Project: Lab Information Systems – Standards

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Deliverable: AB Laboratory Result Delivery Specification

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Reference Documents

The following documents are for reference material purposes to provide context to support information included in this document.

Document
Lab Report Business Overview Document - 20140513

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I INTRODUCTION

1.1 Scope

This document represents the Alberta Health and Alberta Health Services (AHS) HL7 message structure that enables the delivery of electronic laboratory results from Laboratory systems to other systems supporting both AHS internal and point of care providers.

Depending upon what delivery mechanism is used to deliver results to external consumers of laboratory result messages, the HL7 "wrapper" for the message may vary slightly. For example, SHR/eDelivery anticipates delivering messages in an HL7v3-structured message, whereas XDS intends to use a combination of HL7v2.x and v3. The content of the message will, however, be the same in both cases.

This specification, then, defines the structure and content of the laboratory messages as they are delivered to internal consumers and to the facilities that may re-wrap them for external delivery. This specification is based on the ORU (Unsolicited Observation) message specification from version 2.4 of HL7. In HL7, the ORU message is a general-purpose message that may be used to report any clinical observations, include laboratory results, radiology reports, and physical exam findings. The ORU may also be used in various clinical contexts, including inpatient admissions, outpatient visits, and clinical trials. The use cases for this specification are the retrospective reporting of laboratory results for inpatient and outpatient services.

Where this specification differs from the HL7 standard, the specific differences and justification will be noted. In all cases, however, the specification will ensure that its messages are valid HL7 v2.4 messages, capable of being processed by standard HL7 interface engines.

The messages from Cerner Millennium, Sunquest, Meditech (6 separate instances), Specimen Gate, MHDL (Medicine Hat Diagnostic Labs), CBS (Canadian Blood Services), (a total of 11 Laboratory Information Systems) will be standardized by the Laboratory Message Transformation Service to comply with this specification.

1.2 Intended Audience

This specification is intended for implementers of the HL7v2 message profile. A broader understanding of the underlying HL7 v2.x concepts is required for proper interpretation of this specification. Business readers are encouraged to read the Lab Report Specification Business Overview which accompanies this specification as well as the corresponding HL7v3 CDA Lab Report Specification.

1.3 Variances between LTRDv2.1 and LTRDV2.0

For a list of variances between this specification and the LTRDv2.1, please refer to Appendix C.

1.4 Transaction Message Detail

1.4.1 Section Guide

This Message Profile provides detailed specifications about a specific HL7 message or set of messages. It breaks down exactly where and how each piece of information will be conveyed, as well as restrictions on the content of the data including cardinality, table restrictions, length restrictions, etc.

The structure uses a format adopted by the HL7 organization to document message profiles, and includes a detailed breakdown of the contents of each message into their constituent segment groups, segments, fields, components and sub-components. This specification is sufficient for an implementer to build a messaging interface. However, we strongly recommend joining the HL7 organization and

obtaining a copy of the HL7 specifications. In particular, implementers should familiarize themselves with Chapter 2 of the relevant version of the HL7 standard, which provides detailed information about the structure of HL7 messages and such information as escape characters.

1.4.2 Characteristics

This Message Profile contains information specific to the HL7 Conformance Profile format. The Identifier is a unique id assigned to the profile and is used in registering profiles in an HL7 repository.

1.4.3 Conformance Type

Conformance Type indicates what kind of profile is being displayed (i.e. HL7, Constrain, Extend, or Implement). The Encoding Method indicates what format of HL7 messages may be used.

1.4.4 Dynamic Profile

Role indicates whether the profile is from the perspective of the sender or the receiver. The role indicates whether the profile defines what will be sent, or what will be accepted. For example, if an element is marked 'Not Supported' in a Sender profile, it means the value will never be sent. If it is marked 'Not Supported' in a Receiver profile, it means the value will be ignored if it is sent.

Accept Acknowledgment and Application Acknowledgment corresponds to the values found in fields MSH.15 and MSH.16, respectively. They indicate what types of acknowledgments are expected on receipt of the message.

Acknowledgment Mode indicates whether the messages use HL7's 'immediate' or 'deferred' acknowledgment mechanism.

1.5 Message

These properties identify the specific message type, trigger event and message structure used by the message. These are the same values as will be present in the MSH.9 field.

1.5.1 Grammar

This is the HL7-format grammar for the message. It lists each segment used in the message, and uses '[]' to indicate optional segments or segment groups and '{}' to indicate repeating segments or segment groups.

1.5.2 Segment and Segment Group Definitions

Each segment and segment-group used within a message will have a separate description, beginning with the short name of the segment/segment group and the long descriptive name for the segment/segment group. With each segment and segment group definition will be an indication of the Usage (Obligation) and Cardinality of the element. Usage indicates whether the segment or segment group must be present, and if so, under what circumstances. Possible usage values are:

Mnemonic	Description	Definition
R	Required	This means that the element must be present under all circumstances.
RE	Required or Empty	This means that the element must be supported (i.e. applications must be capable of sending/receiving the value), but there may be circumstances where the value is unavailable or non-applicable, in which case it does not need to be present.

C	Conditional	This means that the element must be present under certain circumstances. The specific circumstances will be detailed in the Condition Predicate associated with the element.
CE	Conditional or Empty	This means that the element is only allowed to be present under certain circumstances. The specific circumstances will be detailed in the Condition Predicate associated with the element.
X	Not Supported	This means that the application does not send or it will ignore the element. It is not an error to send the element, however, the data within the element will not be processed by the application.
NP	Not Permitted	This is similar to Not Supported, however in this case it is an error to send the element. This usage code is only used for elements that is not supported, but which if sent, could contain information that would materially alter the interpretation of elements that are supported.

Of note: RE and CE were introduced in HL7v2.5. We are pre-adopting these references in order to develop a tighter specification.

NOTE: Depending on the generation settings, the standard profile display format may include message elements that are defined as part of the standard HL7 message definition, but which may be not supported or not permitted by this specific use of the message. These elements are included in the message as an aid to developers who may be writing applications for multiple systems or those who wish to understand how the message corresponds to the underlying HL7 specification. Elements that are not supported or not permitted will be shown with a grey background. Alternatively, non-supported elements may be excluded from the specification altogether.

HL7 NOTE: HL7 has the concept of a 'NULL' value, which is represented as two empty double-quote characters (""). Unless specifically identified for a particular element, Items marked as 'Required' or 'Conditional' will not support 'NULL' values. Other elements will treat 'NULL' values as Not Present.

Cardinality indicates the minimum and maximum number of repetitions of the segment or group that are permitted. There may also be additional text providing guidelines or additional descriptive information about the use of the segment or segment group. For segment groups or segments with a usage of 'C' (conditional) or 'CE' (conditional or empty), the specific condition predicate under which the element is allowed or required will be specified.

1.5.3 Segment Table

The segment table provides a detailed breakdown of the fields, components and datatypes that are used within a segment in a given context. Note that the definitions of the contents and behaviours of the components of a particular datatype may differ from those defined by HL7. The definition of a datatype may restrict the generic behaviour. For example, a component that is generically defined as RE (optional), might be defined within a particular field as “Required” or “Not Permitted”.

NOTE: Sometimes the same segment may be used in multiple locations within a message. Each location where the segment is used will have its own table, and the segment definition may vary from location to location within the message due to different data requirements.

1.5.4 Seq. (Sequence)

This indicates the position of the message element within the message. All fields within the segment are assigned a number, starting with 1. If components or sub-components are listed, the sequence number

of the parent field will identify them, followed by a period and then the sequence number of the component. E.g. 3.1.4 would refer to the fourth sub-component of the first component of the third field.

If there are additional details available for the element described by the row, the sequence number will be blue, indicating that it is a hyperlink that can be clicked on to link to the descriptive information below the table.

1.5.5 Name

This is the descriptive name for the field, datatype component or sub-component. The hierarchy of elements can be seen by the indentation level of the descriptive name.

1.5.6 Type

This indicates the datatype associated with the field, component or sub-component. 'CM' datatypes have extensions to their names to differentiate them from other CM datatypes with different content. The extensions were defined in HL7 2.5, but are effective for all HL7 versions. The more detailed names have no impact on the content of the actual message and are included for descriptive purposes only.

1.5.7 Table

For coded values, this indicates the table from which the code values must be drawn. In some cases multiple tables may be specified. For complex code datatypes, such as CE, CNE and CWE, the table will be identified at a level above the datatype components because the datatypes allow for multiple codes to be transmitted, and only one of the codes needs to be drawn from the specified table(s). Some tables may be included as part of the specification. If the table is present, the table number will be highlighted blue to indicate that a hyperlink to the table definition is available.

1.5.8 Len. (Length)

This indicates the maximum length supported for the element. If a message is sent with contents exceeding one of the maximum lengths, an error message will be raised, either as part of an acknowledgment message (where one exists), or within the receiving application in the absence of an acknowledgment. HL7 has traditionally assigned maximum lengths to complex datatypes indicating the maximum length for a series of datatype components. However, wherever possible, lengths have also been provided for the individual message components. Where the over-all length is a simple sum of the components, no higher-level length is specified. For repeating elements, the maximum length applies to each individual repetition, not to the sum of the repetitions.

1.5.9 Optionality

This defines whether the field, component or sub-component must be present, and if so, under what circumstances. The possible usage values are defined above in the table under 'Segment and Segment Group Definitions'. For elements with a usage of 'C' (conditional) or 'CE' (conditional or empty), the Usage code will be blue, indicating that there is a hyperlink to the section below the table where the predicate explaining the conditions under which the element is allowed or required are specified.

1.5.10 Card. (Cardinality)

This indicates the number of times the element may be present. The first number indicates the minimum number of times the element may be present, the second number the maximum number of times. A '*' indicates that there is no limitation on the number of repetitions.

1.5.11 Contents

This section contains several types of information. If the content of the message element is fixed (i.e. it is only permitted to be a single specific value in every occurrence of the element), then that value will be displayed in bold. If there is no 'fixed' value, an example value will generally be provided. In some cases the example value will be too large to fit in the space available. In that case, a string saying 'example' will be displayed that acts as a hyperlink to the example in the section following the segment table.

II MESSAGE PROFILE

Below is the HL7v2.4 Message Profile. **Segments, fields and field components that are not supported have been excluded from the Profile.** This will appear blank in all message instances.

HL7 Message Profile

Interface ID	AB_LTRD_HL7_ORU_R01_V3_20181204
Organization	Alberta Health Services
HL7 Version	2.4
Spec Version	**V3.6**
Application Role	Sender
Conformance Type	Implementable
Encodings	ER7
Event Description	
Message Type	ORU
Event Type	R01
Order Control Code	
Message Structure	MSH,PID,{[NTE]},[PV1],{(G1R)[ORC],OBR,{[NTE]},{(G1R.G2R){OBX},{[NTE]}}}
Structure Type	ORU_R01
Accept Ack	NE
Application Ack	NE
Ack Mode	Immediate
Static Profile ID	{ConfSig(1) Alberta Health Services(1) 2.4(1) static-profile(1) ORU(1) R01(1) null(0) null(0) v0.1(1) Sender(1)}
Dynamic Profile ID	{ConfSig(1) Alberta Health Services(1) 2.4(1) dynamic-profile(2) AccNE_AppNE(2) immed_mode_ack(1)}

Segments

Optionality Codes:

- R - required
- RE - required or empty
- C - conditional

Abbreviations:

- seq - sequence
- DT - datatype
- Len - length

Color codes:

- Fields
- Components
- Sub Components

- CE - conditional or empty
- NS - not supported (excluded from specification)
- Opt - optionality
- Rep - repeatable
- Min - quantity min
- Max - quantity max
- Tbl - table
- impl. note
- NS Element
- CM Datatype

Segment	Description	Opt	Rep
MSH	**Message Header**	**R**	**False**

Fields

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
Field Separator	1	ST	1	R	False	1	1		|	Defines the separator to be used for the rest of the message. ASCII 124 or [7C]
Encoding Characters	2	ST	4	R	False	1	1		^~\&	This field contains the four characters used in the structure of the HL7 message: the component separator, repetition. The four characters used for the following purposes: Component separator ^ = 94 or [5E]; Repetition separator ~ = 126 or [7E]; Escape character \ 92 or [5C]; Subcomponent separator & = 38 or [26] E.g. PV1|1|O|Renal Dialysis Program^^^&34567891&DSR|R
Sending Application	3	HD		R	False	1	1			This field uniquely identifies the sending application.
namespace ID	3.1	IS	44	RE		0	1		LabFusion	Local Sending Application ID
Sending Facility	4	HD		RE	False	0	1			Facility responsible for the sending application. Usually the sending laboratory.
namespace ID	4.1	IS	44	RE		0	1			Locally assigned facility identifier
universal ID	4.2	ST	36	RE		0	1		123456789	Provincially assigned facility identifier. Where possible the Delivery Site Registry (DSR) ID or WDFA key should be supplied.
universal ID type	4.3	ID	10	RE		0	1	0301	DSR	
Receiving Application	5	HD	44	RE	False	0	1			This field uniquely identifies the receiving application.

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
namespace ID	5.1	IS	44	RE		0	1		Egate	Local Receiving Application ID
Receiving Facility	6	HD		RE	False	0	1			Facility responsible for the receiving application.
namespace ID	6.1	IS	44	RE		0	1			Locally assigned facility identifier
universal ID	6.2	ST	36	RE		0	1		987654321	Provincially assigned facility identifier. Where possible the Delivery Site Registry (DSR) ID or WDFA key should be supplied.
universal ID type	6.3	ID	10	RE		0	1	0301	DSR	
Date/Time Of Message	7	TS	26	R	False	1	1			This field contains the date/time that the sending system created the message.
Date/Time	7.1	NM	26	R		1	1		201403060759	YYYYMMDD[HHMM[SS[.SSSS]]][+-ZZZ Z]
Message Type	9	CM	13	R	False	1	1	0076	ORU^R01	Ex Val: ORU^R01^ORU_R01
message type	9.1	ID	3	R		1	1		ORU	
trigger event	9.2	ID	3	R		1	1		R01	
message structure	9.3	ID	7	R		1	1		ORU_R01	
Message Control ID	10	ST	40	R	False	1	1		6729949.1	This field contains a number or other identifier that uniquely identifies the message.
Processing ID	11	PT		R	False	1	1			Defines whether the message is part of a production, training, or debugging system.
processing ID	11.1	ID	3	R		1	1	0103	P	
Version ID	12	VID		R	False	1	1	0104		This field is matched by the receiving system to its own version to be sure the message will be interpreted correctly.
version ID	12.1	ID	5	R		1	1	0104	2.4	
Conformance Statement ID	21	ID	40	R	False	1	1		AB_LTRD_HL7_ORU_R01_R1_20181204	Used to assert adherence to a Conformance Statement published by HL7 or by a site. Conformance Statements contain detailed explanations of grammar, syntax, and usage for a particular message or set of messages. This field length exceeds that of the HL7

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
										v2.4 standard in order to conform to provincial Conformance ID naming conventions.

Segment	Description	Opt	Rep
PID	**Patient identification**	**R**	**False**

Fields

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
Patient Identifier List	3	CX		R	True	1	10			Used for all types of patient/person identifiers. Most identifiers may not be available to the LISs at this time. The ID and the assigning authority components together constitute the actual identifier. This field subsumes any values previously captured in PID-2, PID-4, PID-19.
ID	3.1	ST	15	R		1	1		542917810	
assigning authority	3.4	HD	44	RE		0	1			
namespace ID	3.4.1	IS	44	RE		0	1	0363	CANAB	
identifier type code (ID)	3.5	ID	8	R		1	1	0203	ASSOCULI	
assigning facility	3.6	HD	52	RE		0	1			
namespace ID	3.6.1	IS	44	RE		0	1		ABPHN	
Patient Name	5	XPN		R	True	1	5			Patient name or aliases. When the patient name is not known, place a 'U' in the family name to indicate that it is unknown.
family name	5.1	FN	66	R		1	1		Doe	
given name	5.2	ST	50	R		1	1		John	
second and further given names or initials thereof	5.3	ST	35	RE		0	1		E	

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
name type code	5.7	ID	1	RE		0	1	0200	L	
Date/Time Of Birth	7	TS		RE	False	0	1			
Date/Time	7.1	NM	26	R		1	1		19580130	
Administrative Sex	8	IS	1	R	False	1	1	0001	M	
Patient Address	11	XAD		RE	True	0	3			This field contains the mailing address of the patient.
street address (SAD)	11.1	SAD	124	RE		0	1			
street or mailing address	11.1.1	ST	120	RE		0	1		8937 107 A AVE	
	11.2	ST	44	RE		0	1		MOUNTAINE APPT	
city	11.3	ST	60	RE		0	1		GRANDE PRAIRIE	
state or province	11.4	ST	5	RE		0	1	ISO 3166-2	CA-AB	Table could not be standardized – has been removed from Appendix
zip or postal code	11.5	ST	10	RE		0	1		G7U 8Y9	
country	11.6	ID	3	RE		0	1	ISO 3166-1	CA	Table could not be standardized – has been removed from Appendix
address type	11.7	ID	4	RE		0	1	0190		
Phone Number - Home	13	XTN		RE	True	0	3			If available, this field contains the patient's home phone number.
[(999)] 999-9999 [X99999][C any text]	13.1	TN	40	R		1	1		(780)539-6189	
telecommunication use code	13.2	ID	3	RE		0	1	0201	PRN	
Phone Number - Business	14	XTN		RE	True	0	3			If available, this field will contain the patient's business phone number.
[(999)] 999-9999 [X99999][C any text]	14.1	TN	40	R		1	1		(780)539-6189	
telecommunication use code	14.2	ID	3	RE		0	1	0201	WPN	

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
Primary Language	15	CE		RE	False	0	1	ISO3066		Primary language of the patient.
identifier	15.1	ST	5	RE		0	1		EN-CA	
text	15.2	ST	20	RE		0	1			
name of coding system	15.3	IS	10	RE		0	1	0396		
Patient Account Number	18	CX		RE	False	0	1			This field identifies the patient's account. This is usually a lab system assigned identifier.
ID	18.1	ST	15	RE		0	1			
identifier type code (ID)	18.5	ID	3	RE		0	1	0203		
Mother's Identifier	21	CX		RE	False	0	1			Identifier for the patient's mother.
ID	21.1	ST	15	R		1	1			
assigning authority	21.4	HD	44	RE		0	1			
namespace ID	21.4.1	IS	44	RE		0	1	0363		
identifier type code (ID)	21.5	ID	8	R		1	1	0203		
Ethnic Group	22	CE		RE	False	0	1	0189		Ethnic group of the patient.
identifier	22.1	ST	15	RE		0	1			
text	22.2	ST	20	RE		0	1			
name of coding system	22.3	IS	10	RE		0	1	0396		
Multiple Birth Indicator	24	ID	1	RE	False	0	1	0136		
Birth Order	25	NM	2	RE	False	0	1			
Patient Death Date and Time	29	TS		RE	False	0	1			Date/Time of patient death.
Date/Time	29.1	NM	26	R		1	1			
Patient Death Indicator	30	ID	1	RE	False	0	1	0136	N	Coded value indicating whether a patient has died.
Last Update Date/Time	33	TS		RE	False	0	1			Date/time the patient information was last updated.

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
Date/Time	33.1	NM	26	R		0	1			
Last Update Facility	34	HD		RE	False	0	1			Identifier for the facility which last updated the patient information.
namespace ID	34.1	IS	44	RE		0	1			
universal ID	34.2	ST	36	RE		0	1		234567	
universal ID type	34.3	ID	10	RE		0	1	0301	DSR	

Segment	Description	Opt	Rep
NTE	**Notes and Comments**	**RE**	**True**

Fields

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
Set ID - NTE	1	SI	4	RE	False	0	1		1	This field must be used where multiple NTE segments are included in a message. Their numbering must be described in the application message definition.
Source of Comment	2	ID	8	RE	False	0	1	0105	P	
Comment	3	FT	65536	RE	False	0	1			

Segment	Description	Opt	Rep
PV1	**Patient visit**	**RE**	**False**

Fields

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
Set ID - PV1	1	SI	4	RE	False	0	1		1	This field contains the number that identifies this transaction. For the first occurrence of the segment, the sequence number shall be one, for the second occurrence, the sequence number shall be two.
Patient Class	2	IS	2	R	False	1	1	0004	O	This field is used by systems to categorize patients by site.
Assigned Patient Location	3	PL		RE	False	0	1			This field contains the initial assigned location or the location to which the patient is being moved.
point of care	3.1	IS	30	RE		0	1		Renal Dialysis Program	
room	3.2	IS	10	RE		0	1	0303		
bed	3.3	IS	5	RE		0	1	0304		
facility (HD)	3.4	HD	61	RE		0	1			
namespace ID	3.4.1	IS	15	RE		0	1			Locally assigned facility identifier
universal ID	3.4.2	ST	20	RE		0	1		34567891	Provincially assigned facility identifier. Where possible the Delivery Site Registry (DSR) ID or WDFA key should be supplied.
universal ID type	3.4.3	ID	5	RE		0	1	0301	DSR	
Admission Type	4	IS	4	RE	False	0	1	0007	R	
Attending Doctor	7	XCN		RE	True	0	*			This field may contain the defined Provider ID and name of the attending provider if these elements are available.
ID number (ST)	7.1	ST	15	RE		0	1		WHITEJL	
family name	7.2	FN	66	RE		1	1			
given name	7.3	ST	50	RE		0	1		Jane	

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
second and further given names or initials thereof	7.4	ST	50	RE		0	1		L	
source table	7.8	IS	5	RE		0	1	0297		Note: either this component or 16.9 (assigning authority) is required if the first component is present.
assigning authority	7.9	HD	52	RE		0	1			See above
namespace ID	7.9.1	IS	44	RE		0	1			
Referring Doctor	8	XCN		RE	True	0	*			This field may contain the defined Provider ID and name of the referring provider if these elements are available.
ID number (ST)	8.1	ST	15	RE		0	1		333444555	
family name	8.2	FN	66	RE		0	1			
given name	8.3	ST	50	RE		0	1		Jill	
second and further given names or initials thereof	8.4	ST	50	RE		0	1			
source table	8.8	IS	5	RE		0	1	0297		Note: either this component or 16.9 (assigning authority) is required if the first component is present.
assigning authority	8.9	HD	52	RE		0	1			See above
namespace ID	8.9.1	IS	44	RE		0	1			
Consulting Doctor	9	XCN		RE	True	0	5			This field may contain the defined Provider ID and name of the consulting provider if these elements are available.
ID number (ST)	9.1	ST	15	RE		0	1		444555666	
family name	9.2	FN	66	RE		0	1			
given name	9.3	ST	50	RE		0	1		Paul	
second and further given names or initials	9.4	ST	50	RE		0	1		P	

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
thereof										
source table	9.8	IS	5	RE		0	1	0297		Note: either this component or 16.9 (assigning authority) is required if the first component is present.
assigning authority	9.9	HD	52	RE		0	1			See above
namespace ID	9.9.1	IS	44	RE		0	1			
Admitting Doctor	17	XCN		RE	True	0	*			This field may contain the defined Provider ID and name of the admitting provider if these elements are available.
ID number (ST)	17.1	ST	15	RE		0	1		555666777	
family name	17.2	FN	66	RE		0	1			
given name	17.3	ST	50	RE		0	1		Jack	
second and further given names or initials thereof	17.4	ST	50	RE		0	1		John	
source table	17.8	IS	5	RE		0	1	0297		Note: either this component or 16.9 (assigning authority) is required if the first component is present.
assigning authority	17.9	HD	52	RE		0	1			See above
namespace ID	17.9.1	IS	44	RE		0	1			
Visit Number	19	CX		RE	False	0	1			This field contains the unique number assigned to each patient.
ID	19.1	ST	15	RE		0	1			
assigning authority	19.4	HD	52	RE		0	1			
namespace ID	19.4.1	IS	44	RE		0	1	0363		
identifier type code (ID)	19.5	ID	10	RE		0	1	0203		
assigning facility	19.6	HD	52	RE		0	1			
namespace ID	19.6.1	IS	44	RE		0	1			

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
Admit Date/Time	44	TS		RE	False	0	1			
Date/Time	44.1	NM	26	R		1	1			
Discharge Date/Time	45	TS		RE	True	0	*			
Date/Time	45.1	NM	26	R		1	1		201403060721	
Alternate Visit ID	50	CX	250	RE		0	1			This field will be used to pass alternate Visit numbers, eg. the Millennium internal encounter number.
ID	50.1	ST	15	RE		0	1			ST
assigning authority	50.4	HD	52	RE		0	1			
namespace ID	50.4.1	IS	44	RE		0	1	0363		
identifier type code	50.5	ID	10	RE		0	1	0203		
assigning facility	50.6	HD	52	RE		0	1			
namespace ID	50.6.1	IS	44	RE		0	1			

Seg Group	Description	Opt	Rep
G1R	**Groups Order and corresponding Results (OBR and OBXs)**	**R**	**True 1 ***

Segment	Description	Opt	Rep
ORC	**Common Order**	**RE**	**False (Part of repeating G1R)**

Fields

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
Order Control	1	ID	2	R	False	1	1	0119	RE	
Placer Order Number	2	EI		RE	False	0	1			Order identifier provided by the placer of the order being filled. Same as OBR-2

										Placer Order Number, if populated
entity identifier	2.1	ST	15	R		1	1		123456	
namespace ID	2.2	IS	30	RE		0	1	0300	Clinic A	
Filler Order Number	3	EI		RE	False	0	1			Order identifier provided by the filler of the order. Same as OBR-3 Filler Order Number, if populated
entity identifier	3.1	ST	15	R		1	1		234567	
namespace ID	3.2	IS	30	RE		0	1	0300	Lab A	
Order Status	5	ID	2	RE	False	0	1	0038	CM	This field is the status of an order. The purpose of the field is to report the status of an order either upon request or (solicited), or when the status changes (unsolicited).

Segment	Description	Opt	Rep
OBR	**Observation Request**	**R**	**False (Part of repeating G1R)**

Fields

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
Set ID - OBR	1	SI	4	RE	False	0	1			For the first order transmitted, the sequence number shall be 1; for the second order, it shall be 2; and so on.
Placer Order Number	2	EI		RE	False	0	1			Order identifier provided by the placer of the order being filled.
entity identifier	2.1	ST	15	R		1	1		123456	
namespace ID	2.2	IS	30	RE		0	1	0300	Clinic A	
Filler Order Number	3	EI		RE	False	0	1			Order identifier provided by the filler of the order.
entity	3.1	ST	15	R		1	1		234567	

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
identifier										
namespace ID	3.2	IS	30	RE		0	1	0300	Lab A	
Universal Service Identifier	4	CE		R	False	1	1			The identifier code for the requested observation/test/battery upon which the results are reported.
identifier	4.1	ST	15	R		1	1		58410-2	
text	4.2	ST	255	R		1	1		Complete Blood Count	
name of coding system	4.3	IS	10	R		1	1	0396	LN	
alternate identifier	4.4	ST	15	RE		0	1		CBC	
alternate text	4.5	ST	50	RE		0	1		Complete Blood Count	
name of alternate coding system	4.6	IS	10	RE		0	1	0396	L	
Observation Date/Time #	7	TS		R	False	1	1			This field is the clinically relevant date/time of the observation. In the case of a specimen-associated study this field shall represent the date and time the specimen was collected.
Date/Time	7.1	NM	26	R		1	1		201403060715	
Observation End Date/Time #	8	TS		RE	False	1	1			This field is the clinically relevant end date/time of the observation.
Date/Time	8.1	NM	26	RE		1	1			
Collection Volume *	9	CQ		RE	False	0	1			The volume of the specimen.
quantity	9.1	NM	10	RE		0	1			
units	9.2	CE	59	RE		0	1			
identifier	9.2.1	ST	15	RE		0	1			

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
text	9.2.2	ST	20	RE		0	1			
name of coding system	9.2.3	IS	10	RE		0	1	0396		
Collector Identifier *	10	XCN		RE	False	0	1			When a specimen is required for the study, this field will identify the person, department, or facility that collected the specimen.
ID number (ST)	10.1	ST	20	RE		0	1			
family name	10.2	FN	66	RE		0	1			
given name	10.3	ST	50	RE		0	1			
second and further given names or initials thereof	10.4	ST	50	RE		0	1			
suffix (e.g., JR or III)	10.5	ST	1	RE		0	1			
source table	10.8	IS	5	RE		0	1	0297		Note: this component is required if the first component is present
assigning authority	10.9	HD	52	RE		0	1			
namespace ID	10.9.1	IS	44	RE		0	1			
Specimen Action Code	11	ID	1	RE	False	0	1	0065	O	This field is the action to be taken with respect to the specimens that accompany or precede this order.
Danger Code	12	CE		RE	False	0	1			This field is the code and/or text indicating any known or suspected patient or specimen.
identifier	12.1	ST	10	RE		0	1			
text	12.2	ST	20	RE		0	1			
name of coding system	12.3	IS	10	RE		0	1	0396		
Relevant Clinical Info.	13	ST	300	RE	False	0	1		Relevant clinical information	This field contains any additional clinical information about the patient or specimen.

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
Specimen Received Date/Time *	14	TS		RE	False	0	1			This field indicates the date and time the specimen was received.
Date/Time	14.1	NM	26	R		1	1		201403060732	
Specimen Source	15	CM_SPS		RE	False	0	1	0070		Source of specimen. Table could not be standardized – has been removed from Appendix
specimen source name or code	15.1	CE	85	R		1	1			Code or name identifying where the specimen was obtained.
identifier	15.1.1	ST	40	RE		0	1		BLDV	
text	15.1.2	ST	40	RE		0	1		Blood Venous	
name of coding system	15.1.3	IS	10	RE		0	1	0396	HL70070	
alternate identifier	15.1.4	ST	40	RE		0	1			
alternate text	15.1.5	ST	40	RE		0	1			
name of alternate coding system	15.1.6	IS	10	RE		0	1	0396		
additives	15.2	TX	20	RE		0	1			Specimen source additives
freetext	15.3	TX	60	RE		0	1			Specimen source additional text
body site	15.4	CE	85	RE		0	1	0163		Location on the body where the specimen was obtained. Table could not be standardized – has been removed from Appendix
identifier	15.4.1	ST	40	RE		0	1		LA	
text	15.4.2	ST	40	RE		0	1		Left Arm	
name of coding system	15.4.3	IS	10	RE		0	1	0396	HL70163	
alternate	15.4.4	ST	40	RE		0	1			

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
identifier										
alternate text	15.4.5	ST	40	RE		0	1			
name of alternate coding system	15.4.6	IS	10	RE		0	1	0396		
site modifier	15.5	CE	85	RE		0	1			Additional specification of the body site.
identifier	15.5.1	ST	10	RE		0	1			
text	15.5.2	ST	20	RE		0	1			
name of coding system	15.5.3	IS	10	RE		0	1	0396		
alternate identifier	15.5.4	ST	10	RE		0	1			
alternate text	15.5.5	ST	20	RE		0	1			
name of alternate coding system	15.5.6	IS	10	RE		0	1	0396		
Ordering Provider	16	XCN		R	True	1	10			Provider who ordered the tests.
ID number (ST)	16.1	ST	15	R		1	1		666777888	
family name	16.2	FN	66	RE		0	1		Grey	
given name	16.3	ST	50	RE		0	1		Sunny	
second and further given names or initials thereof	16.4	ST	50	RE		0	1			
source table	16.8	IS	5	RE		0	1	0297		Note: either this component or 16.9 (assigning authority) is required if the first component is present.
assigning authority	16.9	HD	52	RE		0	1			See above

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
namespace ID	16.9.1	IS	44	RE		0	1			
Placer Field 1	18	ST	60	RE	False	0	1			Exposure Investigation Number - Specific to Outbreak Management - Exposure investigations involve the collection and analysis of environmental contamination data and biologic tests (when appropriate). The goal is to determine whether people have been exposed to hazardous substances.
Filler Field 1	20	ST	60	RE	False	0	1		0603:H00100 R	This field will contain the Lab Accession number for the order.
Results Rpt/Status Chng - Date/Time	22	TS		RE	False	0	1			This field indicates the date and time the results were last reported or status changed.
Date/Time	22.1	NM	26	RE		0	1		201403060759	
Diagnostic Serv Sect ID	24	ID	10	R	False	1	1	0074	HM	This field identifies the type of laboratory result being reported (e.g. Microbiology, Chemistry, Anatomic Pathology, etc.)
Result Status	25	ID	1	R	False	1	1	0123	F	
Parent Result	26	CM_PRL		RE	False	0	1			When the OBR segment is describing a Parent order (eg. a Culture test), this field is empty. When the OBR is describing a Child order (eg. a Susceptibility test), this field will define the link back to the Parent OBX that spawned the Child order. This information is used in conjunction with the information in OBR-29 to uniquely identify the parent (original culture) result's OBX segment, which the child susceptibilities are related to. Note AHS Micro results generally include the parent procedure/test in these sub fields. There are some exceptions -- see the Millennium examples in Appendix B.The value of this OBR-
OBX-3 observation identifier of parent result	26.1	CE	250	RE		0	1			
identifier	26.1.1	ST	15	RE		0	1		11475-1	
text	26.1.2	ST	60	RE		0	1		Parent test	
name of coding system	26.1.3	IS	10	RE		0	1	0396	LN	
alternate identifier	26.1.4	ST	15	RE		0	1			
alternate	26.1.5	ST	60	RE		0	1			

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
text										26.1 is the OBX-3 value in the parent result and is the organism or chemical species about which this battery reports. For example, if the current battery is an antimicrobial susceptibility, the parent result's identified OBX contains a result which identifies the organism on which the susceptibility were run. This indirect linkage is preferred because the name of the organism in the parent result may undergo several preliminary values prior to finalization. OBR-26.3 may be used to record the name of the microorganism identified by the parent result directly. The organism in this case should be identified exactly as it is in the parent culture. We emphasize that this field does not take the entire result field from the parent. It is meant only for the text name of the organism or chemical subspecies identified. This field is included only to provide a method for linking back to the parent result for those systems which could not generate unambiguous Observation IDs and sub-IDs. If more than one organism is present, OBR-26.2 containing OBX-4-observation subID from the parent result is used to distinguish them. In this case, the first OBX with subID N will contain a value identifying the Nth microorganism, and each additional OBX with subID N will contain susceptibility values for a given antimicrobial test on this organism.
name of alternate coding system	26.1.6	IS	10	RE		0	1	0396	L	
OBX-4 sub-ID of parent result	26.2	ST	20	RE		0	1		1	
part of OBX-5 observation result from parent	26.3	TX	30	RE		0	1			
Quantity/Timing	27	TQ	200	RE	False	0	1			

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
quantity	27.1	CQ	1	RE		0	1			
quantity	27.1.1	NM	5	RE		0	1		1	
duration	27.3	ST	30	RE		0	1			
start date/time	27.4	TS	26	RE		0	1			
priority	27.6	ST	2	RE		0	1	0027		
condition	27.7	ST	3	RE		0	1			
Result Copies To	28	XCN		RE	True	0	99			This field will contain a listing of all physicians that are being copied on the results. It will repeat as necessary.
ID number (ST)	28.1	ST	15	R		1	1		555666888	
family name	28.2	FN	66	RE		0	1			
given name	28.3	ST	50	RE		0	1		Mark	
second and further given names or initials thereof	28.4	ST	50	RE		0	1			
source table	28.8	IS	5	RE		0	1	0297		Note: either this component or 16.9 (assigning authority) is required if the first component is present.
assigning authority	28.9	HD	52	RE		0	1			See above
namespace ID	28.9.1	IS	44	RE		0	1	0300		
Parent	29	CM_EIP		RE	False	0	1			This field relates a child to its parent when a

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
parent's placer order number	29.1	EI	100	RE		0	1			parent/child relationship exist. For example, observations that are spawned by previous observations, e.g ., antimicrobial susceptibilities spawned by blood cultures, need to record the parent (blood culture) filler order number here.
entity identifier	29.1.1	ST	55	R		1	1		456789	
namespace ID	29.1.2	IS	44	RE		0	1	0300	Clinic A	
parent's filler order number	29.2	EI	100	RE		0	1			
entity identifier	29.2.1	ST	55	R		1	1		987654	
namespace ID	29.2.2	IS	44	RE		0	1		Sending Lab A	
Reason for Study	31	CE	250	RE	True	0	99			
identifier	31.1	ST	15	RE		0	1			
text	31.2	ST	60	RE		0	1			
name of coding system	31.3	IS	10	RE		0	1	0396		
Collector's Comment *	40	CE		RE	False	0	1			
text	40.2	ST	250	RE		0	1			

Segment	Description	Opt	Rep
NTE	**Notes and Comments**	**RE**	**True**

Fields

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
Set ID - NTE	1	SI	4	RE	False	0	1		1	This field must be used where multiple NTE segments are included in a message. Their numbering must be described in the application message definition.
Source of Comment	2	ID	8	RE	False	0	1	0105	P	

Comment	3	FT	65536	RE	False	1	1		Comments to LAB: PRE-DIALYSIS, FAX TO SATELLITE UNIT	

Seg Group	Description	Opt	Rep	Min	Max
G2R	**G1R.G2R** – Grouping of OBX and NTEs	**R**	**True**	**1**	*****

Segment	Description	Opt	Rep
OBX	**Observation/Result**	**R**	**False (G2R repeats)**

Fields

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
Set ID - OBX	1	SI	4	RE	False	0	1		1	**The Set-ID for the OBX that contains the embedded CDA document will be 0 (zero).** Note that CDA is not implemented in v3.6 specification.
Value Type	2	ID	3	R	False	1	1	0125	NM	This field contains the format of the observation value in OBX. It must be valued if OBX-11 - Observation result status is not valued with an 'X'. If the value is CE then the result must be a coded entry. When the value type is TX or FT then the results are bulk text. For CDA attachments in OBX-5, this must be set to ED.
Observation Identifier	3	CE		R	False	1	1			Lab procedure code for the result item. For CDA attachments, this should contain the Document Type code for the CDA document (i.e. 11502-2 for Laboratory Report).

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
identifier	3.1	ST	15	R		1	1		6690-2	
text	3.2	ST	255	R		1	1		White Blood Cell Count	
name of coding system	3.3	IS	10	R		1	1	0396	LN	
alternate identifier	3.4	ST	15	RE		0	1		WBC	
alternate text	3.5	ST	60	RE		0	1		WBC Count	
name of alternate coding system	3.6	IS	10	RE		0	1	0396	L	
Observation Sub-Id	4	ST	20	RE	False	0	1			Required if > 1 OBX with the same OBX-3 value associated with an OBR. Usually a sequence number. This field is required in Parent OBX segments that have Child orders attached to them. See the Millennium examples in Appendix B for exceptions.
Observation Value	5	Varies	65536	C	False	0	1		8.0	This field contains the value observed by the observation producer. OBX-2 (Value Type) contains the data type for this according to which observation field is formatted. Future Guidance for CDA attachments (not currently implemented in v3.6): OBX 5 contains the MIME package, encoded as an encapsulated data type. The components of the data type in OBX.5 should be valued as follows: • Set the value of the 2nd component (type of data) to equal "multipart". • Set the value of the 3rd component (data subtype) to equal "x-hl7-cda-level-one". • Set the value of the 4th component (encoding) to equal "A". (Note that a MIME package is not itself Base64-encoded. Rather, entities within the MIME package are Base64-encoded. A MIME package is

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
										sent as ASCII text. Therefore, the correct value for the 4th component of the encapsulated data type is "A", not "Base64".) • Set the value of the 5th component (data) to equal the MIME package itself. Every entity within the MIME package must be Base64-encoded. The content type of the first MIME entity is set to "application/x-hl7-cda-level-one+xml", and should contain the CDA document itself.
identifier	5.1	ST	15	R		1	1		112283007	These definitions apply only when OBX-02 = CE and OBX-05 contains a coded value
text	5.2	ST	255	R		1	1		Escherichia coli (organism)	
name of coding system	5.3	IS	10	R		1	1	0396	SNM	
alternate identifier	5.4	ST	15	RE		0	1		EC	
alternate text	5.5	ST	60	RE		0	1		Escherichia coli	
name of alternate coding system	5.6	IS	10	RE		0	1	0396	L	
Units	6	CE		RE	False	0	1			Where defined in Lab, value will indicate units of measure for the result value reported. The units are free-text in nature and will vary according to the conversion of the Lab.
identifier	6.1	ST	20	R		1	1		10*9/L	
text	6.2	ST	30	RE		0	1			
name of coding system	6.3	IS	10	R		1	1	0396	UCUM	
alternate identifier	6.4	ST	20	RE		0	1			
alternate text	6.5	ST	30	RE		0	1			
name of alternate coding system	6.6	IS	10	RE		0	1	0396		

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
References Range	7	ST	60	RE	False	0	1		4.6-10.6	Interpretation range that applies to the value in OBX-5, to support understanding of abnormal flags in OBX-8.
Abnormal Flags	8	IS	5	RE	True	0	5	0078	N	This field contains a table lookup indicating the normalcy status of the result. Note: Values herein refer to the observation value (OBX.5). Refer to HL7 table 0078 - Abnormal flags for valid entries.
Observation Result Status	11	ID	1	R	False	1	1	0085	F	Status of the result for this OBX segment.
Date/Time of the Observation	14	TS	26	RE	False	0	1			Date/time that the test is performed.
Date/Time	14.1	NM	26	R		1	1		201403060715	
Producer's ID	15	CE		RE	False	0	1			Producing Lab or Service.
identifier	15.1	ST	15	R		1	1		QE	
text	15.2	ST	60	R		1	1		PCH QUEEN ELIZABETH II HOSP	
name of coding system	15.3	IS	10	R		1	1	0396	L	
alternate identifier	15.4	ST	15	RE		0	1			
alternate text	15.5	ST	60	RE		0	1			
name of alternate coding system	15.6	IS	10	RE		0	1	0396		
Responsible Observer	16	XCN		RE	False	0	1			Performer of the lab test.
ID number (ST)	16.1	ST	15	RE		0	1			
family name	16.2	FN	66	RE		0	1			
given name	16.3	ST	50	RE		0	1			
second and further given names or initials thereof	16.4	ST	50	RE		0	1			

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
source table	16.8	IS	5	RE		0	1	0297		Note: either this component or 16.9 (assigning authority) is required if the first component is present.
assigning authority	16.9	HD	52	RE		0	1			See above
namespace ID	16.9.1	IS	44	RE		0	1			

Segment	Description	Opt	Rep
NTE	**Notes and Comments**	**RE**	**True**

Fields

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Ex Val	Description
Set ID - NTE	1	SI	4	RE	False	0	1		1	
Source of Comment	2	ID	8	RE	False	0	1	0105	P	
Comment	3	FT	65536	RE	False	1	1		Placer Comment	

Appendix A. VOCABULARY TABLES

See external document

ID: 0001 Name: Administrative sex Type: USER Coding Sys: HL7 Defined Codes - HL7nnn LMTS Reference: AHS Gender

Order	Code	Description	Source	Display Name	Instructions
1	A	Ambiguous	User		Maps from Indeterminate
2	F	Female	User		3
3	M	Male	User		3
4	N	Not applicable	User		3
5	O	Other	User		3
6	U	Unknown	User		3

ID: 0004 Name: Patient Class Type: USER Coding Sys: HL7 Defined Codes - HL7nnn LMTS Reference: AHS PtClass

Order	Code	Description	Source	Display Name	Instructions
1	C	Commercial Account	User		3.4.3.2
2	E	Emergency	User		3.4.3.2
3	I	Inpatient	User		3.4.3.2
4	N	Not Applicable	User		3.4.3.2
5	O	Outpatient	User		3.4.3.2
6	P	Preadmit	User		3.4.3.2
7	R	Recurring patient	User		3.4.3.2
8	U	Unknown	User		3.4.3.2

ID: 0007 Name: Admission Type Type: USER Coding Sys: HL7 Defined Codes - HL7nnn LMTS Reference: AHS Admssn Type

Order	Code	Description	Source	Display Name	Instructions
1	C	Elective	User		3.4.3.4
2	E	Emergency	User		3.4.3.4
3	L	Labor and Delivery	User		3.4.3.4
4	N	Newborn (Birth in healthcare facility)	User		3.4.3.4
5	R	Routine	User		3.4.3.4
6	U	Urgent	User		3.4.3.4

ID: 0038 Name: Order status Type: HL7 Coding Sys: HL7 Defined Codes - HL7nnn LMTS Reference: AHS Order Status

Order	Code	Description	Source	Display Name	Instructions
1	A	Some, but not all, results available	User		4.5.1.5
2	CA	Order was canceled	User		4.5.1.5
3	CM	Order is completed	User		4.5.1.5
4	HD	Order is on hold	User		4.5.1.5
5	IP	In process, unspecified	User		4.5.1.5
6	SC	In process, scheduled	User		4.5.1.5

ID: 0065 Name: Specimen action code Type: HL7 Coding Sys: HL7 Defined Codes - HL7nnn LMTS Reference: AHS Spcmn ActCd

Order	Code	Description	Source	Display Name	Instructions
1	L	Lab to obtain specimen from patient	User		4
2	O	Specimen obtained by service other than Lab	User		4
3	P	Pending specimen; Order sent prior to delivery	User		4

ID: 0069 Name: Hospital Service Type: USER Coding Sys: HL7 Defined Codes - HL7nnn

Table removed from Appendix, could not standardize values.

ID: 0070 Name: Specimen Source Codes Type: HL7 Coding Sys: HL7 Defined Codes - HL7nnn

Table removed from Appendix, could not standardize values.

ID: 0074 Name: Diagnostic Service Section ID Type: HL7 Coding Sys: HL7 Defined Codes - HL7nnn

Order	Code	Description	Source	Display Name	Instructions
1	BG	Blood Gases	User		4.5.3.24
2	BLB	Blood Bank	User		4.5.3.24
3	CH	Chemistry	User		4.5.3.24
4	COAG	Coagulation	User		4.5.3.24
5	GENR	Genetics Report	User		4.5.3.24
6	EC	Electrocardiac	User		4.5.3.24
7	FL	Fluids	User		4.5.3.24
8	HM	Hematology	User		4.5.3.24
9	IMM	Immunology	User		4.5.3.24
10	LAB-EMC	Laboratory	User		4.5.3.24
11	MB	Microbiology	User		4.5.3.24
12	OTH	Other	User		4.5.3.24
13	POC	Point of Care	User		4.5.3.24
14	SP	Surgical Pathology	User		4.5.3.24
15	TR	Trace Elements	User		4.5.3.24
16	TX	Toxicology	User		4.5.3.24

ID: 0078 Name: Abnormal flags Type: USER Coding Sys: HL7 Defined Codes - HL7nnn LMTS Reference: AHS AbnFlag

Order	Code	Description	Source	Display Name	Instructions
1	SC~L	Below low normal	User		7.4.2.8
2	SC	Significant change	User		7.4.2.8
3	<	Below absolute low-off instrument scale	User		7.4.2.8
4	>	Above absolute high-off instrument scale	User		7.4.2.8
5	A	Abnormal	User		7.4.2.8
6	AA	Critical	User		7.4.2.8
7	B	Better	User		7.4.2.8
8	D	Significant change down	User		7.4.2.8
9	H	Above high normal	User		7.4.2.8
10	HH	Critical	User		7.4.2.8
11	I	Intermediate	User		7.4.2.8
12	L	Below low normal	User		7.4.2.8
13	LL	Critical	User		7.4.2.8
14	MS	Moderately susceptible	User		7.4.2.8
15	N	Normal	User		7.4.2.8
16	NULL	Null	User		7.4.2.8
17	R	Resistant	User		7.4.2.8
18	S	Susceptible	User		7.4.2.8
19	U	Significant change up	User		7.4.2.8
20	VS	Very susceptible	User		7.4.2.8
21	W	Worse	User		7.4.2.8
22	SC~LL	Critical	User		7.4.2.8
23	SC~H	Above high normal	User		7.4.2.8

Order	Code	Description	Source	Display Name	Instructions
24	SC~HH	Critical	User		7.4.2.8
25	C	Critical	User		7.4.2.8
26	SDD	Susceptible-dose dependent	User		7.4.2.8
27	SYN-R	Synergy - resistant	User		7.4.2.8
28	SYN-S	Synergy - susceptible	User		7.4.2.8
29	POS	Positive	User		7.4.2.8
30	NEG	Negative	User		7.4.2.8
31	NOTE	NOTE	User		7.4.2.8

ID: 0085 Name: Observation result status codes interpretation Type: HL7 Coding Sys: HL7 Defined Codes - HL7nnn LMTS Reference: AHS Obs Rslt Status

Order	Code	Description	Source	Display Name	Instructions
1	C	Record coming over is a correction and thus replaces a final result	User		7.4.2.11
2	D	Deletes the OBX record	User		7.4.2.11
3	F	Final results; Can only be changed with a corrected result.	User		7.4.2.11
4	I	Specimen in lab; results pending	User		7.4.2.11
5	N	Not asked; used to affirmatively document that the observation identified in the OBX was not sought when the universal service ID in OBR-4 implies that it would be sought.	User		7.4.2.11
6	P	Preliminary results	User		7.4.2.11
7	X	Results cannot be obtained for this observation	User		7.4.2.11

ID: 0103 Name: Processing ID Type: HL7 Coding Sys: HL7 Defined Codes - HL7nnn

Order	Code	Description	Source	Display Name	Instructions
1	D	Debugging	User		2.A.1.57.1
2	P	Production	User		2.A.1.57.1
3	T	Training	User		2.A.1.57.1

ID: 0104 Name: Version ID Type: HL7 Coding Sys: HL7 Defined Codes - HL7nnn

Order	Code	Description	Source	Display Name	Instructions
1	2.4	Release 2.4	User		2.15.9.12

ID: 0105 Name: Source of comment Type: HL7 Coding Sys: HL7 Defined Codes - HL7nnn

Order	Code	Description	Source	Display Name	Instructions
1	L	Ancillary (filler) department is source of comment	User		2.15.10.2
2	O	Other system is source of comment	User		2.15.10.2
3	P	Orderer (placer) is source of comment	User		2.15.10.2

ID: 0119 Name: Order control codes Type: HL7 Coding Sys: HL7 Defined Codes - HL7nnn

Order	Code	Description	Source	Display Name	Instructions
1	OC	Order/service canceled	User		4.23.1
2	RE	Observations/Performed Service to follow	User		4.23.1
3	RQ	Replaced as requested	User		4.23.1
4	RU	Replaced unsolicited	User		4.23.1
5	SC	Status changed	User		4.23.1

ID: 0123 Name: Result Status Type: HL7 Coding Sys: HL7 Defined Codes - HL7nnn LMTS Reference: AHS RsltSt

Order	Code	Description	Source	Display Name	Instructions
1	A	Some, but not all, results available	User		4.5.3.25
2	C	Correction to results	User		4.5.3.25
3	F	Final results; results stored and verified. Can only be changed with a corrected result.	User		4.5.3.25
4	I	No results available; specimen received, procedure incomplete	User		4.5.3.25
5	O	Order received; specimen not yet received	User		4.5.3.25
6	P	Preliminary: A verified early result is available, final results not yet obtained	User		4.5.3.25
7	R	Results stored; not yet verified	User		4.5.3.25
8	S	No results available; procedure scheduled, but not done	User		4.5.3.25
9	X	No results available; Order canceled.	User		4.5.3.25
10	Y	No order on record for this test. (Used only on queries)	User		4.5.3.25
11	Z	No record of this patient. (Used only on queries)	User		4.5.3.25

ID: 0125 Name: Value type Type: HL7 Coding Sys: HL7 Defined Codes - HL7nnn

Order	Code	Description	Source	Display Name	Instructions
1	AD	Address	User		7.4.2.2
2	CE	Coded Entry	User		7.4.2.2
3	CF	Coded Element With Formatted Values	User		7.4.2.2
4	CK	Composite ID With Check Digit	User		7.4.2.2
5	CN	Composite ID And Name	User		7.4.2.2
6	CP	Composite Price	User		7.4.2.2
7	CX	Extended Composite ID With Check Digit	User		7.4.2.2
8	DT	Date	User		7.4.2.2

Order	Code	Description	Source	Display Name	Instructions
9	ED	Encapsulated Data	User		7.4.2.2
10	FT	Formatted Text (Display)	User		7.4.2.2
11	MO	Money	User		7.4.2.2
12	NM	Numeric	User		7.4.2.2
13	PN	Person Name	User		7.4.2.2
14	RP	Reference Pointer	User		7.4.2.2
15	SN	Structured Numeric	User		7.4.2.2
16	ST	String Data.	User		7.4.2.2
17	TM	Time	User		7.4.2.2
18	TN	Telephone Number	User		7.4.2.2
19	TS	Time Stamp (Date & Time)	User		7.4.2.2
20	TX	Text Data (Display)	User		7.4.2.2
21	XAD	Extended Address	User		7.4.2.2
22	XCN	Extended Composite Name And Number For Persons	User		7.4.2.2
23	XON	Extended Composite Name And Number For Organizations	User		7.4.2.2
24	XPN	Extended Person Name	User		7.4.2.2
25	XTN	Extended Telecommunications Number	User		7.4.2.2

ID: 0163 Name: Body site Type: HL7 Coding Sys: HL7 Defined Codes - HL7nnn

Table removed from Appendix, could not standardize values.

ID: 0136 Name: Yes/no indicator Type: HL7 Coding Sys: HL7 Defined Codes - HL7nnn

Order	Code	Description	Source	Display Name	Instructions
1	N	No	User		2.17.5
2	Y	Yes	User		2.17.5

ID: 0190 Name: Address type Type: HL7 Coding Sys: HL7 Defined Codes - HL7nnn LMTS Reference: AHS AddType

Order	Code	Description	Source	Display Name	Instructions
1	B	Business	User		2.A.1.1.7
2	C	Current Or Temporary	User		2.A.1.1.7
3	H	Home	User		2.A.1.1.7
4	M	Mailing	User		2.A.1.1.7
5	P	Permanent	User		2.A.1.1.7

ID: 0200 Name: Name type Type: HL7 Coding Sys: HL7 Defined Codes - HL7nnn

Order	Code	Description	Source	Display Name	Instructions
1	A	Alias Name	User		2
2	B	Name at Birth	User		2
3	C	Adopted Name	User		2
4	D	Display Name	User		2
5	I	Licensing Name	User		2
6	L	Legal Name	User		2
7	M	Maiden Name	User		2
8	N	Nickname /"Call me" Name/Street Name	User		2
9	P	Name of Partner/Spouse (retained for backward compatibility only)	User		2
10	R	Registered Name (animals only)	User		2
11	S	Coded Pseudo-Name to ensure anonymity	User		2
12	T	Indigenous/Tribal/Community Name	User		2
13	U	Unspecified	User		2

ID: 0201 Name: Telecommunication use code Type: HL7 Coding Sys: HL7 Defined Codes - HL7nnn LMTS Reference: AHS TelCommCd

Order	Code	Description	Source	Display Name	Instructions

1	BPN	Beeper Number	User		2
2	EMR	Emergency Number	User		2
3	ORN	Other Residence Number	User		2
4	PRN	Primary Residence Number	User		2
5	WPN	Work Number	User		2

ID: 0203 Name: Identifier type Type: USER Coding Sys: HL7 Defined Codes - HL7nnn

Order	Code	Description	Source	Display Name	Instructions
1	AM	American Express	User		2
2	AN	Account number	User		2
3	ASSOCULI	Associated AB ULI	User		2
4	BA	Bank Account Number	User		2
5	BATUSN	BATUS (British Army Training Unit Suffield) Number	User		2
6	BOWN	Bowden Institution Number	User		2
7	BR	Birth registry number	User		2
8	BRN	Breed Registry Number	User		2
9	CF	Canadian Forces ID	User		2
10	CICN	Citizenship and Immigration Canada Number	User		2
11	CORCN	Corrections HOB (PE SAKASTEW) Number	User		2
12	CORDN	Corrections Drumheller Number	User		2
13	DI	Diner's Club card	User		2
14	DL	Driver's license number	User		2
15	DN	Doctor number	User		2
16	DR	Donor Registration Number	User		2
17	DS	Discover Card	User		2

Order	Code	Description	Source	Display Name	Instructions
18	EI	Employee number	User		2
19	EN	Employer number	User		2
20	FI	Facility ID	User		2
21	GI	Guarantor internal identifier	User		2
22	GN	Guarantor external identifier	User		2
23	HC	Health Card Number	User		2
24	JHN	Jurisdictional health number (Canada)	User		2
25	LN	License number	User		2
26	LR	Local Registry ID	User		2
27	MA	Medicaid number	User		2
28	MC	Medicare number	User		2
29	MCN	Microchip Number	User		2
30	MR	Medical record number	User		2
31	MS	MasterCard	User		2
32	NE	National employer identifier	User		2
33	NH	National Health Plan Identifier	User		2
34	NI	National unique individual identifier	User		2
35	NNxxx	National Person Identifier where the xxx is the ISO table 3166 3-character (alphabetic) country code	User		2
36	NPI	National provider identifier	User		2
37	PEN	Pension Number	User		2
38	PI	Patient internal identifier	User		2
39	PN	Person number	User		2
40	PRN	Provider number	User		2
41	PSID	Millennium internal ID	User		2

Order	Code	Description	Source	Display Name	Instructions
42	PT	Patient external identifier	User		2
43	RCMP	RCMP Regiment Number	User		2
44	RCMPHN	RCMP Health Number	User		2
45	RR	Railroad Retirement number	User		2
46	RRI	Regional registry ID	User		2
47	SL	State license	User		2
48	SR	State registry ID	User		2
49	SS	Social Security number	User		2
50	TRIP	Third Party Insurance Plan	User		2
51	TRTY	Aboriginal Affairs and Northern Development Canada (Dept Indian & Northern Affairs) ID	User		2
52	U	Unspecified	User		2
53	UPIN	Medicare/HCFA's Universal Physician Identification numbers	User		2
54	VAC	Veterans Affairs Canada	User		2
55	VN	Visit number	User		2
56	VN_ MILLINT	Visit Number - Millennium Internal	User		2
57	VS	VISA	User		2
58	WC	WIC identifier	User		2
59	WCB	WCB Workers Compensation Board Claim Number	User		2
60	WCN	Workers' Comp Number	User		2
61	XX	Organization identifier	User		2

ID: 0301 Name: Universal ID type Type: HL7 Coding Sys: HL7 Defined Codes - HL7nnn

Order	Code	Description	Source	Display Name	Instructions
1	DNS	An Internet dotted name. Either in ASCII or as integers	User		2
2	GUID	Same as UUID.	User		2
3	HCD	The CEN Healthcare Coding Scheme Designator. (Identifiers used in DICOM follow this assignment scheme.)	User		2
4	HL7	Reserved for future HL7 registration schemes	User		2
5	ISO	An International Standards Organization Object Identifier	User		2
6	L,M,N	These are reserved for locally defined coding schemes.	User		2
7	Random	Usually a base64 encoded string of random bits. The uniqueness depends on the length of the bits. Mail systems often generate ASCII string "unique names," from a combination of random bits and system names. Obviously, such identifiers will not be con	User		2

ID: 3166-1 Name: Country Codes Type: ISO Coding Sys - ISO

Table removed from Appendix, could not standardize values.

ID: 3166-2 Name: Province Codes Type: ISO Coding System - ISO

Table removed from Appendix, could not standardize values.

ID: 0354 Name: Message structure Type: HL7 Coding Sys: HL7 Defined Codes - HL7nnn

Order	Code	Description	Source	Display Name	Instructions
1	ORU_R01	Unsolicited transmission of an observation message	User		2.17.1

ID: 0363 Name: Assigning authority Type: USER Coding Sys: HL7 Defined Codes - HL7nnn

Order	Code	Description	Source	Display Name	Instructions
1	AANDC	Aboriginal Affairs and Northern Development Canada (Dept Indian & Northern Affairs)	User		3
2	ACB	Alberta Cancer Board	User		3
3	AUSDVA	Australia - Dept. of Veterans Affairs	User		3
4	AUSHIC	Australia - Health Insurance Commission	User		3
5	BATUS	British Army Training Unit Suffield	User		3
6	BOW	Bowden Institution	User		3
7	CANAB	Canada - Alberta	User		3
8	CANBC	Canada - British Columbia	User		3
9	CANMB	Canada - Manitoba	User		3
10	CANNB	Canada - New Brunswick	User		3
11	CANNL	Canada - Newfoundland and Labrador	User		3
12	CANNS	Canada - Nova Scotia	User		3
13	CANNT	Canada - Northwest Territories	User		3
14	CANNU	Canada - Nunavut	User		3
15	CANON	Canada - Ontario	User		3
16	CANPE	Canada - Prince Edward Island	User		3
17	CANQC	Canada - Quebec	User		3
18	CANRCMP	Canadian RCMP	User		3
19	CANSK	Canada - Saskatchewan	User		3
20	CANYT	Canada - Yukon Territories	User		3
21	CDOM	Communicable Disease & Outbreak Management	User		3
22	CIC	Citizenship and Immigration Canada	User		3
23	CLINIBASE	Clinibase application	User		3
24	CORC	Corrections HOB (PE SAKASTEW)	User		3
25	CORD	Corrections Drumheller	User		3
26	HRC	Canadian Surgery Solutions facility (bought out and renamed from Health Resource Centre)	User		3
27	MEDIPATIENT	MediPatient application	User		3
28	Meditech	Meditech application	User		3
29	MEDITECH-ARHA	Meditech application ARHA instance	User		3
30	MEDITECH-CRHA	Meditech application CRHA instance	User		3
31	MEDITECH-DTRH	Meditech application DTRH instance	User		3
32	MEDITECH-ECH	Meditech application ECH instance	User		3
33	MEDITECH-PCH	Meditech application PCH instance	User		3

Order	Code	Description	Source	Display Name	Instructions
34	MEDITECH-PHR	Meditech application PHR instance	User		3
35	MHDL	Medicine Hat Diagnostic Lab	User		3
36	MILLENNIUM	Millennium application	User		3
37	NLVWS	NL - Ministerie van Volksgezondheid, Welzijn en Sport	User		3
38	RAH	Royal Alex Hospital	User		3
39	U	Unknown	User		3
40	UAH	Tandem application, University of Alberta Hospital	User		3
41	USCDC	US Center for Disease Control	User		3
42	USHCFA	US Healthcare Finance Authority	User		3
43	USSSA	US Social Security Administration	User		3

ID: 0396 Name: Coding system Type: HL7 Coding Sys: HL7 Defined Codes - HL7nnn

Order	Code	Description	Source	Display Name	Instructions
1	99zzz or L	Local general code (where z is an alphanumeric character)	User		2.17.4
2	HISCAnnnn	Health Information Standards Committee for Alberta where nnn is the HISCA table number			
3	HL7nnnn	HL7 Defined Codes where nnnn is the HL7 table number	User		2.17.4
4	ICD10CA	ICD-10 Canada	User		2.17.4
5	ISO+	ISO 2955.83 (units of measure) with HL7 extensions	User		2.17.4
6	ISOnnnn	ISO Defined Codes where nnnn is the ISO table number	User		2.17.4
7	LN	Logical Observation Identifier Names and Codes (LOINC®)	User		2.17.4
8	SCT	Systemized Nomenclature of Medicine (SNOMED)	User		2.17.4
9	UCUM	Uniform Codes for Units of Measure	User		2.17.4
10	pCLOCD	Pan-Canadian Logical Observation Code Database	User		MTW R2.04.03

Appendix B. **SAMPLE MESSAGES**

B.1 **Hematology**

MSH|^~\&|MILLENNIUM-
LIS|CLS|Egate|POSP|20180927134900||ORU^R01^ORU_R01|Q2175665344T2186102557-
2|P|2.4||||||||AB_LTRD_HL7_ORU_R01_R1_20140513
PID|||257965811^^^CANAB^JHN~AB257965811^^^MILLENNIUM^MR^0101~257965811^^^CANAB^AS
SOCULI~2905846^^^MILLENNIUM^PI||Lastname^Firstname^^^^^L||19990612|F|||999 Darren Woods
Blvd SE^^Calgary^AB^T2B 3C4^CA^H||(000)000-0000|(000)000-0000||||||||||||||||N
PV1|1|O|0101^^^0101||||1003380^Truong^Barney^^^^^^MILLENNIUM||||||||||C|000028299058^^^MILLEN
NIUM^VN^0101|||||||||||||||||||||||||20180927075500||||||180071772^^^MILLENNIUM^VN_MILLINT
OBR|1||2208408933^MILLENNIUM|69742-5^CBC \T\ Differential^pCLOCD^CBCR^COMPLETE BLOOD
COUNT^L|||20180927080500|||||||20180927130400||1003380^Truong^Barney^^^^^^MILLENNIUM||||18-
270-003562||20180927134856||HM|F||1^^^20180927075600^^R
OBX|1|NM|718-7^Hemoglobin^pCLOCD^HGB R^HEMOGLOBIN^L|1|141|g/L^^L^g/L^^L|120 -
160||||F|||20180927134852
OBX|2|NM|4544-3^Hematocrit^pCLOCD^HCT R^HEMATOCRIT^L|1|0.41|L/L^^L^L/L^^L|0.36 -
0.48||||F|||20180927134852
OBX|3|NM|789-8^Erythrocytes^pCLOCD^RBC R^RBC^L|1|4.6|10E12/L^^L^10E12/L^^L|4.0 -
5.6||||F|||20180927134852
OBX|4|NM|787-2^MCV^pCLOCD^MCV R^MCV^L|1|91|fL^^L^fL^^L|82 - 100||||F|||20180927134852
OBX|5|NM|786-4^MCHC^pCLOCD^MCHC R^MCHC^L|1|341|g/L^^L^g/L^^L|320 -
360||||F|||20180927134852
OBX|6|NM|788-0^Erythrocyte Distribution Width (RDW)^pCLOCD^RDW
R^RDW^L|1|13.0|%^^L^%^^L|11.0 - 16.0||||F|||20180927134852
OBX|7|NM|777-3^Platelets^pCLOCD^PLT R^PLATELET COUNT^L|1|185|10E9/L^^L^10E9/L^^L|150 -
400||||F|||20180927134852
OBX|8|NM|6690-2^Leukocytes^pCLOCD^WBC R^WBC^L|1|5.4|10E9/L^^L^10E9/L^^L|4.0 -
11.0||||F|||20180927134852
OBX|9|NM|26499-4^Neutrophils^pCLOCD^NEUT R^NEUTROPHILS^L|1|3.1|10E9/L^^L^10E9/L^^L|2.0 -
9.0||||F|||20180927134852
OBX|10|NM|53115-2^Granulocytes Immature^pCLOCD^IMMGRAN^IMMATURE
GRANULOCYTES^L|1|0.0|10E9/L^^L^10E9/L^^L|0.0 - 0.0||||F|||20180927134852
OBX|11|NM|26474-7^Lymphocytes^pCLOCD^LYMPH
R^LYMPHOCYTES^L|1|1.5|10E9/L^^L^10E9/L^^L|0.5 - 3.3||||F|||20180927134852
OBX|12|NM|26484-6^Monocytes^pCLOCD^MONO R^MONOCYTES^L|1|0.5|10E9/L^^L^10E9/L^^L|0.0 -
1.0||||F|||20180927134852
OBX|13|NM|26449-9^Eosinophils^pCLOCD^EO R^EOSINOPHILS^L|1|0.2|10E9/L^^L^10E9/L^^L|0.0 -
0.7||||F|||20180927134852
OBX|14|NM|26444-0^Basophils^pCLOCD^BASO R^BASOPHILS..^L|1|0.0|10E9/L^^L^10E9/L^^L|0.0 -
0.2||||F|||20180927134852

B.2 **Microbiology**

Millennium example:
Millennium will send Parent results and Child results in the same message. It does not always populate the OBX-04 (Observation Sub-Id) field in the Parent result so the OBR-26 (Parent Result) field cannot be reliably used to link the Child to the Parent. However, Millennium will send a copy of the parent OBX with the Child OBXs (see the bolded OBXs segments below).
MSH|^~\&|MILLENNIUM-
LIS|PROV|Egate|REGN|20150210154541||ORU^R01^ORU_R01|Q989982096T990619940-2|D|2.4|

|||||8859/1|||AB_LTRD_HL7_ORU_R01_R1_20140513
PID|1||377717^^^MILLENNIUM^PI~12677846^^^MILLENNIUM^PI||BLDtestMB^Baby 12M Female^^^^^L||20140121|F|||523 Wild Rose St^^Wetas kiwin^CA-AB^T5G 7H0^CA^H
PV1|1|V|00106^^^00106||||1007778^Badawi^Mohammad^^^^^UNKNOWN^UNKNOWN||||||||||V|0000133 14739^^^^VN_MILLEXT^00106|miphn||||1007778^Badawi, Mohammad, MD - Wetaskiwin Hosp Care Ctr||||||||||||||||||||20150205114800|20150205235959|||||99813858^^^^VN_MILLINT
OBR|1||1132149562^MILLENNIUM|22440611^Stool Culture ProvLab^L^22440611^Stool Culture ProvLab^L|||20150205115100|||NONLAB^Nonlab^Collection||||20150205115100|STL&?Stool = Fecal &LN System&STOOL&STOOL&L^^^Stool&Stool&L&Stool&Stool&L^^Micro Spec|1007778^Badawi^Mohammad^^^^^HNAC^Millennium||2015-09||ST-15-5000021||20150210154136||LAB|P||1^^^20150205115100^^R|1031086^MOH^Alberta Health CDC^^^^^HNAC^MILLENNIUM~1031084^MOH^Central Zone Public Health^^^^^HNAC^MILLENNIUM|||Notifiable|||||20150205115100
OBX|1|ST|PRELIMINARY REPORT^Pre^L^PRELIMINARY REPORT^Pre^L|1|Culture POSITIVE for:||||||F|||20150210154133
OBX|2|ST|PRELIMINARY REPORT^Pre^L^PRELIMINARY REPORT^Pre^L|2|Shigella sonnei||||||F|||20150210154133
OBX|3|ST|PRELIMINARY REPORT^Pre^L^PRELIMINARY REPORT^Pre^L|3|Susceptibility results to follow||||||F|||20150210154133
OBX|4|ST|PRELIMINARY REPORT^Pre^L^PRELIMINARY REPORT^Pre^L|4|.||||||F|||20150210154133
OBX|5|ST|PRELIMINARY REPORT^Pre^L^PRELIMINARY REPORT^Pre^L|5|Specimen routinely cultured for Aeromonas, Campylobacter, Escherichia coli||||||F|||20150210154133
OBX|6|ST|PRELIMINARY REPORT^Pre^L^PRELIMINARY REPORT^Pre^L|6|O157:H7, Salmonella, Shigella, and Yersinia.||||||F|||20150210154133
OBX|7|CE|ORGANISM^ORGANISM^L^ORGANISM^ORGANISM^L||SHISON^Shigella sonnei^L^SHISON^Shigella sonnei^L||||||P|||20150210154539
OBR|2||1132149562^MILLENNIUM|VT^MIC (mg/L)^L^VT^MIC (mg/L)^L|||20150205115100|||NONLAB^Nonlab^Collection||||20150205115100|STL&?Stool = Fecal &LN System&STOOL&STOOL&L^^^Stool&Stool&L&Stool&Stool&L^^Micro Spec|1007778^Badawi^Mohammad^^^^^HNAC^Millennium||||ST-15-5000021||20150210154136||LAB|P|ORGANISM&ORGANISM&L01N&ORGANISM&ORGANISM&L01N^1^Shigella sonnei|1^^^^^R|1031086^MOH^Alberta Health CDC^^^^^HNAC^MILLENNIUM~1031084^MOH^Central Zone Public Health^^^^^HNAC^MILLENNIUM|^1132149562&101MA
OBX|1|CE|ORGANISM^ORGANISM^L^ORGANISM^ORGANISM^L|1|SHISON^Shigella sonnei^L^SHISON^Shigella sonnei^L||||||P|||20150210154539
OBX|2|ST|18864-9^Ampicillin^pCLOCD^Amp^Ampicillin^L|1||||S|||F|||20150210154539
OBX|3|ST|18906-8^Ciprofloxacin^pCLOCD^Cipro^Ciprofloxacin^L|1||||S|||F|||20150210154539
OBX|4|ST|18998-5^Trimethoprim+Sulfamethoxazole^pCLOCD^SXT^Trimethoprim-sulfamethoxazole^L|1||||R|||F|||20150210154539

Meditech Example:
MSH|^~\&|MEDITECH-DTRH-MIC|DRDH|||20180927135100||ORU^R01^ORU_R01|30606857.1-2|P|2.4||||||||AB_LTRD_HL7_ORU_R01_R1_20140513
PID|1||887716611^^^CANAB^JHN~GG00921328^^^MEDITECH-DTRH^MR^DRDH~GM7400^^^MEDITECH-DTRH^PI~887716611^^^CANAB^ASSOCULI||Lastname^Firstname^^^^^L||19991218|M|||123 Fake Street^^STRATHMORE^AB^T1P 1J6||(403)690-7899
PV1|1|O|LABORATORY||||MOSHIBRA^Moshood^Ibrahim^^^^^^MEDITECH||||||||||||HT0265011/18^^^MEDITECH-DTRH^VN|||||||||||||||||||||||||201809242208
ORC|RE
OBR|1|22376165^MEDITECH-DTRH-MIC|22376165^MEDITECH-DTRH-MIC|17915-0^Shallow Wound; Aerobic Culture^pCLOCD^CUSUP^CULTURE/GRAM,SUPERFICIAL^L|||201809241300||||||201809242208|SKI&SKIN&L&SKI&SKIN&L^^^ABDOMEN&&L&ABDOMEN&&L|MOSHIBRA^Moshood^Ibrahim^^^^^^MEDITE

CH||||18:MR0134796R||201809271351||MB|A||^^^^^R
OBX|1|ST|10357-2^Microscopic; Wound; Gram Stain^pCLOCD^GSSK^GRAM STAIN,SUPERFICIAL^L|1|Result:||||||F|||201809241300|DRDH^DTH RED DEER REGIONAL HOSP LAB^L
OBX|2|ST|10357-2^Microscopic; Wound; Gram Stain^pCLOCD^GSSK^GRAM STAIN,SUPERFICIAL^L|1|4+ White blood cells||||||F|||201809241300|DRDH^DTH RED DEER REGIONAL HOSP LAB^L
OBX|3|ST|10357-2^Microscopic; Wound; Gram Stain^pCLOCD^GSSK^GRAM STAIN,SUPERFICIAL^L|1|4+ Red blood cells||||||F|||201809241300|DRDH^DTH RED DEER REGIONAL HOSP LAB^L
OBX|4|ST|10357-2^Microscopic; Wound; Gram Stain^pCLOCD^GSSK^GRAM STAIN,SUPERFICIAL^L|1|2+ Epithelial cells||||||F|||201809241300|DRDH^DTH RED DEER REGIONAL HOSP LAB^L
OBX|5|ST|10357-2^Microscopic; Wound; Gram Stain^pCLOCD^GSSK^GRAM STAIN,SUPERFICIAL^L|1|No bacteria seen||||||F|||201809241300|DRDH^DTH RED DEER REGIONAL HOSP LAB^L
OBX|6|ST|620-5^Skin; Aerobic Culture^pCLOCD^CSKW^CULTURE,SUPERFICIAL^L|2|Culture comment:||||||P|||201809241300|DRDH^DTH RED DEER REGIONAL HOSP LAB^L
OBX|7|ST|620-5^Skin; Aerobic Culture^pCLOCD^CSKW^CULTURE,SUPERFICIAL^L|2|1+ Normal flora||||||P|||201809241300|DRDH^DTH RED DEER REGIONAL HOSP LAB^L
OBX|8|ST|620-5^Skin; Aerobic Culture^pCLOCD^CSKW^CULTURE,SUPERFICIAL^L|2|||||||P|||201809241300|DRDH^DTH RED DEER REGIONAL HOSP LAB^L
OBX|9|ST|620-5^Skin; Aerobic Culture^pCLOCD^CSKW^CULTURE,SUPERFICIAL^L|2|.||||||P|||201809241300|DRDH^DTH RED DEER REGIONAL HOSP LAB^L
OBX|10|CE|620-5^Skin; Aerobic Culture^pCLOCD^CSKW^CULTURE,SUPERFICIAL^L|2.1|3092008^Staphylococcus aureus (organism)^SNM^STAAUR^Staphylococcus aureus^L|||A|||P|||201809241300|DRDH^DTH RED DEER REGIONAL HOSP LAB^L
OBX|11|ST|620-5^Skin; Aerobic Culture^pCLOCD^CSKW^CULTURE,SUPERFICIAL^L|2.1|Quantitation:||||||P|||201809241300|DRDH^DTH RED DEER REGIONAL HOSP LAB^L
OBX|12|ST|620-5^Skin; Aerobic Culture^pCLOCD^CSKW^CULTURE,SUPERFICIAL^L|2.1|1+||||||P|||201809241300|DRDH^DTH RED DEER REGIONAL HOSP LAB^L

B.3 **Coagulation**

MSH|^~\&|MILLENNIUM-LIS|CLS|Egate|POSP|20180927135044||ORU^R01^ORU_R01|Q2175666942T2186104191-2|P|2.4||||||||AB_LTRD_HL7_ORU_R01_R1_20140513
PID|||849860020^^^CANAB^JHN~AB849860020^^^MILLENNIUM^MR^0101~849860020^^^CANAB^ASSOCULI~11420521^^^MILLENNIUM^PI||Lastname^Firstname^^^^^L||19991127|F|||^^^^^CA^H||(000)000-0000
PV1|1|O|0101^^^0101||||1318778^Dolgetta^Speranza^^^^^^MILLENNIUM||||||||||C|000028300006^^^MILLENNIUM^VN^0101||||||||||||||||||||||||||||20180927084200||||||180076857^^^MILLENNIUM^VN_MILLINT
OBR|1||2208449664^MILLENNIUM|5902-2^Prothrombin^pCLOCD^PT^PROTHROMBIN TIME^L|||20180927085500||||||20180927130400||1318778^Dolgetta^Speranza^^^^^^MILLENNIUM||||18-270-004686||20180927135043||COAG|F||1^^^20180927084500^^R
OBX|1|NM|6301-6^INR^pCLOCD^INR^INR^L|1|0.9||0.9-1.1||||F|||20180927135043

B.4 **Blood Bank**

MSH|^~\&|MEDITECH-DTRH-BBK|DLCA|||20180927140400||ORU^R01^ORU_R01|30607077.1-2|P|2.4||||||||AB_LTRD_HL7_ORU_R01_R1_20140513
PID|1||492474611^^^CANAB^JHN~FW00676074^^^MEDITECH-DTRH^MR^DLCA~FL21887^^^MEDITECH-DTRH^PI~492474611^^^CANAB^ASSOCULI||Lastname^Firstname^^^^^L||19990228|F|||5610 PANORAMA DR^^CALGARY^AB^T4M 0C9||(403)885-5972
PV1|1|E|EMERGENCY||||HOWEWEND^Howery^Wendy^^^^^^MEDITECH||||||||||||HN0045051/18^^^MEDITECH-DTRH^VN|||||||||||||||||||||||||201809271228
ORC|RE
OBR|1|22394949^MEDITECH-DTRH-BBK|22394949^MEDITECH-DTRH-BBK|IVIG^IV IMMUNE GLOBULIN^L^IVIG^IV IMMUNE GLOBULIN^L|||201809271229|||||||201809271229||HOWEWEND^Howery^Wendy^^^^^^MEDITECH||||2709:TM00061U||201809271402||BLB|A||^^^^^A
OBX|1|TX|IVIG^IV IMMUNE GLOBULIN^L^IVIG^IV IMMUNE GLOBULIN^L|XM|IG170013 ||||||P|||201809271229
OBX|2|TX|IVIG^IV IMMUNE GLOBULIN^L^IVIG^IV IMMUNE GLOBULIN^L|XM|ISSUED 20180927 1402||||||P|||201809271229
OBX|3|TX|IVIG^IV IMMUNE GLOBULIN^L^IVIG^IV IMMUNE GLOBULIN^L|XM|IG170174 ||||||P|||201809271229
OBX|4|TX|IVIG^IV IMMUNE GLOBULIN^L^IVIG^IV IMMUNE GLOBULIN^L|XM|ISSUED 20180927 1239||||||P|||201809271229

B.5 **Chemistry**

MSH|^~\&|SUNQUEST|SUNQUEST|DADD|GNH|20180927134042||ORU^R01^ORU_R01|182700182696-2|P|2.4|||||||AB_LTRD_HL7_ORU_R01_R1_20140513
PID|||010781136^^^GNH^MR^GNH~193606320^^^CANAB^JHN~193606320^^^CANAB^ASSOCULI||LASTNAME^FIRSTNAME^^^^^L||19990520|F
PV1||U|GEMR^^^GNH|||||||||||||||29
ORC|RE
OBR|1|I40426|I40426-0|50564-4^Urinalysis Panel^pCLOCD^UMA^URINE MACROSCOPIC^L|||201809271255|||||||201809271315||G0006248^NGUYEN^DR.LAU^^^^^^^SUNQUEST^SUNQUEST||||H6892272|CPL|||CH|F||^^^^^S
OBX|1|FT|5767-9^Appearance; Urine^pCLOCD^UAPR^Colour/Turbidity^L|1.1|Unremarkable~HAZY||||||F
OBX|2|NM|2756-5^pH; Urine^pCLOCD^UPH^pH, urine^L|1.1|5.0||(4.5-8.0)||||F
OBX|3|ST|2965-2^Specific Gravity; Urine^pCLOCD^USG^Specific Gravity^L|1.1|>1.030||(1.005-1.030)|H|||F
OBX|4|FT|20454-5^Protein, Urine^pCLOCD^UPROT^Protein^L|1.1|Trace||(NEG)|A|||F
OBX|5|FT|25428-4^Glucose, Urine^pCLOCD^UGLU^Glucose^L|1.1|Negative||(NEG)||||F
OBX|6|FT|2514-8^Ketones; Urine^pCLOCD^UKET^Ketones^L|1.1|Trace||(NEG)|A|||F
OBX|7|ST|5794-3^Hemoglobin, Urine^pCLOCD^UHGB^Hemoglobin, urine^L|1.1|3+||(NEG)|A|||F
OBX|8|FT|53316-6^Leukocytes, Urine^pCLOCD^ULEUK^Leukocytes^L|1.1|Negative||(NEG)||||F

B.6 **Anatomical Pathology**

MSH|^~\&|SUNQUEST|COPATH|DADD|UAH|20180927134627||ORU^R01^ORU_R01|182700184609-2|P|2.4|||||||AB_LTRD_HL7_ORU_R01_R1_20140513
PID|||470966000^^^CANAB^JHN~470966000^^^CANAB^ASSOCULI||Lastname^Firstname^^^^^L||19990311|F
PV1||U|RDH^^^UAH
ORC|RE
OBR|1|FL18-1950|FL18-1950|FLA^Flow Cytometry^L^FLA^Flow Cytometry^L|||201809250846|||||||201809260748||F8307^ABDELBAQI^DR.MAISOUN^^^^^^^SUNQUEST^SUNQUEST||||FL18-1950||||SP|F||^^^^^R
OBX|1|FT|AP^Anatomical Pathology^L^AP^Anatomical Pathology^L|1.1|~~START OF REPORT- AP RESULTS AND NOTES - END OF REPORT -||||||F

B.7 **CDA Attachment (Not currently supported in v3.6)**

MSH|^~\&|LabFusion|^123456789^DSR|Egate|^987654321^DSR|20140227113536||ORU^R01|Q795086546T792203445|P|2.4|||||||AB_LTRD_HL7_ORU_R01_R1_20140513

PID|1||1016264739^^^CANAB^ASSOCULI^ABPHN||Smith^Bob^F^^^^L||20010407|M|||99 Test Road^^CALGARY^CA-AB^G7U 8Y3^CA ||(403)539-6189^PRN|(403)539-6185^WPN|EN-CA|||||||||||||N

PV1|1|O||R|||222333444^White^Jane^L|333444555^Green^Jill|444555666^Black^Paul^P|MED|||||||5556666777^Blue^Jack^John|||||||||||||||||||||||||||||20131122074700

ORC|RE|123456^Clinic A|234567^Lab A||

OBR||123456^Clinic A|234567^Lab A|34532-2^Blood Type and Indirect Antibody Screen^LN^4655769^TYPE AND SCREEN^L|||20140227112900||||||Relevant clinical information|20140227112900||666777888^Grey^Sunny||||||20140227110200||BLB|F||||

OBX|1|ED| 11502-2^Laboratory Report^LN||^multipart^x-hl7-cda-level-one^A^

MIME-Version: 1.0

Content-Type: multipart/mixed; boundary="HL7-CDA-boundary"

Content-Transfer-Encoding: Base64

--HL7-CDA-boundary

Content-Type: application/x-hl7-cda-level-one+xml

... Base 64 of base CDA document, which contains
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xmlns:hl7="urn:hl7-org:v3" xmlns:xs="http://www.w3.org/2001/XMLSchema">
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<!-- Conforms to the Alberta Laboratory Report CDA specification -->
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displayName="Laboratory Report"/>
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</ClinicalDocument>

--HL7-CDA-boundary

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APPENDIX C: VARIANCES BETWEEN LTRD V2.1 AND V2.0

Segment	Variances
General	Shift from v2.3 to v2.4, augmented field definitions, provided example values
MSH	MSH-3 Sending Application conformance changed from RE to R MSH-7 Date time of message conformance changed from RE to R MSH-21 Conformance ID added
PID	Added PID-21, 22, 29, 30, 33, 34 Deprecated PID-2 and PID-4. Now to be populated in PID-3. PID-3 added Identifier type to meet HISCA Client Data Standards; Increased max to 10 PID-5 increased max to 5 PID-7 changed from R to RE PID-11 increased max to 3
PV1	Deprecated PV1-18 Patient Type, PV1-39 Servicing Facility; PV1-41 Account Status For PV1-7, 8, 9, 17 – add source table and assigning authority
ORC	Change segment conformance from R to RE ORC-2, 3 – deprecated universal ID and universal ID type Deprecated ORC-9, 10, 12, 13, 16
OBR	OBR-2, 3 - – deprecated universal ID and universal ID type Added OBR-9, 10, 12, 13, 40 OBR-16, 28 – added source table and assigning authority
OBX	Added OBX-16