tool can be accessed at: <https://phinmqf.cdc.gov/> and NIST via <http://hl7v2-elr-testing.nist.gov/mu-elr/>. West Virginia prefers that any identified errors are resolved or discussed prior to submitting a test message, along with sending the actual error report.

Once a PHIN-MS or WVHIN connection is set up at the laboratory and any errors with HL7 are corrected, the connection will be tested by a transmission of an HL7 message (with de-identified data) to the WVEDSS.

(MU Note: For the purposes of on-going submission, WV considers the MU ELR objective met when messages are successfully received through WVHIN or PHIN-MS, then validated and processed by the WVEDSS.)

3. Phase 3 starts once the connection between WVEDSS and the laboratory has been established. The primary purpose of the Testing Phase is to verify that the HL7 messages meet content and implementation guide criteria. CURRENT METHODS OF REPORTING WILL CONTINUE (i.e. fax or mail) until completion of Phase 4 – Production. The testing process may continue for 2-4 weeks and will not end until all issues identified are resolved.

Below we outline the main steps that will occur during this phase.



1. Test messages that are sent from the laboratory can be test cases found on the NIST site <http://hl7v2-elr-testing.nist.gov/mu-elr/> under the 'Context-based Validation' selection in the menu bar, "stock" test messages which have been used during testing with other states/partners with de-identified 'live' messages. The HL7 content should be

identical to a “real” laboratory result with the exception that patient data are de-identified. A corresponding fax should also be sent to the WVEDSS staff person assigned.

- Messages that are successfully consumed by WVEDSS will be checked against the paper result to ensure that all required information is available via ELR. Office of Epidemiology & Prevention Services Division of Epidemiologic Informatics & Evaluation.

2. If the message fails to be consumed by the WVEDSS, the laboratory will be notified with the errors and assistance offered to resolve the issue if necessary/possible.

3. Lab results will also be reviewed to ensure that clinical information being presented is applicable to the disease.

- While it is understood that all types of laboratory results that will be submitted to WVEDSS in Phase 4 cannot be accounted for in Phase 3, ensuring that clinical content is accurate should decrease the time spent in Phase 4.

4. Phase 4 is divided into two stages: Parallel Production and Live Production.

Parallel Messaging starts when ELRs are sent to the WVEDSS Production Environment, while still sending paper laboratory results. The messages in this phase will contain actual patient demographic data and correspond to actual laboratory test results that are being reported to WVEDSS in real-time.

Parallel Production will be an ongoing process for 2-3 months. During this stage, paper laboratory results will continue to be submitted for each corresponding ELR. As in Phase 3, WVBPH staff will compare the paper laboratory results with those received electronically for content, accuracy, and completeness. West Virginia anticipates Parallel Production will be in place for 2-3 months before discussing shutting off paper reporting. The timeline is dependent on: the types of laboratory results verified, volume of anticipated laboratory results, and frequency of errors reported during Phase 4.

Live Production begins when WVEDSS determines that all issues with incoming ELRs during the Parallel stage have been resolved **and** there has been a minimum of 2 weeks of Parallel Production without any errors.


5. Once Phase 4 has been completed, the laboratory will have successfully transitioned to ELR reporting. Thereafter, the laboratory will be expected to notify WVEDSS of any

changes to codes, HL7 message structure, addition/deletion of ELR for a disease, etc. Any changes that are determined to have a significant impact on ELR will require that some aspect of reporting will revert to Phase 4 of the guide and need to be tested and validated before changes can be implemented.

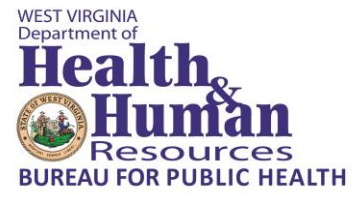
PRODUCTION!


MAINTENANCE 

Pre-Engagement Checklist

Guidance	
1	<p>Please confirm with your system vendor that your system can generate an HL7 message using the implementation guide defined under Meaningful Use for ELR without upgrades or customization.</p> <ul style="list-style-type: none"> • CDC Technical Standards • HIT Protocols for Transmission to PHAs • NIST HL7 Validation Tool
2	<p>Please determine specific HL7 version making sure that version 2 messaging can be generated for sending laboratory reports and determining if upgrades or customizations are needed by your system vendor.</p> <ul style="list-style-type: none"> • HL7 International Specifications • WV Bureau for Public Health (BPH) HL7 Specifications <p>(In the event that the HL7 specifications document opens and presents a menu asking for a username and password click “cancel” repeatedly if necessary and use the “save as” option to save the document to your desktop)</p>
3	<p>Can my clinical system for ELR detect when a laboratory result meets the PHA criteria as reportable?</p> <ul style="list-style-type: none"> • WV Electronically Reportable Diseases
4	<p>If HL7 is not supported, specify the type of output (such as Excel or CSV) and whether the output needs to be manually generated or automated from your system.</p>
5	<p>Specification for sending ELRs</p> <ul style="list-style-type: none"> • WV BPH Flat File Message Profile • Flat File Sample • HL7 Sample
6	<p>WVBPH/WVHIN will provide SFTP credentials and endpoint. Data sources will be asked to push batches of ELRs to WVEDSS daily using SSH File Transport Protocol (SFTP). Be sure your organization can support that.</p>
7	<p>Does your clinical system for ELR utilize Logical Observation Identifiers Names and Codes (LOINC) and Systematized Nomenclature of Medicine (SNOMED) for laboratory tests and results? LOINC and SNOMED codes will be reviewed by WVBPH staff to ensure that codes are appropriate for transmission to WVEDSS. LOINC and SNOMED are required, <u>local codes will not be accepted.</u></p> <ul style="list-style-type: none"> • PHIN VADS • SNOMED CT Browser • LOINC
8	<p>Facility have a Meaningful Use based attestation milestone to meet?</p> <ul style="list-style-type: none"> • WVBPH Promoting Interoperability Program (for Meaningful Use) • CMS Promoting Interoperability Programs • WVBPH Online Registration System
9	<p>Post Pre-Engagement Assessment </p> <ul style="list-style-type: none"> • Inductive Health Initial Intake Survey

Office of Epidemiology & Prevention Services
Division of Epidemiologic Informatics & Evaluation



Contact Information

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