

## Lead Environmental Investigation Notification Message Mapping Guide

**VERSION: LeadEnvironmentalNationalNotificationMapv1.0 dated 8/17/2007.**

This Message Mapping Guide describes the content and message mapping specifications for the set of data elements used to communicate information to meet the requirements for Lead Environmental Investigation notifications to CDC. The intended audience for this document are the state/local and CDC programs and other public health related organizations interested in using the HL7 V2.5 case notification message specification for transmitting their data elements.

The ORU^R01 - Unsolicited Observation Message is the HL7 standard message used to pass the Nationally Notifiable Condition Report message. The National Notification message is used to convey a de-identified subset of investigation/surveillance information to meet national reporting requirements, where CDC is the only receiver. Additional information about the methodology utilized for national notifications as an ORU message can be found in Section 2 of the [MESSAGE STRUCTURE SPECIFICATION for NATIONAL CONDITION REPORTING Version 1.0](#) document. This document specifies the structure and methodology for the use of the Health Level 7 (HL7) Version 2.5 Unsolicited Result Message (ORU^R01) that supports the electronic interchange of any de-identified Nationally Notifiable Condition message from public health entities to the CDC.

### References

Version 1.0 of the [Message Specification Guide](#) is used to inform the mapping methodology for this guide.  
*Notify CDC Message--All PAMs* from NEDSS PAM Platform Team. Last updated 1/26/2007.  
*NEDSS PAM Platform Help Guide*, 11/30/2006.

### Understanding the Organization of the Mapping Guide

#### Data Element Index

This tab provides the complete list of data elements of interest requested by the program. The last column cross-references to the tab where the data element is fully specified for messaging.

#### Revisions

This tab is intended to provide revision control for updates made to the document.

#### Key

Column descriptions for the tabs using the mapping methodology.

#### Subject-related

This tab provides the mapping methodology for the demographic variables requested by the program.

#### Generic Obs.

This tab provides the content for the generic investigation questions (observations). The ones that are not used for this particular instance are greyed out.

#### Lead Env

#### Observations

This tab provides the mapping methodology for the investigation content requested by the program for this specific notification.

#### Notification Structure

This tab provides the structural elements for the Notification. These variables are not negotiable. Default values are provided for HL7 structural elements that are required but not part of the surveillance data requested.

#### Example

This tab contains a message that conforms in structure to the Message Specification Guide and in content to this version of the Message Mapping Guide. This message is for example purposes and should not be used as the source of truth for coding, data mapping, or other content.

### Variables as Observations

Other than the variables that map to the Patient Identifier segment (see Subject-Specific tab), all other variables are passed as a series of OBX-Observation/Result segments that are logically tied to the OBR-Observation Request "section header" segment that immediately precedes it. This content presents the real differences between the messages since all types of Notifications are handled in a standard manner up to this point.

PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Valid Values	Data Validation	TAB REFERENCE
<b>CORE DEMOGRAPHIC DATA ELEMENTS</b>								
LOC001	Local Address ID	Identifier for subject location (entity ID).	Alphanumeric	R				Subject-related
LOC005	Location City	City name associated with the address for a subject location.	Code	O				Subject-related
LOC008	Location County	County associated with the address for a subject location.	Code	O				Subject-related
LOC006	Location State	State associated with the address for a subject location.	Code	O				Subject-related
LOC007	Location Postal Code	Zip or Postal code associated with the address for a subject location.	Alphanumeric	O				Subject-related
LOC025	Location Census Tract	Census tract associated with the address for a subject location.	Alphanumeric	O				Subject-related
LOC026	Location Dwelling Type	Dwelling type associated with the address for a subject location. Dwelling type is used to classify the building and may include office, duplex, single family, etc.	Code	O		Mobile Home Office Duplex Single Family Multi-unit Dwelling		Subject-related
<b>LEAD ENVIRONMENTAL NOTIFICATION DATA ELEMENTS</b>								
NOT109	Reporting State	State reporting the notification.	Coded	R		Standard 2-digit State FIPS code		Generic Obs.
INV169	Condition Code	Condition or event that constitutes the reason the notification is being sent.	Coded	R		32010 Lead Poisoning		Generic Obs.
INV168	Record ID	Sending system-assigned local ID of the case investigation with which the subject is associated.	Text	R				Generic Obs.
INV107	Jurisdiction Code	Identifier for the physical site from which the report is being submitted. Jurisdictions are defined by the reporting entity.	Code	R		state-assigned		Generic Obs.
INV2006	Investigation Close Date	Investigation Close Date	Date	O				Generic Obs.
INV111	Referral Date for Investigation	Date the event or illness was first reported by the reporting source.	Date	R				Generic Obs.

PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Valid Values	Data Validation	TAB REFERENCE
INV154	State of Exposure	If the disease or condition was imported, indicate the state in which the disease was likely acquired.	Code	O		State		Generic Obs.
INV156	County of Exposure	If the disease or condition was imported, this field will contain the county of origin of the disease or condition.	Code	O		County		Generic Obs.
LEA113	Risk Assessment Completed Date	Date of risk assessment/inspection completion.	Date	O				Lead Env. Observations
LEA114	Investigation Reason Code	Reason for opening the environmental investigation, such as a citizen request or a complaint response	Code	O		Primary Prevention Citizen Request Physician Order Complaint Response Relocation Address Meets Persistently EBLL Criteria Safe Work Practice Complaint Community Development Block Grant (CDBG) Meets Standard Investigation Criteria HUD		Lead Env. Observations
LEA115	No hazard identified indicator	Check this box to indicate that no hazard was identified at the property that is the focus of the investigation, but a new (alternate) location was identified for which an environmental investigation was opened or will be opened.	Boolean	O		T or F		Lead Env. Observations

PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Valid Values	Data Validation	TAB REFERENCE
LEA116	No Hazard/ Alternate Location Identified Indicator	Indicate whether a hazard was identified in the environmental investigation; check this box if no hazard was identified in the alternate location	Boolean	O		T or F		Lead Env. Observations
LEA117	Lead paint source identified indicator	Indicate whether lead paint was identified as a hazard during the environmental investigation; <i>No</i> if no lead paint hazard was found at the property; <i>Yes</i> if a lead paint hazard was found at the property; <i>Unknown</i> if it is not known whether lead paint was a hazard at the property.	Code	O				Lead Env. Observations
LEA118	Interior Lead Paint Hazard Indicator	Indicator of <i>interior lead paint hazard</i> . This is a derived field: if any Risk Assessment interior room/component combination has COMPONENT_HAZARD_IDENTIFIED_INDICATOR checked, then code as "true", otherwise leave blank.	Boolean	O		T or F		Lead Env. Observations
LEA119	Exterior Lead Paint Hazard Indicator	Indicator of <i>exterior lead paint hazard</i> . This is a derived field: if any Risk Assessment exterior site/component combo has COMPONENT_HAZARD_IDENTIFIED_INDICATOR checked, then code as "true", otherwise leave blank.	Boolean	O		T or F		Lead Env. Observations
LEA120	Occupational Exposure	Investigation findings of sources - Occupational Exposure.	Code	O		Yes No Unknown		Lead Env. Observations

PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Valid Values	Data Validation	TAB REFERENCE
LEA121	Lead sources other than paint	Investigation findings of sources - <i>lead sources other than paint</i> . This field may repeat.	Code	O	Y	Traditional Medicines Hobbies Occupations Jewelry Food Toys Industrial Hazard Cosmetics		Lead Env. Observations
LEA122	Occupational Exposure of other household member	Occupational exposure of other household member. This is a derived field: Code as "True" if PATIENT_OR_OTHER_HOUSEHOLD_MEMBER (under Occupation on Other Risk Factors Tab) = "Other Household Member", otherwise leave blank.	Boolean	O		T or F		Lead Env. Observations
LEA123	Soil hazard indicator	Indicator of <i>soil hazard</i> . This is a derived field: Code as "true" if any SOIL_SITE_HAZARD_IDENTIFIED_INDICATOR checked, otherwise leave blank.	Boolean	O		T or F		Lead Env. Observations
LEA124	Water hazard indicator	Indicator of <i>water hazard</i> . This is a derived field: Code as "true" if any WATER_SITE_HAZARD_IDENTIFIED_INDICATOR checked, otherwise leave blank.	Boolean	O		T or F		Lead Env. Observations

PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Valid Values	Data Validation	TAB REFERENCE
LEA101	Case Investigation Closure Reason	If the value specified in Case Status is <i>Closed</i> , choose the reason why the case was closed.	Code	O		Case Opened in Error False Positive Moved Out of Compliance Lost to Follow-Up/Unable to Locate Uncooperative or refused Closure Criteria Met Moved Out of Jurisdiction/State Remediation Complete No Hazard Found House Demolished Inspection Refused No Longer Rental Unit Permanent Injunction Insufficient Funds - Remediation Not Complete Administratively Closed		Lead Env. Observations
LEA125	Date remediation due	Due date of remediation.	Date	O				Lead Env. Observations
LEA126	Date address hazard remediation or abatement completed	Date address hazard remediation or abatement completed.	Date	O				Lead Env. Observations
LEA127	Date clearance testing completed	Date clearance testing completed.	Date	O				Lead Env. Observations

PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Valid Values	Data Validation	TAB REFERENCE
LEA128	Clearance testing performed indicator	Indicator of <i>clearance testing performed</i> . This is a derived field: if CLEARANCE_TESTING_COMPLETE_INDICATOR = "Yes" then code as "True". If CLEARANCE_TESTING_COMPLETE_INDICATOR = "No" or is blank, AND any sample is entered for clearance testing, then code as "True". Otherwise code as blank.	Boolean	O		T or F		Lead Env. Observations
LEA129	Clearance testing performed date	Date clearance testing performed. This is a field derived from the Earliest Date Sample Obtained for Clearance Testing.	Date	O				Lead Env. Observations
LEA130	Clearance testing result	Result of clearance testing. This is a derived field: if CLEARANCE_TESTING_COMPLETE_INDICATOR = "Yes" then code as "Passed". If "no" then code as "Failed"; if blank, and any sample is entered for clearance testing, then code as "Unknown". If blank and no samples are entered, then leave blank.	Code	O		Passed Failed Unknown		Lead Env. Observations

**Revisions**

<b>Date</b>	<b>Version</b>	<b>Description</b>
8/8/2007	Final V 1.0	<b>Notification Structure tab:</b> Updated the value set and OID references for INV169 condition code.
8/8/2007	Final V 1.0	Added a <b>Data Element Index</b> tab that lists all of the program-specific data elements of interest. The column on the far right of the index contains a reference to the tab on which the data element is mapped to the HL7 message. Since the Valid Values are listed on this tab, the Coded Concepts column was removed from the other tabs.

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**Key to columns in each Tab/Worksheet:**

Column	Description
<b>Program Variables Section</b>	
PHIN Variable ID	PHIN element UID drawn from the coding system PH_PHINQuestions_CDC
Label	Short name for the data element, which is passed in the message.
Description	Description of the data element as in PHIN Questions.
Data Type	Data type for the variable response expected by the program area
Prog. Req/Opt	Indicator whether the program specifies the field as: <b>R</b> - Required - mandatory for sending the message <b>O</b> - Optional - if the data is available it should be passed
May Repeat	Indicator whether the response to the data element may repeat. "Yes" in the field indicates that it may; otherwise, the field is not populated. Repeats require special processing.
Value Set Name	Name of the pre-coordinated value set from which the response is drawn. The value sets and coding systems are accessible via the Public Health Information Network Vocabulary Access and Distribution Services at <a href="http://www.cdc.gov/PhinVSBrowser/StrutsController.do">http://www.cdc.gov/PhinVSBrowser/StrutsController.do</a> .
Data Validation	Business rules used for validating data integrity
<b>Message Mapping Methodology Section</b>	
Message Context	Specific HL7 segment and field mapping for the element.
HL7 Data Type	HL7 data type used by PHIN to express the variable.
HL7 Optionality	Indicates if the field is required, optional, or conditional in a segment. The only values that appear in the Message Mapping are: <ul style="list-style-type: none"> <li>• R – Required. Must always be populated</li> <li>• O – Optional. May optionally be populated.</li> </ul>
HL7 Repeats	Indicates whether the field may repeat. The only values that appear in the Message Mapping are: <ul style="list-style-type: none"> <li>• Y – HL7 allows the field to repeat an indefinite or site-determined number of times.</li> <li>• N or blank – No repetition.</li> </ul>
Implementation Notes	Related implementation comments.

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Subject/Demographic Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	Prog. Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
LOC001	Local Address ID	Identifier for subject location (entity ID).	Text	R				PID-3 Patient Identifier List (does not pass Variable ID or label)	ST	R	[1..1]	Also on the Notification Structure tab
LOC005	Location City	City name associated with the address for a subject location.	Code	O		City		PID-11.3 Patient Address - City (note that the variable ID and label do not appear in the message)	ST	O	[0..1]	
LOC008	Location County	County associated with the address for a subject location.	Code	O		County		PID-11.9 Patient Address - County (note that the variable ID and label do not appear in the message)	IS	O	[0..1]	
LOC006	Location State	State associated with the address for a subject location.	Code	O		State		PID-11.4 Patient Address - State (note that the variable ID and label do not appear in the message)	ST	O	[0..1]	
LOC007	Location Postal Code	Zip or Postal code associated with the address for a subject location.	Text	O				PID-11.5 Patient Address - Postal Code (note that the variable ID and label do not appear in the message)	ST	O	[0..1]	
LOC025	Location Census Tract	Census tract associated with the address for a subject location.	Text	O				PID-11.10 Patient Address - Census Tract (note that the variable ID and label do not appear in the message)	IS	O	[0..1]	
LOC026	Location Dwelling Type	Dwelling type associated with the address for a subject location. Dwelling type is used to classify the building and may include office, duplex, single family, etc.	Code	O		Dwelling Type		Observation/OBX Segment under the Subject Type header (OBR segment) with this variable ID and label	CWE	O	[0..1]	

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The generic surveillance elements that are not used for Lead Environmental notifications are shaded.

Generic Surveillance Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
NOT109	Reporting State	State reporting the notification.	Coded	R		State		Observation/OBX Segment with this variable ID and label	CWE	O	Y	expecting only one instance
NOT113	Reporting County	County reporting the notification.	Code	R		County		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV169	Condition Code	Condition or event that constitutes the reason the notification is being sent.	Coded	R		Nationally Notifiable Infectious Disease (NNID) reportable to the Nationally Notifiable Disease Surveillance System (NNDSS)	must be 32010 Lead Poisoning	(note that this is a Notification structural element, so it appears twice in this Guide)	CE	O	Y	expecting only one instance
INV168	Record ID	Sending system-assigned local ID of the case investigation with which the subject is associated.	Text	R				OBR-3.1 Filler Order Number (note that the variable ID and label do not appear in the message)	EI	R		Also on the Notification Structure tab
INV172	Local Case ID	Official local (city/county) identification number for the case	Text	O				Observation/OBX Segment with this UID and label	ST	O	Y	

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Generic Surveillance Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
INV173	State Case ID	Official state identification number for the case; used by the state and the CDC to identify the case in communications.	Text	R				Observation/OBX Segment with this UID and label	ST	O	Y	
INV107	Jurisdiction Code	Identifier for the physical site from which the report is being submitted. Jurisdictions are defined by the reporting entity.	Code	R				Observation/OBX Segment with this variable ID and label	IS	R	Y	expecting only one instance
INV108	Case Program Area Code	The organizational ownership of the investigation. Program areas (e.g., Immunization, STD) are defined at the state level by the conditions for which they provide primary prevention and control.	Code	O				Observation/OBX Segment with this variable ID and label	IS	O	Y	
INV109	Case Investigation Status Code	Status of the investigation. For example, <i>open</i> or <i>closed</i> .	Code	O				Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV2006	Investigation Close Date	Investigation Close Date	Date	O			If the user enters the 'Date Closed' then the user must also enter the Closure Reason	Observation/OBX Segment with this variable ID and label	TS	O	Y	expecting only one instance
INV110	Investigation Date Assigned	Date the investigator was assigned to this investigation.	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	

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Generic Surveillance Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
INV111	Referral Date for Investigation	Date the event or illness was first reported by the reporting source.	Date	R			If the user enters the 'Date Referred' then that date must be >= Date Opened	Observation/OBX Segment with this variable ID and label	TS	O	Y	expecting only one instance
INV112	Reporting Source Type Code	Type of facility or provider associated with the source of information sent to Public Health.	Code	O		Reporting Source Type NND		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV114	Reporting Source Name	Name of the provider reporting the case (typically the patient's primary care provider)	Text	O				Observation/OBX Segment with this variable ID and label	ST	O	Y	
INV115a	Reporting Source Address Line 1	Reporting source street address Line 1	Text	O				Observation/OBX Segment with this variable ID and label	ST	O	Y	
INV115b	Reporting Source Address Line 2	Reporting source street address Line 2	Text	O				Observation/OBX Segment with this variable ID and label	ST	O	Y	
INV116	Reporting Source Address City	Reporting source address city	Code	O		City		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV117	Reporting Source Address State	Reporting source address state	Code	O		State		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV118	Reporting Source Zip Code	Zip Code of the reporting source for this case.	Alphanumeric	O				Observation/OBX Segment with this variable ID and label	ST	O	Y	

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Generic Surveillance Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
INV119	Reporting Source Address County	Reporting source address county	Code	O		County		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV120	Earliest Date Reported to County	Earliest date reported to county public health system	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV121	Earliest Date Reported to State	Earliest date reported to state public health system	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV122	Reporting Source Telephone Number	Reporting source telephone number	Text	O				Observation/OBX Segment with this variable ID and label	ST	O	Y	
INV128	Hospitalized	Was patient hospitalized because of this event?	Code	O		Yes No Unknown (YNU)	1) If the patient was hospitalized for this illness, then enable entry of admission date 2) If the patient was hospitalized for this illness, then enable entry of discharge date 3) If the patient was hospitalized for this illness, then enable entry of total duration of stay in the hospital in days 4) If the patient was hospitalized for this illness, then enable entry of hospital information	Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV129	Hospital Name	Name of the healthcare facility in which the subject was hospitalized.	Text	O				Observation/OBX Segment with this variable ID and label	ST	O	Y	

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Generic Surveillance Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
INV132	Admission Date	Subject's admission date to the hospital for the condition covered by the investigation.	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV133	Discharge Date	Subject's discharge date from the hospital for the condition covered by the investigation.	Date	O			If the user enters the Discharge Date, then the date must be >= Admission Date	Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV134	Duration of hospital stay in days	Subject's duration of stay at the hospital for the condition covered by the investigation.	Numeric	O				Observation/OBX Segment with this variable ID and label	SN	O	Y	
INV136	Diagnosis Date	Date of diagnosis of condition being reported to public health system	Date	O			1) If the user enters the Diagnosis Date, then the date must be >= Illness Onset Date 2) If the user enters the Diagnosis Date, then the date must be >= Rash Onset Date	Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV137	Date of Illness Onset	Date of the beginning of the illness. Reported date of the onset of symptoms of the condition being reported to the public health system	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV138	Illness End Date	Time at which the disease or condition ends.	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV139	Illness Duration	Length of time this person had this disease or condition.	Numeric	O				Observation/OBX Segment with this variable ID and label	SN	O	Y	

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Generic Surveillance Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
INV140	Illness Duration Units	Unit of time used to describe the length of the illness or condition.	Code	O		Duration Unit (UCUM)		Observation/OBX Segment with this variable ID and label	CE	O	Y	
INV145	Did the patient die from this illness	Did the patient die from this illness or complications of this illness?	Code	O		Yes No Unknown (YNU)		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV146	Date of death	The date and time the subject's death occurred.	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV147	Case Start Date	The date the case investigation was initiated.	Date	R			If the user enters the case Date Opened then the date must be <= current date (done in questions.txt), >=Patient Date of Birth, and >= Sample Draw Date (if case triggered from Elevated BLL)	Observation/OBX Segment with this variable ID and label	TS	R	Y	
INV150	Case outbreak indicator	Denotes whether the reported case was associated with an identified outbreak.	Code	O			If this case is part of an outbreak of 5 or more cases, then enable entry of outbreak name (INV151)	Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV151	Case Outbreak Name	A state-assigned name for an indentified outbreak.	Code	O		Yes No Unknown (YNU)		Observation/OBX Segment with this variable ID and label	IS	O	Y	
INV152	Case Disease Imported Code	Indication of where the disease/condition was likely acquired.	Code			Disease Acquired Jurisdiction		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV153	Imported Country	If the disease or condition was imported, indicates the country in which the disease was likely acquired.	Code	O		Country		Observation/OBX Segment with this variable ID and label	CWE	O	Y	

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Generic Surveillance Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
INV154	State of Exposure	If the disease or condition was imported, indicate the state in which the disease was likely acquired.	Code	O		State		Observation/OBX Segment with this variable ID and label	CWE	O	Y	expecting only one instance
INV156	County of Exposure	If the disease or condition was imported, this field will contain the county of origin of the disease or condition.	Code	O		County		Observation/OBX Segment with this variable ID and label	CWE	O	Y	expecting only one instance
INV156	Imported County	If the disease or condition was imported, contains the county of origin of the disease or condition.	Code	O		County		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV157	Transmission Mode	Code for the mechanism by which disease or condition was acquired by the subject of the investigation. Includes sexually transmitted, airborne, bloodborne, vectorborne, foodborne, zoonotic, nosocomial, mechanical, dermal, congenital, environmental exposure, indeterminate.	Code	O		Case Transmission Mode		Observation/OBX Segment with this variable ID and label	CWE	O	Y	

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PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
INV159	Detection Method	Code for the method by which the public health department was made aware of the case. Includes provider report, patient self-referral, laboratory report, case or outbreak investigation, contact investigation, active surveillance, routine physical, prenatal testing, perinatal testing, prison entry screening, occupational disease surveillance, medical record review, etc.	Code	O		Case Detection Method		Observation/OBX Segment with this variable ID and label	CWE	O	Y	Note required by program
INV161	Confirmation Method	Code for the mechanism by which the case was classified, providing information about how the case classification status was derived. More than one confirmation method may be indicated.	Code	O	Y	Case Confirmation Method		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV162	Confirmation Date	If an investigation is confirmed as a case, the confirmation date is entered.	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	

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PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
INV163	Case Class Status Code	Status of the case/event as suspect, probable, confirmed, or "not a case" per CSTE/CDC/ surveillance case definitions.	Code	R		Case Class Status		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV165	MMWR Week	MMWR Week for which case information is to be counted for MMWR publication.	Numeric	R				Observation/OBX Segment with this variable ID and label	SN	O	Y	
INV166	MMWR Year	MMWR Year (YYYY) for which case information is to be counted for MMWR publication.	Date	R		Case Class Status		Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV173	State Case ID	Official state identification number for the case; used by the state and the CDC to identify the case in communications.	Text	R				Observation/OBX Segment with this variable ID and label	ST	O	Y	
INV176	Date of First Report to CDC	Date the case was first reported to the CDC.	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV177	Date First Reported PHD	Earliest date the case was reported to a public health department.	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV178	Pregnancy Status	Indicates whether the patient was pregnant during the event.	Code	O		Yes No Unknown (YNU)	Only valid for female patients.	Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV179	PID	Indicates whether or not the patient has pelvic inflammatory disease (PID).	Code			Yes No Unknown (YNU)	Only valid for female patients.	Observation/OBX Segment with this variable ID and label	CWE	O	Y	

Lead Environmental Investigation Notification Message Mapping Guide

Generic Surveillance Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
INV2001	Age at time of case investigation	Patient age at time of case investigation	Numeric	O			age units required	Observation/OBX Segment with this variable ID and label	SN	R	Y	
INV2002	Age units at time of case investigation	Patient age units at time of case investigation	Code	O		Age unit		uses the INV2001 observation - maps to OBX-6-Units (does not use INV2002 ID or label)	CE	O	Y	

Lead Environmental Investigation Notification Message Mapping Guide

Program-Specific Surveillance Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	Prog. Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
LEA113	Risk Assessment Completed Date	Date of risk assessment/inspection completion.	Date	O			If the user enters the 'Risk Assessment Completed Date' then that date must be >= <b>Risk Assessment Start Date</b>	Observation/OBX Segment with this variable ID and label	TS	O	Y	expecting only one instance
LEA114	Investigation Reason Code	Reason for opening the environmental investigation, such as a citizen request or a complaint response	Code	O		Environmental Investigation Reason		Observation/OBX Segment with this variable ID and label	CWE	O	Y	expecting only one instance
LEA115	No hazard identified indicator	Check this box to indicate that no hazard was identified at the property that is the focus of the investigation, but a new (alternate) location was identified for which an environmental investigation was opened or will be opened.	Boolean	O			If the user indicates that no hazard was found in the investigation outcome then the system will not allow the entry of the Date Remediation Complete. If the user indicates 'No Hazard Identified' in the investigation outcome then the system will disable entry of 'No Hazard Identified - Alternate Location Identified,' 'Lead Paint,' 'Occupational Exposure,' and 'Lead Sources Other Than Lead Found.'	Observation/OBX Segment with this variable ID and label	IS	O	Y	Used IS datatype to pass the T or F only

Lead Environmental Investigation Notification Message Mapping Guide

Program-Specific Surveillance Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	Prog. Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
LEA116	No Hazard/Alternate Location Identified Indicator	Indicate whether a hazard was identified in the environmental investigation; check this box if no hazard was identified in the alternate location	Boolean	O				Observation/OBX Segment with this variable ID and label	IS	O	Y	Used IS datatype to pass the T or F only
LEA117	Lead paint source identified indicator	Indicate whether lead paint was identified as a hazard during the environmental investigation; <i>No</i> if no lead paint hazard was found at the property; <i>Yes</i> if a lead paint hazard was found at the property; <i>Unknown</i> if it is not known whether lead paint was a hazard at the property.	Code	O		Yes No Unknown (YNU)		Observation/OBX Segment with this variable ID and label	CWE	O	Y	expecting only one instance
LEA118	Interior Lead Paint Hazard Indicator	Indicator of <i>interior lead paint hazard</i> . This is a derived field: if any Risk Assessment interior room/component combination has COMPONENT_HAZARD_IDENTIFIED_INDICATOR checked, then code as "true", otherwise leave blank.	Boolean	O				Observation/OBX Segment with this variable ID and label	IS	O	Y	Used IS datatype to pass the T or F only
LEA119	Exterior Lead Paint Hazard Indicator	Indicator of <i>exterior lead paint hazard</i> . This is a derived field: if any Risk Assessment exterior site/component combo has COMPONENT_HAZARD_IDENTIFIED_INDICATOR checked, then code as "true", otherwise leave blank.	Boolean	O				Observation/OBX Segment with this variable ID and label	IS	O	Y	Used IS datatype to pass the T or F only

Lead Environmental Investigation Notification Message Mapping Guide

Program-Specific Surveillance Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	Prog. Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
LEA120	Occupational Exposure	Investigation findings of sources - Occupational Exposure.	Code	O		Yes No Unknown (YNU)		Observation/OBX Segment with this variable ID and label	CWE	O	Y	expecting only one instance
LEA121	Lead sources other than paint	Investigation findings of sources - <i>lead sources other than paint</i> . This field may repeat.	Code	O	Y	Non Paint Lead Source		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
LEA122	Occupational Exposure of other household member	Occupational exposure of other household member. This is a derived field: Code as "True" if PATIENT_OR_OTHER_HOUSEHOLD_MEMBER (under Occupation on Other Risk Factors Tab) = "Other Household Member", otherwise leave blank.	Boolean	O				Observation/OBX Segment with this variable ID and label	IS	O	Y	Used IS datatype to pass the T or F only
LEA123	Soil hazard indicator	Indicator of <i>soil hazard</i> . This is a derived field: Code as "true" if any SOIL_SITE_HAZARD_IDENTIFIED_INDICATOR checked, otherwise leave blank.	Boolean	O				Observation/OBX Segment with this variable ID and label	IS	O	Y	Used IS datatype to pass the T or F only
LEA124	Water hazard indicator	Indicator of <i>water hazard</i> . This is a derived field: Code as "true" if any WATER_SITE_HAZARD_IDENTIFIED_INDICATOR checked, otherwise leave blank.	Boolean	O				Observation/OBX Segment with this variable ID and label	IS	O	Y	Used IS datatype to pass the T or F only
LEA101	Case Investigation Closure Reason	If the value specified in Case Status is <i>Closed</i> , choose the reason why the case was closed.	Code	O		Case Investigation Closure Reason		Observation/OBX Segment with this variable ID and label	CWE	O	Y	expecting only one instance

Lead Environmental Investigation Notification Message Mapping Guide

Program-Specific Surveillance Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	Prog. Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
LEA125	Date remediation due	Due date of remediation.	Date	O			If the user enters the 'Date Remediation Due' then that date must be >= Date Opened	Observation/OBX Segment with this variable ID and label	TS	O	Y	expecting only one instance
LEA126	Date address hazard remediation or abatement completed	Date address hazard remediation or abatement completed.	Date	O			If the user enters the 'Date Completed' then that date must be >= Date Referred unless Date Referred not entered	Observation/OBX Segment with this variable ID and label	TS	O	Y	expecting only one instance
LEA127	Date clearance testing completed	Date clearance testing completed.	Date	O			If the user enters the 'Completion Date' for Clearance Testing then that date must be >= Date Opened	Observation/OBX Segment with this variable ID and label	TS	O	Y	expecting only one instance
LEA128	Clearance testing performed indicator	Indicator of <i>clearance testing performed</i> . This is a derived field: if CLEARANCE_TESTING_COMPLETE_INDICATOR = "Yes" then code as "True". If CLEARANCE_TESTING_COMPLETE_INDICATOR = "No" or is blank, AND any sample is entered for clearance testing, then code as "True". Otherwise code as blank.	Boolean	O				Observation/OBX Segment with this variable ID and label	IS	O	Y	Used IS datatype to pass the T or F only
LEA129	Clearance testing performed date	Date clearance testing performed. This is a field derived from the Earliest Date Sample Obtained for Clearance Testing.	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	expecting only one instance

Lead Environmental Investigation Notification Message Mapping Guide

Program-Specific Surveillance Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	Prog. Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
LEA130	Clearance testing result	Result of clearance testing. This is a derived field: if CLEARANCE_TESTING_COMPLETE_INDICATOR = "Yes" then code as "Passed". If "no" then code as "Failed"; if blank, and any sample is entered for clearance testing, then code as "Unknown". If blank and no samples are entered, then leave blank.	Code	O		Passed Failed Unknown		Observation/OBX Segment with this variable ID and label	CWE	O	Y	expecting only one instance

Lead Environmental Investigation Notification Message Mapping Guide

These variables are not negotiable. Default values are provided for HL7 structural elements that are required but not part of the surveillance data requested.

Notification Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
NOT108	Notification ID	The unique identifier for the notification record. For the V2 Case Notification, this concept maps to the HL7 attribute MSH-10 Message Control ID. No UID or label is passed in the message.	String	R				MSH-10-Message Control ID. No UID or label is passed in the message.	ST	R		
LOC001	Local address ID	Identifier for subject location (entity ID).	String	R				PID-3.1 Patient Identifier List – ID Number PID-3.4 Assigning Authority format <localID&OID&ISO> Does not pass Variable ID or label.	CX	R	Y	Only the sending system's internally assigned subject id expected for these de-identified messages
DEM100	Patient name type	Name is not requested by the program, but the Patient Name field is required to be populated for the HL7 message to be valid. Have adopted the HL7 convention for processing a field where the name has been removed for de-identification purposes.	Coded	R		Name Type (HL7)		PID-5.7 Patient Name Type - <u>second instance</u> (does not pass Variable ID or label). HL7 reserves the first instance of the name for Legal Name.	CX	R	Y	Literal value:  ~~~~~S
INV168	Record ID	Sending system-assigned local ID of the case investigation with which the subject is associated.	Text	R				OBR-3.1 Filler Order Number (note that the variable ID and label do not appear in the message)	EI	R		Also on the Notification Structure tab
NOT099	Subject Type	Type of subject for the notification.	Coded	R		Notification Section Header		OBR 1 : Maps to the HL7 attribute OBR-4-Universal Service ID. No UID or label is passed in the message.	CE	R		Literal Value: 'LOCSUBJ^Location/Place Subject^2.16.840.1.114222.4.5.274'

Lead Environmental Investigation Notification Message Mapping Guide

Notification Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
NOT101	Notification Type	Type of notification. Main notification types are "Individual Case", "Environmental", "Summary", and "Laboratory Report".	Coded	R		Notification Section Header		OBR 2 : Maps to the HL7 attribute OBR-4-Universal Service ID. No UID or label is passed in the message.	CE	R		Literal Value: 'ENVNTF^Environmental Investigation Notification^2.16.840.1.114222.4.5.274'
NOT103	Date First Submitted	Date the notification was first sent to CDC. This value does not change after the original notification. For the V2 Case Notification, this concept maps to the HL7 attribute OBR-7-Observation Date/time. No UID or label is passed in the message.	Date/time	R				Maps to the HL7 attribute OBR-7-Observation Date/time. No UID or label is passed in the message.	TS	R		<same value in each OBR instance>
NOT106	Date of Report	Date/time this version of the notification was sent. It will be the same value as NOT103 for the original notification. For updates, this is the update/send date/time.	Date/time	R				Maps to the HL7 attribute OBR-22-Result Report/Status Chg Date/time. No UID or label is passed in the message.	TS	R		<same value in each OBR instance>
INV169	Condition Code	Condition or event that constitutes the reason the notification is being sent.	Coded	R		Nationally Notifiable Disease Surveillance System (NNDSS) & Other Conditions of Public Health Importance		Maps to HL7 attribute OBR-31-Reason for Study. The UID and label are not passed in the message.	CE	R	Y	Default value in each OBR instance: '32010^Lead Poisoning^2.16.840.1.114222.4.5.277'

MSH|^~\&|^2.16.840.1.114222.4.5.232.1.xxx^ISO|^2.16.840.1.114222.4.5.232.1.xxx^ISO|^2.16.840.1.114222.4.5.xxx^ISO|^2.16.840.1.114222^ISO|200509101913100||ORU^R01^ORU\_R01|NOT0003600|D|2.5|||||||||NationalNotificationORUv1.0^PHIN^2.16.8  
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OBX|1|CWE|LOC026^Location Dwelling Type^2.16.840.1.114222.4.5.232||24^Group Home - Severe Mental Impairment^ 2.16.840.1.114222.4.5.178|||||F<CR>  
OBR|2|""|0280923^OID^ISO|ENVNTE^Environmental Notification^2.16.840.1.114222.4.5.274||200606010191310|||||||||200606010191310||F|||||32101^Lead Poisoning^2.16.840.1.114222.4.5.277<CR>  
OBX|1|TS|INV111^Date of Report^2.16.840.1.114222.4.5.232|||||F<CR>  
OBX|2|TS|LEA113^Risk Assessment/Inspection Completed Date^2.16.840.1.114222.4.5.232||20060415|||||F<CR>  
OBX|3|CWE|LEA114^Investigation Reason Code^2.16.840.1.114222.4.5.232||GRANTDEV^Community Development Block Grant (CDBG)^2.16.840.1.114222.4.5.402|||||F<CR>  
OBX|4|TS|INV2006^Case Close Date^2.16.840.1.114222.4.5.232||20060531|||||F<CR>  
OBX|5|IS|LEA115^No hazard identified indicator^2.16.840.1.114222.4.5.232||F|||||F<CR>  
OBX|6|IS|LEA116^No Hazard/Alternate Location Identified Indicator^2.16.840.1.114222.4.5.232||T|||||F<CR>  
OBX|7|CWE|LEA117^Lead paint source identified indicator^2.16.840.1.114222.4.5.232||Y^Yes^2.16.840.1.113883.12.136|||||F<CR>  
OBX|8|IS|LEA118^Interior Lead Paint Hazard Indicator^2.16.840.1.114222.4.5.232||F|||||F<CR>  
OBX|9|IS|LEA119^Exterior Lead Paint Hazard Indicator^2.16.840.1.114222.4.5.232||T|||||F<CR>  
OBX|10|CWE|LEA120^Occupational Exposure - patient^2.16.840.1.114222.4.5.232||N^No^2.16.840.1.113883.12.136|||||F<CR>  
OBX|11|IS|LEA121^Lead sources other than paint indicator^2.16.840.1.114222.4.5.232||C0025131^Traditional Medicines^2.16.840.1.113883.6.86~C0019826^Hobbies^2.16.840.1.113883.6.86|||||F<CR>  
OBX|12|IS|LEA122^Occupational Exposure of other household member^2.16.840.1.114222.4.5.232||F|||||F<CR>  
OBX|13|IS|LEA123^Soil hazard indicator^2.16.840.1.114222.4.5.232||T|||||F<CR>  
OBX|14|IS|LEA124^Water hazard indicator^2.16.840.1.114222.4.5.232||T|||||F<CR>  
OBX|15|CWE|LEA101^Case Close Reason^2.16.840.1.114222.4.5.232||REMEDCMP^Remediation Complete^2.16.840.1.114222.4.5.402|||||F<CR>  
OBX|16|TS|LEA125^Date remediation due^2.16.840.1.114222.4.5.232||20060515|||||F<CR>  
OBX|17|TS|LEA126^Date address hazard remediation or abatement completed^2.16.840.1.114222.4.5.232||20060516|||||F<CR>  
OBX|18|TS|LEA127^Date clearance testing completed^2.16.840.1.114222.4.5.232||20060530|||||F<CR>  
OBX|19|IS|LEA128^Clearance testing performed indicator^2.16.840.1.114222.4.5.232||T|||||F<CR>  
OBX|20|TS|LEA129^Clearance testing performed date^2.16.840.1.114222.4.5.232||20060528|||||F<CR>  
OBX|21|CWE|LEA130^Clearance testing result^2.16.840.1.114222.4.5.232||224327007^Passed exams^2.16.840.1.113883.6.96|||||F<CR>  
OBX|22|CWE|NOT109^Reporting State^2.16.840.1.114222.4.5.232||GA^Georgia^2.16.840.1.113883.6.92|||||F<CR>  
OBX|23|CWE|INV154^Imported State^2.16.840.1.114222.4.5.232||TN^Tennessee^2.16.840.1.113883.6.92|||||F<CR>  
OBX|24|CWE|INV156^Imported County^2.16.840.1.114222.4.5.232||13121^The county of Fulton, Georgia^2.16.840.1.113883.6.930060408|||||F<CR>

40.1.114222.4^ISO~LeadEnvironmentalNationalNotificationMapv1.0^PHIN^2.16.840.1.114222.4^ISO<CR>