New Mexico Department of Health

Electronic Laboratory Reporting (ELR) On-Boarding Handbook

Version: 1.0

This handbook is intended to be used by potential ELR Trading Partners of the New Mexico Department of Health (NMDOH).

Updated September 2024

Electronic Laboratory Reporting (nmhealth.org)

OUR VISION: *A healthier New Mexico!*

OUR MISSION: *To ensure health equity, we work with our partners to promote health and well-being and improve health outcomes for all people in New Mexico*

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Version Control			
Version	Author	Date	Changes
1.0	Amy Drake	9.27.24	

Terms and Acronyms

This section defines terms and acronyms that are used throughout the Electronic Laboratory Reporting (ELR) On-Boarding Handbook.

CLIA: Clinical Laboratory Improvement Act

EHR: Electronic Health Record

ELR: Electronic Laboratory Reporting

ELRC: Electronic Laboratory Reporting Coordinator

HL7: Health Level 7, a standardized medical message system used for electronic lab reporting to public health. HL7 is one of several American National Standards Institute – accredited Standards Developing Organizations operating in the healthcare arena (http://hl7.org).

HIE: Health Information Exchange

IDEB: Infectious Disease Epidemiology Bureau of NMDOH

IDMU: Informatics and Data Management Unit (part of IDEB)

LIS: Laboratory Information System, also referred to as Laboratory Information Management System (LIMS)

LOINC: Logical Observation Identifiers Names and Codes, which identify resulted test laboratory observations. The LOINC database is maintained by the Regenstrief Institute and is intended to assist in the electronic exchange or clinical results (https://loinc.org).

MIC: Minimum Inhibitory Concentrations

MU: Meaningful Use

NIST: National Institute of Standards and Technology

NMDOH: New Mexico Department of Health

OID: Object Identifier, which is a code number identifying an object used in electronic lab reporting to public

health.

PHIN VADS: Public Health Information Network Vocabulary Access and Distribution System

SME: Subject Matter Expert

SNOMED-CT: Systematized Nomenclature of Medicine – Clinical terms used to identify laboratory results. The clinical terminology is owned and maintained by SNOMED International (formerly IHTSDO).

SYNCRONYS: is a not-for-profit organization aimed to improve healthcare for all New Mexicans. SYNCRONYS runs the State of New Mexico's Health Information Exchange (HIE)**.**

TP: Trading Partner: an entity such as a hospital or laboratory that sends electronic data to the public health department.

TPG: Trading Partner Guide

Introduction

Background

New Mexico Administrative Code 7.4.3[1] provides that diseases and conditions of public health significance must be reported to the New Mexico Department of Health (NMDOH). The parties who must report these conditions include:

- Every health care professional treating any person or animal having or suspected of having any notifiable condition.
- Laboratories performing diagnostic tests for any notifiable condition.
- Any other person, including laboratory staff; an official in charge of any health facility, hospital records or administrative personnel; the principal or person in charge of any private or public school or child care center; teachers and school nurses; and a householder or any other person, in the absence of a health care professional having direct knowledge of a disease or condition of public health significance, having knowledge of any person having or suspected of having a notifiable condition.

New Mexico Administrative Code 7.4.3 also provides that notifiable condition information may be transmitted via phone call, fax, letter, or computer data transfer. NMDOH accepts HL7-compliant Electronic Laboratory Reports (ELR) from laboratories who have "onboarded" with NMDOH by the process set out below. We do not expect individual physicians to report via ELR (Electronic Laboratory Reporting); only hospitals and laboratories are eligible to report results via ELR.

New Mexico is a "dual use" state, and, as such, requires hospitals, facilities, and healthcare providers to report conditions of public health importance. We expect hospitals and facilities who onboard with ELR to report laboratory reports of public health significance regardless of whether that result was generated "in-house" or not. This requirement may mean that some facilities will be required to fax, or otherwise report some results (e.g., immediately telephone emergency reports) even after they have been onboarded for ELR (if they cannot forward properly formatted reference lab results, for example).

Laboratories are responsible for ensuring that infectious disease reporting is set up and continues according to the New Mexico Administrative Code. Once a laboratory's ELR feed is in Production, NMDOH expects that laboratory to add or remove results as required, maintain connectivity, monitor the results being sent, and supplement the ELR feed with additional results as requested. If a laboratory cannot ensure the quality or content of the ELR feed, they should consider faxing all results.

Scope

This handbook sets out the process by which a hospital or laboratory can shift from using fax, calls, or letters to report notifiable conditions by utilizing HL7 ELR. It assumes that the reader of this handbook and ELR Trading Partners have a basic understanding of interface concepts, HL7 messaging, and NMDOH reporting requirements. Laboratories should be able to meet the structural and content requirements of NMDOH as specified in Format and Vocabulary in Appendix B. Hospital-associated laboratories sending ELR for Meaningful Use are required to send HL7 2.5.1 messages.

Contact

To learn more about ELR in New Mexico, contact the Informatics and Data Management Unit of the NMDOH Infectious Disease Epidemiology Bureau (IDEB) at 1-833-796-8773 / DOH-ELR-Onboard@doh.nm.gov or

[1] http://www.srca.nm.gov/parts/title07/07.004.0003.html

Overview of ELR Reporting Requirements in New Mexico

Report all conditions listed in the NMAC 7.4.3[2] for all New Mexico residents and persons seeking care in New Mexico except:

- Some reportable conditions will not have specific laboratory results associated with them needed for case finding, such as drug overdose, fracture due to fall among older adults, and other health conditions listed in NMAC 7.4.3.
- Reporting that is done through a NMDOH designee:
  - ✓ Cancer reporting: Report to the New Mexico Tumor Registry at University of New Mexico School of Medicine, Albuquerque, NM 87131.
  - ✓ Human Papillomavirus (HPV): Report to the New Mexico HPV Pap Registry, 1816 Sigma Chi Rd NE, Albuquerque, NM 87106, phone 505-272-5785 or 505-277-0266

ELR structure must conform to HL7 2.5.1 guidance:

- HL7 Standards Product Brief - HL7 Version 2.5.1 Implementation Guide: Electronic Laboratory Reporting to Public Health, Release 1 (US Realm) | HL7 International
- Send only final or corrected results.
- Use snapshot mode.
- Resulted test (OBX-3) must be LOINC coded.
- ELR content must fulfill the need of the program to investigate the case and mount a response.

The ORU^R01^ORU_R01 Message diagram is adapted from Figure 4 1. 2.5.1 ELR Message in the HL7 2.5.1 Implementation Guide (Electronic Laboratory Reporting (ELR) | Electronic Laboratory Reporting (ELR) | CDC

NMDOH accepts the following types of OBX results:

- CE (Coded element): Coded Element data type. This data type transmits codes, and the text associated with the code. This type has six components, as follows: identifier, text, name of coding system, alternate identifier, alternate text, and name of alternate coding system.
- CWE (Coded with exceptions)
- NM (Numeric): Numeric data type. A number represented as a series of ASCII numeric characters consisting of an optional leading sign (+ or -), the digits and an optional decimal point.
- SN (Structured Numeric)
- ST (String): String data type. String Data is left justified with trailing blanks optional. Any printable ASCII characters are allowed.
- TX (Text Data): Text data type. String data meant for user display on a terminal or printer.

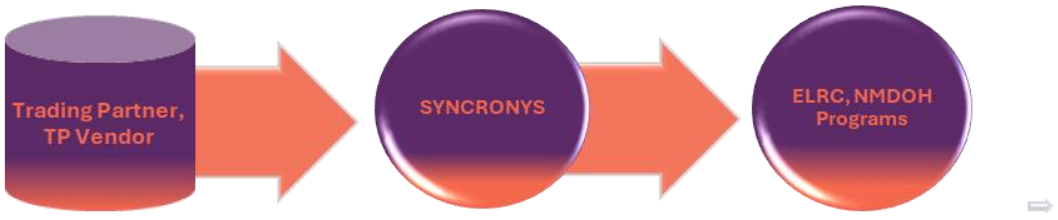
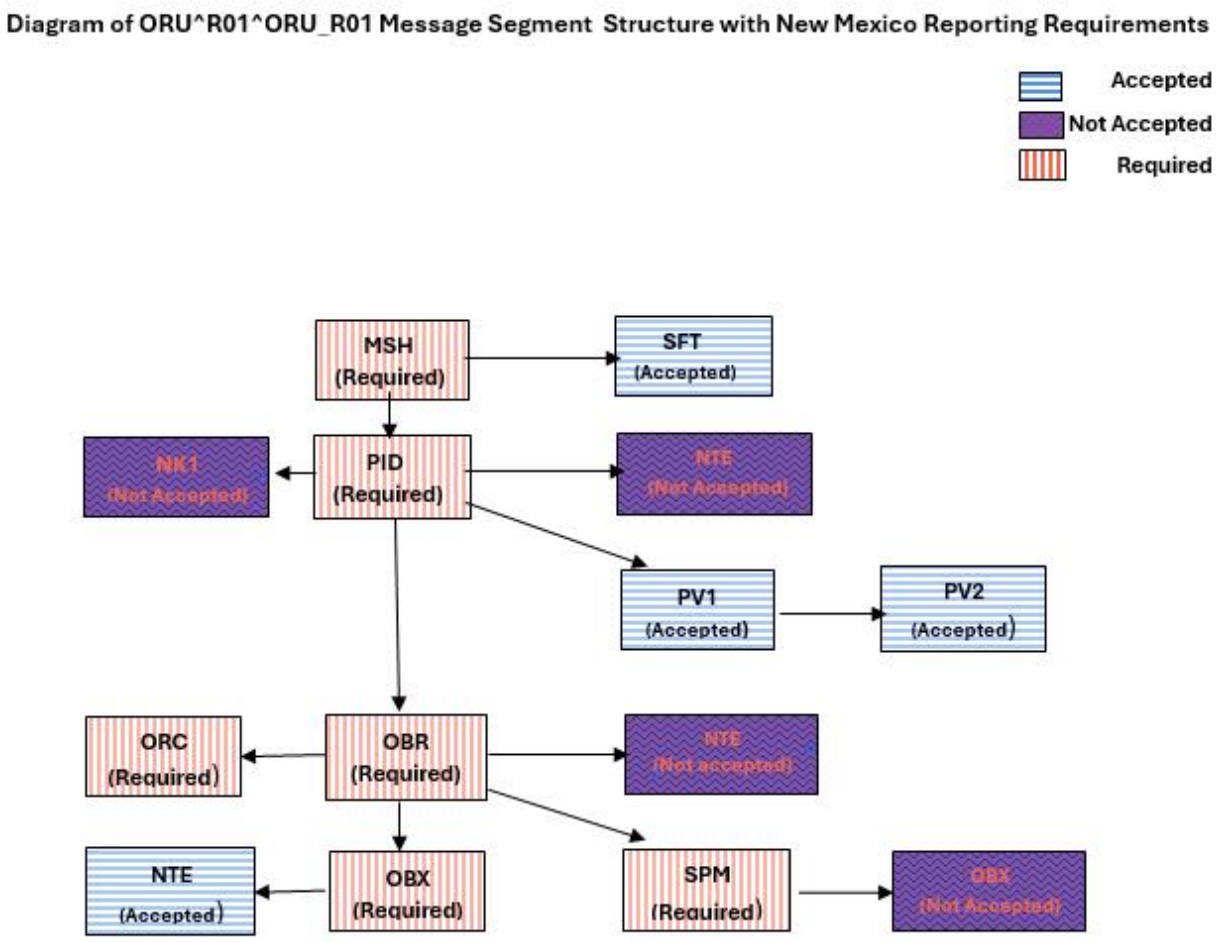


Figure 1.

[3]

The following graphic indicates which segments NMDOH requires, allows, or does not accept.

Figure 2.



Electronic Laboratory Reporting (ELR) On-Boarding Checklist

Purpose

This section provides information regarding the phases and steps involved in successful ELR onboarding with NMDOH. The ELR onboarding checklist is for hospitals and laboratories (Trading Partners) and their vendors or business associates.

ELR Onboarding Phases

ELR onboarding phases include:

1. Initiation: In this phase, the Trading Partner, SYNCRONYS, and the ELR Coordinator (ELRC) communicate about the requirements and expectations for ELR onboarding.
2. Preparation: In this phase, the Trading Partner ensures that everything is in place for a successful implementation. An optional step is to load test ELR onto the NIST website to get a head start on structural testing.
3. Testing: This phase contains two distinct testing processes, each of which may require extensive engagement and communication from the Trading Partner with SYNCRONYS and the ELRC. The Trading Partner will begin sending data to ensure that:
    - Message structure conforms to the HL7 ELR guidance. Commonly, message structure guidance means only that a segment is populated, not that the data is appropriate.
    - Message content is appropriate for each program and reporting is complete.
4. Go-Live: In this phase, the Trading Partner and the ELRC make final arrangements for Go-Live in Production and starts sending ELR files. In addition, the Trading Partner signs the ELR Onboarding agreement, and the ELRC delivers the Trading Partner Guide.
5. Follow up: After Go-Live, NMDOH validates ELR feed against faxed lab reports and assesses the Trading Partner's overall ELR reporting performance. The ELRC works with the Trading partner to resolve any final issues. When the final review is completed and the issues resolved, the Trading Partner stops faxing lab reports.

Note: TP needs to continue to send paper files until ELRC directs to stop after post- Go-Live validation (1-2 months after Go-Live).

Trading Partner and ELRC task list		
Trading Partner Activity	**Comp**	**Response & Resources**
Phase 1: Initiation		
A. Contact ELR Coordinator (ELRC) at New Mexico Department of Health	☐	Email: nmdoh.elrinbox@doh.nm.gov ELRC will respond within 5 business days. ELRC will send this ELR On-Boarding Handbook, Laboratory Reportable Events Guidance, and Trading Partner Guide (TPG); link to Questionnaire forms (See Step 2C below); and links to reference materials (see Step 1B below).

Trading Partner and ELRC task list		
Trading Partner Activity	**Comp**	**Response & Resources**
• Review NMDOH and national guidance.	☐	**New Mexico Department of Health Guidance** Electronic Laboratory Reporting (nmhealth.org) • NMDOH ELR On-boarding Handbook • NMDOH Laboratory Reportable Events Guide • Trading Partner Guide • Notifiable Diseases or Conditions of New Mexico: http://www.srca.nm.gov/parts/title07/07.004.0003.html **National Guidance** • HL7 Version 2.5.1 Implementation Guide: Electronic Laboratory Reporting to Public Health Release 1 (US Realm) with Errata: https://www.hl7.org/implement/standards/product_brief.cfm?product_id=98 (If you cannot download this document, the ELRC can provide it for you.)
B. Decide whether to move forward with onboarding and inform ELRC of decision.	☐	
Phase 2: Preparation		
A. Participate in kick-off call with ELRC	☐	• ELRC will review the onboarding process, ELR On-boarding Handbook, Laboratory Reportable Events Guidance and Trading Partner Guide
B. Complete ELR Onboarding Questionnaire forms, save results, alert ELRC.	☐	The Questionnaire includes 4 forms. Click the links below to access the forms: Contact, IT, lab Info Diseases Immediate Reporting Diseases Routine Reporting--Zoonotic, TB, STD, HIV, Environmental General Infectious Diseases *Recommendation: Print the forms and gather information before completing them.* *Complete one form at a time.* *You must complete each form in one sitting; the system does not allow you to save your work and then pick it up again. However, you can complete different forms at different times.* *Inform the ELRC when you have finished all the forms.*

Trading Partner and ELRC task list		
Trading Partner Activity	**Comp**	**Response & Resources**
C. With ELRC, review questionnaire responses and discuss next steps	☐	The ELRC will contact you to review the questionnaire responses to create a plan for moving forward.
D. Redo and submit questionnaires if needed		
E. Attend meetings with ELRC to prepare for onboarding	☐	Email communication and telephone conference calls will be on an ad-hoc basis until a laboratory begins sending a test feed.
F. Determine which test results need to be sent	☐	• Refer to Laboratory Reportable Events Guidance ELRC and SYNCRONYS will be available on an ad hoc basis to answer questions.
G. Prepare ELR coding • Map local lab test codes to LOINC standard vocabulary. • Map other local codes (race, ethnicity, county) according to the HL7 2.5.1 Implementation Guide. • Recommended: Map non-numeric results to SNOMED-CT standard vocabulary. • Recommended: Map specimen information to SNOMED-CT standard vocabulary.	☐	All resulted tests must be LOINC coded. • LOINC: http://loinc.org. This site may require that users register and log in (at no cost). All LOINC terms sent by laboratories will be compared against the LOINC.org website. • SNOMED-CT: https://www.nlm.nih.gov/healthit/snomedct/index.html. This site has information on how to register for ULMS to access their SNOMED-CT browser. • Public Health Information Network Vocabulary Access Distribution System (PHIN VADS) & Reportable Condition Mapping Table: https://phinvads.cdc.gov/vads/SearchVocab.action
H. Contact SYNCRONYS (SYNCRONYS will provide email of assigned resource) to set up SYNCRONYS sFTP connection for the test files/feed	☐	SYNCRONYS will provide the sFTP site and credentials, file naming convention, and any other information needed to deliver the test ELR message/feed.
I. Recommended step: Test HL7 ELR message using the NIST HL7 ELR 2.5.1 Validation Suite.	☐	NIST HL7 ELR Validator may be accessed here: http://hl7v2- elr-testing.nist.gov/mu-elr/. For best results, please test all result types that your system produces (coded, numeric, structured numeric, free text).
J. Recommended: Resolve message issues found using the NIST	☐	

Trading Partner and ELRC task list		
Trading Partner Activity	**Comp**	**Response & Resources**
Set up a TEST feed and turn on Production data in Test mode. **The purpose of the upcoming testing is to understand the structure and content of the ELR feed as it will be sent in Production.** **Set up test records that include unusual/rare fictional results to enable structural and content testing of unusual results (see Appendix 2 for more information).** **Ensure that at least one of the following types of messages are included in the feed even if you do not have these results in the Production environment: CE, CWE, NM, SN, TX plus messages with a parent/child relationship (specifically an organism with susceptibilities.) Underlying assumption: you will send these in Production eventually.** **In TEST mode, we recommend setting up the feed to send a batch file every 24 hours (for laboratories whose results are triggered automatically).**	☐	**Please use the following file naming convention: <lab name>-ELR-TEST-<datetime stamp>.hl7**
Phase 3.1: Structural Testing		
A. Work with SYNCRONYS as needed during structural testing. SYNCRONYS will do structural testing on the test feed. SYNCRONYS will review message and send an issues list to TP with corrections needed.	☐	Note: it is unlikely that all issues will be picked up in the first round of testing. Often, a terminal error in a message will prevent us from being able to look at the rest of the message. This step may need to be repeated several times. Please communicate each change that you have made so we are able track.
B. If necessary, work with SYNCRONYS to correct structural issues with test messages. Notify ELRC and SYNCRONYS of any corrections to the method of creating the messages. **Note**: TP may need to repeat this step several times.	☐	SYNCRONYS and NMDOH will track each issue and its resolution.
Phase 3.2: Content Testing		

Trading Partner and ELRC task list		
Trading Partner Activity	**Comp**	**Response & Resources**
A. Once SYNCRONYS attests that the test feed messages pass structural testing requirements, content testing will begin. See Appendix D for sample test scenarios that may be used to create test messages, including unusual/rare cases.	☐	ELRC will do content testing on the files, and SMEs will review reports generated from the test feed. ELRC will send an issues list to the TP with corrections needed.
B. If necessary, work with ELRC to deal with content issues with message until ELRC determines that message passes content tests. **Note:** TP may need to repeat this step several times.	☐	**Note:** Please communicate each change that you have made so we are able track.
Phase 4: Go-Live **Note: TP needs to continue to send paper files until ELRC directs to stop.**		
A. Attend logistics call with ELRC to review remaining concerns and responsibilities and to plan for Go-Live in Production	☐	• SYNCRONYS will provide the Production file naming convention, and any other information needed to deliver the ELR feed. • In Production, deliver batch files every 30 or 60 minutes if you have results to send.
B. Sign Onboarding Agreement, return to ELRC.	☐	• ELRC produces Trading Partner Guide for MU documentation, which NMDOH State Epidemiologist signs. ELRC scans letter and agreement and sends documents to TP, NMDOH IT Department, and Medicaid.
	☐	
C. Change names of files sending to Production file naming convention and start sending ELR batch files every 30 to 60 minutes.	☐	SYNCRONYS flips switch to make ELR live, informs ELRC and TP.
Phase 5: Follow Up		
A. Confirm that sending all desired files in ELR	☐	NMDOH SMEs validate content by comparing ELR files to paper TP reporting. ELRC, NMDOH IT Dept, SMES meet and assess status of TP ELR submissions to that point.
B. 1-2 months after Go-Live, receive communication from ELRC regarding status of and issues with ELR submissions	☐	

Trading Partner and ELRC task list		
Trading Partner Activity	**Comp**	**Response & Resources**
C. Work with ELRC to correct issues with ELR submissions	☐	When all issues are resolved, ELRC directs TP to discontinue faxing lab reports.
D. Discontinue paper reporting.	☐	

NMDOH Electronic Laboratory Reporting Frequently Asked Questions

The following are answers to questions Trading Partners commonly ask before and during the on-boarding process. If you have additional questions, please contact the ELR team at DOH-ELR-Onboard@doh.nm.gov

1. **How do I get started?**

   The first step in the ELR on-boarding process is contacting the ELR Coordinator at NMDOH IDEB. This list is recommended for Trading Partner use, but Trading Partners will not be required to complete and submit the list. Before starting the on-boarding process, NMDOH recommends the Trading Partner review this handbook and the Trading Partner Questionnaire.

   If the Trading Partner wishes to continue, the Trading Partner needs to get ready to generate test files. We recommend the Trading partner complete the following steps:

   a. Map local lab test codes to LOINC standard vocabulary (required)
   b. Map local, non-numeric test result values to SNOMED-CT standard vocabulary (recommended)
   c. Map other local codes according to the HL7 2.5.1 Implementation guide: Electronic Laboratory Reporting to Public Health (US Realm)
   d. Develop conformant messages for all result types
   e. Test those messages using the NIST HL7 ELR 2.5.1 Validation Suite (recommended)

Resolve message issues found using the NIST HL7 ELR 2.5.1 Validation Suite (recommended)
These steps are described in the onboarding process flow and checklist above.

2. **What are the approved methods for laboratory result to the NMDOH?**
   Fax and ELR are the only approved methods for laboratory results notification. Under some conditions (such as a pandemic) we may be able to accommodate other methods contact the NMDOH ELR On-Boarding email to discuss.

3. **What is the standard for ELR in New Mexico?**
   HL7 Standards Product Brief - HL7 Version 2.5.1 Implementation Guide: Electronic Laboratory Reporting to Public Health, Release 1 (US Realm) | HL7 International

4. **What does "dual use" mean to public health reporting requirements in New Mexico?**
   New Mexico is a "dual use" state, and, as such, requires hospitals, facilities and healthcare providers to report conditions of public health importance. We expect hospitals and facilities that onboard with ELR to report laboratory reports of public health significance regardless of whether that result was generated "in-house" or not. This requirement may mean that some facilities will be required to fax some results even after they have been onboarded for ELR (if they cannot forward properly formatted reference lab results, for example).

5. **How will NMDOH use the data sent in ELR messages?**
   Infectious disease data reported to NMDOH is used to respond to infectious disease and outbreak. Additionally, NMDOH will anonymously notify CDC of specific disease events. NMDOH must ensure adequate and reliable information in those systems.

Because of this, NMDOH will not use the data during testing in Production surveillance systems. Once the ELR message content and structure is at an agreeable state, NMDOH will discuss moving the Trading Partner into Production.

6. **What is SYNCRONYS Role in this Process?**
   Data Transport: SYNCRONYS facilitates the sFTP transport mechanism for receiving ELR submissions and processing during analysis and Production phases of the onboarding.

   On-Boarding: SYNCRONYS performs HL7 structural analysis on all onboarding partner data. This analysis ensures required fields and segments are populated in each message (non-allowed fields are not populated). In addition, fields that should contain specific code set values could be potentially verified. SYNCRONYS also provides data to the NMDOH for content analysis prior to Production acceptance.

   Production: SYNCRONYS processes Production data into the NMDOH ELR Repository database for general reporting and use by NMDOH, as well as forwarding submitted HL7 files to the NMDOH for internal processing.

7. **What is the difference between structural and content testing?**
   Structural testing validates the physical structure of the HL7 ELR messages against the HL7 guidance. Specifically, it checks for the presence or absence of required fields and, for some fields, checks the content against accepted values. Commonly the absence of required fields results in a 'terminal error', where messages cannot be loaded into a system.

   Content testing aims to check the completeness and meaning of the messages. The number and type of test results will be analyzed to determine if all data are being reported, test types and test results will be reviewed to determine if the test and result are sensical, demographic information about the patient, ordering provider and ordering facility will be reviewed for completeness. Results received will also be compared to the faxed (or previous ELR feed) to determine if reporting is complete; SMEs will review all results to determine their utility.

8. **Will my laboratory's data be included in the NMHIE?**
   No, ELR data is not included in the NMHIE. To include laboratory data in the HIE, an ORU and possibly an ADT interface must be developed with SYNCRONYS specifically for the NMHIE.

9. **Do you require the use of standard vocabulary?**
   We require valid LOINC and resulted test descriptions for resulted tests (OBX-3 Observation Identifier) as well as coded results for race (PID-10) and (PID-22) ethnicity. We prefer SNOMED for coded results (OBX-5) and specimen descriptions.

10. **How will LOINC codes and descriptions be evaluated?**
    - That the LOINC is valid (i.e., in the Regenstrief LOINC list at https://loinc.org and not deprecated.
    - The LOINC test name describes the test and test method (it is helpful if laboratories use one of the names listed by Regenstrief)
    - The LOINC test name and the local test name generally describe the same thing
    - The LOINC code and test names are not used for more than one local test name/code
    - If LOINC has not yet published a LOINC for a result that you will be sending, please verify with the ELRC
    - We cannot evaluate the accuracy of the LOINC you have chosen please use the LOINC recommended by the manufacturer of the test.

11. **What kinds of files are most useful for NMDOH to evaluate?**
    NMDOH has found that it is most useful to evaluate HL7 ELR that are "production data in test mode." This means that Production -laboratory data will be used for evaluation.

12. **How does NMDOH prioritize laboratories in the ELR onboarding process?**
    Available resources at NMDOH, number of beds in a hospital, type of lab, and ability to onboard quickly as demonstrated by the answers to the questions in the questionnaire all play into priorities. Other factors include responsiveness of Trading Partner staff, ability to make changes in sending systems and ability to attend regular check-in meetings.

13. **Will NMDOH map my local resulted test codes? If not, what tools are available for vocabulary mapping assistance?**
    NMDOH will not map local codes to standard codes. Check the Regenstrief institute's website https://loinc.org for the most recent information about LOINC codes. Access to this website is free but may require a login. If a laboratory is required to send a resulted test that does not yet have a LOINC, please check with the ELRC.

14. **What web-based tools are available to assist me in validating my message structure?**
    NMDOH uses free, online ELR message tools to assist in validation. Examples include the NIST HL7 2.5.1 Validation Suite for certifying 2014 and 2015 Edition Meaningful Use EHR technology (http://hl7v2-elr- testing.nist.gov/mu-elr/). NMDOH recommends that potential Trading Partners, including those just interested in testing for Meaningful Use, to first validate their messages using the NIST tool and make any necessary corrections prior to submitting to NMDOH for testing. NMDOH recognizes that not all errors received from the NIST validation are of equal importance; some may be accepted by NMDOH.

15. **What is reportable in New Mexico?**
    The list of notifiable diseases or conditions is updated when new diseases or conditions of importance are identified and can be found on the NMDOH website: http://www.srca.nm.gov/parts/title07/07.004.0003.html

    For information about the test results that may go with each condition, see NMDOH Reportable Events Guide.

16. **What methods of transport are available to send ELR to NMDOH?**
    Secure file transport protocol, or sFTP, is the preferred method of transport for ELR with NMDOH. SYNCRONYS will provide instructions on how to set this up when the Trading Partner is ready to send test messages.

17. **If my lab starts to send ELR to NMDOH, will we have to continue sending paper lab reports?**
    Paper lab reports may be discontinued once the ELR have been validated against them for a pre-determined amount of time, usually two months, depending on lab report volume. ELR ELRC will notify TP when TP may stop sending paper lab reports**. Paper reporting can be discontinued for only the lab results included in ELR.** If your facility is not utilizing ELR to meet all reporting obligations (e.g., not capturing results performed by reference laboratories), those lab reports must still be reported via fax.

18. Does ELR fulfill my reporting requirements to NMDOH?

ELR satisfies the reporting requirements for non-emergent conditions as long as the results are submitted within 24 hours of being finalized by the laboratory. Healthcare Providers and laboratories must promptly notify authorities in the event of suspected or confirmed emergency situations.

ELR reporting by laboratories does not nullify the health care provider's or institution's obligation to report diseases, conditions and events, nor does reporting by health care providers nullify the laboratory's obligation to report reportable lab events. Laboratory reporting, including ELR, is not the same as case reporting by health care providers.

19. Will my lab need to send the tests performed by reference lab facilities?

According to New Mexico Rules and Regulations, laboratories must report lab reports for tests performed in-house and by reference laboratories, with the performing organization appropriately documented. If you cannot include results from reference hospitals in the ELR, you must report them via fax. If you are unable to appropriately document the performing organization or utilize standard vocabulary for those results sent to reference labs, paper lab reporting of those lab results will be expected.

20. How long does the on-boarding process take?

The Onboarding duration varies based on the Trading Partner's readiness and NMDOH's current onboarding workload. To expedite the process, we recommend Trading Partners complete the activities listed in the Preparation phase (listed in the onboarding activities, Trading Partner and ELRC Task List.) on page (8-14_) before sending their first test message. Communication is key: if a change is made to the feed based on a request that we make, let us know when or if it was done. If TP cannot fulfill a specific request, let us know. Labs already in production with other states typically onboard faster. Those that test their messages on NIST website and have available staff for adjustments also experience faster onboarding. Labs that review their outgoing feed tend also tend to be a quicker onboard.

21. Does NMDOH accept batch or real-time message transmission for ELR?

Batch transactions will be utilized, but we request that when a lab goes into Production that they send batches once per hour.

22. Does NMDOH send acknowledgements for received ELR?

No, NMDOH does not send message or batch acknowledgements for ELR. However, if reporting entity likes, we can assist you in confirming that we are receiving ELR on our end.

23. When do we sign the Trading Partner Guide (TPG)?

The TPG will remain in draft form and will not be signed by NMDOH or the Trading Partner until ELR is in Production. NMDOH will share a draft version of the TPG with the Trading Partner early in the on-boarding process to help explain business rules.

24. If something is listed as "RE," do I have to send it to NMDOH?

"RE" stands for "Required but can be empty". This is <u>not</u> the same as "Optional." For values listed as RE, if the value is known, you are required to send it. However, if the value is unknown, leave the field empty. Conformant systems are required to be able to send this information, and the

ability to send RE fields will be evaluated during on-boarding.

25. What kind of documentation will NMDOH provide to me that I can use for Meaningful Use attestation?

Once the TP reaches Go-Live phase of the Onboarding process, NMDOH will provide an attestation letter indicating the TP is actively engaged. This letter can be used as documentation for your records. Neither NMDOH, Surveillance Systems or Informatics Program are the Meaningful Use regulators of the body which measures compliance. If you have specific questions about your attestation process, please contact representatives within those governing bodies.

Appendix A: NMDOH Electronic Laboratory Reporting Business Rules

The following Business Rules will be included in the Trading Partner Guide between the Trading Partner and the New Mexico Department of Health (NMDOH).

1. Trading Partners wanting to onboard for ELR with NMDOH are required to follow HL7 Standards Product Brief - HL7 Version 2.5.1 Implementation Guide: Electronic Laboratory Reporting to Public Health, Release 1 (US Realm) | HL7 International. The only other option is to fax results: we do not accept excel or other flat file results.

2. The message structure required is ORU^R01^ORU_R01.

3. **Batch processing** will be utilized and submitted to SYNCRONYS via sFTP.

4. Any order that results in multiple observations must follow **snapshot processing** rules. All information in subsequent message(s) associated with a specific patient and event will replace the corresponding information from the previous message(s) in the receiving application. Because of this, when an observation regarding a particular order is made and an ELR message is sent, any subsequent observations obtained and sent using the same order information must include all previously sent observations for that order.

   An example would be a culture order which results in a final result of *Salmonella* found and sent in an ELR message. If later that culture is also found to have grown *Shigella* and a new ELR message is sent, this second message must also include the original *Salmonella* result. Omitting the original *Salmonella* species result in the subsequent message would indicate that the result is deleted as part of the update that added the *Shigella* species result.

5. **Acknowledgement messages** will not be sent from NMDOH or SYNCRONYS.

6. The implementation described in this agreement does not include electronic data exchange with NHSN (The NHSN User Support Help Desk receives and triages all requests via the nhsn@cdc.gov email account) or the cancer registry (New Mexico Tumor Registry at University of New Mexico School of Medicine, Albuquerque, NM 87131), or HPV registry (New Mexico HPV Pap Registry, 1816 Sigma Chi Rd NE, Albuquerque, NM 87106, phone 505-272-5785 or 505-277-0266).

7. The implementation described in this agreement refers to **living and deceased humans** living in or seeking care in New Mexico. We do not accept non-human results via ELR. Please fax notifiable animal results to 505-827-0013.

8. Messages are constrained to include only **one patient per message**. A message containing more than one PID segment will be rejected.

9. Z-segments will be ignored.

10. Any messages requiring more than **one SPM segment per order** (OBR segment) must be split by the Trading Partner.

11. The SPM segment must be the last segment in the message.

12. Lab Result Sender Usage: NMDOH expects that laboratory systems can send messages that are conformant to the HL7 guidance. A small number of additional requirements are specified in Appendix B to accommodate receiving systems

13. Only Final (F) and Corrected results (C) are required to be sent and should be properly documented in [OBX-11] (Observation Result Status). Proper serialization must be followed (i.e., only a corrected result can succeed a final result. Preliminary results are not accepted.

14. Every message must contain one and only one ORC segment.

15. Parent/child relationships include reflex testing and drug susceptibility testing. Parent observations should be appropriately documented in [OBR-26] (Parent Result) and [OBR-29] (Parent) of the child following the data types specified in the Implementation Guide.

16. SFT, PD1, TQ1, TQ2, CTD, FTI, and CTI are not required by the NMDOH and will be ignored if sent by Trading Partner. If any of these segments are sent, they should be properly formed**.**

17. [MSH-11] (Processing ID) should have the value "P" (Production) even when in Test mode.

18. Standard vocabulary for LOINC is required in OBX-3. Vocabulary coding systems include, but are not limited to:
    a. LOINC – Logical Observation Identifiers Names and Codes. In the event where there are no LOINC code available for a result, then local codes and descriptions must be present, and the Coding System name must be "L." Notify the ELRC and SYNCRONYS if no LOINC code is available.
    b. SNOMED CT – Systemized Nomenclature of Medicine – Clinical Terms where applicable.
    c. UCUM – Unified Code for Units of Measure

19. According to New Mexico Rules and Regulations, laboratories must report results for tests performed both in-house and by reference laboratories, with the performing organization appropriately documented in the ELR message. If you are unable to appropriately document the performing organization in the ELR message for those labs sent to reference labs, provide paper (faxed) lab reporting of those results.

20. The Trading Partner will notify NMDOH ahead of changes to the sending application or ELR interface that are expected to affect the ELR messages. These may include, but are not limited to, sending application upgrades and other changes to systems affecting the sending application.

Appendix B: NMDOH Electronic Laboratory Reporting Message Constraints

Constraints placed on the HL7 Version 2.5.1 Implementation Guide: Electronic Laboratory Reporting to Public Health Release 1 (US Realm), with errata (referred to as Implementation Guide going forward), are specified in this section. In fields where literal values are expected, the values are indicated below using single quotation marks following an equal sign (e.g. [MSH-12] Version ID = '2.5.1').
Send ELR messages in snapshot mode

Send only final and corrected results.

The MSH, PID, ORC, OBR, OBX, NTE (where applicable), and SPM segments are required.

Following are New Mexico's specifications for literal values, requirement and requests above the HL7 implementation guide and provides information for fields where laboratories commonly have trouble. See Figure XX for segments that are required, optional and not accepted.			
Segment or Field Component	**Description**	**HL7 2.5.1**	**Notes and literal values**
MSH-1	FieldSeparator	R	Literal value: '|'
MSH-2	EncodingCharacters	R	Literal value: '^~\&'
MSH-4.1	SendingFacilityName	R	Describe the Sending facility so that a person can understand. Commonly recognized abbreviations are encouraged. (Limited to 20 characters.)
MSH-4.2	SendingFacilityID	R	Enter your facility's CLIA or OID number
MSH-4.3	UniversalIDType	R	Literal value: 'CLIA' or 'ISO'
MSH-5	ReceivingApplication	R	Literal value: 'NMDOH^2.16.840.1.113883.3.5364^ISO'
MSH-6	ReceivingFacility	R	Literal value: 'NMDOH^2.16.840.1.113883.3.5364^ISO'
MSH-9	MessageType	R	Literal Value: 'ORU^R01^ORU_R01'
MSH-10	MessageControlID	R	Must be unique for each message. Uniquely identifies the message instance from the sending application. NM requirement is different from HL7: maximum number of characters is 100.
MSH-11	ProcessingID	R	Literal value: 'P' (even in test mode)
MSH-12	VersionID	R	Literal value: '2.5.1'
MSH-15	Accept Acknowledgment Type	CE	Literal value: 'NE'
MSH-16	Application Acknowledgment Type	CE	Literal value: 'NE'
MSH-21	MessageProfileIdentifier	R	Literal value: 'PHLabReport-NoAck^^2.16.840.1.114222.4.10.3^ISO'
PID-3	PatientIdentifierList	R	This is a repeating segment. Enter the MRN in the first repeating block, then others. Reference laboratories should enter their own and the hospital's Person IDs if possible.
PID-5.7	PatientName	**R in NM**	Multiple repeating segments are accepted. At least one must have the literal value" 'L' (Legal). **We require a name in each message, even if it is a placeholder name**. For example, if it is the only

Following are New Mexico's specifications for literal values, requirement and requests above the HL7 implementation guide and provides information for fields where laboratories commonly have trouble. See Figure XX for segments that are required, optional and not accepted.			
Segment or Field Component	**Description**	**HL7 2.5.1**	**Notes and literal values**
			value available 'Baby' should be designated a legal name until the actual name is entered into the system.
PID-8	AdministrativeSex	RE	Transform local codes to the value set HL70001. If your facility accommodates more than the value set HL70001, provide the codes and values to ELRC.
PID-10	Race,	RE	Transform local codes to the value set HL70005. If your facility accommodates more than the value set HL70005, provide the codes and values to the ELRC. If Race is unknown, leave this field blank.
PID-11.9	CountyParishCode	RE	We request county information for home address. We prefer that it be coded as PHVS_County_FIPS_6-4, but if that is not possible, provide the ELRC with a list of possible codes and values. Text is also acceptable.
PID-22	EthnicGroup	RE	Transform local codes to the value set HL70189. If your facility accommodates more than the value set HL70189, provide the codes and values to the ELRC during the onboarding process. If Ethnicity is unknown, leave this field blank.
ORC-21	OrderingFacilityName	R	Ordering facility name, address and phone number are required regardless of the presence or absence of ordering provider information.
ORC-22	OrderingFacilityAddress	R	Ordering facility name, address and phone number are required regardless of the presence or absence of ordering provider information.
ORC-23	OrderingFacilityPhoneNumber	R	Ordering facility name, address and phone number are required regardless of the presence or absence of ordering provider information.
OBR-4	UniversalServiceIdentifier	R	Do not LOINC encode OBR-4 unless it is a code that personnel in the facility will recognize.
OBR-25	ResultStatus	R	Send only F (Final) or C (Corrected) results. Do not send preliminary (P) results—if it is a preliminary result (a culture result, for example) for a condition that requires emergent notification, call the Epidemiology line at 505-827-0006. Do not send ordered tests that have been cancelled (X) they will fail in our system.
OBX-2	ValueType	R	Use only NM, CE, CWE, ST, TX, CE, DT, TS or SN values. Make sure that OBX-2 and OBX-5 match.
OBX-3	ObservationIdentifier	R	LOINC is required in OBX3.1 and a valid test name (preferably copied from the LOINC site) in OBX-3.2
OBX-5	ObservationValue	CE	Request that coded results be coded using SNOMED
OBX-6	Units	CE	Populate if OBX-2 is 'SN' or 'NM' using valid UCUM values.

Following are New Mexico's specifications for literal values, requirement and requests above the HL7 implementation guide and provides information for fields where laboratories commonly have trouble. See Figure XX for segments that are required, optional and not accepted.			
Segment or Field Component	**Description**	**HL7 2.5.1**	**Notes and literal values**
OBX-11	Observation Result Status	R	Send- only F (Final) or C (Corrected) results. Do not send preliminary (P) results—if it is a preliminary result (a culture result, for example) for a condition that requires emergent notification, call the Epidemiology line at 505-827-0006. Do not send results that have been cancelled (X) they will fail in our system.
OBX-19	DateTimeOfTheAnalysis	**R in NM**	**This field is required in our systems.**
NTE-3	Comment	O	Maximum number or characters is 1999. Send only NTE segments associated with an OBX segment. (See figure 2. for segments that are accepted.)
SPM-4	SpecimenType	R	SNOMED codes are preferred.
SPM-8	SpecimenSourceSite	RE	SNOMED codes are preferred.
R: Required **RE:** Required, but can be empty **O:** Optional **CE**: Conditional, but may be empty			

Appendix C: Guidance for Sending Antimicrobial Resistance Test Results via ELR

To fully assess antimicrobial resistance and categorize resistance properly, NMDOH needs to receive enough information about resistance testing for specific organisms. This includes:

1. The antimicrobial/bactericidal agent being tested
2. The method of testing (MIC, etc.)
3. The actual quantitative and qualitative results and interpretations

This information is used to monitor for multi-drug-resistant organisms that require stronger antibiotics to treat infections.

Specific fields in the HL7 message allow for the antimicrobial susceptibilities to be reported to NMDOH. The messages used to report susceptibilities should contain the organism, antibiotic susceptibilities, and the specimen source. The parent observation is the identified observation, and the child observation is the antibiotic susceptibility result. The child observations should list all antibiotics tested against the organism, the measured MIC values, and the phenotypic interpretation.

See the diagram below for a simple example of how to link the parent-child observations for antimicrobial resistance:

Message Type (HL7 2.5.1)
MSH
PID
ORC
OBR|1|Placer|Filler
OBX|1||Observation^Identifier|ObservationSubID|ObservationValue
SPM
OBR|2||||||||||||||||||||||||||Observation&Identifier^ObservationSubID^ObservationValue|||Placer^Filler
OBX|1
OBX|2
OBX|3
SPM

Example [OBR-26] Parent Result:

|600-7&Microorganism identified&LN&CULT&Culture&L^1^Streptococcus pneumoniae|

The first component <600-7&Microorganism identified&LN&CULT&Culture&L> consists of the test codes and descriptions for a microbial culture that appeared in the parent observation [OBX-3]. The second component <1> is the sub-ID in the parent organism [OBX-4]. The third component <Streptococcus pneumoniae> is the result description of the parent observation. The result description should come from [OBX-5.2] of the parent observation but may come from [OBX-5.5] if [OBX-5.2] is empty.

Additional information and message examples can be found in Appendix A of the HL7 Version 2.5.1 Implementation Guide: Electronic Laboratory Reporting to Public Health Release 1 (US Realm), with erra