



Public Health Information Network
HL7 Version 2.5

TUBERCULOSIS CASE NOTIFICATION IMPLEMENTATION GUIDE

Version 1.0

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Centers for Disease Control and Prevention



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TB CASE NOTIFICATION AS ORU HL7 2.5 IMPLEMENTATION GUIDE

1 INTRODUCTION

This Implementation Guide documents the use of the *Health Level 7 (HL7) Version 2.5 Observation Report Unsolicited* to support messaging of the Varicella Case Notification from public health entities to the CDC.

The specifications in this *Implementation Guide* are not intended as a tutorial for either HL7 or interfacing in general. The reader is expected to have a basic understanding of interface concepts and HL7. This message is based on and conforms to the *HL7 Standard, Version 2.5*.

1.1 PHIN MESSAGING

The Public Health Information Network (PHIN) initiative is a comprehensive architecture of data and information systems standards intended to advance the development of efficient, integrated, and interoperable public health information systems. PHIN development, along with the work of related initiatives such as e-Health Initiative (eHI), is based on the fundamental understanding that exchange of health-related information between healthcare providers, public health agencies, and the general public is an essential aspect of public health surveillance and response. Therefore, messaging—the electronic exchange of data between computerized information systems—is a key element of the PHIN architecture.

The development and effective management of data interchange (messaging) requires the use of generally accepted standards. These standards become more widely used and more effective when they are developed by a widely based consensus process rather than by any single organization. Furthermore, use of industry standards is a basic tenet of the e-Government initiative that provides direction to CDC as to other government agents. Since it is generally accepted that Health Level Seven (HL7) standards are the prevailing industry standards for communicating clinical and laboratory data in the form of electronic messages, CDC has chosen to work with HL7 as the primary source for interface standards.

The breadth and general applicability of the HL7 standards are advantageous to a wide variety of users, but they also present challenges for specific implementations in public health and other contexts. Public health messaging partners need to define, with particularity, the data to be passed, and the circumstances under which it is passed. In other words, it is necessary to develop message implementation guides based around specific scenarios or use cases. These guides introduce the level of specificity required to define verifiably compliant messages.

1.2 WHAT IS AN IMPLEMENTATION GUIDE?

A public health messaging implementation guide is a document that describes:

- The circumstances under which messaging takes place
- The data that is passed in a particular message
- Additional specifications and guidance to assist in message implementation.

A wide range of use cases and partners are involved in public health messaging. Despite a multiplicity of specific message contexts, many of the same partners are involved as message receivers and message senders. As a result, consistency in both the form and content of message implementation guides can help establish and maintain a common, standards-based approach to electronic messaging.

1.3 AUDIENCE

This guide is designed for use by analysts who need a better understanding of the contents of PHIN messages, and by implementers working to develop PHIN-compliant applications. Understanding and using the relevant implementation guide or guides is a key requirement for establishing PHIN compliance.

1.4 CONTACTS

PHIN Help Desk
National Center for Public Health Informatics
Phone: 1-800-532-9929 or 770-216-1299
Email: PHINTech@cdc.gov

2 CASE NOTIFICATION AS ORU MESSAGE METHODOLOGY

2.1 STANDARD MESSAGE FORMAT

The *ORU^R01—Unsolicited Observation Message* is the HL7 standard message used to pass the Notifications in HL7 2.5 methodology. The standard message allows many segments, but the constrained ORU for Notifications makes use of only four segments: Message Header (MSH), Patient Identification (PID), Observation Request (OBR), and Observation Result (OBX).

The MSH segment is typical for PHIN messaging, and is required for every message. The Notification ID is used for the Message Control ID in MSH-10, and the version of the specification to which the message complies is mapped to MSH-21 Message Profile Identifier.

The PID segment is used for passing the patient's internal/local ID from the sending application, address fields, sex, race, ethnicity, and possibly nationality, citizenship, death indicator, and deceased date, if they are collected for that particular condition. Other demographic-type elements that do not reside on the PID segment are treated as investigation observations. The PID segment is not used when the Notification is for environmental reporting, and the standard allows the PID to be optional for the ORU.

The OBR segment is used as a "report header" to identify the Notification Type and to pass the investigation local ID as a "filler number." Some required date/time fields on the OBR segment will be picked up from the notification *create* and *send* date/times. The Notification Type is passed in the OBR-4 Universal Service ID field. The event or condition code is passed in the OBR-31 Reason for Study. The appropriate event codes for each condition are provided in the Guide.

The OBX segment is used to pass each data element as an Observation. There can be many of these OBX segments per OBR. All OBX segments are logically tied to the OBR that immediately precedes them.

2.2 THREE NOTIFICATION TYPES

The main Notification Type is NOTF for a Case Notification, as most of these are. Notification Type may be ENVNTF, if it is an environmental notification (Lead is the prototype), or LABNTF, if it is a notification about laboratory reporting (Lead Laboratory Report is also the prototype). These are the only three notification types in use for the investigation data passed in the first instance of the Order_Observation segment group.

2.3 TWO SUPPLEMENTAL NOTIFICATION TYPES

The message allows more than one Order_Observation segment group, and these subsequent/additional observation groups may carry either an associated laboratory report or associated vaccine report, in which case, the OBR-4 value in the additional OBR segments is either LABRPT or VACRPT. The

additional OBR segment carries all of the observations for the single, associated report, and there can be any number of additional OBR segments. The only time additional OBRs will be received (as known to date) is for the Case Notification (NOTF). There seems to be no use case for sending associated laboratory reports or vaccine reports for environmental or laboratory investigations. (The LABNTF is a notification about a lab report in itself, and includes other information to meet national Lead reporting requirements. It may or may not have resulted in a “case”).

2.4 DATA ELEMENTS/QUESTIONS AS OBSERVATIONS

Once the type of notification and the event or condition are defined, all other pertinent data is passed as Observations under the OBR segment. Any data element that does not reside in the PID segment and all of the investigation data elements are specified and passed as OBX segments. The Observation Identifier draws from the PHIN standard Value Set, PHVS_PHINQuestions_CDC, from which all of the data elements are drawn, so it is possible to hard code the object identifier (OID) for the values in OBX-3. An OID is required to meet PHIN Interoperability Requirements, as OBX-3 is a coded element (CE) data type. This section presents the real difference between the various Messaging Guides, since the preceding parts of the message are all handled in a standard manner.

The order in which the Observations are passed makes no difference—that is, the report should not be hard-coded so that every question is passed whether it was answered on the application side or not. Only fields that contain data should be passed in the message. Although the “required” fields in the application will contain data for messaging, the “required” status is not enforced by the message.

2.5 DATA TYPES IN USE

Data types in use for responses are defined in the condition-specific “Data Elements as Observations” tables. A data type is declared for each observation in OBX-2 Value Type, a field that indicates the expected format of the response in OBX-5. The value types in use have been constrained to String, Coded, Text, Structured Numeric, and Timestamp, to control the format of the data to allow parsing for database purposes.

2.6 OBSERVATION RESPONSES

The response in OBX-5, if the value type in OBX-2 is CE, draws from a PHIN standard value set. The plan is to provide with each specification a Workbook that allows mapping of local values to the Standard values. The Workbook contains a macro that automates the building of the Rhapsody translation table used for coding logic for the interface. Navigating through the translation table supplies the appropriate coding system OID to meet PHIN interoperability requirements.

2.7 UPDATE AND DELETION PROCESSING

The Result/Report Status field in OBR-25 of the Observation Request segment is used for processing. This field makes use of the HL7 typical values and processing implications for reporting. The first time a notification is sent, the value will be 'F' for *Final*. If an update is sent, the entire, new report is sent and the OBR-25 value will be 'C' for *Corrected*. If the application has functionality that causes a deletion request to occur (as some of them have), a value of 'X' will be sent in the OBR-25 Status field. This field is an ID data type, so the HL7 code is the only component that must be passed (no description or OID). The individual Observation statuses in OBX-11 are not used for processing; the field is mandatory for the message, but the value 'F' is used to meet that requirement. The entire report will be processed according to the contents of OBR-25.

3 DATA ELEMENT CROSS REFERENCE

3.1 NOTIFICATION CROSS-REFERENCE ABBREVIATIONS

The column headers and their definitions as used in the cross-reference tables for the Message Header, Demographics, and basic elements that apply to all Notifications are as follows:

TABLE 3-1 NOTIFICATION CROSS REFERENCE ABBREVIATIONS	
Abbreviation	Definition
NPP Name	The name assigned to the data element in the application.
UID	PHIN element UID drawn from the value set PHVS_PHINQuestions_CDC.
Label	Short name for the data element.
Description	Description of the data element.
HL7 Message Context	Specific HL7 segment and field mapping for the element.
Data Type	Data type used by PHIN for HL7 element.
Req./Opt.	Indicator whether the field is required or optional in the message. Note that the required status for the application is enforced by the application and not the message. <ul style="list-style-type: none"> • R – Required. Must always be populated. • O – Optional. May optionally be populated.
Rpts	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 table 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 http://www.cdc.gov/PhinVSBrowser/StrutsController.do .
Comments	Related implementation comments.

TUBERCULOSIS NOTIFICATION MESSAGE IMPLEMENTATION GUIDE

3.2 TUBERCULOSIS CASE NOTIFICATION DATA ELEMENTS

This table shows the data elements in use for TB and how each element is expected to appear in the message.

TABLE 3-2. TB CASE NOTIFICATION DATA ELEMENT CROSS REFERENCE								
UID	Label	Description	HL7 Message Context	Data Type	Req/ Opt	Rpts	Value Set Name	Comments
NTF139	Notification Local ID	Sending system-generated, unique local ID of the notification record. This is a required field.	MSH-10 Message Control ID	ST	R			
DEM197	Local patient ID	Sending system-generated internal person identifier. This is a required field.	PID-3 Patient Identifier List	CX	R			Requires an assigning authority OID in the fourth component.
DEM115	Birth Time	Patient's date of birth.	PID-7 Date/Time of Birth	TS	O			
DEM113	Patient's sex	Patient's current sex.	PID-8 Administrative Sex	IS	O		PHVS_Sex_MFU	
DEM152	Race Category	Field containing one or more codes that broadly refer to the patient's race(s).	PID-10 Race	CE	O	Y	PHVS_RaceCategory_CDC	
DEM155	Ethnic Group Code	Ethnic group code.	PID-22 Ethnic Group	CE	O		PHVS_EthnicityGroup_CDC	
DEM2004	Nationality	Nationality.	PID-28 Nationality	CE	O		PHVS_Country_ISO_3161-1	
INV168	Investigation Local ID	System-assigned local ID of the investigation with which the case subject/entity is associated. This is a required field.	OBR-3.1 Filler Order Number OBR-3.3 Assigning authority OID OBR-3.4 'ISO'	EI	R			Requires an assigning authority OID in the third component.
NOT101	Notification Type	Type of notification. This is a required field.	OBR-4 (first OBR occurrence)	CE	R		PHVS_NotificationType_NN D	

TUBERCULOSIS NOTIFICATION MESSAGE IMPLEMENTATION GUIDE

TABLE 3-2. TB CASE NOTIFICATION DATA ELEMENT CROSS REFERENCE

UID	Label	Description	HL7 Message Context	Data Type	Req/ Opt	Rpts	Value Set Name	Comments
NOT103	Date Notification First Submitted	Date the notification was first sent to an entity outside the case jurisdiction of occurrence. This value does not change after the original notification. This is a required field.	OBR-7 ObservationDate/Time	TS	R			Element required to be populated for the OBR segment in the ORU message.
NOT106	Date of Notification	Date/time the notification was sent. It will be the same value as NOT103 for the original notification. For updates, this is the <i>update/send</i> date/time. This is a required field.	OBR-22 Results/report Date/time	TS	R			Element required to be populated for the OBR segment in the ORU message.
INV169	Condition Code	Condition or event that constitutes the reason the notification is being sent. This is a required field.	OBR-31 Reason for Study	CE	R		PHVS_NationallyNotifiableDiseaseCondition_CDC	
NOT109	Reporting State	NND reporting state. This is a required field.	Observation/OBX Segment	CE	R		PHVS_State_FIPS_5-2	
NOT110	Record Type	Type of record reported (<i>e.g.</i> , individual or summary notification).	Observation/OBX segment	IS	O		PHVS_PublicHealthCaseRecordType_CDC	Data type is IS so description and OID are not passed.
INV173	State Case ID	State-assigned patient ID. This is a required field.	Observation/OBX Segment	ST	R			
INV172	Patient Chart Number	Locally assigned patient ID.	Observation/OBX Segment	ST	O			
INV147	Investigation Start Date	Investigation start date.	Observation/OBX Segment	TS	O			

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TABLE 3-2. TB CASE NOTIFICATION DATA ELEMENT CROSS REFERENCE

UID	Label	Description	HL7 Message Context	Data Type	Req/Opt	Rpts	Value Set Name	Comments
TB098	Investigation Submitted By	Investigation <i>Submitted By</i> .	Observation/OBX Segment	ST	O			
INV107	Jurisdiction Code	Case jurisdiction code.	Observation/OBX Segment	IS	O		Local coding scheme not created in PHIN-VADS	
INV108	Program Area Code	Case program area code.	Observation/OBX Segment	IS	O		Local coding scheme not created in PHIN-VADS	
INV109	Investigation Status Code	Case investigation status code. This is a required field.	Observation/OBX Segment	CE	R		PHVS_CaseInvestigationStatus_NND	
TB080	Reporting Address City	Reporting address city.	Observation/OBX Segment	CE	O		PHVS_City_USGS_GNIS	
TB099	Inside City Limits	Inside city limits?	Observation/OBX Segment	IS	O		PHVS_YNU	
TB081	Reporting Address County	Reporting address county.	Observation/OBX Segment	CE	O		PHVS_County_FIPS_6-4	
TB082	Reporting Address Zip Code	Reporting address Zip Code.	Observation/OBX Segment	ST	O			
INV165	MMWR Week	MMWR Week. This is a required field.	Observation/OBX Segment	SN	R			
INV166	MMWR Year	MMWR Year. This is a required field.	Observation/OBX Segment	TS	R			
INV111	Date of Report	Date of report by reporting source. This is a required field.	Observation/OBX Segment	TS	R			
TB100	Date Counted	Date counted. This is a required field.	Observation/OBX Segment	TS	R			

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TABLE 3-2. TB CASE NOTIFICATION DATA ELEMENT CROSS REFERENCE

UID	Label	Description	HL7 Message Context	Data Type	Req/ Opt	Rpts	Value Set Name	Comments
DEM153	Detailed Race	Detailed race(s).	OBX Segment: To keep the race category in context with detailed races, pass the race category in the first instance of this field and the detailed race codes as repeats. If more than one race category was passed in PID-10 Race, use a second OBX Detailed Race segment instance to keep that grouping in context.	CE	O	Y	PHVS_Race_CDC	See sample message for implementation details.
DEM156	Detailed Ethnicity	Detailed ethnicity.	OBX Segment	CE	O	Y	PHVS_Ethnicity_CDC	
DEM2003	US Citizen	US citizen?	Observation/OBX Segment	IS	O		PHVS_TrueFalse_CDC	
DEM2005	Date of Entry into US	Date of entry into US.	Observation/OBX Segment	TS	O			
TB202	Estimated US Entry Date	Indicator of estimated date of entry into US.	Observation/OBX Segment	IS	O		PHVS_TrueFalse_CDC	IS data type; may simply pass True (T) or False (F).
TB101	Status at Diagnosis of TB	Status at diagnosis of TB.	Observation/OBX Segment	CE	O		PHVS_GeneralConditionStat us_CDC	
TB102	Previous Diagnosis of TB	Previous diagnosis of TB?	Observation/OBX Segment	CE	O		PHVS_YNU	
TB103	Year of Previous Diagnosis	Year of previous diagnosis.	Observation/OBX Segment	TS	O			

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TABLE 3-2. TB CASE NOTIFICATION DATA ELEMENT CROSS REFERENCE

UID	Label	Description	HL7 Message Context	Data Type	Req/ Opt	Rpts	Value Set Name	Comments
TB104	More than One Previous Episode	More than one previous episode.	Observation/OBX Segment	IS	0		PHVS_TrueFalse_CDC	
TB105	Major Site of Disease	Major site of disease.	Observation/OBX Segment	CE	0		PHVS_MajorDiseaseSite_TB	
TB106	Additional Site of Disease	Additional site of disease.	Observation/OBX Segment	CE	0	Y	PHVS_AdditionalDiseaseSite_TB	
TB107	More than One Additional Site	More than one additional site.	Observation/OBX Segment	IS	0		PHVS_TrueFalse_CDC	
TB108	Sputum Smear	Sputum smear.	Observation/OBX Segment	CE	0		PHVS_PosNegUnkNotDone_CDC	
TB109	Sputum Culture	Sputum culture.	Observation/OBX Segment	CE	0		PHVS_PosNegUnkNotDone_CDC	
TB110	Microscopic Exam of Tissue and Other Body Fluids	Microscopic exam of tissue and other body fluids.	Observation/OBX Segment	CE	0		PHVS_PosNegUnkNotDone_CDC	
TB111	Microscopic Exam Site 1	Microscopic exam site 1.	Observation/OBX Segment	CE	0		PHVS_MicroscopicExamCultureSite_TB	
TB112	Microscopic Exam Site 2	Microscopic exam site 2.	Observation/OBX Segment	CE	0		PHVS_MicroscopicExamCultureSite_TB	
TB113	Culture of Tissue and Other Body Fluids	Culture of tissue and other body fluids.	Observation/OBX Segment	CE	0		PHVS_PosNegUnkNotDone_CDC	
TB114	Culture Site 1	Culture site 1.	Observation/OBX Segment	CE	0		PHVS_MicroscopicExamCultureSite_TB	
TB115	Culture Site 2	Culture site 2.	Observation/OBX Segment	CE	0		PHVS_MicroscopicExamCultureSite_TB	

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TABLE 3-2. TB CASE NOTIFICATION DATA ELEMENT CROSS REFERENCE

UID	Label	Description	HL7 Message Context	Data Type	Req/Opt	Rpts	Value Set Name	Comments
TB116	Chest X-ray Results	Chest X-ray results.	Observation/OBX Segment	CE	0		PHVS_ChestXRayResult_CD C	
TB117	Abnormal Chest X-ray Cavitory Status	Abnormal chest X-ray cavitory status.	Observation/OBX Segment	CE	0		PHVS_AbnormalChestXRayFinding_TB	
TB118	Abnormal Chest X-ray Condition Status	Abnormal chest X-ray condition status.	Observation/OBX Segment	CE	0		PHVS_XRayBasedPatientCondition_NND	
TB119	Skin Test at Diagnosis	Skin test at diagnosis.	Observation/OBX Segment	CE	0		PHVS_PosNegUnkNotDone_CDC	
TB120	Millimeters of Induration	Millimeters of induration.	Observation/OBX Segment	SN	0			[^nm] format; units not necessary.
TB121	Was Patient Anergic	Was patient anergic?	Observation/OBX Segment	CE	0		PHVS_PosNegUnkNotDone_CDC	
TB122	HIV Status	HIV status.	Observation/OBX Segment	CE	0		PHVS_HIVStatusQualitativeResult_NND	
TB123	HIV Based On	HIV based on....	Observation/OBX Segment	CE	0		PHVS_HIVDiagnosisBasedOn_NND	
TB124	CDC AIDS Patient Number	CDC AIDS patient number.	Observation/OBX Segment	ST	0			
TB125	State AIDS Patient Number	State AIDS patient number.	Observation/OBX Segment	ST	0			
TB126	City County AIDS Patient Number	City-County AIDS patient number.	Observation/OBX Segment	ST	0			
TB127	Homeless Within Past Year	Homeless within past year?	Observation/OBX Segment	CE	0		PHVS_YNU	

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TABLE 3-2. TB CASE NOTIFICATION DATA ELEMENT CROSS REFERENCE

UID	Label	Description	HL7 Message Context	Data Type	Req/Opt	Rpts	Value Set Name	Comments
TB128	Resident of Correctional Facility at Time of Diagnosis	Resident of correctional facility at time of diagnosis?	Observation/OBX Segment	CE	O		PHVS_YNU	
TB129	Type of Correctional Facility	Type of correctional facility.	Observation/OBX Segment	CE	O		PHVS_CorrectionalFacilityType_NND	
TB130	Resident of Long Term Care Facility at Time of Diagnosis	Resident of long-term care facility at time of diagnosis?	Observation/OBX Segment	CE	O		PHVS_YNU	
TB131	Type of Long Term Care Facility	Type of long-term care facility.	Observation/OBX Segment	CE	O		PHVS_LongTermCareFacilityType_NND	
TB132	Isoniazid therapy	Isoniazid initial therapy?	Observation/OBX Segment	CE	O		PHVS_YNU	
TB133	Rifampin therapy	Rifampin initial therapy?	Observation/OBX Segment	CE	O		PHVS_YNU	
TB134	Pyrazinamide therapy	Pyrazinamide initial therapy?	Observation/OBX Segment	CE	O		PHVS_YNU	
TB135	Ethambutol therapy	Ethambutol initial therapy?	Observation/OBX Segment	CE	O		PHVS_YNU	
TB136	Streptomycin therapy	Streptomycin initial therapy?	Observation/OBX Segment	CE	O		PHVS_YNU	
TB137	Ethionamide therapy	Ethionamide initial therapy?	Observation/OBX Segment	CE	O		PHVS_YNU	
TB138	Kanamycin therapy	Kanamycin initial therapy?	Observation/OBX Segment	CE	O		PHVS_YNU	

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TABLE 3-2. TB CASE NOTIFICATION DATA ELEMENT CROSS REFERENCE

UID	Label	Description	HL7 Message Context	Data Type	Req/Opt	Rpts	Value Set Name	Comments
TB139	Cycloserine therapy	Cycloserine initial therapy?	Observation/OBX Segment	CE	0		PHVS_YNU	
TB140	Capreomycin therapy	Capreomycin initial therapy?	Observation/OBX Segment	CE	0		PHVS_YNU	
TB141	Para-Amino Salicylic Acid therapy	Para-Amino Salicylic Acid initial therapy?	Observation/OBX Segment	CE	0		PHVS_YNU	
TB142	Amikacin therapy	Amikacin initial therapy?	Observation/OBX Segment	CE	0		PHVS_YNU	
TB143	Rifabutin therapy	Rifabutin initial therapy?	Observation/OBX Segment	CE	0		PHVS_YNU	
TB144	Ciprofloxacin therapy	Ciprofloxacin initial therapy?	Observation/OBX Segment	CE	0		PHVS_YNU	
TB145	Ofloxacin therapy	Ofloxacin initial therapy?	Observation/OBX Segment	CE	0		PHVS_YNU	
TB146	Other initial regimen	Other initial regimen?	Observation/OBX Segment	CE	0		PHVS_YNU	
TB147	Date Therapy Started	Date therapy started.	Observation/OBX Segment	TS	0			
TB148	Injecting Drug Use Within Past Year	Injecting drug use within past year?	Observation/OBX Segment	CE	0		PHVS_YNU	
TB149	Non-Injecting Drug Use Within Past Year	Non-injecting drug use within past year?	Observation/OBX Segment	CE	0		PHVS_YNU	
TB150	Excess Alcohol Use Within Past Year	Excess alcohol use within past year?	Observation/OBX Segment	CE	0		PHVS_YNU	

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TABLE 3-2. TB CASE NOTIFICATION DATA ELEMENT CROSS REFERENCE

UID	Label	Description	HL7 Message Context	Data Type	Req/ Opt	Rpts	Value Set Name	Comments
TB151	Employment Status	Employment status.	Observation/OBX Segment	CE	O		PHVS_EmploymentStatus_NND	
TB152	Occupation Risk Category	Occupation risk category.	Observation/OBX Segment	CE	O	Y	PHVS_OccupationRiskCategory_TB	
TB153	Count at CDC as verified	Count at CDC as verified. This is a required field.	Observation/OBX Segment	CE	R		PHVS_TrueFalse_CDC	
TB154	Case Verification	Case verification. This is a required field.	Observation/OBX Segment	CE	R		PHVS_CaseVerification_TB	
TB156	Was Drug Susceptibility Testing Done	Was drug susceptibility testing done?	Observation/OBX Segment	CE	O		PHVS_YNU	
TB157	Date First Isolate Collected	Date first isolate collected.	Observation/OBX Segment	TS	O			
TB158	Isoniazid initial susceptibility	Isoniazid initial susceptibility.	Observation/OBX Segment	CE	O		PHVS_SusceptibilityResult_CDC	
TB159	Rifampin initial susceptibility	Rifampin initial susceptibility.	Observation/OBX Segment	CE	O		PHVS_SusceptibilityResult_CDC	
TB160	Pyrazinamide initial susceptibility	Pyrazinamide initial susceptibility.	Observation/OBX Segment	CE	O		PHVS_SusceptibilityResult_CDC	
TB161	Ethambutol initial susceptibility	Ethambutol initial susceptibility.	Observation/OBX Segment	CE	O		PHVS_SusceptibilityResult_CDC	
TB162	Streptomycin initial susceptibility	Streptomycin initial susceptibility.	Observation/OBX Segment	CE	O		PHVS_SusceptibilityResult_CDC	
TB163	Ethionamide initial susceptibility	Ethionamide initial susceptibility.	Observation/OBX Segment	CE	O		PHVS_SusceptibilityResult_CDC	

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TABLE 3-2. TB CASE NOTIFICATION DATA ELEMENT CROSS REFERENCE

UID	Label	Description	HL7 Message Context	Data Type	Req/Opt	Rpts	Value Set Name	Comments
TB164	Kanamycin initial susceptibility	Kanamycin initial susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD DC	
TB165	Cycloserine initial susceptibility	Cycloserine initial susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD DC	
TB166	Capreomycin initial susceptibility	Capreomycin initial susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD DC	
TB167	Para-Amino Salicylic Acid initial susceptibility	Para-Amino Salicylic Acid initial susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD DC	
TB168	Amikacin initial susceptibility	Amikacin initial susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD DC	
TB169	Rifabutin initial susceptibility	Rifabutin initial susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD DC	
TB170	Ciprofloxacin initial susceptibility	Ciprofloxacin initial susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD DC	
TB171	Ofloxacin initial susceptibility	Ofloxacin initial susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD DC	
TB172	Other initial susceptibility	Other initial susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD DC	
TB173	Culture Conversion Documented	Culture conversion documented?	Observation/OBX Segment	CE	0		PHVS_YNU	
TB174	Date of Initial Positive Culture	Date of initial positive culture.	Observation/OBX Segment	TS	0			

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TABLE 3-2. TB CASE NOTIFICATION DATA ELEMENT CROSS REFERENCE

UID	Label	Description	HL7 Message Context	Data Type	Req/ Opt	Rpts	Value Set Name	Comments
TB175	Date of First Consistently Negative Culture	Date of first consistently negative culture.	Observation/OBX Segment	TS	0			
TB176	Date Therapy Stopped	Date therapy stopped.	Observation/OBX Segment	TS	0			
TB177	Reason Therapy Stopped	Reason therapy stopped.	Observation/OBX Segment	CE	0		PHVS_ReasonTherapyStopped_TB	
TB178	Type of Health Care Provider	Type of health care provider.	Observation/OBX Segment	CE	0	Y	PHVS_HealthCarePracticeType_TB	
TB179	Directly Observed Therapy	Directly observed therapy.	Observation/OBX Segment	CE	0		PHVS_DirectlyObservedTherapy_TB	
TB180	Sites of Directly Observed Therapy	Sites of directly observed therapy.	Observation/OBX Segment	CE	0	Y	PHVS_DirectlyObservedTherapySite_TB	
TB181	Number Weeks Directly Observed Therapy	Number weeks directly observed therapy.	Observation/OBX Segment	SN	0			Not using units. Format is ^nn .
TB182	Follow-Up Susceptibility Testing	Follow-up susceptibility testing?	Observation/OBX Segment	CE	0		PHVS_YNU	
TB183	Follow-Up Susceptibility Testing Date	Follow-up susceptibility testing date.	Observation/OBX Segment	TS	0			
TB184	Isoniazid final susceptibility	Isoniazid final susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD	
TB185	Rifampin final susceptibility	Rifampin final susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD	

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TABLE 3-2. TB CASE NOTIFICATION DATA ELEMENT CROSS REFERENCE

UID	Label	Description	HL7 Message Context	Data Type	Req/ Opt	Rpts	Value Set Name	Comments
TB186	Pyrazinamide final susceptibility	Pyrazinamide final susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD	
TB187	Ethambutol final susceptibility	Ethambutol final susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD	
TB188	Streptomycin final susceptibility	Streptomycin final susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD	
TB189	Ethionamide final susceptibility	Ethionamide final susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD	
TB190	Kanamycin final susceptibility	Kanamycin final susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD	
TB191	Cycloserine final susceptibility	Cycloserine final susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD	
TB192	Capreomycin final susceptibility	Capreomycin final susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD	
TB193	Para-Amino Salicylic Acid final susceptibility	Para-Amino Salicylic Acid final susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD	
TB194	Amikacin final susceptibility	Amikacin final susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD	
TB195	Rifabutin final susceptibility	Rifabutin final susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD	
TB196	Ciprofloxacin final susceptibility	Ciprofloxacin final susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD	

TUBERCULOSIS NOTIFICATION MESSAGE IMPLEMENTATION GUIDE

TABLE 3-2. TB CASE NOTIFICATION DATA ELEMENT CROSS REFERENCE

UID	Label	Description	HL7 Message Context	Data Type	Req/ Opt	Rpts	Value Set Name	Comments
TB197	Ofloxacin final susceptibility	Ofloxacin final susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD	
TB198	Other final susceptibility	Other final susceptibility.	Observation/OBX Segment	CE	0		PHVS_SusceptibilityResult_CD	
TB199	Legacy Client ID	Legacy client ID.	Observation/OBX Segment	ST	0			<Placeholder - not messaged at this time.>
TB200	Legacy RVCT ID	Legacy RVCT ID.	Observation/OBX Segment	ST	0			<Placeholder - not messaged at this time.>

4 HL7 ORU^R01 ABSTRACT MESSAGE

The following message description portrays how the HL7 Unsolicited Observation message is constrained for use as a Notification.

TABLE 4.1 MESSAGE ATTRIBUTES	
Abbreviation	Definition
Segment	<p>Three-character code for the segment and the abstract syntax (<i>i.e.</i>, the square and curly braces)</p> <ul style="list-style-type: none"> • [XXX] Optional • { XXX } Repeating • XXX Required • [{ XXX }] Optional and Repeating <p>Note that for Segment Groups there will not be a segment code present, but the square and curly braces will still be present.</p> <p>This column shows the HL7 repeats and optionality for the standard message. The Usage and Cardinality columns specify how PHIN constrains the message.</p>
Name	Name of the Segment or Segment group element.
Usage	<p>Usage of the field for PHIN. Indicates if the field is required, optional, or conditional in a segment. Legal values are:</p> <ul style="list-style-type: none"> • R – Required. Must always be populated • O – Optional. May optionally be populated. • C – Conditional. Populated under specified conditions. • X – Not used for PHIN messaging.
Cardinality	<p>Indicator of the minimum and maximum number of times the element may appear.</p> <ul style="list-style-type: none"> • [0..0] Element never present. • [0..1] Element may be omitted and it can have at most, one Occurrence. • [1..1] Element must have exactly one Occurrence. • [0..n] Element may be omitted or may repeat up to <i>n</i> times. • [1..n] Element must appear at least once, and may repeat up to <i>n</i> times. • [0..*] Element may be omitted or repeat for an unlimited number of times. • [1..*] Element must appear at least once, and may repeat unlimited number of times. • [m..n] Element must appear at least <i>m</i>, and at most, <i>n</i> times.
Section	Indicator of the part of this guide that describes the segment. Some segments are associated with multiple sections.

Note: In the tables throughout this document, **Yellow = The PHIN Standard does not support the use of this item.**

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TABLE 4-2. ABSTRACT MESSAGE SYNTAX ORU^R01 UNSOLICITED OBSERVATION MESSAGE				
Segment	Name	Usage	Cardinality	Section
	<i>Header Begin</i>			
MSH	Message Header	R	[1..1]	3.2
[[SFT]]	Software Segment	X	[0..0]	
	<i>Header End</i>			
{	<i>PATIENT_RESULT Begin</i>	R	[1..1]	
[<i>PATIENT Begin</i>	O	[0..1]	
PID	Patient Identification	R	[1..1]	3.3
[PD1]	Additional Demographics	X	[0..0]	
[(NTE)]	Notes and Comments for PID	X	[0..0]	
[(NK1)]	Next of Kin/Related Parties	X	[0..0]	
[<i>VISIT Begin</i>			
PV1	Patient Visit	X	[0..0]	
[PV2]	Patient Visit – Additional Information	X	[0..0]	
]	<i>VISIT End</i>			
]	<i>PATIENT End</i>	O	[0..1]	
{	<i>ORDER_OBSERVATION Begin</i>	R	[1..*]	
[ORC]	Order Common	X	[0..0]	
OBR	Observation Request	R	[1..1]	3.4
[(NTE)]	Notes and Comments	X	[0..0]	
{	<i>TIMING_QTY Begin</i>	X	[0..0]	
TQ1	Timing/Quantity	X	[0..0]	
[[TQ2]]	Timing/Quantity Order Sequence	X	[0..0]	
}}	<i>TIMING_QTY End</i>			
[CTD]	Contact Data	X	[0..0]	
[{	<i>OBSERVATION Begin</i>	R	[1..*]	
OBX	Observation Related to OBR	R	[1..1]	3.5
{ [NTE] }	Notes and Comments	X	[0..0]	
}}	<i>OBSERVATION End</i>			
[{FT1}]	Financial Transaction	X	[0..0]	
[{CTI}]	Clinical Trial Identification	X	[0..0]	
[{	<i>SPECIMEN Begin</i>			
SPM	Specimen	X	[0..0]	
[{OBX}]	Observation Related to Specimen	X	[0..0]	
}}	<i>SPECIMEN End</i>			

TUBERCULOSIS NOTIFICATION MESSAGE IMPLEMENTATION GUIDE

**TABLE 4-2. ABSTRACT MESSAGE SYNTAX
ORU^R01 UNSOLICITED OBSERVATION MESSAGE**

Segment	Name	Usage	Cardinality	Section
}	<i>ORDER_OBSERVATION End</i>			
}	<i>PATIENT_RESULT End</i>			
[DSC]	Continuation Pointer	X	[0..0]	

5 HL7 SEGMENT AND FIELD DESCRIPTIONS

This section contains descriptions of the segments used. Within each segment, the supported fields are briefly described. For more information on segments and fields, refer to the *HL7 Standard*.

5.1 SEGMENT ATTRIBUTE TABLE ABBREVIATIONS

The abbreviated terms and their definitions as used in the segment table headings are as follows:

TABLE 5-1 SEGMENT ATTRIBUTES	
Abbreviation	Definition
Seq	Sequence of the elements as they are numbered in the HL7 segment.
Len	<p>PHIN maximum length of the element. Length of an element is calculated using the following rules:</p> <ul style="list-style-type: none"> • Field length = (Sum of all supported component lengths) + (component number of the last supported component) – 1. • Component length = (Sum of all supported sub-component lengths) + (sub-component number of the last supported component) – 1. <p>Lengths should be considered recommendations, not absolutes. The receiver may truncate fields, components, and sub-components longer than the recommended length. The receiver should not fail to process a message simply because fields, components, or sub-components are too long.</p>
DT	Data type used by PHIN for HL7 element.
Usage	<p>Usage of the field for PHIN. Indicates if the field is required, optional, or conditional in a segment. Legal values are:</p> <ul style="list-style-type: none"> • R – Required. Must always be populated. • O – Optional. May optionally be populated. • C – Conditional. Populated under specified conditions. • X – Not used for PHIN messaging.
Cardinality	<p>Indicator of the minimum and maximum number of times the element may appear.</p> <ul style="list-style-type: none"> • [0..0] Element never present. • [0..1] Element may be omitted and it can have at most, one Occurrence. • [1..1] Element must have exactly one Occurrence. • [0..n] Element may be omitted or may repeat up to <i>n</i> times. • [1..n] Element must appear at least once, and may repeat up to <i>n</i> times. • [0..*] Element may be omitted or repeat for an unlimited number of times. • [1..*] Element must appear at least once, and may repeat unlimited number of times. • [m..n] Element must appear at least <i>m</i>, and at most, <i>n</i> times.
PHIN Value Set	<p>Pre-coordinated tables used in public health messages, accessible via the Public Health Information Network Vocabulary Access and Distribution Services at http://www.cdc.gov/PhinVSBrowser/StrutsController.do.</p>
HL7 Element Name	HL7 descriptor of the element in the segment.

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TABLE 5-1 SEGMENT ATTRIBUTES

Abbreviation	Definition
Description/Comments	PHIN context and usage for the element.

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5.2 MSH – MESSAGE HEADER SEGMENT

The Message Header Segment (MSH) is necessary to support the functionality described in the Control/Query chapter of the *HL7 standard*. MSH is used to define the intent, source, destination, and some specifics of the syntax of a message. The message header is mandatory for every message.

TABLE 5-2. MESSAGE HEADER SEGMENT (MSH)

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
1	1	ST	R	[1..1]		Field Separator	Character to be used as the field separator for the rest of the message. The supported value is , ASCII (124).
2	4	ST	R	[1..1]		Encoding Characters	Field that always contains the following four characters, in the same order: ^~& .
3	227	HD	R	[1..1]		Sending Application	Field used to uniquely identify the sending application for messaging purposes. If populated, it will contain an OID that represents the sending application instance.
3.1	20	IS	O	[0..1]		Namespace ID	
3.2	199	ST	R	[1..1]		Universal ID	OID.
3.3	6	ID	R	[1..1]		Universal ID Type	Literal value: 'ISO'.
4	227	HD	R	[1..1]		Sending Facility	Unique identifier of the facility that sends the message. The sending facility must be part of the PHIN OID registry.
4.1	20	IS	O	[0..1]		Namespace ID	Facility short name; may be included for readability.
4.2	199	ST	R	[1..0]		Universal ID	OID.
4.3	6	ID	R	[1..0]		Universal ID Type	Literal value: 'ISO'.
5	227	HD	R	[1..1]		Receiving Application	Field used to uniquely identify the receiving application for messaging purposes. If populated, it will contain an OID that represents the receiving application instance.
5.1	20	IS	O	[0..1]		Namespace ID	Application short name; may be included for readability.
5.2	199	ST	R	[1..1]		Universal ID	OID.

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TABLE 5-2. MESSAGE HEADER SEGMENT (MSH)

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
5.3	6	ID	R	[1..1]		Universal ID Type	Literal value: 'ISO'.
6	227	HD	R	[1..1]		Receiving Facility	Unique identifier of the facility that is to receive the message. This unique identifier must be part of the PHIN OID registry.
6.1	20	IS	O	[0..1]		Namespace ID	Facility short name; may be included for readability.
6.2	199	ST	R	[1..1]		Universal ID	Must be an OID.
6.3	6	ID	R	[1..1]		Universal ID Type	Literal value: 'ISO'.
7	24	TS	R	[1..1]		Date/Time Of Message	Date/time the sending system created the message.
7.1	24	DTM	R	[1..1]		Time	YYYY[MM[DD[HH[MM[SS[.S[S[S[S]]]]]]]]][+/-ZZZZ], where at least the first fourteen digits are used to specify to a precision of "second." The time zone (+/-ZZZZ) is represented as +/-HHMM offset from Coordinated Universal Time (UTC) (formerly Greenwich Mean Time [GMT]), where +0000 or -0000 both represent UTC (without offset). If the time zone is not included, the time zone is understood to be the local time zone of the sender.
7.2		ID	X	[0..0]		Degree of Precision	Not supported.
8		ST	X	[0..0]		Security	Not supported.
9	15	MSG	R	[1..1]		Message Type	Field containing the message type, trigger event, and message structure ID for the message. For the Case Notification message, the value in this field will always be 'ORU^R01^ORU_R01'.
9.1	3	ID	R	[1..1]		Message Code	Literal value: 'ORU'.
9.2	3	ID	R	[1..1]		Trigger Event	Literal value: 'R01'.
9.3	7	ID	R	[1..1]		Message Structure	Literal value: 'ORU_R01'.

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TABLE 5-2. MESSAGE HEADER SEGMENT (MSH)

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
10	20	ST	R	[1..1]		Message Control ID	String that uniquely identifies the message instance from the sending application. This field correlates to PHIN UID NTF139: the system-assigned, local ID of the notification record.
11	3	PT	R	[1..1]		Processing ID	Field that indicates the intent for processing the message, such as "Testing," "Development," or "Production."
11.1	1	ID	R	[1..1]		Processing ID	Field that will always contain P for this message in a production environment.
11.2	1	ID	O	[0..1]		Processing Mode	Understood to be "Current," if not explicitly sent in the message.
12	5	VID	R	[1..1]		Version ID	HL7 version number used to interpret format and content of the message.
12.1	5	ID	R	[1..1]		Version ID	Literal value: '2.5'.
12.2		CE	X	[0..0]		Internationalization Code	Not supported.
12.3		CE	X	[0..0]		International Version ID	Not supported.
13		NM	X	[0..0]		Sequence Number	Not supported.
14		ST	X	[0..0]		Continuation Pointer	Not supported.
15		ID	X	[0..0]		Accept Acknowledgment Type	Not supported.
16		ID	X	[0..0]		Application Acknowledgment Type	Not supported.
17		ID	X	[0..0]		Country Code	Not supported.
18		ID	X	[0..0]		Character Set	Not supported.
19		CE	X	[0..0]		Principal Language Of Message	Not supported.

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TABLE 5-2. MESSAGE HEADER SEGMENT (MSH)

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
20		ID	X	[0..0]		Alternate Character Set Handling Scheme	Not supported.
21	411	EI	R	[1..1]		Message Profile Identifier	Field used to reference or assert adherence to a message profile. Message profiles contain detailed explanations of grammar, syntax, and usage for a particular message or set of messages.
21.1	199	ST	R	[1..1]		Entity Identifier	Literal value: 'TBCaseNotificationv1'.
21.2	4	IS	O	[0..1]		Namespace ID	Literal value: 'PHIN'.
21.3	199	ST	R	[1..1]		Universal ID	OID for PHIN as the assigning authority of message profile identifier. Literal value: '2.16.840.1.114222.4.5.232'.
21.4	6	ID	R	[1..1]		Universal ID Type	Literal value: 'ISO'.

5.3 PID – PATIENT IDENTIFICATION SEGMENT

The Patient Identification Segment (PID) is used as the primary means of conveying patient identification information that is not likely to change frequently.

TABLE 5-3. PATIENT IDENTIFICATION SEGMENT (PID)

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
1	4	SI	O	[0..1]		Set ID - PID	Segment sequencing field that does not need to be populated, but may contain a '1'; however, only one patient/one PID segment per message is supported.
2		CX	X	[0..0]		Patient ID	Not supported.
3	255	CX	R	[1..1]		Patient Identifier List	Only a sending system-generated, internal person identifier is sent with Notifications, as these are de-identified messages.
3.1	15	ST	R	[1..1]		ID Number	DEM197 Local patient ID.

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TABLE 5-3. PATIENT IDENTIFICATION SEGMENT (PID)

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
3.2		ST	X	[0..0]		Check Digit	Not supported.
3.3		ID	X	[0..0]		Check Digit Scheme	Not supported.
3.4	227	HD	O	[0..1]		Assigning Authority	
3.4.1	20	IS	O	[0..1]		Namespace ID	
3.4.2	199	ST	R	[1..1]		Universal ID	OID for sending application as assigning authority.
3.4.3	6	ID	R	[1..1]		Universal ID Type	Literal value: 'ISO'.
3.5		ID	X	[0..0]		Identifier Type Code	Not supported.
4		CX	X	[0..0]		Alternate Patient ID - PID	Not supported.
5	513	XPN	R	[1..1]		Patient Name	Mandatory field that must be populated, but Patient Name is not supported with the Case Notification message. Literal value: "" (pair of double quotes).
6		XPN	X	[0..0]		Mother's Maiden Name	Not supported.
7	24	TS	O	[0..1]		Date/Time of Birth	Patient's date of birth. Correlates to PHIN Element UID DEM115 Birth Time.
7.1	24	DTM	R	[0..1]		Time	YYYY[MM[DD[HH[MM[SS[.S[S[S[S]]]]]]]][/+/-ZZZZ], where at least the first eight digits are used to specify to a precision of "day."
7.2		ID	X	[0..0]		Degree of Precision	Not supported.
8	1	IS	O	[0..1]	PHVS_Sex_MFU	Administrative Sex	Patient's sex. Correlates to PHIN Element UID DEM113 Patient's Current Sex.
9		XPN	X	[0..0]		Patient Alias	Not supported.
10	841	CE	O	[0..*]		Race	Field containing one or more codes that broadly refer to the patient's race(s). Correlates to PHIN Element UID DEM152 Race Category Code.
10.1	20	ST	R	[1..1]	PHVS_RaceCategory_CDC	Identifier	
10.2	199	ST	O	[0..1]		Text	

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TABLE 5-3. PATIENT IDENTIFICATION SEGMENT (PID)

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
10.3	199	ID	R	[1..1]		Name of Coding System	OID for race and ethnicity coding system. Literal Value: '2.16.840.1.113883.6.238'.
10.4		ST	X	[0..0]		Alternate Identifier	Not supported.
10.5		ST	X	[0..0]		Alternate Text	Not supported.
10.6		ID	X	[0..0]		Name of Alternate Coding System	Not supported.
11	455	XAD	O	[0..*]		Patient Address	Residence address of the patient. Multiple addresses for the same person may be sent. TB reporting does not use this field for capturing the Reporting Address.
11.1	184	SAD	O	[0..1]		Street Address	Correlates to PHIN Element UID DEM159 Patient's Street Address 1. Not used for Case Notification reporting.
11.2	120	ST	O	[0..1]		Other Designation	Correlates to PHIN Element UID DEM160 Patient's Street Address 2. Not used for Case Notification reporting.
11.3	50	ST	O	[0..1]		City	Correlates to PHIN Element UID DEM161 Patient's City.
11.4	50	ST	O	[0..1]	PHVS_State_FIPS_5-2	State or Province	Correlates to PHIN Element UID DEM162 Patient's State.
11.5	12	ST	O	[0..1]		Zip or Postal Code	Correlates to PHIN Element UID DEM163 Patient's Zip code.
11.6	3	ID	O	[0..1]	PHVS_Country_ISO_3166-1	Country	Correlates to PHIN Element UID DEM167 Patient's Country.
11.7	3	ID	O	[0..1]	PHVS_AddressType_HL7_2x	Address Type	Correlates to PHIN Element UID DEM158 Patient's Address Type.
11.8		ST	X	[0..0]		Other Geographic Designation	Not supported.

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TABLE 5-3. PATIENT IDENTIFICATION SEGMENT (PID)

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
11.9	20	IS	O	[0..1]	PHVS_County_FIPS_6-4	County/Parish Code	Correlates to PHIN Element UID DEM165 County Code.
11.10	20	IS	O	[0..1]		Census Tract	Correlates to PHIN Element UID DEM168 Census Tract.
11.11		ID	X	[0..0]		Address Representation Code	Not supported.
11.12		DR	X	[0..0]		Address Validity Range	Not supported.
11.13	24	TS	O	[0..1]		Effective Date	Correlates to PHIN Element UID DEM169 Residence From Date.
11.14	24	TS	O	[0..1]		Expiration Date	Correlates to PHIN Element UID DEM170 Residence To Date.
12		IS	X	[0..0]		County Code	Not supported – residence county is part of PID-11.
13		XTN	X	[0..0]		Phone Number - Home	Not supported due to patient confidentiality reasons.
14		XTN	X	[0..0]		Phone Number - Business	Not supported due to patient confidentiality reasons.
15		CE	X	[0..0]		Primary Language	Not supported.
16		CE	X	[0..0]		Marital Status	Not supported.
17		CE	X	[0..0]		Religion	Not supported.
18		CX	X	[0..0]		Patient Account Number	Not supported due to privacy reasons.
19		ST	X	[0..0]		SSN Number - Patient	Not supported due to privacy reasons.
20		DLN	X	[0..0]		Driver's License Number - Patient	Not supported due to privacy reasons.
21		CX	X	[0..0]		Mother's Identifier	Not supported due to privacy reasons.
22	841	CE	O	[0..1]		Ethnic Group	Field that defines the patient as either Hispanic or Non-Hispanic.
22.1	20	ST	R	[1..1]	PHVS_EthnicityGroup_CDC	Identifier	
22.2	199	ST	O	[0..1]		Text	

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TABLE 5-3. PATIENT IDENTIFICATION SEGMENT (PID)

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
22.3	199	ID	R	[1..1]		Name of Coding System	OID for race and ethnicity coding system. Literal Value: '2.16.840.1.113883.6.238'.
22.4		ST	X	[0..0]		Alternate Identifier	Not supported.
22.5		ST	X	[0..0]		Alternate Text	Not supported.
22.6		ID	X	[0..0]		Name of Alternate Coding System	Not supported.
23	250	ST	O	[0..1]		Birth Place	PHIN UID DEM126 Birth Country. Not used for TB program, but is supported in the Notification message.
24	1	ID	O	[0..1]		Multiple Birth Indicator	PHIN UID DEM116 Multiple Birth Indicator. Not used for TB program, but is supported in the Notification message.
25	2	NM	O	[0..1]		Birth Order	PHIN UID DEM17 Birth Order. Not used for TB program, but is supported in the Notification message.
26	841	CE	O	[0..*]		Citizenship	PHIN UID DEM2009 Citizenship. Not used for TB program, but is supported in the Notification message.
26.1	20	ST	R	[1..1]	PHVS_Country_ISO_3161-1	Identifier	
26.2	199	ST	O	[0..1]		Text	
26.3	199	ID	R	[1..1]		Name of Coding System	Standard coding system OID.
26.4		ST	X	[0..0]		Alternate Identifier	Not supported.
26.5		ST	X	[0..0]		Alternate Text	Not supported.
26.6		ID	X	[0..0]		Name of Alternate Coding System	Not supported.
27		CE	X	[0..0]		Veterans Military Status	Not supported.
28	841	CE	O	[0..1]		Nationality	PHIN UID DEM2004 Nationality. Captured as TB element ORIGIN_COUNTRYOF_ORIGIN.

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TABLE 5-3. PATIENT IDENTIFICATION SEGMENT (PID)

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
28.1	20	ST	R	[1..1]	PHVS_Country_ISO_3161-1	Identifier	
28.2	199	ST	O	[0..1]		Text	
28.3	199	ID	R	[1..1]		Name of Coding System	Standard coding system OID.
28.4		ST	X	[0..0]		Alternate Identifier	Not supported.
28.5		ST	X	[0..0]		Alternate Text	Not supported.
28.6		ID	X	[0..0]		Name of Alternate Coding System	Not supported.
29	24	TS	O	[0..1]		Patient Death Date and Time	PHIN UID DEM128 Date of Death. May be passed if the source patient record contains a deceased date along with a deceased indicator.
29.1	24	DTM	R	[1..1]		Time	YYYY[MM[DD[HH[MM[SS[S[S[S[S]]]]]]]]][+/-ZZZZ], where at least the first eight digits are used to specify to a precision of "day."
29.2		ID	X	[0..0]		Degree of Precision	Not supported.
30	1	ID	O	[0..1]	PHVS_YesNo_HL7_2x	Patient Death Indicator	PHIN UID DEM127 Patient Deceased Indicator. May be passed if the source patient record is marked as deceased at the time of the message.
31		ID	X	[0..0]		Identity Unknown Indicator	Not supported.
32		IS	X	[0..0]		Identity Reliability Code	Not supported.
33		TS	X	[0..0]		Last Update Date/Time	Not supported.
34		HD	X	[0..0]		Last Update Facility	Not supported.
35		CE	X	[0..0]		Species Code	Not supported.
36		CE	X	[0..0]		Breed Code	Not supported.
37		ST	X	[0..0]		Strain	Not supported.
38		CE	X	[0..0]		Production Class Code	Not supported.
39		CWE	X	[0..0]		Tribal Citizenship	Not supported.

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5.4 OBR – OBSERVATION REQUEST

The Observation Request Segment (OBR) acts as a report header and contains generic information about the notification. The OBR-4 value describes the type of notification data being passed in the OBX segments that immediately follow it.

The Tuberculosis notification message, by design, contains only one OBR, as there are no associated laboratory or vaccine report elements.

TABLE 5-4. OBSERVATION REQUEST SEGMENT (OBR)

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
1	4	SI	R	[1..*]		Set ID - OBR	Sequence number of one of multiple OBRs that may be in a message. For the first order transmitted, the set ID is 1 ; for the second order, it is 2 ; etc.
2	2	EI	R	[1..1]		Placer Order Number	When results are transmitted in an ORU message, an ORC is not required, and the identifying placer order number must be present in the OBR segments. Literal value: "" (pair of double quotes)
3	427	EI	R	[1..1]		Filler Order Number	Unique identifier created by the sending application for this case or investigation instance.
3.1	199	ST	R	[1..1]		Entity Identifier	For TB reporting, this is RVCT_ID.
3.2	20	IS	O	[0..1]		Namespace ID	
3.3	199	ST	R	[1..1]		Universal ID	OID for sending application as assigning authority.
3.4	6	ID	R	[1..1]		Universal ID Type	Literal value: 'ISO'.
4	420	CE	R	[1..1]		Universal Service Identifier	Type of report or a section within a larger report.
4.1	20	ST	R	[1..1]	PHVS_NotificationType_NND	Identifier	Code that indicates the type of investigation data carried in this Notification segment. Literal value: 'NOTF'.
4.2	199	ST	O	[0..1]		Text	Literal value: 'Case Notification'.
4.3	199	ID	R	[1..1]		Name of Coding System	Coding system OID.
4.4		ST	X	[0..0]		Alternate Identifier	Not supported.

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TABLE 5-4. OBSERVATION REQUEST SEGMENT (OBR)

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
4.5		ST	X	[0..0]		Alternate Text	Not supported.
4.6		ID	X	[0..0]		Name of Alternate Coding System	Not supported.
5		ID	X	[0..0]		Priority – OBR	Not supported.
6		TS	X	[0..0]		Requested Date/Time	Not supported.
7	24	TS	R	[1..1]		Observation Date/Time	Field required to be populated when the OBR is transmitted as part of a report message. For Case Notification, this is the notification creation or update date/time. This field is populated for message purposes and does not relate to any of the notification timestamps that are passed as specifically tagged observations. This is a mandatory field for the message. This field correlates to NOT103 Date Notification First Submitted: Date/time the investigation was submitted. If the application cannot supply this timestamp, provide "" to meet the required status for the field.
7.1	24	DTM	R	[1..1]		Time	YYYY[MM[DD[HH[MM[SS[.S[S[S[S]]]]]]]]][+/-ZZZZ], where at least the first fourteen digits are used to specify to a precision of "second."
7.2		ID	X	[0..0]		Degree of Precision	Not supported.
8		TS	X	[0..0]		Observation End Dt/Time	Not supported.
9		CQ	X	[0..0]		Collection Volume	Not supported.
10		XCN	X	[0..0]		Collector Identifier	Not supported.
11		ID	X	[0..0]		Specimen Action Code	Not supported.
12		CE	X	[0..0]		Danger Code	Not supported.
13		ST	X	[0..0]		Relevant Clinical Information	Not supported.

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TABLE 5-4. OBSERVATION REQUEST SEGMENT (OBR)

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
14		TS	X	[0..0]		Specimen Received Date/Time	Not supported.
15		SPS	X	[0..0]		Specimen Source	Not supported.
16		XCN	X	[0..0]		Ordering Provider	Not supported.
17		XTN	X	[0..0]		Order Callback Phone #	Not supported.
18		ST	X	[0..0]		Placer Field 1	Not supported.
19		ST	X	[0..0]		Placer Field 2	Not supported.
20		ST	X	[0..0]		Filler Field 1	Not supported.
21		ST	X	[0..0]		Filler Field 2	Not supported.
22	24	TS	R	[1..1]		Results Rpt/Status Change Date/Time	Last update date/time of the Notification. This field correlates to NOT106 Date of Notification: Date the notification was sent to an outside entity.
22.1	24	DTM	R	[1..1]		Time	YYYY[MM[DD[HH[MM[SS[.S[S[S(S]]]]]]]]][+/-ZZZZ], where at least the first fourteen digits are used to specify to a precision of "second."
22.2		ID	X	[0..0]		Degree of Precision	Not supported.
23		MOC	X	[0..0]		Charge to Practice	Not supported.
24		ID	X	[0..0]		Diagnostic Serv Sect ID	Not supported.
25	1	ID	R	[1..1]	PHVS_ResultStatus_HL7_2x	Result Status	Required field in this message; applies to the entire report. Literal value: 'F' for <i>Final</i> , when the notification is first sent. Literal value: 'C' for <i>Correction</i> , when an update/revision is sent. Literal value: 'X' for <i>Delete</i> , when the notification should be deleted or rescinded. This is an ID data type, so neither description nor OID are passed.
26		PRL	X	[0..0]		Parent Result	Not supported.

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TABLE 5-4. OBSERVATION REQUEST SEGMENT (OBR)

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
27		TQ	X	[0..0]		Quantity/Timing	Not supported.
28		XCN	X	[0..0]		Result Copies To	Not supported.
29		EIP	X	[0..0]		Parent	Not supported.
30		ID	X	[0..0]		Transportation Mode	Not supported.
31	420	CE	R	[1..1]		Reason for Study	Code that indicates the condition being reported with this Notification. This field correlates to INV169, Condition Code, and is required for the first OBR.
31.1	20	ST	R	[1..1]	PHVS_NationallyNotifiableDisease Condition_CDC	Identifier	Literal Value: '10220'.
31.2	199	ST	R	[1..1]		Text	Literal Value: 'Tuberculosis'.
31.3	199	ID	R	[1..1]		Name of Coding System	Literal Value: '2.16.840.1.114222.4.5.78'.
31.4		ST	X	[0..0]		Alternate Identifier	Not supported.
31.5		ST	X	[0..0]		Alternate Text	Not supported.
31.6		ID	X	[0..0]		Name of Alternate Coding System	Not supported.
32		NDL	X	[0..0]		Principal Result Interpreter	Not supported.
33		NDL	X	[0..0]		Assist. Result Interpreter	Not supported.
34		NDL	X	[0..0]		Technician	Not supported.
35		NDL	X	[0..0]		Transcriptionist	Not supported.
36		TS	X	[0..0]		Scheduled Date/Time	Not supported.
37		NM	X	[0..0]		No. of Sample Containers	Not supported.
38		CE	X	[0..0]		Transport Logistics of Collected Sample	Not supported.
39		CE	X	[0..0]		Collector's Comment *	Not supported.
40		CE	X	[0..0]		Transport Arrangement Responsibility	Not supported.

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TABLE 5-4. OBSERVATION REQUEST SEGMENT (OBR)

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
41		ID	X	[0..0]		Transport Arranged	Not supported.
42		ID	X	[0..0]		Escort Required	Not supported.
43		CE	X	[0..0]		Planned Patient Transport Comment	Not supported.
44		CE	X	[0..0]		Procedure Code	Not supported.
45		CE	X	[0..0]		Procedure Code Modifier	Not supported.
46		CE	X	[0..0]		Placer Supplemental Service Information	Not supported.
47		CE	X	[0..0]		Filler Supplemental Service Information	Not supported.
48		CWE	X	[0..0]		Medically Necessary Duplicate Procedure Reason.	Not supported.
49		IS	X	[0..0]		Result Handling	Not supported.

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5.5 OBX – OBSERVATION RESULT SEGMENT

The Observation Result Segment (OBX) is used to convey observation results as “name/value pairs.” Observations that may have multiple OBX segments may be reported under a single Observation Request segment.

TABLE 5-5. OBSERVATION RESULT SEGMENT (OBX)

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
1	4	SI	R	[1..1]		Set ID – OBX	Sequence number of the OBX, which increments up by one for each observation segment in the group.
2	2	ID	R	[1..1]	<<see Data Element Mapping Table for Observations below>>	Value Type	Format of the observation value expressed in OBX-5. Value Type is required for this message. The expected value types are SN, CE, TX or ST, to indicate Structured Numeric, Coded, Text, or String observations. The IS (coded value for user-defined tables) data type has been added for some coded values where an OID is not available or necessary.
3	420	CE	R	[1..1]		Observation Identifier	Unique identifier of the specific observation being passed in this segment.
3.1	20	ST	R	[1..1]	PHVS_PHINQuestions_CDC	Identifier	UID for the data element or question.
3.2	199	ST	O	[0..1]		Text	Description for the data element or question.
3.3	199	ID	R	[1..1]		Name of Coding System	PHIN Coding system OID. Literal value: '2.16.840.1.114222.4.5.232'.
3.4		ST	X	[0..0]		Alternate Identifier	Not supported.
3.5		ST	X	[0..0]		Alternate Text	Not supported.
3.6		ID	X	[0..0]		Name of Alternate Coding System	Not supported.
4	20	ST	O	[0..1]		Observation Sub-ID	Field that may contain a sequence number used to tie together observations with the same value in OBX-3.

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TABLE 5-5. OBSERVATION RESULT SEGMENT (OBX)

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
5	99999	varies	O	[1..*]	<<see Data Element Mapping Table for Observations below>>	Observation Value	Actual result value or observation. The data type in OBX-2 Value Type indicates the format of the observation. The length of the observation field is variable, depending upon the value type. The Standard allows the observation value to repeat using a tilde (~) for multipart, single-answer results with the same data type.
Breakdown for the SN data type result:							
5.1	2	ST	O	[0..1]		Comparator	Defined as greater than, less than, greater than or equal, less than or equal, equal, and not equal, respectively (= ">" or "<" or ">=" or "<=" or "=" or "<>". If this component is not valued, it defaults to equal ("=").
5.2	15	NM	O	[0..1]		Num1	First number.
5.3	1	ST	O	[0..1]		Separator/Suffix	"-" or "+" or "/" or "." or ":"
5.4	15	NM	O	[0..1]		Num2	Second number.
Breakdown for the ST data type result:							
5.1	199	ST	R	[1..1]		String Data	String data that is left-justified, with trailing blanks optional. Any displayable (printable) ASCII characters (hexadecimal values between 20 and 7E, inclusive, or ASCII decimal values between 32 and 126), except the defined escape characters and defined delimiter characters, are allowed.
Breakdown for the CE Data type result (total maximum length is 841):							
5.1	20	ST	R	[1..1]		Identifier	Standardized code.
5.2	199	ST	O	[0..1]		Text	Standardized description.
5.3	199	ID	R	[1..1]		Name of Coding System	Coding system OID.
5.4	20	ST	O	[0..1]		Alternate Identifier	Original local concept code may be sent.
5.5	199	ST	O	[0..1]		Alternate Text	Original local concept description may be sent.

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TABLE 5-5. OBSERVATION RESULT SEGMENT (OBX)

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
5.6	199	ID	O	[0..1]		Name of Alternate Coding System	Use the HL7 convention of 'L' for Local, or send the OID for the assigning application.
Breakdown for the TS data type result:							
5.1	24	DTM	R	[1..1]		Time	YYYY[MM[DD[HH[MM[SS[.S[S[S[S]]]]]]]]][+/-ZZZZ], where: <ul style="list-style-type: none"> • the first four digits specify a precision of "year" • the first six are used to specify a precision of "month" • the first eight are used to specify a precision of "day" • the first ten are used to specify a precision of "hour" • the first twelve are used to specify a precision of "minute" • the first fourteen are used to specify a precision of "second" • the first sixteen are used to specify a precision of "one tenth of a second" • the first nineteen are used to specify a precision of "one ten-thousandths of a second." NOTE: Not expecting timestamp to have more granularity than 14 digits. The time zone (+/-ZZZZ) is represented as +/-HHMM offset from Coordinated Universal Time (UTC) (formerly Greenwich Mean Time [GMT]), where +0000 or -0000 both represent UTC (without offset). If the time zone is not included, the time zone defaults to that of the local time zone of the sender.
5.2		ID	X	[0..0]		Degree of Precision	Not supported.

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TABLE 5-5. OBSERVATION RESULT SEGMENT (OBX)

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
Breakdown for the IS (coded value for user-defined tables) data type result:							
5.1	20	ST	R	[1..1]		String Data	Field in which the value follows the formatting rules for an ST field, except that it is drawn from a site-defined (or user-defined) table of legal values.
6	841	CE	O	[0..1]		Units	Units of measure that put the numeric observation value expressed in OBX-5 into context. Included are weight, height, age, and temperature units.
6.1	20	ST	R	[1..1]	PHVS_UnitsOfMeasure_CDC	Identifier	
6.2	199	ST	O	[0..1]		Text	
6.3	199	ID	R	[1..1]		Name of Coding System	Coding system OID.
6.4		ST	X	[0..0]		Alternate Identifier	Not supported.
6.5		ST	X	[0..0]		Alternate Text	Not supported.
6.6		ID	X	[0..0]		Name of Alternate Coding System	Not supported.
7		ST	X	[0..0]		References Range	Not supported.
8		IS	X	[0..0]		Abnormal Flags	Not supported.
9		NM	X	[0..0]		Probability	Not supported.
10		ID	X	[0..0]		Nature of Abnormal Test	Not supported.
11	1	ID	R	[1..1]		Observation Result Status	Required field for this segment. Literal value 'F' is always sent. Updates and revisions are not processed based on status changes to the observation-level status code.
12		TS	X	[0..0]		Effective Date of Reference Range Values	Not supported.
13		ST	X	[0..0]		User Defined Access Checks	Not supported.

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TABLE 5-5. OBSERVATION RESULT SEGMENT (OBX)

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
14		TS	X	[0..0]		Date/Time of the Observation	Not supported.
15		CE	X	[0..0]		Producer's ID	Not supported.
16		XCN	X	[0..0]		Responsible Observer	Not supported.
17		CE	X	[0..0]		Observation Method	Not supported.
18		EI	X	[0..0]		Equipment Instance ID	Not supported.
19		TS	X	[0..0]		Date/Time of the Analysis	Not supported.

6 MISCELLANEOUS

This section contains additional material for use by implementers.

6.1 EXAMPLE TB NOTIFICATION MESSAGE

The following example message is provided as a concrete example of a message instance that follows this guide.

NOTE: This message is for demonstration purposes and should not be used to encode, as details such as OIDs may change.

This message reflects a first-time notification send:

```
MSH|^~\&|^2.16.840.1.114222.4.5.232.1.xxx^ISO|^2.16.840.1.114222.4
.5.232.1.150^ISO|^2.16.840.1.114222.4.5.232.3.2.3^ISO|^2.16.840.
1.114222^ISO|200609101913100||ORU^R01^ORU_R01|NOT100023301|D|2.5
|||||TBCaseNotificationv1^PHIN^2.16.840.1.114222.4.5.232^ISO
<CR>
PID|1||PSN2398273947^^&<OID>&ISO||""||19671206|M||1002-5^American
Indian or Alaska Native^2.16.840.1.113883.6.238~2106-
3^White^2.16.840.1.113883.6.238|||||2135-2^Hispanic or
Latino^2.16.840.1.113883.6.238|||||KY^CAYMAN
ISLANDS^2.16.1<CR>
OBR|1|""|CAS1000280923^^<assigning authority OID>^ISO|NOTF^CASE
NOTIFICATION^2.16.840.1.114222.4.5.256|||200608010191310|||||
|||||200608010191310|||F|||||10220^Tuberculosis^2.16.840.1.11
422.4.5.78<CR>
OBX|1|CE|DEM153^SUBJECT RACE
DETAIL^2.16.840.1.114222.4.5.232||1002-5^American Indian or
Alaska Native~1047-0^Cabazon^2.16.840.1.113883.6.238~1051-
2^Torres-Martinez^2.16.840.1.113883.6.238|||||F<CR>
OBX|2|CE|DEM156^DETAILED
ETHNICITY^2.16.840.1.114222.4.5.232||2153-5^Mexican American
Indian^2.16.840.1.113883.6.238~2155-0^Central
American^2.16.840.1.113883.6.238|||||F<CR>
OBX|3|IS|DEM2003^US
Citizen^2.16.840.1.114222.4.5.232||F|||||F<CR>
OBX|4|TS|DEM2006^Date of Entry in
US^2.16.840.1.114222.4.5.232||2000|||||F<CR>
OBX|5|IS|INV107^Case Jurisdiction
Code^2.16.840.1.114222.4.5.232||JURISDICTION|||||F<CR>
OBX|6|IS|INV108^Case Program Area
Code^2.16.840.1.114222.4.5.232||TB|||||F<CR>
OBX|7|CE|INV109^Case Investigation Status
Code^2.16.840.1.114222.4.5.232||O^Open^2.16.840.1.114222.4.5.2
32|||||F<CR>
OBX|8|TS|INV111^Report
Date^2.16.840.1.114222.4.5.232||20060805|||||F<CR>
OBX|9|TS|INV147^Investigation Start
Date^2.16.840.1.114222.4.5.232||20060718|||||F<CR>
```

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OBX|10|SN|INV165^MMWR
Week^2.16.840.1.114222.4.5.232||^23|||||F<CR>

OBX|11|TS|INV166^MMWR
Year^2.16.840.1.114222.4.5.232||2006|||||F<CR>

OBX|12|ST|INV172^Local Case
ID^2.16.840.1.114222.4.5.232||9|||||F<CR>

OBX|13|ST|INV173^State Case
ID^2.16.840.1.114222.4.5.232||9|||||F<CR>

OBX|14|ST|TB098^Investigation Submitted
By^2.16.840.1.114222.4.5.232||NAME OF INVESTIGATOR AS
STRING|||||F<CR>

OBX|15|CE|TB099^Patient lives within city
limits^2.16.840.1.114222.4.5.232||N^No^2.16.840.1.113883.12.13
6|||||F<CR>

OBX|16|TS|TB100^Date
Counted^2.16.840.1.114222.4.5.232||20060802|||||F<CR>

OBX|17|CE|TB101^Status at Diagnosis of
TB^2.16.840.1.114222.4.5.232||
C0231162^Alive^2.16.840.1.113883.6.86|||||F<CR>

OBX|18|CE|TB102^Previous Diagnosis of
TB^2.16.840.1.114222.4.5.232||
Y^Yes^2.16.840.1.113883.12.136|||||F<CR>

OBX|19|TS|TB103^Year of Previous
Diagnosis^2.16.840.1.114222.4.5.232||2000|||||F<CR>

OBX|20|IS|TB104^More than One Previous
Episode^2.16.840.1.114222.4.5.232||T|||||F<CR>

OBX|21|CE|TB105^Major Site of
Disease^2.16.840.1.114222.4.5.232||1231004^ Meninges
structure^2.16.840.1.113883.6.96|||||F<CR>

OBX|22|CE|TB106^Additional Site of
Disease^2.16.840.1.114222.4.5.232||10200004^Liver
structure^2.16.840.1.113883.6.96~12738006^Brain
structure^2.16.840.1.113883.6.96~110708006^Middle ear AND
mastoid cells^2.16.840.1.113883.6.96|||||F<CR>

OBX|23|IS|TB107^More than Additional Site
Indicator^2.16.840.1.114222.4.5.232||T|||||F<CR>

OBX|24|CE|TB108^Sputum Smear
Performed^2.16.840.1.114222.4.5.232||10828004
^Positive^2.16.840.1.113883.6.96|||||F<CR>

OBX|25|CE|TB109^Sputum Culture^2.16.840.1.114222.4.5.232||10828004
^Positive^2.16.840.1.113883.6.96|||||F<CR>

OBX|26|CE|TB110^Microscopic Exam of Tissue and Other Body
Fluids^2.16.840.1.114222.4.5.232||10828004^Positive^2.16.840.1
.113883.6.96|||||F<CR>

OBX|27|CE|TB111^Microscopic Exam Site
1^2.16.840.1.114222.4.5.232||258446004^Bronchial fluid sample^
2.16.840.1.113883.6.96|||||F<CR>

OBX|28|CE|TB112^Microscopic Exam Site
2^2.16.840.1.114222.4.5.232||2778004 ^Pleural
Fluid^2.16.840.1.113883.6.96|||||F<CR>

TUBERCULOSIS NOTIFICATION MESSAGE IMPLEMENTATION GUIDE

OBX|29|CE|TB113^Culture of Tissue and Other Body
Fluids^2.16.840.1.114222.4.5.232||10828004
^Positive^2.16.840.1.113883.6.96|||||F<CR>

OBX|30|CE|TB114^Culture Site
1^2.16.840.1.114222.4.5.232||258446004^Bronchial fluid sample^
2.16.840.1.113883.6.96|||||F<CR>

OBX|31|CE|TB115^Culture Site 2^2.16.840.1.114222.4.5.232||2778004
^Pleural Fluid^2.16.840.1.113883.6.96|||||F<CR>

OBX|32|CE|TB116^Chest XRay
Results^2.16.840.1.114222.4.5.232||A^Abnormal (applies to non-
numeric results^2.16.840.1.113883.12.78|||||F<CR>

OBX|33|CE|TB117^Chest X-ray: if Abnormal, Cavitory
Status^2.16.840.1.114222.4.5.232||EYH044^Cavitory^2.16.840.1.1
14222.4.5.116|||||F<CR>

OBX|34|CE|TB118^Chest X-ray: if Abnormal, Condition
Status^2.16.840.1.114222.4.5.232||230993007^Worsening^2.16.840
.1.113883.6.96|||||F<CR>

OBX|35|CE|TB119^Tuberculin (Mantoux) Skin Test at
Diagnosis^2.16.840.1.114222.4.5.232||10828004^Positive^2.16.84
0.1.113883.6.96|||||F<CR>

OBX|36|SN|TB120^Tuberculin (Mantoux) Skin Test at Diagnosis:
Millimeters of
Induration^2.16.840.1.114222.4.5.232||^9|||||F<CR>

OBX|37|CE|TB121^Tuberculin (Mantoux)Skin Test at Diagnosis: If
Negative, was Patient Anergic^2.16.840.1.114222.4.5.232||
Y^Yes^2.16.840.1.113883.12.136|||||F<CR>

OBX|38|CE|TB122^HIV Status^2.16.840.1.114222.4.5.232|| 10828004
^POSITIVE^2.16.840.1.113883.6.96|||||F<CR>

OBX|39|CE|TB123^Basis of HIV Status, if
positive^2.16.840.1.114222.4.5.232||107729005^Chart
evaluation, medical records
perspective^2.16.840.1.113883.6.96|||||F<CR>

OBX|40|ST|TB124^CDC AIDS Patient
Number^2.16.840.1.114222.4.5.232||CDCAidsPtNumberString|||||F
<CR>

OBX|41|ST|TB125^State HIV/AIDS Patient Number
^2.16.840.1.114222.4.5.232||StateHIVAidsPtNumberString|||||F<
CR>

OBX|42|ST|TB126^City/County HIV/AIDS Patient
Number^2.16.840.1.114222.4.5.232||StateHIVAidsPtNumberString||
|||F<CR>

OBX|43|CE|TB127^Homeless Within Past
Year^2.16.840.1.114222.4.5.232||Y^Yes^2.16.840.1.113883.12.136
|||||F<CR>

OBX|44|CE|TB128^Resident of Correctional Facility at Time of
Diagnosis^2.16.840.1.114222.4.5.232||Y^Yes^2.16.840.1.113883.1
2.136|||||F<CR>

OBX|45|CE|TB129^If Yes, Type of Correctional
Facility^2.16.840.1.114222.4.5.232||003^Federal
Prison^2.16.840.1.114222.4.5.178|||||F<CR>

TUBERCULOSIS NOTIFICATION MESSAGE IMPLEMENTATION GUIDE

OBX|46|CE|TB130^Resident of Long Term Care Facility at Time of
Diagnosis^2.16.840.1.114222.4.5.232||Y^Yes^2.16.840.1.113883.1
2.136|||||F<CR>

OBX|47|CE|TB131^If Yes, Type of Long-Term Care
Facility^2.16.840.1.114222.4.5.232||62480006^Psychiatric
hospital^2.16.840.1.113883.6.96|||||F<CR>

OBX|48|CE|TB132^Initial Regimen:
Isoniazid^2.16.840.1.114222.4.5.232||Y^Yes^2.16.840.1.113883.1
2.136|||||F<CR>

OBX|49|CE|TB133^Initial Regimen:
Rifampin^2.16.840.1.114222.4.5.232||Y^Yes^2.16.840.1.113883.12
.136|||||F<CR>

OBX|50|CE|TB134^Initial Regimen:
Pyrazinamide^2.16.840.1.114222.4.5.232||N^No^2.16.840.1.113883
.12.136|||||F<CR>

OBX|51|CE|TB135^Initial Regimen:
Ethambutol^2.16.840.1.114222.4.5.232||
N^No^2.16.840.1.113883.12.136|||||F<CR>

OBX|52|CE|TB136^Initial Regimen:
Streptomycin^2.16.840.1.114222.4.5.232||
N^No^2.16.840.1.113883.12.136|||||F<CR>

OBX|53|CE|TB137^Initial Regimen:
Ethionamide^2.16.840.1.114222.4.5.232||
N^No^2.16.840.1.113883.12.136|||||F<CR>

OBX|54|CE|TB138^Initial Regimen:
Kanamycin^2.16.840.1.114222.4.5.232||
N^No^2.16.840.1.113883.12.136|||||F<CR>

OBX|55|CE|TB139^Initial Regimen:
Cycloserine^2.16.840.1.114222.4.5.232||
N^No^2.16.840.1.113883.12.136|||||F<CR>

OBX|56|CE|TB140^Initial Regimen: Capreomycin
^2.16.840.1.114222.4.5.232||
N^No^2.16.840.1.113883.12.136|||||F<CR>

OBX|57|CE|TB141^Initial Regimen: Para-Amino Salicylic
Acid^2.16.840.1.114222.4.5.232||N^No^2.16.840.1.113883.12.136|
|||||F<CR>

OBX|58|CE|TB142^Initial Regimen:
Amikacin^2.16.840.1.114222.4.5.232||
N^No^2.16.840.1.113883.12.136|||||F<CR>

OBX|59|CE|TB143^Initial Regimen:
Rifabutin^2.16.840.1.114222.4.5.232||
N^No^2.16.840.1.113883.12.136|||||F<CR>

OBX|60|CE|TB144^Initial Regimen:
Ciprofloxacin^2.16.840.1.114222.4.5.232||
N^No^2.16.840.1.113883.12.136|||||F<CR>

OBX|61|CE|TB145^Initial Regimen:
Ofloxacin^2.16.840.1.114222.4.5.232||
N^No^2.16.840.1.113883.12.136|||||F<CR>

OBX|62|CE|TB146^Initial Regimen: Other^2.16.840.1.114222.4.5.232||
N^No^2.16.840.1.113883.12.136|||||F<CR>

TUBERCULOSIS NOTIFICATION MESSAGE IMPLEMENTATION GUIDE

OBX|63|TS|TB147^Date Therapy
Started^2.16.840.1.114222.4.5.232||20060415|||||F<CR>

OBX|64|CE|TB148^Injecting Drug Use Within Past
Year^2.16.840.1.114222.4.5.232||
N^No^2.16.840.1.113883.12.136|||||F<CR>

OBX|65|CE|TB149^Non-Injecting Drug Use Within Past
Year^2.16.840.1.114222.4.5.232||
N^No^2.16.840.1.113883.12.136|||||F<CR>

OBX|66|CE|TB150^Excess Alcohol Use Within Past
Year^2.16.840.1.114222.4.5.232||
Y^Yes^2.16.840.1.113883.12.136|||||F<CR>

OBX|67|CE|TB151^Employment Status^2.16.840.1.114222.4.5.232||2^
Part time employed^ 2.16.840.1.113883.12.66|||||F<CR>

OBX|68|CE|TB152^Occupation Risk
Category^2.16.840.1.114222.4.5.232||1^Health Care Worker^
2.16.840.1.114222.4.5.259~3^Correctional Facility Employee^
2.16.840.1.114222.4.5.259|||||F<CR>

OBX|69|CE|TB153^Count at CDC as a Verified Case of
TB^2.16.840.1.114222.4.5.232||
Y^Yes^2.16.840.1.113883.12.136|||||F<CR>

OBX|70|CE|TB154^Case Verification Assignment
(internal)^2.16.840.1.114222.4.5.232||1^POSCULT^1? Positive Culture
2.16.840.1.114222.4.5.198|||||F<CR>

OBX|71|CE|TB156^Was Drug Susceptibility Testing
Done^2.16.840.1.114222.4.5.232||
Y^Yes^2.16.840.1.113883.12.136|||||F<CR>

OBX|72|TS|TB157^Date First Isolate
Collected^2.16.840.1.114222.4.5.232||20060414|||||F<CR>

OBX|73|CE|TB158^Initial Susceptibility:
Isoniazid^2.16.840.1.114222.4.5.232||S^Susceptible. Indicates
for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|74|CE|TB159^Initial Susceptibility:
Ripampin^2.16.840.1.114222.4.5.232||S^Susceptible. Indicates
for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|75|CE|TB160^Initial Susceptibility:
Pyrazinamide^2.16.840.1.114222.4.5.232||S^Susceptible.
Indicates for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|76|CE|TB161^Initial Susceptibility:
Ethambutol^2.16.840.1.114222.4.5.232||S^Susceptible. Indicates
for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|77|CE|TB162^Initial Susceptibility:
Streptomycin^2.16.840.1.114222.4.5.232||S^Susceptible.
Indicates for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|78|CE|TB163^Initial Susceptibility:
Ethionamide^2.16.840.1.114222.4.5.232||S^Susceptible.

TUBERCULOSIS NOTIFICATION MESSAGE IMPLEMENTATION GUIDE

Indicates for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|79|CE|TB164^Initial Susceptibility:
Kanamycin^2.16.840.1.114222.4.5.232||S^Susceptible. Indicates
for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|80|CE|TB165^Initial Susceptibility:
Cycloserine^2.16.840.1.114222.4.5.232||S^Susceptible.
Indicates for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|81|CE|TB166^Initial Susceptibility:
Capreomycin^2.16.840.1.114222.4.5.232||S^Susceptible.
Indicates for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|82|CE|TB167^Initial Susceptibility: Para-Amino Salicylic
Acid^2.16.840.1.114222.4.5.232||S^Susceptible. Indicates for
microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|83|CE|TB168^Initial Susceptibility:
Amikacin^2.16.840.1.114222.4.5.232||S^Susceptible. Indicates
for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|84|CE|TB169^Initial Susceptibility:
Rifabutin^2.16.840.1.114222.4.5.232||S^Susceptible. Indicates
for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|85|CE|TB170^Initial Susceptibility:
Ciprofloxacin^2.16.840.1.114222.4.5.232||S^Susceptible.
Indicates for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|86|CE|TB171^Initial Susceptibility:
Ofloxacin^2.16.840.1.114222.4.5.232||S^Susceptible. Indicates
for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|87|CE|TB172^Initial Susceptibility:
Other^2.16.840.1.114222.4.5.232||S^Susceptible. Indicates for
microbiology susceptibilities
only.^2.16.840.1.113883.12.78>|||||F<CR>

OBX|88|CE|TB173^Sputum Culture Conversion
Documented^2.16.840.1.114222.4.5.232||
N^No^2.16.840.1.113883.12.136|||||F<CR>

OBX|89|TS|TB174^Date Specimen Collected on Initial Positive Sputum
Culture^2.16.840.1.114222.4.5.232||20060415|||||F<CR>

OBX|90|TS|TB175^Date Specimen Collected on First Consistently
Negative Culture
Culture^2.16.840.1.114222.4.5.232||20060630|||||F<CR>

OBX|91|TS|TB176^Date Therapy
Stopped^2.16.840.1.114222.4.5.232||20060704|||||F<CR>

OBX|92|CE|TB177^Reason Therapy Stopped^2.16.840.1.114222.4.5.232||
183948000^Refused procedure - parent's
wish^2.16.840.1.113883.6.96|||||F<CR>

TUBERCULOSIS NOTIFICATION MESSAGE IMPLEMENTATION GUIDE

OBX|93|CE|TB178^Type of Health Care
Provider^2.16.840.1.114222.4.5.232||C0041708^ Health
Department^ 2.16.840.1.113883.6.86~310174000^Private
Doctor^2.16.840.1.113883.6.96|||||F<CR>

OBX|94|CE|TB179^Directly Observed
Therapy^2.16.840.1.114222.4.5.232||Y2^Yes, Both DOT and Self-
Administered^2.16.840.1.114222.4.5.195|||||F<CR>

OBX|95|CE|TB180^Site(s) of Directly Observed
Therapy^2.16.840.1.114222.4.5.232||C^In clinic or other facility^2.16.840.1.114222.4.5.196-
F^In the field^2.16.840.1.114222.4.5.196~ |||||||F<CR>

OBX|96|SN|TB181^Number of Weeks of Directly Observed
Therapy^2.16.840.1.114222.4.5.232||^5|||||F<CR>

OBX|97|CE|TB182^Final Drug Susceptibility Results. Was Follow-Up
Drug Susceptibility Testing Done^2.16.840.1.114222.4.5.232||
Y^Yes^2.16.840.1.113883.12.136|||||F<CR>

OBX|98|TS|TB183^Date Final Isolate Collected for which Drug
Susceptibility was
Done^2.16.840.1.114222.4.5.232||20060701|||||F<CR>

OBX|99|CE|TB184^Final Susceptibility:
Isoniazid^2.16.840.1.114222.4.5.232||S^Susceptible. Indicates
for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|100|CE|TB185^Final Susceptibility:
Ripampin^2.16.840.1.114222.4.5.232||S^Susceptible. Indicates
for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|101|CE|TB186^Final Susceptibility:
Pyrazinamide^2.16.840.1.114222.4.5.232||S^Susceptible.
Indicates for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|102|CE|TB187^Final Susceptibility:
Ethambutol^2.16.840.1.114222.4.5.232||S^Susceptible. Indicates
for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|103|CE|TB188^Final Susceptibility:
Streptomycin^2.16.840.1.114222.4.5.232||S^Susceptible.
Indicates for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|104|CE|TB189^Final Susceptibility:
Ethionamide^2.16.840.1.114222.4.5.232||S^Susceptible.
Indicates for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|105|CE|TB190^Final Susceptibility:
Kanamycin^2.16.840.1.114222.4.5.232||S^Susceptible. Indicates
for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|106|CE|TB191^Final Susceptibility:
Cycloserine^2.16.840.1.114222.4.5.232||S^Susceptible.
Indicates for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

TUBERCULOSIS NOTIFICATION MESSAGE IMPLEMENTATION GUIDE

OBX|107|CE|TB192^Final Susceptibility:
Capreomycin^2.16.840.1.114222.4.5.232||S^Susceptible.
Indicates for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|108|CE|TB193^Final Susceptibility: Para-Amino Salicylic
Acid^2.16.840.1.114222.4.5.232||S^Susceptible. Indicates for
microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|109|CE|TB194^Final Susceptibility:
Amikacin^2.16.840.1.114222.4.5.232||S^Susceptible. Indicates
for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|110|CE|TB195^Final Susceptibility:
Rifabutin^2.16.840.1.114222.4.5.232||S^Susceptible. Indicates
for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|111|CE|TB196^Final Susceptibility:
Ciprofloxacin^2.16.840.1.114222.4.5.232||S^Susceptible.
Indicates for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|112|CE|TB197^Final Susceptibility:
Ofloxacin^2.16.840.1.114222.4.5.232||S^Susceptible. Indicates
for microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|113|CE|TB198^Final Susceptibility:
Other^2.16.840.1.114222.4.5.232||S^Susceptible. Indicates for
microbiology susceptibilities
only.^2.16.840.1.113883.12.78|||||F<CR>

OBX|114|IS|NOT110^Record
Type^2.16.840.1.114222.4.5.232||I|||||F<CR>

OBX|115|CE|TB080^Reporting Address
City^2.16.840.1.114222.4.5.232||331532^Decatur^
2.16.840.1.113883.6.245|||||F<CR>

OBX|116|CE|TB081^Reporting Address
County^2.16.840.1.114222.4.5.232||GA135^The county of
Gwinnett,Georgia^2.16.840.1.113883.6.93|||||F<CR>

OBX|117|ST|TB082^Reporting Address
Zip^2.16.840.1.114222.4.5.232||30032|||||F<CR>

6.2 REFERENCES

Health Level Seven, Version 2.5, 2003, Chapter 2 – Control.

Health Level Seven, Version 2.5, 2003, Chapter 2a – Data Types.

Health Level Seven, Version 2.5, 2003, Chapter 3 – Patient Administration.

Health Level Seven, Version 2.5, 2003, Chapter 4 – Order Entry.

Health Level Seven, Version 2.5, 2003, Chapter 5 – Observation Reporting.

TUBERCULOSIS NOTIFICATION MESSAGE IMPLEMENTATION GUIDE

Notify CDC Message–All PAMs from NEDSS PAM Platform Development Team at SAIC. Last updated 9/12/2006.