CDPH
California Department of Public Health

CalREDIE
California Reportable Disease Information Exchange

CDPH

Electronic Lab Reporting HL7 Specifications Guide

UPDATED DECEMBER 2024

Contents

INTRODUCTION

This is the California Department of Public Health (CDPH) guide to required data elements for electronic laboratory report (ELR) results sent to the California Reportable Disease Information Exchange (CalREDIE). CalREDIE is the state's public health infectious disease surveillance system. This guide contains the necessary specifications for laboratory results reporting to CDPH and provides information regarding message content and transmission of laboratory reportable result messages using Health Level 7 International (HL7) data standards. HL7 provides a framework and related standards for transfer of clinical and administrative data between software applications and is the preferred framework for submitting reportable disease condition test results to comply with California State regulations.

California Code of Regulations, Title 17, Section 2505 requires laboratories and other testing facilities to report laboratory testing results suggestive of diseases of public health importance to the local health department via ELR. Additional information on Title 17 and reportable requirements resources are available at these links:

- Reportable Disease and Conditions
- CalREDIE Lab Reporting

This document, CDPH Electronic Lab Reporting HL7 Specifications Guide, will be referred to as the "CDPH Guide" and is intended to streamline and highlight requirements of particular importance for compatibility with the CalREDIE system to ensure accurate and complete reporting to the state as well as location health jurisdictions (LHJs) within the state.

This CDPH Guide is supplemental to the HL7 Version 2.5.1 Implementation Guide: Electronic Lab Reporting to Public Health, R1 (US Realm) adopted by the Centers for Disease Control and Prevention (CDC) which is available at this link: HL7 V251_Implementation Guide: ELR to Public Health R1.1_2014MAY.pdf (hl7.org)

CalREDIE REPORTING DATA ELEMENTS & REQUIREMENTS

The following is a high-level summary of requirements and important fields for sending version **2.5.1 or higher** lab results to CalREDIE. Detailed specifications for segments and fields begin on page 4.

In certain rare instances when a testing facility is unable to send lab result messages in HL7 version 2.5.1 or higher, refer to Appendix C for additional requirements to ensure lab results can be accepted and processed accurately by CalREDIE.

The following segments are required in HL7 messages sent to CalREDIE:

Table 1. Required Message Segments

Code	Segment Name
MSH	Message Header
SFT	Software
PID	Patient Identification
ORC	Common Order
OBR	Observation Request
OBX	Observation/Result
SPM	Specimen
Optional	*Segment*
NTE	Notes and Comments

Notes are optional segments and can be used for asked on order entry (AOE) questions. NTEs are preferred to be sent after the OBX segment(s).

Table 2 below provides a description of the data elements **required** when sending HL7 ELR-formatted lab data results to CalREDIE. The column descriptions for the table are:

- **HL7 Segment/Component -** the HL7 segment and field, and component when needed, for data elements required in the ELR message being sent to CalREDIE
- **HL7 Element Name –** the name of the field and/or component
- **Description/Comments -** important and specific instructions on how to populate entries
- **Data Format and/or Example** - examples of acceptable entries

Table 2. HL7 ELR Specifications for Required Data Elements

HL7 Segment / Component	HL7 Element Name	Description/Comments	Data Format and/or Example
MSH-4.1	Reporting Facility Name	Facility name must not exceed 20 characters	ABC Hospital
MSH-4.2	Facility CLIA	Should match officially assigned CLIA ID	05D2170913
MSH-7	Date and Time of Message	Date and time when sent by the interface. GMT offset (shown in example after the hyphen) is optional.	YYYYMMDDHHMMSS 20240322113759-0700
MSH-10	Message Control ID	A unique ID for each message sent	20240208132554.23456 Alpha-numeric values accepted; hyphens or periods may also be included
MSH-12.1	HL7 version number	2.5.1 or higher expected *For organizations unable to send at least version 2.5.1, refer to Appendix C.*	2.5.1
SFT-1	Software Vendor Organization	Lab Information Management System (LIMS) or Electronic Health Record/Electronic Medical Record (her/EMR) Manufacturer	Cerner, Epic, OrchardSoft, Apollo
SFT-3	Software Product Name	Typically, an interface engine or module	Cerner ELR, Epic Bridges, Cloverleaf, Corepoint
PID-5.1	Patient Last Name	Hyphenated names are acceptable, but non-ascii special characters like accented letters are not.	Smith
PID-5.2	Patient First Name	Hyphenated names are acceptable, but non-ascii special characters like accented letters are not.	Sam

HL7 Segment / Component	HL7 Element Name	Description/Comments	Data Format and/or Example
PID-5.3	Patient Middle Name	Hyphenated names are acceptable, but non-ascii special characters like accented letters are not.	Robert or R
PID-7	Patient Date of Birth	Use YYYYMMDD format	19851225
PID-8	Administrative Sex	Indicate with a single character code Options are: Female (**F**), Male (**M**), Other (**O**), or Unknown (**U**)	F, M, O, or U
PID-10	Race	Patient race Multiple race codes are acceptable, please separate by ~ *See Appendix B for a full list of accepted race codes.*	2028-9^Asian 2054-5^Black or African American~2028-9^Asian~2036-2^Filipino
PID-11	Patient Address	Populate across components and include house number, street, city, state (two letter abbreviation) and zip code	100 Paseo de San Antonio^APT 235^San Jose^CA^95113^USA^H
PID-13	Phone Number	Should include area code and no dashes	^PRN^PH^^1^123^1236789
PID-22	Ethnic Group	Patient Ethnicity Use code or single letter code with text descriptions: **N** for Not Hispanic or Latino, **H** for Hispanic or Latino, or **U** for Unknown	2186-5^Not Hispanic or Latino 2135-2^Hispanic or Latino N^Not Hispanic or Latino H^Hispanic
ORC-21	Ordering Facility Name	Name of facility involved in ordering the lab test	General Hospital Lab^D^^^^NPI&2.16.840.1.113883.4.6&ISO^NPI^^^1255402921

HL7 Segment / Component	HL7 Element Name	Description/Comments	Data Format and/or Example
ORC-22	Ordering Facility Address	Generally, should be in CA	2217 Trancas^Suite 22^Napa^CA^94558^USA^M
ORC-23	Ordering Facility Phone Number	Should include area code and no dashes	^WPN^PH^^1^123^1236789
ORC-24	Ordering/ Referring Provider Address	Includes building number, street, city, state (two letter abbreviation) and zip code	5010 Paseo de San Antonio^Suite 200^San Jose^CA^95113^USA^H
OBR-4	Lab Test Order LOINC	Universal Service Identifier code for the requested observation/test/battery Use either the same LOINC as in OBX.3 or, if no LOINC exists, use your local code in OBR4.4	96741-4^SARS-CoV-2 (COVID-19) variant Sequencing Nom (Specimen)^LN^36900^COVID-19 WGS^L
OBR-13	Relevant Clinical Information	CDPH uses this field to indicate pregnancy status. Options are: Prenatal, Not Pregnant or Unknown Pregnancy **Pregnancy status was added to list of REQUIRED data elements in October 2019	Prenatal

HL7 Segment / Component	HL7 Element Name	Description/Comments	Data Format and/or Example
OBR-16	Ordering Provider National Provider Identifier (NPI) and Name	NPI, Last Name and First Name of the Ordering Provider. Middle name or initial and title may also be included.	1012941681^Arthurson^Joanna^ C^^DR *NOTE: Tests must be ordered by a licensed physician or other person authorized to order tests under the physician's scope of practice, as specified in California Business and Professions Code section 1288. See Appendix D for reference.*
OBR-17	Ordering Provider Phone Number	Include area code and no dashes	^WPN^PH^^1^123^1236789
OBR-25	Result Status	Use single letter codes Options are **F** for Final, **P** for preliminary and **C** for corrected	F, P or C
OBR-31	Reason for Study	Use ICD-10 Diagnosis Code **Diagnosis code was added to list of REQUIRED data elements in October 2019	A92.5^Zika virus disease^I10

HL7 Segment / Component	HL7 Element Name	Description/Comments	Data Format and/or Example
OBX-2	Data Type	This field identifies the data type of the result in OBX-5 SN = Structured Numeric (preferred for quantitative results and can accommodate ratios, titers, ranges and other qualifiers) CWE = Coded with Exceptions; i.e., SNOMED CNE = Coded no Exceptions FT = Formatted Text with embedded codes ST = String for text less than 999 characters TX = Text more than 999 characters TS/TM/ DT = Timestamp/Time/Date	SN, ST, TX, FT, CWE *Note: Coded element (CE), while acceptable for CalREDIE, is no longer used in v 2.6 and higher*
OBX-3.1	Lab Test LOINC code	Lab Test Observation Identifier - a numeric code for the testing performed. LOINC is used as the coding system for this field	82176-9
OBX-3.2	Lab Test Name	Text describing the test performed	RSV RNA Nph Ql NAA+non-probe
OBX-5.1	Lab Result Observation Value Code	SNOMED code for the resulted test name **or** if numeric result (such as SN, NM) have numeric result in OBX-5, units in OBX-6, and reference range in OBX-7	SNOMED: 260385009 SN example: ^0^-^1| **OR** |^1^/^2| **OR** |^1^:^2| **OR** |<^10|, etc NM example: |123.4|

HL7 Segment / Component	HL7 Element Name	Description/Comments	Data Format and/or Example
OBX-5.2	Lab Result Observation Value Text Description	Text description of the resulted test name	Negative
OBX-6	Result Units	Need to send it if you have it for quantitative results Assume a standard (UCUM) code populates the first triplet and a local code the second. Condition: If the data type in OBX 2 is "NM" or "SN" and the OBX-11 observation result status is not 'X' then OBX.6 must be populated. Else, OBX.6 is not populated.	|titer^titer^UCUM|
OBX-7	Result References Range	This element is a common core data element for quantitative (SN or NM) results reported in OBX-5. Need to send it if you have it.	<1:2 Serum titer of CF Ab or <1:1 CSF titer of CF Ab
OBX-8	Abnormal Flag	Indicator of the normalcy of the result found in OBX-5. Use N^Normal or A^Abnormal based on result outcome unless drug resistant susceptibility.	A^Abnormal or N^Normal Examples for mic: S^Suceptible R^Resistant I^Intermediate
OBX-11	Observation Result Status	Use single letter codes Options are **F** for Final, **P** for preliminary and **C** for corrected.	F, P or C

HL7 Segment / Component	HL7 Element Name	Description/Comments	Data Format and/or Example
OBX-17	Observation Method or Test Device	Lab instrument used to perform test or testing methodology/platform. Need to send it if you have it. If over 20 characters, use OBX-17.2.	Abbott IDNOW
OBX-19	Test Resulted Date and Time	Time at which testing was performed	YYYYMMDDHHMMSS 20241201000002
OBX-23.1	Performing Organization Name	Laboratory name where testing took place. This field specifies the laboratory that produced the test result described in this OBX segment.	San Francisco PHL
OBX-23.10	Performing Organization CLIA	For producing laboratories that are CLIA-certified, the CLIA identifier should be used for the organization identifier.	05D0643643
OBX-24	Performing Organization Address	Address of the laboratory that actually performed the test when used as a reference laboratory. Includes building number, street, city, state (two letter abbreviation) and zip code.	100 Paseo de San Antonio^APT 235^San Jose^CA^95113^USA^H
SPM-2.2.1	Accession Number	Unique identifier for the test, usually assigned by the LIMS. Can include letters, numbers, periods, dashes, etc. ****Labs SHOULD NOT reuse Accession Numbers for ELR messages for lab results transmitted to CDPH**	24-A001456-005

HL7 Segment / Component	HL7 Element Name	Description/Comments	Data Format and/or Example
SPM-4 .1	Specimen Type or Material SNOMED code	SNOMED code for the type of specimen **Specimen source (type) was added to list of REQUIRED data elements in October 2019	258610001
SPM-4 .2	Specimen Type or Material Text Description	Text description of the type of specimen **Specimen source (type) was added to list of REQUIRED data elements in October 2019	Sputum specimen
SPM-8 .1	SNOMED Code for Specimen Source Site	A numeric code for the specimen source (body) site/anatomic location **Specimen site was added to list of REQUIRED data elements in October 2019	13648007
SPM-8.2	Specimen source site text description	A text description for the specimen source (body) site/anatomic location **Specimen site was added to list of REQUIRED data elements in October 2019	Urethral structure
SPM-17	Specimen Collected Date and Time	Date and time specimen was collected from the patient	YYYYMMDDHHMMSS 202402061830-0800
SPM-18	Specimen Received Date and Time	Date and time specimen arrived in the laboratory to be tested	YYYYMMDDHHMMSS 202402061950-0800

Any deviations from this guidance may result in non-acknowledgement (NAK/NACK) messages, data-processing errors, & reporting delays. It is the responsibility of the reporting facility to review their NAK messages, to correct and resend lab results, and to ensure required lab results are properly reported to CDPH and CalREDIE.

HL7 messages that initially NAK due to errors should be resent with a corrected status in the appropriate OBR and OBX segments. To resend 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.

MULTIPLEX REPORTING

Multiplex reporting is used when results from panel tests (e.g. respiratory panel test for SARS-CoV-2, Flu A/B and RSV, or an STD screening panel for chlamydia and gonorrhea, or syphilis) need to be reported in one HL7 message. Table 3 highlights important details to be included in these messages.

Table 3. Multiplex Panel Reporting Guidance

Multiplex/Panel Results

- The panel LOINC and its corresponding text should be in **OBR-4.**
- Each test in the panel should be in its own OBX segment. A LOINC specific to each individual test in the panel should be in **OBX-3.1**. The panel LOINC should not be used in OBX-3.
- Include the SNOMED code for the test result in **OBX-5.1.**
- When performing multiplex testing with "combo panels" (panels that can't differentiate between two or more analytes), an NTE segment must be added with the comment "This test does not differentiate between analyte A and analyte B.".
- For Influenza A & B, and RSV **testing that differentiates virus subtypes, those subtypes must be reported, even if the subtype results are not detected, inconclusive, etc.** Do not report an overall Influenza or RSV positive result that does not differentiate the type/subtype of Influenza or RSV when typing information is available.
- **Include a flag in OBX-8** (does not apply to CSV submissions) **A^Abnormal** for detected/reactive results. **N^Normal** for not detected/non-reactive/inconclusive/specimen unsatisfactory results.

EXAMPLE of a properly formatted **Respiratory panel**

OBR|1||55555718120^TESTLAB^2.16.840.1.113883.3.362.90.100^ISO|**95941-1**^Influenza virus A and B and SARS-CoV-2 (COVID-19) and Respiratory syncytial virus RNA panel - Respiratory specimen by NAA with probe detection|||20241103223532-0800|||||Not Pregnant|||1234567890^SMITH^JANE ^^^^^^NPI&2.16.840.1.113883.4.6&ISO^^^^NPI|^WPN^PH^^1^123^1236789|||||20241103223532-0800|||F||||||B97^COVID-19 screening^I10

OBX|**1**|CWE|**94565-9**^SARS coronavirus 2 RNA^LN||**260415000**^Not Detected^SCT^NOTDET^Not Detected^L^20230301^1||Not Detected|**N^Normal**|||F|||20241103223532-0800|||^FilmArray 2.0 System_BioFire||20241103223532-0800||||TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7&ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814

OBX|**2**|CWE|**82166-0**^Influenza virus A RNA^LN||**260373001**^Detected^SCT ^DETEAB^Detected^L^20230301^1||Not Detected|**A^Abnormal**|||F|||20241103223532-0800|||^FilmArray 2.0 System_BioFire|| 20241103223532-0800||||TESTLAB^D^^^^CLIA &2.16.840.1.113883.4.7&ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814

OBX|**3**|CWE|**82167-8**^Influenza virus A H1 RNA^LN||**260415000**^Not Detected^SCT^NOTDET^Not Detected^L^20230301^1||Not Detected|**N^Normal**|||F|||20241103223532-0800|||^FilmArray 2.0 System_BioFire||20241103223532-0800||||TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7&ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814

OBX|**4**|CWE|**68986-9**^Influenza virus A H5a RNA^LN||**260373001**^Detected^SCT^ DETEAB^Detected^L^20230301^1||Not Detected|**A^Abnormal**| ||F|||||^FilmArray 2.0 System_BioFire||20241103223532-0800|||TESTLAB^D^^^^CLIA &2.16.840.1.113883.4.7& ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814

OBX|**5**|CWE|**82169-4**^Influenza virus A H3 RNA^LN||**260415000**^Not Detected^SCT^NOTDET^Not Detected^L^20230301^1||Not Detected|**N^Normal**|||F|||20241103223532-0800|||^FilmArray 2.0 System_BioFire||20241103223532-0800|||TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7& ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814

OBX|**6**|CWE|**82170-2**^Influenza virus B RNA^LN||**260415000**^Not Detected^SCT^NOTDET^Not Detected^L^20230301^1||Not Detected|**N^Normal**|||F|||20241103223532-0800|||^FilmArray 2.0 System_BioFire||20241103223532-0800|||TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7& ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814

OBX|**7**|CWE|**30075-6**^RSV A RNA NAA+probe Ql (Specimen)^LN||**260373001**^Detected^SCT^NOTDET^Not Detected^L^20230301^1||Not Detected|**A^Abnormal**|||F|||20241103223532-0800|||^FilmArray 2.0 System_BioFire|| 20241103223532-0800|||TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7& ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814

OBX|**8**|CWE|**30076-4**^RSV B RNA NAA+probe Ql (Specimen)^LN||**260415000**^Not Detected^SCT^NOTDET^Not Detected^L^20230301^1||Not Detected|**N^Normal**|| ||F|||20241103223532-0800|||^FilmArray 2.0 System_BioFire||20241103223532-0800|||| TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7& ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814

SPM|1|^55555718120&TESTLAB&2.10.640.1.113883.3.362.90.100&ISO||445297001^Nasal Swab^SCT^^^^2.5.1||||71836000^Nasopharyngeal structure^SCT||||||||202411011633-0800|202411020316-0800||||||||||||

EXAMPLE of a properly formatted **Chlamydia & Gonorrhea panel**
OBR|1|ngcttestpt^TESTLAB^2.16.840.1.113883.3.362.90.100^ISO|**64017-7**^C trach+GC pnl SpecNAA+probe^LN^1129160939 ^Chlamydia and GC APTIMA^L^2.5.1^v1|||202412021000-0800|||||Unknown pregnancy|||1234567890^SMITH^JANE^^^^^^NPI&2.16.840.1.113883.4.6&ISO^^^^NPI|^WPN^PH^^1^123^1236789||||202412021000-0800|||F|||||Z11.3^STI Screening^I10 **OBX**|1|CE|**60256-5^**N gonorrhoea rRNA Ur Ql NAA+probe^LN^1131024653^N gonorrhoeae APTIMA ^L^2.5.1^v1||**10828004**^Positive (qualifier value)^SCT^Positive^Positive^L||Negative|**A^Abnormal**|| |F|||202412021000-0800|||^Cepheid Xpert CT/NG||202412021000-0800||||TESTLAB^D^^^^CLIA& 2.16.840.1.113883.4.7&ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814 **OBX**|2|CE|**42931-6**^C trach rRNA Ur Ql NAA+probe^LN^1131024675^Chlamydia APTIMA ^L^2.5.1^v1||10828004^Positive (qualifier value)^SCT^Positive^Positive^L ||Negative|A^Abnormal|| |F|||202412021000-0800|||^Cepheid Xpert CT/NG||202412021000-0800||||TESTLAB^D^^^^CLIA& 2.16.840.1.113883.4.7&ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814 **SPM**|1|^ngcttestpt&fakeMD&1.2.840.114350.1.13.541.2.7.3.798268.320&ISO^ConnectionTest0001&fakeMD&2.16.840.1.114222.4.1.1.0412&ISO||258520000^Vaginal Swab^SCT^^^L||||76784001^Vagina^SCT||||||||20241202093000-0800|20241202093500-0800|||||||||||

PARENT-CHILD REPORTING

Parent-child relationships, such as culture and sensitivities, can be reported using the HL7 electronic messaging standard. Parent-Child reporting ensures the ability to link a parent (e.g. culture) to child (e.g. bacterial susceptibility) results using OBR-26.2 and OBR-29 in the child message. The messages may contain both the parent order-observation group and the child order-observation group; or the message may contain only the child order-observation group. Reflex testing and Bacterial Susceptibilities are the major use cases for this structure. Parent-Child format should not be used to report syphilis titers along with the screening result.

Key Features of a good parent-child culture result ELR message: (Color coded elements below pertain to analogous components of the example ELR messages on p. 13-14.)

- Both parent and child(ren) must be in the same message and the parent must precede its child(ren).
- 1st observation group is the first set of **OBR**, multiple **OBX** and **SPM** segments and contains the parent identifier(s).
- 2nd observation group is the second set of **OBR**, multiple **OBX** and **SPM** segments and contains the child/ren identifier(s).
- 1st OBR-4 is populated with the culture information which repeats in the 1st OBX-3.
- 1st OBX-4 should be the parent ID, followed by the finding in OBX-5 (in this case the SNOMED code and organism name).
- 2nd OBR-26 is mapped using the following components:
  - OBR-26.1 is the culture LOINC and corresponding text.
  - OBR-26.2 is the child ID (equates to the parent ID).
  - OBR-26.3 is the organism's name (equates to OBX-5) or parent result.
  - OBR-29 must be populated with a parent number (different than the parent ID).
- 2nd OBX segments after 2nd OBR will link the susceptibilities to the organism.
  - OBX-3 is the LOINC and text description of the antibiotic tested.
  - OBX-4 in the susceptibilities links to the organism and corresponds with the parent & child ID.
  - OBX-5 is the susceptibility result.
  - OBX-6 is the susceptibility units of measure.
  - OBX-8 is susceptibility interpretation (applicable to MIC)

EXAMPLE of properly formatted Parent Child Culture and Susceptibility with ONE organism.

OBR|1|microtestpt^Fake_EHR^1.2.840.114350.1.13.541.2.7.2.11111^ISO|ConnectionTest0001^fakeMD^1.2.840.114350.1.13.541.2.7.3.798268.1111^ISO|630-4^Bacteria identified Cx Nom (U)^LN^2922077^Urine Culture^L||||20241202100000-0800|||||Not pregnant|||1234567890^SMITH^JANE^^^^^^NPI&2.16.840.1.113883.4.6&ISO^^^^NPI|^WPN^PH^^1^123^12367 89|||||20241202100000-0800|||F|||||||87086^Urine Culture^I10

OBX|1|CWE|630-4^Bacteria identified Cx Nom (U)^LN^2922077^Urine Culture^L|1|714315002^Multiple drug-resistant Klebsiella pneumoniae (organism)^SCT^123672466^Multiple drug-resistant Klebsiella pneumoniae^L|||A^Abnormal (applies to non-numeric results)^HL70078^^^^2.5.1|||F|||20241202100000-0800|||||20241202100000-0800||||TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7&ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814||||||

SPM|1|^microtestpt&fakeMD&1.2.840.114350.1.13.541.2.7.3.798268.320&ISO^ConnectionTest0001&fakeMD&2.16.840.1.114222.4.1.1.0412&ISO||122880004^U CleanCatch^SCT^^^^2.5.1|||| 446300003^Urine specimen from urethra|||||||20241202093000-0800|20241202093500-0800||||||||||

OBR|2|microtestpt^Fake_EHR^1.2.840.114350.1.13.541.2.7.2.11111^ISO|ConnectionTest0001^fakeMD^1.2.840.114350.1.13.541.2.7.3.798268.1111^ISO|50545-3^Bacterial susceptibility panel MIC (Isol)^LN^54071982^CMICY^L||||20241202100000-0800|||||Not pregnant|||1234567890^SMITH^JANE^^^^^^NPI&2.16.840.1.113883.4.6&ISO|||||20241202100000-0800||MB|F|630-4&BACTERIA IDENTIFIED:PRID:PT:URINE:NOM:CULTURE&LN^1^Multiple drug-resistant Klebsiella pneumoniae (organism)|||1350539813&KP1118&1.3.6.1.4.1.26580.150 &ISO^6775586767&HNAM_ORDERID&1.3.6.1.4.1.26580.150&ISO||87086^Urine Culture^I10|||||||||||||||||||

OBX|1|SN|28-1^Ampicillin MIC [Susc]^LN^309703^Ampicillin^L|1|>=^32|ug/mL^MicroGramsPerMilliLiter [Mass Concentration Units]^UCUM||R^Resistant. Indicates for microbiology susceptibilities only^HL70078^^^^2.5.1|||F||| 20241202100000-0800|||||20241202100000-0800||||TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7 &ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814||||||

OBX|2|SN|76-0^ceFAZolin MIC [Susc]^LN^34484544^Cefazolin Urine^L|1|>=^64|ug/mL^MicroGramsPerMilliLiter [Mass Concentration Units]^UCUM||R^Resistant. Indicates for microbiology susceptibilities only^HL70078^^^^2.5.1|||F|||20241202100000-0800|||||20241202100000-0800||||TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7 &ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814||||||

OBX|3|NM|6644-9^Cefepime MIC [Susc]^LN^309692^Cefepime^L|1|4|
ug/mL^MicroGramsPerMilliLiter [Mass Concentration Units]^UCUM||S^Susceptible. Indicates for microbiology susceptibilities only^HL70078^^^^2.5.1|||F|||20241202100000-0800|||||20241202100000-0800|||| TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7&ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814||||||

SPM|1|^microtestpt&fakeMD&1.2.840.114350.1.13.541.2.7.3.798268.320&ISO^ConnectionTest0001&fakeMD&2.16.840.1.114222.4.1.1.0412&ISO||122880004^U CleanCatch^SCT^^^^2.5.1|||||446300003^Urine specimen from urethra|||||||||20241202093000-0800|20241202093500-0800||||||||||

EXAMPLE of properly formatted Parent Child Culture & Susceptibility with TWO organisms. Multiple SPM segments are needed. An SPM segment should follow the last OBX to complete each group.

OBR|1|microtestpt^Fake_EHR^1.2.840.114350.1.13.541.2.7.2.11111^ISO|ConnectionTest0001^fakeMD^1.2.840.114350.1.13.541.2.7.3.798268.1111^ISO|630-4^Bacteria identified Cx Nom (U)^LN^2922077^Urine Culture^L||||20241202100000-0800|||||Not pregnant|||1234567890^SMITH^JANE^^^^^^NPI&2.16.840.1.113883.4.6&ISO^^^^NPI|^WPN^PH^^1^123^1236789|||||20241202100000-0800|||F|||||||87086^Urine Culture^I10

OBX|1|CWE|630-4^Bacteria identified Cx Nom (U)^LN^2922077^Urine Culture^L|1|714315002^Multiple drug-resistant Klebsiella pneumoniae (organism)^SCT^123672466^Multiple drug-resistant Klebsiella pneumoniae^L|||A^Abnormal (applies to non-numeric results)^HL70078^^^^2.5.1|||F|||20241202100000-0800|||||20241202100000-0800||||TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7&ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814||||||

OBX|1|CWE|630-4^Bacteria identified Cx Nom (U)^LN^2922077^Urine Culture^L|2|91288006^Acinetobacter baumannii (organism)^SCT^91288006^Acinetobacter baumannii (organism)^L|||A^Abnormal (applies to non-numeric results)^HL70078^^^^2.5.1|||F|||||||20241202100000-0800||||TESTLAB^D^^^^CLIA &2.16.840.1.113883.4.7&ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814 ||||||

SPM|1|^microtestpt&fakeMD&1.2.840.114350.1.13.541.2.7.3.798268.320&ISO^ConnectionTest0001&fakeMD&2.16.840.1.114222.4.1.1.0412&ISO||122880004^U CleanCatch^SCT^^^^2.5.1||||446300003^Urine specimen from urethra|||||||||20241202093000-0800|20241202093500-0800||||||||||

OBR|2|microtestpt^Fake_EHR^1.2.840.114350.1.13.541.2.7.2.11111^ISO|ConnectionTest0001^fakeMD^1.2.840.114350.1.13.541.2.7.3.798268.1111^ISO|50545-3^Bacterial susceptibility panel MIC (Isol)^LN^54071982^CMICY^L||||20241202100000-0800|||||Not pregnant|||1234567890^SMITH^JANE^^^^^^NPI&2.16.840.1.113883.4.6&ISO|||||20241202100000-0800||MB|F|630-4&BACTERIA IDENTIFIED:PRID:PT:URINE:NOM:CULTURE&LN^1^Multiple drug-resistant Klebsiella pneumoniae (organism)|||1350539813&KP1118&1.3.6.1.4.1.26580.150&ISO^6775586767&HNAM_ORDERID&1.3.6.1.4.1.26580.150&ISO||87086^Urine Culture^I10|||||||||||||||||

OBX|1|SN|28-1^Ampicillin MIC [Susc]^LN^309703^Ampicillin^L|1|>=^32|ug/mL^MicroGramsPerMilliLiter [Mass Concentration Units]^UCUM||R^Resistant. Indicates for microbiology susceptibilities only^HL70078^^^^2.5.1|||F|||20241202100000-0800|||||20241202100000-0800||||TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7&ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814||||||

OBX|2|SN|76-0^ceFAZolin MIC [Susc]^LN^34484544^Cefazolin Urine^L|1|>=^64|ug/mL^MicroGramsPerMilliLiter [Mass Concentration Units]^UCUM||R^Resistant. Indicates for microbiology susceptibilities only^HL70078^^^^2.5.1|||F|||20241202100000-0800|||||20241202100000-0800||||TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7&ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814||||||

OBX|3|NM|6644-9^Cefepime MIC [Susc]^LN^309692^Cefepime^L|1|4|ug/mL^MicroGramsPerMilliLiter [Mass Concentration Units]^UCUM||S^Susceptible. Indicates for microbiology susceptibilities only^HL70078^^^^2.5.1|||F|||20241202100000-0800|||||20241202100000-0800||||TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7&ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814||||||

SPM|1|^microtestpt&fakeMD&1.2.840.114350.1.13.541.2.7.3.798268.320&ISO^ConnectionTest0001&fakeMD&2.16.840.1.114222.4.1.1.0412&ISO||122880004^U CleanCatch^SCT^^^^2.5.1||||446300003^Urine specimen from urethra|||||||20241202093000-0800|20241202093500-0800||||||||||

OBR|3|microtestpt^Fake_EHR^1.2.840.114350.1.13.541.2.7.2.11111^ISO|ConnectionTest0001^fakeMD^1.2.840.114350.1.13.541.2.7.3.798268.1111^ISO|50545-3^Bacterial susceptibility panel MIC (Isol)^LN^312370^MIC^L||||20241202100000-0800|||||Not pregnant|||1234567890^SMITH^JANE^^^^^^NPI&2.16.840.1.113883.4.6&ISO^^^^NPI|^WPN^PH^^1^559^6246999|||||20241202100000-0800||MB|I|630-4&BACTERIA IDENTIFIED:PRID:PT:URINE:NOM:CULTURE&LN^2^Acinetobacter baumannii (organism)|||^2548652265&HNAM_ORDERID&2.16.840.1.113883.3.5684&ISO||87086^Urine Culture^I10|||||||||||||||||

OBX|1|SN|28-1^Ampicillin MIC [Susc]^LN^309703^Ampicillin^L|1|>=^32|ug/mL^MicroGramsPerMilliLiter [Mass Concentration Units]^UCUM||R^Resistant. Indicates for microbiology susceptibilities only^HL70078^^^^2.5.1|||F||| 20241202100000-0800|||||20241202100000-0800||||TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7 &ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814||||||

OBX|2|SN|76-0^ceFAZolin MIC [Susc]^LN^34484544^Cefazolin Urine^L|1|>=^64|
ug/mL^MicroGramsPerMilliLiter [Mass Concentration Units]^UCUM||R^Resistant. Indicates for microbiology susceptibilities only^HL70078^^^^2.5.1|||F|||20241202100000-0800|||||20241202100000-0800|||TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7&ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814||||||

OBX|3|NM|6644-9^Cefepime MIC [Susc]^LN^309692^Cefepime^L|1|4|
ug/mL^MicroGramsPerMilliLiter [Mass Concentration Units]^UCUM||S^Susceptible. Indicates for microbiology susceptibilities only^HL70078^^^^2.5.1||| F|||20241202100000-0800|||||20241202100000-0800|||TESTLAB^D^^^^CLIA& 2.16.840.1.113883.4.7&ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814||||||

SPM|1|^microtestpt&fakeMD&1.2.840.114350.1.13.541.2.7.3.798268.320&ISO^ConnectionTest0001&fakeMD&2.16.840.1.114222.4.1.1.0412&ISO||122880004^U CleanCatch^SCT^^^^2.5.1||||446300003^Urine specimen from urethra|||||||20241202093000-0800|20241202093500-0800||||||||||

REPORTING QUANTITATIVE RESULTS

Report quantitative (numeric) results with an SN-Structured Numeric data type or NM-Numeric data in OBX-2. NM type is limited to values with optional "+" or "- "sign. The SN type is more versatile and can express unsigned numbers, in addition to inequalities, ranges, ratios and categorical responses.
The preference is to report SN.

When reporting **quantitative** results please have:

- SN (Structured Numeric) data type in OBX-2
  OBX-5 details for SN results
  - Corresponds to a Quantitative LOINC in OBX-3
  - Example: numbers |^2.0|, intervals |^0^-^1|, ratios |^1^/^2| or |^1^:^2|, inequalities |categorical results |^2^+|
  - Units are required in OBX-6
  - The reference range in OBX.7
  - Test interpretation, abnormal, normal, or high flag to be captured in OBX-8

Table 4. Quantitative Reporting Guidance

Quantitative Results • Report quantitative and qualitative results completely in separate OBX segments with test ordered code & description in **OBR-4.1** and **OBR-4.2.** • Quantitative results should use 'SN' in **OBX-2,** numeric data in **OBX-5** and units in **OBX-6.1** Separate numbers with symbols like ":" utilizing component separator indicated by "^".
EXAMPLE of a properly formatted HL7 ELR for **Syphilis.**
OBR|1||123456^LABX^2.16.840.1.113883.3.362.90.100^ISO|**20507-0^Reagin Ab**^LN^012005^RPR, Rfx Qn RPR/Confirm TP^L^2.77^1|||20240706131629-0700|||||Unknown pregnancy||| 1234567890^Smith^Joe^^^^^^NPI&2.16.840.1.113883.4.6&ISO^^^^NPI|^WPN^PH^^1^111^1112222||||20240706131629-0700|||F|||||Z11.3^STI Screening^I10 **OBX|1|CWE|20507-0**^Reagin Ab^LN^006072^RPR^L^2.77^1||**11214006^Reactive**^SCT ^REA^Reactive^L^20230301^1||**Non Reactive**|**A^Abnormal**|||F|| |20240706131629-0700| 05CLIA^LabXName^CLIA||^GSD AIX1000 RPR Analyzer||20240706131629-0700|||LabX Location^D^^^^CLIA&2.16.840.1.113883.4.7&ISO^XX^^^ 05D0123456|1234 PerfLabAddress Ste 13^^San Diego^CA^92128 **OBX|2|SN|31147-2**^Reagin Ab^LN^006464^RPR, Quant.^L^2.77^1| **|^1^:^16|titer^titer^UCUM**^^^^20171130|**NonRea<1:1|H^High**|||F|||20240706131629-0700|05DCLIA^LabXName^CLIA||^GSD AIX1000 RPR Analyzer||20240706131629-0700|||LabX Location^D^^^^CLIA&2.16.840.1.113883.4.7&ISO^XX^^^ 05D0123456|1234 PerfLabAddress Ste 13^ ^San Diego^CA^92128 **SPM**|1|^123456&fakeMD&1.2.840.114350.1.13.541.2.7.3.798268.320&ISO^ConnectionTest0001&fakeMD&2.16.840.1.114222.4.1.1.0412&ISO||119297000^Blood^SCT^^^L|||28520004^Venipuncture||||||||20240706130000-0700|202407061310-0700||||||||||

EXAMPLE of a properly formatted HL7 ELR for **TB (IGRA).**

OBR|1|tbtestpt3^fakeMD^1.2.840.114350.1.13.541.2.7.3.798268.1111^ISO|ConnectionTest0001^fakeMD^1.2.840.114350.1.13.541.2.7.3.798268.1111^ISO|**71775-1^M TB IGNF pnl BLD**^LN^QFT4^QuantiFERON-Tb Gold Plus, B^L^^U||||20241202100000-0800|||||Not pregnant|||1234567890^Fake^Doctor^^^^^^NPI&2.16.840.1.113883.4.6&ISO^^^^NPI|^WPN^PH^^1^123^8144095|||||20241202100000-0800|||F||||||Z86.15^Personal history of latent tuberculosis infection^I10|

OBX|1|**CE**|**71773-6^M. tuberculosis stim IFN-g Ql (Bld) [Interp]^LN^TBQUAN^Quantiferon-TB^L**||**260385009^Negative^SCT^NEG^Neg^L**||**Negative**|**N^Normal**|||F|||20241202100000-0800|||Qiagen QFT-Gold+||20241202100000-0800||||TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7&ISO^XX^^^99999|1616 CAPITOL AVE^^SACRAMENTO^CA^95814||||

OBX|2|**SN**|**71776-9^Gamma interferon background IA Qn (Bld)^LN^TBNIL^Nil^L**||**^0.042**|**IU/mL**^international units per millilter^UCUM^IU/mL^international units per millilter^L|**<8.0 IU/mL**|**N^Normal**|||F|||20241202100000-0800||| Qiagen QFT-Gold+||20241202100000-0800||||TESTLAB^D^^^^CLIA& 2.16.840.1.113883.4.7& ISO^XX^^^99999|1616 CAPITOL AVE^^SACRAMENTO^CA^95814||||

OBX|3|**SN**|**71774-4^Mitogen stimulated gamma interferon corrected for background Qn (Bld)^LN^TBMITC^Mitogen-Nil^L**||**^0.585**|**IU/mL**^international units per millilter^UCUM^IU/mL^international units per millilter^L|**>0.5 IU/mL**|**N^Normal**|||F|||20241202100000-0800|||Qiagen QFT-Gold+||20241202100000-0800||||TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7&ISO^XX^^^99999|1616 CAPITOL AVE^^SACRAMENTO^CA^95814||||

OBX|4|**SN**|**64084-7^M. tuberculosis stim IFN-g by CD4+ T-cells corrected for background Qn (Bld)**^LN^TBCAL1^TB1 Ag-Nil^L||**<^0.00**|**IU/mL**^international units per millilter^UCUM^IU/mL^international units per millilter^L|**<0.35 IU/mL**|N^Normal|||F||||20241202100000-0800||| Qiagen QFT-Gold+||20241202100000-0800 ||||TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7&ISO^XX^^^99999|1616 CAPITOL AVE^^SACRAMENTO^CA^95814||||

OBX|5|**SN**|**88517-8^M. tuberculosis stim IFN-g by CD4+ CD8+ T-cells corrected for background Qn (Bld)**^LN^TBCAL2^TB2 Ag-Nil^L||**<^0.00**|**IU/mL**^international units per millilter^UCUM^IU/mL^international units per millilter^L|**<0.35 IU/mL**|**N^Normal**|||F||||20241202100000-0800||| Qiagen QFT-Gold+||20241202100000-0800||||TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7&ISO^XX^^^05D0123456|1616 CAPITOL AVE^^SACRAMENTO^CA^95814||||

SPM|1|^tbtestpt3&fakeMD&1.2.840.114350.1.13.541.2.7.3.798268.320&ISO^ConnectionTest0001&fakeMD&2.16.840.1.114222.4.1.1.0412&ISO||119297000^Blood^SCT^^^L||||28520004^Venipuncture|||||||||20241202093000-0800|20241202093500-0800||||||||||

EXAMPLE of a properly formatted HL7 ELR for **Hepatitis B.**

OBR|1|hepbtestpt1^fakeMD^1.2.840.114350.1.13.541.2.7.3.798268.111^ISO|ConnectionTest^fakeMD^1.2.840.114350.1.13.541.2.7.3.798268.1111^ISO|**11258-1^HBV DNA Qn (S)^LN^ 5521035^HBV Load**^L||||20241202103055-0800|||||Not Pregnant|||1234567890^Fake^Doctor ^^^^^^NPI&2.16.840.1.113883.4.6&ISO^^^^NPI|^WPN^PH^^1^123^8144095|||||20241201000002-0800|||F||||||Z11.59^Screening for Hep B^I10|

OBX|1|**SN**|**42595-9^HBV DNA NAA+probe Qn**^LN^85997326^Hepatitis B Virus DNA^L||**^3.45**|**log IU/mL**^^L|**Undetected<1.00 log IU/mL**|**A^Abnormal**|||F||||||Abbott RealTime||20241201000002-0800||||TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7&ISO^XX^^^99999|1616 CAPITOL AVE^^ SACRAMENTO^CA^95814||||||||||

SPM|1|^hepbtestpt1&fakeMD&1.2.840.114350.1.13.541.2.7.3.798268.32&ISO^ConnectionTest&fakeMD&2.16.840.1.114222.4.1.1.0412&ISO||119297000^Blood^SCT^^^L||||28520004^Venipuncture|||||||20241202093000-0800|20241202093500-0800||||||||||

EXAMPLE of a properly formatted HL7 ELR for **Hepatitis C.**

OBR|1||hepctestpt1^fakeMD^1.2.840.114350.1.13.541.2.7.3.798268.1111^ISO|ConnectionTest^fakeMD^1.2.840.114350.1.13.541.2.7.3.798268.1111^ISO|**11011-4^HCV RNA NAA+probe Qn**^LN^551300^HCV RealTime Abbott^L|||20241202103055-0800|||||Unknown pregnancy|||1234567890^Fake^Doctor^^^^^^NPI&2.16.840.1.113883.4.6&ISO^^^^NPI|^WPN^PH^^1^123^8144095|||||20241202103055-0800|||F||||||B19.20^Unspecified viral hepatitis C||

OBX|1|**SN**|**11011-4^HCV RNA NAA+probe Qn**^LN^551301^Hepatitis C Quantitation^L||**<^12**|**[IU]/mL**^^L|**Undetected<15[IU]/mL**|**N^Normal**|||F||||||Abbott RealTime|| 20241202103055-0800||||TESTLAB^D^^^^CLIA&2.16.840.1.113883.4.7 &ISO^XX^^^05D0123456 |1616 CAPITOL AVE^^SACRAMENTO^CA^95814|

SPM|1|^hepctestpt1&fakeMD&1.2.840.114350.1.13.541.2.7.3.798268.320&ISO^ConnectionTest0001&fakeMD&2.16.840.1.114222.4.1.1.0412&ISO||119297000^Blood^SCT^^^L||||28520004^Venipuncture|||||||||20241202093000-0800|20241202093500-0800||||||||||

EXAMPLE of a properly formatted HL7 ELR for **Coccidioides.**

OBR|1|Coccitest^fakeMD^1.2.840.114350.1.13.541.2.7.3.79826.11^ISO|ConnectionTest^fakeMD^1.2.840.114350.1.13.541.2.7.3.798268.11^ISO|**5096-3^C. immitis Ab CF (S) [Titer]**^LN^2557295 ^Coccidioides CF Ab^L||||20241201000002-0800|||||Unknown Pregnancy||| 1234567890^Fake^Doctor^^^^^^NPI&2.16.840.1.113883.4.6&ISO^^^^NPI|^WPN^PH^^1^123^8144095|||||20241201000002-0800|||F||||||B38^Valley Fever^I10|

OBX|1|**SN**|**5096-3^C. immitis Ab CF (S) [Titer]**^LN^139175^Coccidioides CF Antibody^L||**^1^:^8**|**titer**^titer^UCUM|**Neg:<1:2**|**H^Above high normal**^HL70078^^^^2.5.1||| F||||||BD MAXTM||20241201000002-0800||||Lab^D^^^^CLIA&2.16.840.1.113883.4.7&ISO^XX^^^99999|1234 PerfLabAddress^^San Diego^CA^92128

SPM|1|^Coccitest&fakeMD&1.2.840.114350.1.13.541.2.7.3.79826.32&ISO^ConnectionTest&fakeMD&2.16.840.1.114222.4.1.1.0412&ISO||119297000^Blood^SCT^^^L||||28520004^Venipuncture|||||||||20241202093000-0800|20241202093500-0800||||||||||

FREQUENTLY ASKED QUESTIONS (FAQ)

Who is required to report?
California Code of Regulations, Title 17, Section 2505 requires laboratories to report laboratory testing results, including molecular & pathologic results, suggestive of diseases of public health importance to LHJs. Other facilities conducting these tests in California or routinely testing California residents are also required to report. The list of reportable disease conditions can be found at the link above. Tests performed by an off-site reference lab should be reported to CDPH by the performing lab.

What information is required?
Results for all persons tested in the state must be reported, regardless of the patients' residence. Additionally, results for any California residents tested outside of the state must be reported.
Title 17, California Code of Regulations (CCR), Section 2505 requires specific items to be captured in the test requisition forms and to be reported in ELRs. See Table 2. HL7 ELR Specifications, on pages 3-10.

When do results need to be reported?
Refer to Subsection lists & categories in Title 17 Link above. Laboratories must report results via ELR to CalREDIE.
Reporting requirements for diseases and agents listed in Subsection (e)(1):

- Make initial report to the local health officer via telephone within one hour, and
- Report result(s) to CalREDIE within one working day of identification.

Reporting requirements for diseases and agents listed in Subsection(e)(2):

- Report result(s) to CalREDIE within one working day of identification

How should Multiplex Panels for COVID, FLU and RSV be reported?
See MULTIPLEX REPORTING section above, starting on page 12.

For more detailed information on reporting COVID, Influenza and RSV Multiplex panels, please refer to the guidance for reporting multiplex (panel) testing available on our website at this link Reportable Disease and Conditions. See the following references: Guidance for Reporting SARS CoV-2 Influenza and RSV Multiplex Test Results July 2023 and Reporting Multiplex Respiratory Panels and Subtyped Influenza A&B and RSV Results Nov2024.

Where can I get comprehensive table of all HL7 ELR Message Fields, Segments and Components?
The previous CDPH guide, 'CalREDIE ELR2PH Companion Guide - v.9.27.2019' contains detailed information that can be referenced, if needed. An updated version of the comprehensive guide is forthcoming. Contact CalREDIEELR@cdph.ca.gov if there are questions on current HL7 format and/or content.

Do I need to report Asked on Order Entry (AOE) Questions?
AOEs are not required. If you do report this information, place in NTE segments after the OBX segment(s).

Do I need to report results that were run at a reference lab?
In general, the laboratory that performed the testing is responsible for submitting reportable results to CalREDIE. If the performing lab is out of state and does not report to CalREDIE, then the lab in California would be responsible for reporting the results.

Can I leave OBR-13 blank for pregnancy status?
Pregnancy status is required to be reported for diseases that may be passed from mother to child. This includes, but is not limited to:

- Zika Virus
- Syphilis
- Gonorrhea
- Chlamydia
- HIV
- Listeria

Do not leave OBR-13 blank. Report "unknown pregnancy" if the pregnancy status is not known.

Do I need to report Parkinson's Disease data to CalREDIE?
Please see CDPH website for Parkinson's Disease reporting: California Parkinson's Disease Registry

Do I need to report blood lead test data to CalREDIE?
Please see the CDPH webpage links below for the two programs associated with Blood Lead Reporting:

- Occupational Lead Poisoning Prevention Program (ca.gov)
- Childhood Lead Poisoning Prevention Branch (CLPPB) (ca.gov)

Do I need to report HIV/AIDS data to CalREDIE?
Data for HIV or AIDS test results should be reported via ELR using the same connection for sending other reportable disease results to CDPH. CDPH routes HIV/AIDS lab result messages to the Office of AIDS, as these results are not processed in CalREDIE.

All HIV results should be sent as a SEPARATE HL7 ELR message and not as part of a panel. For example, do not submit both Hepatitis and HIV results for the same patient in the same ELR message. Instead, report the results as two separate messages. For more information on HIV testing and surveillance, please see the Office of AIDS CDPH webpage: Office of AIDS Homepage (ca.gov)

What does "Unique ID" mean for MSH-10?
Each message should have a distinctly different combination of letters and numbers in MSH-10, which serve as a unique reference for that message. Do not reuse MSH-10 values.

What does "Unique Identifier" mean for SPM-2.2.1?
Each accession ID in SPM-2.2.1 should be unique to the combination of the patient and the test ordered. The accession ID can be a combination of letters, numbers, leading zeros and dashes or other characters. This is usually derived from the accession ID that the testing facility uses internally. The same accession IDs should not be reused for different patients.

How should rabies lab results for animals be reported?
Rabies results for humans are reportable to CalREDIE. Cases of animal rabies should be reported using the Animal Rabies Case Report form (CRF), CDPH 102 found at https://www.cdph.ca.gov/CDPH%20Document%20Library/ControlledForms/cdph102.pdf. Email the form to CDPH Veterinary Public Health Section at vetph@cdph.ca.gov. Some LHJs may prefer to manually enter animal rabies into CalREDIE, but this should be ***in addition to*** regular animal health reporting and is not a substitute for filing CRF with state Veterinary Public Health.

CONTACT INFORMATION

If there are any additional questions or further assistance is needed, please contact CalREDIEELR@cdph.ca.gov

APPENDICES

APPENDIX A - TERMS & ACRONYMS

This section defines the terms and acronyms used in this specification guide.

AOE: Asked on Order Entry. These are questions that are answered by the patient while receiving care e.g. "Has patient been hospitalized?"

CDPH: California Department of Public Health.

CDPH Guide: refers to this document, CDPH Electronic Lab Reporting HL7 Specifications Guide

CLIA: Clinical Laboratory Improvement Act. A CLIA ID is a specially formatted laboratory identifier assigned by the CDC or its designee.

ELR: Electronic Laboratory Report.

ELR2PH: An acronym used in the 2019 CalREDIE companion guide for Electronic Laboratory Reporting to Public Health.

HL7: Health Level 7 is a not-for-profit, ANSI-accredited standards developing organization dedicated to providing a comprehensive framework and related standards for the exchange, integration, sharing, and retrieval of electronic health information**.**

ISO: International Standards Organization; an organization that assigns Universal Identifiers (i.e., OIDs, etc.).

LIS/LIMS: Laboratory Information System/Laboratory Information Management System.

LOINC: An acronym for Logical Observation Identifiers Names and Codes which is a common language and standard nomenclature for identifying laboratory tests.

MIC: Minimum Inhibitory Concentration. The lowest concentration (in µg/mL) of an antibiotic that inhibits the growth of a given strain of bacteria.

NPI: National Provider Identifier. The NPI, a Health Insurance Portability and Accountability Act (HIPAA) Administrative Simplification Standard, is a unique 10-digit number identification number for covered health care providers.

OID: Object Identifier, which is an officially registered code to identify healthcare organizations and data settings for terminology and coding systems. OIDs are not specific for ELR, however, CDPH does not typically validate OIDs used in messages sent to CalREDIE.

ONC: The Office of the National Coordinator, which sets the requirement for "Meaningful Use messaging."

PHIN VADS: Public Health Information Network Vocabulary Access and Distribution System; PHIN VADS provides standard vocabularies to CDC and its public health partners in one place. PHIN VADS is a web-based enterprise vocabulary system for accessing, searching, and distributing vocabularies used in public health and clinical care practice.

Production: term used in reference to CalREDIE reporting, platform where live reporting is occurring for real patient data.

SNOMED: An acronym for Systemized Nomenclature of Medicine and is a clinical terminology system that provides a standardized way of representing clinical information (e.g. specimen type or test interpretation).

Staging Environment: term used in reference to the CalREDIE testing environment. HL7 submitters send production-level quality messages for fake or mocked up lab results to this environment for message content and format validation prior to the lab being approved for cutover to production reporting. This test environment is secure and HIPAA-compliant; however, sending read patient data should be avoided unless required for testing.

UCUM: Unified Code for Units of Measure, was developed by Regenstrief Institute & adopted internationally by many organizations such as LOINC & HL7.

APPENDIX B – Race Codes for PID-10

Table 5 shows a reference list of Race Concept Codes from CalREDIE. If laboratories have capacity for transmitting specific race data, those codes should be populated into the ELR message. Additionally, multiple race codes can be transmitted in the ELR message.

Table 5. Race Codes for PID-10

Race	Concept Code	Race	Concept Code
American Indian/Alaska Native	1002-5	Micronesian	2085-9
Asian	2028-9	Middle Eastern or North African	2118-8
Asian - Burmese	2032-1	Native Hawaiian	2079-2
Asian Indian	2029-7	Native Hawaiian/Other Pacific Islander	2076-8
Bangladeshi	2030-5	Nepalese	2050-3
Bhutanese	2031-3	New Hebrides	2104-8
Black or African American	2054-5	Okinawan	2043-8
Cambodian	2033-9	Other Pacific Islander	2500-7
Carolinian	2092-5	Other Race	2131-1
Chamorro	2088-3	Pakistani	2044-6
Chinese	2034-7	Palauan	2091-7
Chuukese	2097-4	Papua New Guinean	2102-2
Fijian	2101-4	Pohnpeian	2094-1
Filipino	2036-2	Polynesian	2078-4
Guamanian	2087-5	Saipanese	2095-8
Hmong	2037-0	Samoan	2080-0
Indonesian	2038-8	Singaporean	2051-1
Iwo Jiman	2048-7	Solomon Islander	2103-0
Japanese	2039-6	Sri Lankan	2045-3
Kiribati	2096-6	Tahitian	2081-8
Korean	2040-4	Taiwanese	2035-4
Kosraean	2093-3	Thai	2046-1
Laotian	2041-2	Tokelauan	2083-4
Madagascar	2052-9	Tongan	2082-6
Malaysian	2042-0	Trinidadian	2074-3
Maldivian	2049-5	Unknown	U
Mariana Islander	2089-1	Vietnamese	2047-9
Marshallese	2090-9	White	2106-3
Melanesian	2100-6	Yapese	2098-2

Additional Race Concept Code Resources can be found via links below:

CDC PHIN VADs link for Race Concept Codes, Concept Name, & details (Value Set Details (cdc.gov))

CDC PHIN VADS link for Race & Ethnicity Concept Codes (Code System Details (cdc.gov)

APPENDIX C – HL7 ELR version 2.3.1 CalREDIE Requirements

In certain rare instances when a testing facility is unable to send lab result messages in HL7 version 2.5.1 or higher, the following structure and content is required.

Required Segments

Table 6. Segments Required in HL7 ELR v2.3.1 messages sent to CalREDIE

Code	Segment Name
MSH	Message Header
PID	Patient Identification
ORC	Order Control
OBR	Observation Request
OBX	Observation Result
Optional Segment	
NTE	Notes

Notes are optional segments and can be used for asked on order entry (AOE) questions. NTEs are preferred to be sent after the OBX segment(s).

The fields shown in Table 7 must be populated in HL7 ELR v2.3.1 messages.

Table 7. Fields of Special Notice

HL7 Field/ Segment/Component	Description/Guidance
ORC-22	Ordering Facility Address (generally should be in CA)
ORC-23	Ordering Facility Phone Number
OBR-3.1	Accession Number
OBR-13	Relevant Clinical Information to be used for indicating pregnancy status - use values of Prenatal, Not Pregnant or Unknown Pregnancy
OBR-14	Specimen Received Date and Time
OBR-15	Specimen Source SNOMED Code and Test Description
OBR-16	Ordering Provider NPI and Name
OBR-17	Ordering Provider Phone Number
OBX-3.1	Lab Test Result LOINC
OBX-8	Abnormal Flag; use N^Normal or A^Abnormal based on result outcome
OBX-17	Instrument used to perform test or testing methodology/platform (if over 20 characters, use OBX-17.2)
OBX-19	Test Resulted Date and Time

APPENDIX D - REFERENCES

Links

Reportable Disease and Conditions (ca.gov)

ELR / Electronic Laboratory Reporting | CDC

HL7 Standards Product Brief - HL7 Version 2.5.1 Implementation Guide: Electronic Laboratory Reporting to Public Health, Release 1 (US Realm) | HL7 International

V251_IG_LB_LABRPTPH_R2_DSTU_R1.1_2014MAY.pdf (hl7.org)

https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/COVID-19/Unvaccinated-Workers-in-High-Risk-Settings-State-Public-Health-Order-FAQ-09-03-22.aspx

Guidance for Reporting SARS CoV-2 Influenza and RSV Multiplex Test Results July 2023 (ca.gov)

https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=BPC&sectionNum=1288.

https://browser.ihtsdotools.org/?perspective= full&conceptId1=895231008&edition=MAIN/2024-01-01&release=&languages=en

Title 17 - 2505 Changes - Pregnancy Status Reporting - ELR Guidance (ca.gov)

REVISION HISTORY

Date	Document Version	Release Status	Person Updating	Description
2010-2011	1.01	LTIAPH Production version	E. Haas P. Duffey	Draft, content, requirements, format formalized & released production version
2012	1.01	Updates	P. Duffey S. Pon, et al.	
2019	1.03	Updated Release	A. Jacobsen R. Kafle	Updated to reflect changes to Title 17 Section 2505.
9/2024		Full Revision	E. Carroll, R. Haag, V. Burkhart	New and streamlined version developed to be more user friendly. An updated version of the 'CalREDIE ELR2PH Companion Guide' with a comprehensive HL7 field and component table reference is forthcoming.
12/2024		Updated Release	E. Carroll, R. Haag, V. Burkhart K. Villegas	Minor edits and updates needed to be ADA compliant.