HL7 Outbound Result Specification v2.3

Orchard® Harvest™

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Overview

Preface

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Scope of this Document

This document provides specifications for the export of Results from Harvest LIS.

Event/Message Structure

Braces { . . . } indicate one or more of the enclosed group of segments. Brackets [. . .] show that the enclosed group of segments is optional.

Escape Sequences

Control characters and HL7 message delimiters are represented in the message by the following escape sequences.

\	\E\
|	\F\
^	\S\
~	\R\
&	\T\
Tab	Replaced with 5 space characters
CRLF	\X0D0A\ or \.br\ (May be configured)

Results Interface (Outbound)

ORU event (R01) – Unsolicited Transmission of an observation message

The ORU message (unsolicited transmission of an observation message - event R01) is used to send the results of lab orders from the LIS back to the host system. Each ORU message has at least one OBR segment and at least one OBX segment. Default message contains one ORC with one or more OBR segments. Optionally can send only one ORC and one OBR per message.

Microbiology and AP reports are sent as formatted NTE segments.

Result messages may be output containing embedded PDF files. See Encoded PDF Document notes following the OBX segment specification.

Orchard uses the segments and non-shaded fields listed below. Field lengths are shown for fields that differ from HL7 data type field lengths.

{ } Indicate repeating segments
[ ] Indicate optional segments

Message Segments	Segment Name	Comments
MSH	Message Header	
{PID	Patient Identification	
[{NTE}]	Notes and Comments (for Patient ID)	
[PV1]	Patient Visit	
ORC	Common Order	
[{NTE}]	Notes and Comments (for Order)	
{OBR	Observation Request (Lab Order)	
[{NTE}]	Notes and Comments (for Order Choice)	
{OBX	Observation/Result	
[{NTE}]}}}	Notes and Comments (for Results)	

Segment Fields

MSH – Message Header

Seg/Field	HL7 Name	Harvest Name	Length	Comments
MSH-1	Field Separator		1	'|' (ASCII 124)
MSH-2	Encoding Characters		4	'^~\&' where '^' is the component delimiter (ASCII 94) '~' is the repeat delimiter (ASCII 126) '\' is the escape delimiter (ASCII 92) '&' is the subcomponent delimiter (ASCII 38)
MSH-3	Sending Application Namespace ID	Sending application		Orchard Harvest LIS
MSH-4	Sending Facility Namespace ID	Sending facility		Practice Name
MSH-5	Receiving Application Namespace ID	Receiving application		
MSH-6	Receiving Facility Namespace ID	Receiving facility		
MSH-7	Date/Time of Message			
MSH-9	Message Type			ORU
MSH-10	Message Control ID			Unique message number
MSH-11	Processing ID			'P' = Production
MSH-12	Version ID			'2.3'

Example:
MSH|^~\&|Orchard Harvest LIS|Practice Name|||20230427162923||ORU|82247|P|2.3

PID – Patient Identification

Seg/Field	HL7 Name	Harvest Name	Length	Comments
PID-1	Set ID	Sequence number		Incremented w/each PID
PID-2	Patient ID	Patient ID	16	
PID-3	Patient ID	Patient ID	16	
PID-4	Alternate Patient ID	SSN	10	
PID-5.1	Family Name	Patient last name	30	
PID-5.2	Given Name	Patient first name	30	
PID-5.3	Middle Initial or Name	Patient middle name		
PID-5.4	Suffix	Suffix		
PID-5.5	Prefix	Prefix		
PID-5.6	Degree	Degree		
PID-7	Date/Time of Birth	DOB		Formatted as YYYYMMDD
PID-8	Sex	Sex	1	M=Male F=Female
PID-10	Race Identifier	Race host code	80	

PID-11.1	Street Address	Street address1		
PID-11.2	Other Designation	Street address2		
PID-11.3	City	City	30	
PID-11.4	State or Province	State	2	
PID-11.5	Zip or Postal Code	Zip code	10	
PID-12	County Code	County code	4	
PID-13.1	Phone Number – home	Phone1		Format as [(999)] 999-9999
PID-13.4	Email Address			
PID-13.6	Area Code			
PID-13.7	Local Number			
PID-14	Phone Number – bus	Phone2		Format as [(999)] 999-9999
PID-18	Patient Account ID	Encounter number	60	
PID-19	SSN - Patient	SSN	10	
PID-22	Ethnic Group	Ethnicity		
PID-30	Death Indicator	Death Indicator		'Y' Only sent if patient is deceased.

Example PID:
PID|1|51748|51748||Sample^Patient^T||19680524|M||W|555 North St.^^DODGE
CITY^KS^67801||(555)222-9999|(555)123-4567|||||VENDOR acct#|444116666|

NTE – Notes and Comments

Seg/Field	HL7 Name	Harvest Name	Length	Comments
NTE-1	Set ID	Sequence number		Incremented w/each NTE for parent segment
NTE-2	Source of Comment			Harvest outputs a sequence number
NTE-3	Comment	Comment		

Example NTE:
NTE|1|L|text

PV1 – Patient Visit

Seg/Field	HL7 Name	Harvest Name	Length	Comments
PV1-1	Set ID	Sequence number	1	'1'
PV1-2	Patient Class	Patient Class host code		Sent if encounter number applies
PV1-3.2	Room	Room number		
PV1-3.3	Bed			
PV1-3.4.1	Facility Namespace ID	Draw Location abbrev	30	
PV1-3.4.2	Facility Universal ID	Draw Location host code	80	
PV1-3.4.5-13		Draw Location		
PV1-4	Admission Type	Admission Type host code		Sent if encounter number applies
PV1-7.1	Attending Provider ID Number	Provider host code	80	
PV1-7.2	Attending Provider	Provider last name		

	Family Name			
PV1-7.3	Attending Provider Given Name	Provider first name		
PV1-7.4	Attending Provider Middle Name	Provider middle name		
PV1-7.6-14	Attending Provider	Attending Provider detail		
PV1-8.1	Referring Provider	Provider host code	80	Sent if encounter number applies
PV1-8.2	Referring Provider Family Name	Provider last name		
PV1-8.3	Referring Provider Given Name	Provider first name		
PV1-8.4	Referring Provider Middle Name	Provider middle name		
PV1-8.6-14	Referring Provider	Referring Provider detail		
PV1-9	Consulting Doctor			Multiple consulting providers are separated by the repeat character. Format is: hostcode^lastName^firstName^middleName~hostCode^lastName^firstName^middleName…
PV1-17.1	Admitting Provider ID Number	Provider host code		
PV1-17.2	Admitting Provider Family Name	Provider last name		
PV1-17.3	Admitting Provider Given Name	Provider first name		
PV1-17.4	Admitting Provider Middle Name	Provider middle name		
PV1-17.6-14	Admitting Provider	Admitting Provider detail		
PV1-18	Patient Type	Patient Type host code		Sent if encounter number applies
PV1-19	Visit number ID	Encounter number	60	If no encounter number, the Harvest sample ID is sent.
PV1-20	Financial Class	Financial Class host code		Sent if encounter number applies
PV1-39.4.1	Servicing Facility	Order location abbrev		
PV1-39.4.2	Servicing Facility	Order Location host code		
PV1-39.4.5-13		Order Location		
PV1-44	Admit Date/Time	Encounter admit date/time		If no encounter number, the draw date is sent.
PV1-45	Discharge Date/Time	Encounter discharge date/time		
PV1-50	Alternate Visit ID	Placer SID	20	

Example PV1:
PV1|1||123^^^Exam 4&ns18||||andersonjb^Anderson^James^B|Barnsj^Barns^James^D|
smithd^Smith^David^T~poolew^Poole^Walter^A|||||||||||Visit Nbr|||||||||||||||

|||||||||||20030512103000|20030514123800|

ORC – Common Order

Seg/Field	HL7 Name	Harvest Name	Length	Comments
ORC-1	Order Control	Order control	2	'RE'=Results
ORC-2	Placer Order Number	Placer ID	20	
ORC-3	Filler Order Number	Harvest SID	20	This is the sample number used within Orchard Harvest
ORC-4	Placer Group Number			
ORC-5	Order Status			'CM' = Completed
ORC-10.1	Entered By ID number	Tech host code	80	Entered by Tech.
ORC-10.2	Entered By Family name	Tech last name	30	
ORC-10.3	Given Name	Tech first name	30	
ORC-12.1	Ordering Provider ID	Ordering Provider host code		
ORC-12.2	Ordering Provider Family Name	Ordering Provider Last Name		
ORC-12.3	Ordering Provider Given Name	Ordering Provider First Name		
ORC-12.4	Ordering Provider Middle Name	Ordering Provider Middle Name		
ORC-12.6-14	Ordering Provider	Ordering Provider detail		
ORC-13.4.1	Facility Namespace ID	Order Location abbrev	30	
ORC-13.4.2	Facility Universal ID	Order Location host code	80	
ORC-13.4.5-13		Order Location		
ORC-14	Callback Phone			
ORC-15	Order Effective D/T	Order date/time		

Example ORC:
ORC|RE|0000012674|SID123|||||||18^Fox^Randy|||Wclinic^414^D^^^^||20031231

OBR – Observation Request (Lab Order)

Seg/Field	HL7 Name	Harvest Name	Length	Comments
OBR-1	Set ID	Sequence number		Incremented w/each OBR
OBR-2	Placer Order Number	Placer SID	20	
OBR-3.1	Filler Order Number	Harvest SID	20	
OBR-3.2	Entity Identifier Namespace ID	Requisition number	80	
OBR-4.1	Universal Service ID	Order Choice host code	80	

OBR-4.2	Universal Service ID Text	Order Choice name	80	
OBR-7	Observation Date/Time	Draw date/time		
OBR-10.1	Collector Identifier ID Number	Phleb host code	80	
OBR-10.2	Collector Identifier Family Name	Phleb last name	30	
OBR-10.3	Given Name	Phleb first name	30	
OBR-11	Specimen Action Code	Reflex order indicator		'G' when order is a reflexed or attached order. AP: 'G' not used
OBR-13	Clinical Info			Fasting information
OBR-14	Specimen Received Date/Time	Sample delivery date/time		
OBR-15.1.1	Specimen Source Name or Identifier	Sample type host code	80	
OBR-16.1	Ordering Provider ID Number	Ordering provider host code	80	
OBR-16.2	Ordering Provider Family name	Ordering Provider last name		
OBR-16.3	Ordering Provider Given name	Ordering Provider first name		
OBR-16.4	Ordering Provider Middle name	Ordering Provider middle name		
OBR-16.6-14	Ordering Provider	Ordering Provider detail		
OBR-17	Order Callback Phone Number			
OBR-18	Placer Field #1	Pass thru field		
OBR-19	Placer Field #2	Pass thru field		
OBR-20	Filler Field #1	Origin	80	Harvest Instrument ID
OBR-22	Results Rpt/Status Change - Date/Time	Approval date/time		
OBR-25	Result Status	Result status	1	'F'=Final
OBR-27.6	Priority	Stat	1	Defaults: 'S'=Stat, 'A'=ASAP, 'R'=Routine. Other priorities may be user defined.
OBR-28	Result Copies To			Repeating entries separated by '~'. Format: HostCode^Last^First^Initial^Suffix^Prefix^Degree… Harvest does not have fields in its database for Suffix, or Prefix so these components will always be blank in the HL7 output.
OBR-29.2	Parent's Filler Order Number	Parent SID		Original SID from which split SIDs may have been spawned. For AP, the parent filler SID.
OBR-32.1.1	Principle Result Interpreter ID	Interpreter host code		Used in AP for report signature
OBR-32.1.2	Interpreter Last Name			

OBR-32.1.3	Interpreter First Name			
OBR-32.1.4	Interpreter Middle Name			
…				
OBR-32.1.10	Assigning Authority ID	NPI Code		
OBR-32.1.11	Assigning Authority ID Type	'NPI'		'NPI'
…				
OBR-32.7.1	Facility Name	Linked order location abbreviation		
OBR-32.7.2	Facility ID	Linked order location host code		
OBR:32.7.3	Facility ID Type			'L' = Local
OBR-33.1.1	Assistant Result Interpreter ID	Assistant Interpreter host code		
OBR-33.1.2	Interpreter Last Name			
OBR-33.1.3	Interpreter First Name			
OBR-33.1.4	Interpreter Middle Name			
…				
OBR-33.1.10	Assigning Authority ID	NPI Code		
OBR-33.1.11	Assigning Authority ID Type			'NPI'
…				
OBR-33.7.1	Facility Name	Linked order location abbreviation		
OBR-33.7.2	Facility ID	Linked order location host code		
OBR-33.7.3	Facility ID Type			'L' = Local
OBR-34.1	Technician ID	Tech host code	80	Approving Tech
OBR-34.2.1	Technician Family Name	Tech last name		
OBR-34.2.2	Given Name	Tech first name		
OBR-34.2.3	Middle Name	Tech middle name		
OBR-44	Procedure Code	CPT Code(s)		Codes are tilde separated
…				
OBR:50		cc Locations		Repeating components separated by '~'. Format: hostCode^locationName

Example OBR:
OBR|1|0000012674|123456^req#1234|LIPIDP^LIPanel|||200004191107|||
16693^RIVERS^CLINTON^C||||20001207132100|Serum|E91570^CASTELLONE^DAVID^MD|
|||||||||F||1^^^^^S|||||||123^West&Sam||

OBX – Observation/Result

Seg/Field	HL7 Name	Harvest Name	Length	Comments
OBX-1	Set ID	Sequence number		Incremented w/each OBX for parent OBR
OBX-2	Value type		2	'NM'=numeric or 'ST'=text 'ED'=Encoded PDF document (see Note Encode PDF Documents
OBX-3.1	Observation Identifier	Host code	80	Lab test host code
OBX-3.2	Observation Text	Lab test abbrev	80	
OBX-5	Observation Value	Observation value		Test result. For PDF Document, See Encoded PDF Document for field format.
OBX-6	Units	Test units		Not used for AP.
OBX-7	References range	Test range		See OBX-7 note below
OBX-8	Abnormal Flags	Abnormal flags	2	'H'=high, 'L'=low, 'HH'=critical high, 'LL=critical low' 'A'=Abnormal, 'A!'= Critical abnormal. Not used for AP.
OBX-11	Observation Result Status		3	F'=Final
OBX-14	Date/Time of the Observation	Draw date/time		
OBX-15.1	Producer's Identifier	Test location host code	80	
OBX-15.2	Producer's text	Test location abbreviation		
OBX-15.5-13		Test Location		
OBX-16.1	Responsible Observer ID	Approving Technician host code	80	
OBX-16.2	Responsible Observer last name	Approving tech last name		
OBX-16.3	Responsible Observer first name	Approving tech first name		

Example OBX:
OBX|1|NM|LOI-0804-5^WBC||2.7|K/uL|3.6-10.0|LL|||F|||20001207131015||LO

AP Example (OBR/OBX/NTE):
ORC|RE|GARP1-000270-1|61387-01||...
OBR|1|GARP1-000270-1|61387-01|HL7PAP^PAP
Smear|R||20050914123556|||AAdamy12^Adams^Adamy||||200509141235|Body
Fluid|||||||||||P||^^^^^R||^61387|...
OBX|1|ST|||AP results||||||P|||20050914123556|22
NTE|1||
NTE|2||Surgical Pathology Report
NTE|3||
NTE|4||AP DATE TEST2
NTE|5||02/02/2000
NTE|6||
ORC|RE|GARP1-000270-2|61387-02||...
OBR|1|GARP1-000270-2|61387-02|HL7PAP^PAP
Smear|R||20050914123556|||AAdamy12^Adams^Adamy||||200509141235|Body

Fluid||||||||||P||^^^^^R||^61387|...
OBX|1|ST|||AP results||||||P|||20050914123556|
NTE|1||
NTE|2||Surgical Pathology Report
NTE|3||
NTE|4||AP DATE TEST2
NTE|5||02/02/2000
NTE|6||
NTE|7||AP FILLIN TEST

OBX-7 Note: Reference ranges for tests such as UEPI, B-HCG, and Protime can contain as many as 8 specific ranges. If the amount of data presented in this fashion presents a problem, consider one of the following options:

1. Establish ranges in the host system
2. Establish lookup table on host system for applying ranges for specific tests.

   Example:

   OBX|1|NM|300INR^INR||2.8||INR;REF RANGE:;MI;Thr/Emb;2.0-3.0;Artificial;Heart Valve;2.5 - 3.5;Recurrent;Embolism;2.5 - 3.5||||F
   OBX|2|NM|THCG^B-HCG||23659||HCG Ref. Range;Weeks:;MIU/ML;0.2-1;5-50;1-2;50-500;2-3;100-5,000;3-4;500-10,000;4-5;1,000-50,000;5-6;10,000-100,000;6-8;15,000-100,000;2-3 Months;10,000-100,000||||F

Encoded PDF Documents: Results can be sent out as PDF documents. The format is below:
   PDF is output complete using one OBX segment in OBX:5.3.
   OBX|1|**ED**|<Host Code>^<Test Name>||**PDF^Base64**^<Encoded PDF File>|||||||