

HL7 2.5.1 Validation Tech Spec (last revised 29 SEP2015 BS)

HL7 2.5.1 ELR assistance with field verification/validation (focusing on ODH needs, rather than on how to properly create a 2.5.1 file in general).

Typical problem areas highlighted in yellow.					
Segment	Seq	HL7 2.5.1 Supported	ODH REQUIRED?	Misc. Info/Notes	sample format (see HL7 2.5.1 Implementation Guide for more examples, as well as NIST sample messages)
MSH -required segment	1	field separator	Y		MSH ^~\&
	2	encoding characters	Y		MSH ^~\&
	3	sending application		generally application OID	[SQ^2.16.840.1.113883.3.697^ISO]
	4	sending facility name	Y	CLIA needed as identifier	[UNIVERSITY HOSPITAL^36D0033333^CLIA]
	5	receiving application	Y		[OHDOH^2.16.840.1.114222.4.1.3674^ISO]
	6	receiving facility name	Y		[OHDOH^2.16.840.1.114222.4.1.3674^ISO]
	7	date/time of message	Y	YYYYMMDDHHMMSS	20150927102433
	9	message type	Y		
	10	message control ID		Use the standard format indicated in the implementation guide. ODH requests a date/time stamp or date stamp concatenation to assist with tracking of files.	2014031400001
	11	processing ID	Y		
12	version ID (2.5.1)	Y		2.5.1	
	15	accept acknowledgment type		if possible, do not populate if sending 2.5.1	AL
	16	application acknowledgment type		if possible, do not populate if sending 2.5.1	NE
	17	country code			
	21	message profile identifier			[PHLabReport-Ack^2.16.840.1.11422.4.10.3^ISO]
SFT - optional segment				we don't use SFT but our system does validate - so if sending, will need to make sure it works according to NIST and then hope it works for us too	
PID -required segment	1	Set ID - PID	Y		
	3	Patient identifier list	not required, but ODH uses	important to include ID in 3.1, ID type in 3.5 and associated facility name in 3.6.1; repeating segments acceptable; however; 'AI' type patient identifiers generally cause messages to fail (e.g. use SSN, MR, XX, AN, etc.)	[01653298^Univ Hosp&2.16.999.1.119922.4.1.9999&ISO^MR^Univ Hosp&2.16.999.1.119922.4.1.9999&ISO]
	5	patient name	Y		[STORM^WILLIAM^E^M^L]
	6	mother's maiden name			
	7	date of birth	Y	YYYYMMDD	19501023
	8	sex	Y	standard vocab	M, F, or U
	9				
	10	race	Y	standard vocab	See PVHS RaceCategory CDC v1.xls; [2054-5^Black or African American^HL70005^B^Black or African American^L^2.5.1^1]
	11	patient address	Y	We geocode addresses -- Street address, city, state and zip are important	[246 N HIGH STREET^35 BLDG^COLUMBUS^OH^43215^H]
	13	patient phone number - home	Y	standard format; repeating segments acceptable	[^PRN^PH^614^8064104]
	14	patient phone number - business			
	16	marital status			
	17	religion			
	18	patient account number	not required, but ODH uses		
	21	mother's identifier			
22	ethnicity	not required, but ODH uses	standard vocab		
23	country of birth				
24	multiple birth indicator				
25	birth order				
26	citizenship				
27	veterans military status				
29	patient death date and time				
30	patient death indicator				

	31	identity unknown indicator			
	32	identity reliability code			
	33	last update date/time			
	34	last update facility			
	35	species code			
	36	breed code			
	37	strain			
	38	production class code			
	39	tribal citizenship			
NK1 - optional segment				we don't use NK1 but our system does validate - so if sending, will need to make sure it works according to NIST and then hope it works for us too	
PV1 - optional segment				we don't use PV1 but our system does validate - so if sending, will need to make sure it works according to NIST and then hope it works for us too	
	2	patient class		If populated, we can only accept E//O patient classes	
PV2 - optional segment				we don't use PV2 but our system does validate - so if sending, will need to make sure it works according to NIST and then hope it works for us too	
ORC - required segment	1	order control			
	2	placer order number			
	3	filler order number			
	4	placer group number			
	5	order status			
	6	response flag			
	8	parent			
	9	date/time of transaction			
	10	entered by			
	11	verified by			
	12	ordering provider		Should be same as OBR-16	
	13	enterer's location			
	14	call back phone number		Should be same as OBR-17	
	15	order effective date/time			
	16	order control code reason			
	17	entering organization			
	18	entering device			
	19	action by			
	21	ordering facility name	Y	both ordering facility info and ordering provider information are requested, and both must be sent if available but at least one is required (ordering provider name in OBR.16); repeating phone number segments acceptable	[Wexner Medical Center^^^Wexner Medical Center&36D0329129&CLIA^XX^^Wexner Medical Center]
	22	ordering facility address	Y		[410 W 10th Ave^Columbus^OH^43210^B]
	23	ordering facility phone	Y		[^WPN^PH^^614^2938652]
	24	ordering provider address	Y		
	25	order status modifier			
	27	filler's expected availability date/time			
	28	confidentiality code			
	29	order type			
	30	enterer authorization mode			
	31	parent universal service identifier			
OBR - required segment	1	set ID			
	2	placer order number			
	3	Filler order number	Y	generally includes accession number and application OID triplet	H134736^SQ^2.16.840.1.113883.3.697^ISO
	4	universal service ID	Y	generally includes the LOINC coded triplet	[5195-3^HBV SURFACE AG SER QL^LN^HBSAG^Hep B Surface Ag^L^M1^HBV SURFACE AG SER QL]
	7	observation date/time	Y		
	8	observation end date/time			
	9				
	10	collector identifier			
	11	specimen action code		if populated, this can only be one character in length	
	12	danger code			
	13	relevant clinical information		not required, but ODH puts in a note on the ODRS case	

	14	specimen received date/time			
	15	specimen source			
	16	ordering provider	Y	used as ordering provider in ODRS; should be same value as ORC-12; identifier in component 1 is accepted but not required; also only first 3 components required	902502^ORLOV^DIANE^M^DDO^SQ&2.16.840.1.113883.3.697&ISO^L^MDN^SQ&2.16.840.1.113883.3.697&ISO
	17	order callback phone number	Y	used as ordering provider phone; should be same as ORC-14	[^WPN^PH^614^2934854]
	18	placer field 1			
	19	placer field 2			
	20	filler field 1			
	21	filler field 2			
	22	results report/status change date/time			
	23	charge to practice			
	24	diagnostic service ID			
	25	result status	Y	should be P or F	
	26	parent result	Y if sending susceptibility results in sequence 2	If sending susceptibility results, in OBR sequence 2, this should be comprised of LOINC triplet from OBX-3 in sequence 1, the sub-ID for the organism, and the description in OBX-5.2	625-4&BACTERIA STL CULT&LN&STCUL&Stool Culture&L^1.1^VIBRIO PARAHAEMOLYTICUS
	28	result copies to			
	29	parent	Y if sending susceptibility results in sequence 2	If sending susceptibility results, in OBR sequence 2, this should be comprised of the placer order number from OBR-2 and the filler order number from OBR-3 in sequence 1	123487428-0&Hillcrest Hospital Laboratory&36D0337861&CLIA^H355351&SQ&2.16.840.1.113883.3.697&ISO
	31	reason for study			
	32	principal result interpreter			
	33	assistant result interpreter			
	34	technician			
	35	transcriptionist			
	36	scheduled date/time			
	39	collector's comment			
	44	procedure code			
	45	procedure code modifier			
	46	placer supplemental service information			
	47	filler supplemental service information			
	48	medically necessary....			
	49	result handling			
	50	parent universal service id			
				we don't use TQ1 but our system does validate - so if sending, will need to make sure it works according to NIST and then hope it works for us too	
TQ1 - optional					
OBX - required segment	1	set ID	Y		
	2	value type	Y		
	3	observation identifier	Y	standardized LOINC coding (test/question); should only be used for sending test codes, not for comment codes (use NTE segments for those)	Appropriate formatting of test/result information is hugely important. The ELR Implementation Guide has good information about this. ODH requires that in OBX-3 (all) and OBX-5 (if CWE data type), the standardized code triplet must come first, before the locally coded triplet. *See below for examples.
	4	observation sub-ID	Y		
	5	observation value	Y	standardized SNOMED coding where appropriate (result/answer); should contain no notes about the specimen or results (those should be included in NTE segments)	
	6	units	Y	if applicable	
	7	reference ranges	Y	if applicable; must be limited to one component	NEGATIVE
	8	abnormal flags	not required, but ODH uses	S/I/R results for susceptibility testing can be in this field	A^Abnormal^HL70078^A^Abnormal^HL70078^2.5.1^V1^Abnormal
	9	probability			
	10	nature of abnormal test			
	11	observation result status	Y	should be P, F, or C; if C (corrected results), a phone call should be made to local public health about the correction	
	12	effective date of reference range			
	13	user defined access checks			

	14	date/time of observation	Y		
	15	producers ID	Y		
	16	responsible observer			
	17	observation method			
	18	equipment instance identifier			
	19	date/time of analysis	Y	used as result date for 2.5.1	
	23	performing organization	Y	used as performing lab for 2.5.1; CLIA in component 10, name in component 1	[University Hospital^D^UH^XX^36D0033333]
	24	performing organization address			
	25	performing organization medical director			
SPM - required segment (ODH constraint of one SPM segment per message)	1	set ID			
	2	specimen ID	Y	used as specimen ID for 2.5.1	
	3	specimen parent IDs			
	4	specimen type	Y	used as specimen type for 2.5.1; standard vocabulary	See PVHS SpecimenType HL7 2x V1.xls; Examples below here also:
	5	specimen type modifier			CVX^CERVIX^HL70487^CERVIX^Cervix^L^
	6	specimen additives			STL^STOOL = FECAL^HL70487^STOOL^Stool^L^
	7	specimen collection method			SER^SERUM^HL70487^SERUM^M^1
	8	specimen source site			119339001^Stool specimen^SCT^STSWAB^Stool specimen received on swab^L^20130901
	9	specimen source site modifier			122561005^Blood specimen from patient^SCT^BLUD^Blood^L^20130901
	10	specimen collection site			122575003^Urine specimen^SCT
	11	specimen role			
	12	specimen collection amount		If populated, this must be truncated after SPM-12.2.3 (numeric result and coding system info) or SPM-12.2.6 (numeric result and both primary and alternate coding systems)	[5^mL&MilliLiter&UCUM] or [5^mL&MilliLiter&UCUM&mL&mL&L]
	13	grouped specimen count			
	14	specimen description			
	15	specimen handling code			
	16	specimen risk code			
	17	specimen collection date/time	Y	used as specimen collect date for 2.5.1	20150913120000-0500
	18	specimen received date/time			
	19	specimen expiration date/time			
	20	specimen availability			
	21	specimen reject reason			
	22	specimen quality			
	23	specimen appropriateness			
	24	specimen condition			
	25	specimen current quantity			
	26	number of specimen containers			
	27	container type			
	28	container condition			
	29	specimen child role			
NTE - optional segment	1	set ID			
	2	source of comment			
	3	comment	not required, but ODH uses	All specimen and result notes should be included as NTE segments and not OBX segments.	
	4	comment type			
Additional ODH constraints: if susceptibilities are sent, a culture test must accompany them and there can only be one set of susceptibility results per message; in OBX-3 (all) and OBX-5 (if CWE data type), the standardized code triplet must come first, before the locally coded triplet.					
Additional information for hospital labs seeking Stage 2 Meaningful Use: per MU2 guidelines, you must use LOINC and SNOMED codes for test and results in OBX-3 and OBX-5.					
*Test/result examples (ST, SN, and CWE result types)					
OBX 1 ST 43304-5^CHLAMYDIA TRACH.,AMPLIFIED^LN^XCTRA^CHLAMYDIA TRACH.,AMPLIFIED^L 1 POSITIVE					
OBX 1 SN 33331-0^West Nile virus IgM Ab [Titer] in Serum^LN^1522^West Nile virus AB IgM, ELISA, Serum^L ^1^32 [titer]^titer^UCUM^titer^titer^L^1.8.2					
OBX 1 CWE 580-1^FUNGAL CULTURE/SM, MISC^LN^FUNCS^FUNGAL CULTURE/SM, MISC^L 1 23439005^Coccidioides immitis^SNM					

OBX 2 CWE 24111-7^N	gonorrhoea DNA XXX QI PCR^LN^GCAMP^N.	gonorrhoeae amp.^L^2.46^v1^N.	gonorrhoeae amp. 1 260373001^Detected^SCT^DET^DETECTED^L^20130901^v1
OBX 1 CWE 11475-1^Microorganism	XXX Cult^LN^CULT^Culture results^L^2.46^v1^Culture results 1.1 19122007^Giardia intestinalis^SCT^GLAM^Giardia (lamblia)	intestinalis^L^20130901^v1	
OBX 1 CWE 11475-1^Microorganism	XXX Cult^LN^CULT^Culture results^L^2.46^v1^Culture results 1.1 243365003^Acid-fast bacillus^SCT^AFBC^Acid fast bacillus^L^20130901^v1		
OBX 1 CWE 5013-8^HSV DNA CSF QI PCR^LN^HSVTC^HSV CSF by PCR^L^2.46^v1^HSV CSF by PCR 1 10828004^Positive^SCT^POS^Positive^L^20130901^v1			
OBX 1 CWE 11475-1^Microorganism	XXX Cult^LN^CULT^Culture results^L^2.46^v1^Culture results 1.1 9861002^Streptococcus pneumoniae^SCT^SPN^Streptococcus pneumoniae^L^20130901^v1		
one susceptibility example			
OBX 1 SN 18996-9^TOBRAMYCIN^LN^TO^TOBRAMYCIN^L^2.40^v1^TOBRAMYCIN 1 ^16 R^Resistant^HL70078^R^Resistant^HL70078^2.5.1^V1^Resistant			
For assistance with LOINC codes, please visit: http://search.loinc.org			
For assistance with SNOMED coding, please visit: http://phinvads.cdc.gov/vads/SearchHome.action			