


Specification [PCS Assessments to OV]

MEDITECH

MEDITECH PCS Assessments to OV
HL7 2.5.1 Specification

FINAL

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Introduction

General Comments

This specification is concerned with defining an interface between the MEDITECH PCS application and an other vendor system for the purpose of sending PCS Assessment Queries to the other vendor. In addition, this document covers the sequencing of records and the protocol that is to be used for communications between MEDITECH and the other vendor.

A copy of this specification should be provided to the other vendor well in advance of MEDITECH software delivery so that any questions or concerns of the other vendor can be resolved as soon as possible.

Proper cabling between the MEDITECH machine and the other vendor machine will need to be provided by the hospital. MEDITECH can assist in the specification of the correct cable configuration to be used for the inter-machine link.

It is possible that additional devices such as modems or protocol converter units (PCUs) may need to be purchased by the hospital depending on the hardware platform of the other vendor system or on the proximity of the MEDITECH machine to the other vendor machine. MEDITECH may be of some assistance in determining specific needs in this area.

The machine to machine communications will need to be thoroughly tested by MEDITECH and the other vendor prior to any application level testing.

General Message Format and Functionality

The message formats in this document are HL7 version 2.5.1 compliant.

Document references:

HL7 Messaging Standard Version 2.5.1, An Application Protocol for Electronic Data Exchange in Healthcare Environments, 2007

Assessment data will be passed between the two systems in discrete MESSAGES. A single message may contain multiple variable length data transactions referred to as SEGMENTS. The number, type and content of segments in a given message will be determined based upon the type of message being sent. Each segment will begin with a 3 character code known as the Segment ID, followed by a number of fields which are delimited by the Field Separator character. Each segment will be terminated with a carriage return.

Use Case and Workflow

Messages will be passed to the other vendor system when:

1. Outbound Data is enabled in the PCS Toolbox Parameters and the Outbound Data Dictionary is configured to send assessment queries outbound.
2. A user answers the patient query in EMR Open Chart (accessed via the PCS Status Board), the query response is sent across the interface.

Assessment Messages are formatted as HL7 ORU messages. Only one patient per message is allowed.

A message will be composed of the following segments:

- MSH - Message Header
- EVN - Event Type
- PID - Patient Identification
- PV1 - Patient Visit
- OBR - Observation Request
- OBX - Observation/Result

PID The Patient Identification segment will contain the patient identifiers as sent from MEDITECH.

OBR The Observation Request segment will contain the intervention identifier as sent from MEDITECH.

OBX The OBX segment contains the result values for the Assessment queries that make up the Intervention identified in the previous OBR segment.

Message Structure

MSH	Message Header	
	EVN	Event Type
	PID	Patient Identifier
	PV1	Patient Visit
	OBR	Order Identifier
	OBX	Query

Messages

This section describes the attributes used to document segment and message formats.

Message Element Attributes:

Format	Description
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[XXX]	Optional and singular
{XXX }	Required and may repeat
XXX	Required and singular
{{XX}}	Optional and may repeat

Optionality/Usage:

Code	Usage Description
R	Required - the application shall implement “R” elements
O	Optional
RE	Required but may be Empty - the application shall implement “RE” elements
X	Not Supported - the application shall not implement “X” elements
C	The element has an associated condition predicate. “a” and “b” are placeholders for usage codes representing the True “a” predicate outcome and the False “b” predicate outcome for the condition.
B	May be included for backwards compatibility.

Cardinality:

Code	Description
[0..0]	Element never present
[0..1]	Element may be omitted and can have, at most, one occurrence.
[1..1]	Element must have exactly one occurrence.
[0..*]	Element may be omitted or repeat an unlimited number of times.
[1..*]	Element must appear at least once, and may repeat an unlimited number of times

Message Types

Observation Result Unsolicited Message: ORU^R01^ORU_R01

ORU (Observation Result Unsolicited) messages will be passed from Meditech to the Other Vendor system.

Segment	Name	Opt	Cardinality
MSH	Message Header	R	[1..1]

EVN	Event Type Segment	O	[0..1]
{	PATIENT_RESULT Begin	R	[1..1]
[Patient Begin	R	[1..1]
PID	Patient Identification	R	[1..1]
[VISIT Begin	O	
PV1	Patient Visit	R	[1..1]
]	VISIT End		
]	PATIENT End		
{	ORDER_OBSERVATION Begin	R	[1...*]
OBR	Observation Request	R	[1..1]
{{	OBSERVATION Begin	C(R/X)	[0..*]
OBX	Observation related to OBR	R	[1...*]
}}	OBSERVATION End		
}	ORDER_OBSERVATION End		
}	PATIENT_RESULT End		

Segment and Field Descriptions

The following tables are based on information provided in the HL7 2.5.1 base specification.

Table Reference

Format	Description
DT	Data Type - HL7 Data Type - Refer to HL7 specification for definition of Data Types
Opt	HL7 Usage
Card	Cardinality

MSH - Message Header Segment

S	Element Name	Opt	DT	Card	Example	Explanation
1	Field Separator	R	ST	[1..1]	' '	This field contains the separator between the segment ID and the first real field, MSH-2-encoding characters. As such it serves as the separator and defines the character to be used as a separator for the rest of the message. Recommended value is " " (ASCII 124).
2	Encoding Characters	R	ST	[1..1]	'^~\&' or '^~\&#'	This field contains the encoding characters in the following order: the component separator, repetition separator, escape character, and subcomponent separator. Recommended values are "^~\&" (ASCII 94, 126, 92, and 38, respectively) or "^~\&#" (ASCII 94, 126, 92, 38, and 35).
3	Sending Application	O	HD	[0..1]	PCS	This field uniquely identifies the sending application among all other applications within the network enterprise. MEDITECH does not by default require this field.
4	Sending Facility	O	HD	[0..1]	MT	This field uniquely identifies the sending application's facility. MEDITECH does not by default require or send this field.
5	Receiving Application	O	HD	[0..1]		This field uniquely identifies the receiving application among all other applications within the network enterprise. The network enterprise consists of all those applications that participate in the exchange of HL7 messages within the enterprise. MEDITECH does not require this field. This field is defined in the M-AT Message Generator dictionary (HL7 Configuration tab).
6	Receiving Facility	O	HD	[0..1]	MT	This field identifies the receiving facility. MEDITECH does not require this field. This field is defined in the M-AT Message Generator dictionary (HL7 Configuration tab).

7	Date/Time of Message	R	TS	[1 .. 1]		The date/time that the sending system created the message. Format: MMDDYYYYHHMM
9	Message Type	R	M SG	[1 .. 1]	ORU ^R01	This field contains the HL7 message type, trigger event, and the message structure ID for the message.
10	Message Control ID	R	ST	[1 .. 1]		A unique number that identifies this message.
11	Processing ID	R	PT	[1 .. 1]	P or D	"P" if LIVE, "D" for Draft
12	Version ID	R	V ID	[1 .. 1]	'2.5.1'	This field is extracted from the M-AT list message and if not available, defaults to "2.5.1"
15	Accept Acknowledgment Type	R	ID	[0 .. 1]	'AL'	
16	Application Acknowledgment Type	R	ID	[0 .. 1]	'NE'	

EVN - Event Type Segment

The EVN segment was added to the message per request of our vendors. It can be suppressed using the Suppress Segments option in the M-AT Message Generator dictionary.

S EQ	Element Name	Opt	DT	Card	Example	Explanation
1	Event Type Code	B	ID		'R01'	HL7 Event Type Code - this field is retained for backwards compatibility. It is recommended that the second component of MSH-9 (trigger event) is used to transmit event type code information.
2	Recorded Date/Time	R	TS			Date/Time when message is created.

PID - Patient Identifier Segment

S EQ	Element Name	Opt	DT	Card	Example	Explanation
1	Set ID - PID	R	SI		'1'	
2	Patient ID	X				
3	Patient Identifier List	R	CX			Medical Record Number^^^^MR^Facility~SS Number or Health Care Number (CAN)^^^^SS or HC^Facility~EMR Number^^^^EMR^Facility
4	Alternate Patient ID	X				
5	Patient Name	R	X PN			Last^First^Middle^Suffix^Title^Degree
6	Mother's Maiden Name	O	X PN			HimRec.MothersName
7	Date/Time of Birth	O	TS			HimRec.Birthdate or HimRec.birthdate Computed
8	Administration Sex	R	IS			HimRec.Sex
9	Patient Alias	X				
10	Race	O	CE			HimRec.Race
11	Patient Address	O	X AD		Street^Street2^City^State^Zip^Country^^^County	HimRec.Address1^HimRec.Address2^HimRec.City^HimRec.State^HimRec.Zip^HimRec.Country^^^HimRec.County or MisZipPostal.County
12	County Code	X				

13	Phone Number - Home	O	X	TN	primary phone number^"PRN"^phone type~phone number^"ORN"^phone type...	HimRec.PhoneNum^PRN^HimRec.PhoneType~HimRec.PhoneNum^ORN^HimRec.PhoneType
14	Phone Number - Business	O	X	TN	employer phone number^"WPN"^"EMP"	HimRec.EplrPhone^WPN^EMP
15	Primary Language	O	CE			HimRec.Language
16	Marital Status	O	CE			HimRec.MaritalStatus
17	Religion	O	CE			HimRec.Religion
18	Patient Account Number	O	CX			RegAcct.AcctNum

PV1 - Patient Visit Segment

SEQ	Element Name	Opt	DT	Card	Example	Explanation
1	Set ID	O	SI		'1'	
2	Patient Class	R	IS			P (Patient Status=PRE) I (Patient Status=IN or INO) E (Patient Status=ER) O (All other patient status')
3	Assigned Patient Location	O	PL		location^room^bed	MisEventData.RegLocation^MisEventData.RegRoom^MisEventData.RegBed
4	Admission Type	O	IS			RegAcct.AdmitPriority
5	Preadmit Number	X				
6	Prior Patient Location	X	PL		location^room^bed	
7	Attending Doctor	O	XCN		LA^FI^MI^SU^TI^DE	RegAcct.AttendProvider
8	Referring Doctor	O	XCN		LA^FI^MI^SU^TI^DE	RegAcct.ReferringProvider
9	Consulting Doctor	B	XCN		LA^FI^MI^SU^TI^DE	RegAcct.OtherProvider (Multiple)
10	Hospital Service	O	IS			RegAcct.Service
11	Temporary Location	O	PL			RegAcct.TemporaryLocation
12	Preadmit Test Indicator	X				
13	Re-admission Indicator	X				
14	Admit Source	O	IS			RegAcct.AdmitSource
15	Ambulatory Status	X				
16	VIP Indicator	O	IS			RegAcct.Vip
17	Admitting Doctor	O	XCN		LA^FI^MI^SU^TI^DE	RegAcct.AdmitProvider
18	Patient Type	O	IS			RegAcct.RegType
19	Visit Number	X				
20	Financial Class	O	FC			BarAcct.CurFinClass
21	Change Price Indicator	X				
22	Courtesy Code	X				
23	Credit Rating	X				
24	Contract Code	X				
25	Contract Effective Date	X				
26	Contract Amount	X				
27	Contract Period	X				
28	Interest Code	X				
29	Transfer Bad Debt Code	X				
30	Transfer Bad Debt Date	X				
31	Bad Debt Agency Code	X				
32	Bad Debt Transfer Amount	X				
33	Bad Debt Recover Amount	X				

34	Delete Account Indicator	X				
35	Delete Account Date	X				
36	Discharge Disposition	O	IS			RegAcct.DischDispos
37	Discharge to Location	X				
38	Diet Type	X				
39	Servicing Facility	O	IS			RegAcct.Facility
40	Bed Status	X				
41	Account Status	O	IS			RegAcct.RegStatus
42	Pending Location	X				
43	Prior Temporary Location	X				
44	Admit Date/Time	O	TS			RegAcct.AdmitDate and RegAcct.AdmitTime
45	Discharge Date/Time	O	TS			
46	Current Patient Balance	X				
47	Total Charges	X				
48	Total Adjustments	X				
49	Total Payments	X				
50	Alternate Visit ID	X				
51	Visit Indicator	X				
52	Other Healthcare Provider	B	XCN			RegAcct.FamilyProvider

OBR - Observation Request Segment

The OBR segment represents a PCS Intervention.

SEQ	Element Name	Opt	DT	Card	Example	Explanation
1	Set ID	R	SI		'1'	A counter
2	Placer Order Number	X				
3	Filler Order Number	X				
4	Universal Service Identifier	R	CE			^PcsIntervention OID^PcsIntervention.Name^L"
5	Priority	X				
6	Requested Date/Time	X				
7	Observation Date/Time	C	TS			PcsAcctAct.IntActDateTime
33	Assistant Result Interpreter	O	NDL			Cosigner PcsAcctAct.IntActCosigner
34	Technician	O	NDL			Cosigner PcsAcctAct.IntActCosigner



OBR-33/OBR-34

The Cosigner can be formatted in either OBR-33 or OBR-34. Which field is used, is specified in the Outbound Data Dictionary (Queries tab). Path: Clinical>Dictionaries>Patient Care>Outbound Data Dictionaries

OBX - Observation Result Segment

OBX segments contain the query results for the queries defined on the Intervention.

S EQ	Element Name	O pt	DT	C ard	Example	Explanation
1	Set ID	R	SI		'1'	A counter
2	Value Type	C	ID			MisQry.Type > map to table
3	Observation Identifier	R	CE		Query Mnemonic, Query Name, "L" for Local System, Instance Mnemonic, Instance Name	^MisQry OID^MisQry.Text^"L"^Instance OID^Instance Name
4	Observation Sub-ID	X				
5	Observation Value	C	Varies			Query Response value PcsAssmntData.QueryValue
6	Units	O	CE			
7	Reference Range	X				
8	Abnormal Flag	X				
9	Probability	X				
10	Nature of Abnormal Test	X				
11	Observation Result Status	R	ID			C=Corrected, D=Delete, F=Final
12	Effective Date of Reference Range	X				
13	User Defined Access Checks	X				
14	Date/Time of Observation	O	TS			PcsAcctAct.IntActDateTime - same as OBR 7
15	Producer's ID	O	CE			PcsAcctAct.IntActRecUser: ^Mnemonic^Full Name as a String^L (for Local)
16	Responsible Observer	O	X CN			PcsAcctAct.IntActUser: ^Mnemonic^Last Name^First Name^Middle Initial^Suffixes^Prefixes^Degrees^XXXX

Sample Messages

```
MSH|^~\&|HIS|A|OV APP^OV UID^ISO|RFAC^RFAC UID^ISO|201511241356||ORU^R01^ORU_R01|0|D|2.4|||AL|NE|
EVN|R01|201511241356|
PID|1|S10010354|SZ00149401^^^^MR^A~S0-B20140529102832626^^^^PI^A~S10010354^^^^EMR^A|S0-
B20140529102832626|Hall^Jenna^^^^L||19690529|F|||||M|CA|SA0000177593|
PV1|1|I|MEDSURG^150^320|EL|||MT^Meditech^Joseph^^^^^^^^^^XX||MED|||||MT^Meditech^Joseph^^^^^^^^^^XX|IN|SA000
0177593^201405291028|SP|||||||||||||||||A|ADM|||201405291028|
OBR|1||MARPAIN^MAR Pain Assessment|||201511241350|
OBX|1|ST|NEURO.PA^Pain Intensity^L|9|||||F|||201511241350|MAYNARD^Melissa
Maynard^L|MAYNARD^Maynard^Melissa^^^^RN^^^^^^XX|
OBX|2|ST|NEURO.PASU^Pain Scale Used^L|Numeric (1-10)|||||F|||201511241350|MAYNARD^Melissa
Maynard^L|MAYNARD^Maynard^Melissa^^^^RN^^^^^^XX|
OBX|3|ST|NEURO.PLOC^Pain Location Body Site^L|Neck|||||F|||201511241350|MAYNARD^Melissa
Maynard^L|MAYNARD^Maynard^Melissa^^^^RN^^^^^^XX|
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MSH|^~\&|HIS|A|OV APP^OV UID^ISO|RFAC^RFAC UID^ISO|201511241347||ORU^R01^ORU_R01|0|D|2.4|||AL|NE|
EVN|R01|201511241346|
PID|1|S10039491|SZ00178808^^^^MR^A~111-55-5555^^^^SS^A~S0-B20151124092526421^^^^PI^A~S10039491^^^^EMR^A|S0-
B20151124092526421|O'BRIEN^DECLAN^^^^L||19951124|M|||||SA0000219512|111-55-5555|
PV1|1|I|10A^10B^45|EL|||DAMERAULT^AMERAULT^DIANE^NICOLE^MBBS^DR^^^^^^XX||MED|||||AHEK^Aherns^Kelly^J^^^MD^^
^^^^XX|IN|SA0000219512^201511240925|SP|||||||||||||A|ADM|||201511240925|
OBR|1||MM MONITOR^Monitor Data|||201511241000|
OBX|1|ST|CARD.HDCO^Cardiac Output^L|50|||||F|||201511241000|OBRJ^JEFF
```


OBX|3|ST|CARD.HDRA^Central Venous (RA) Pressure^L||10|||||F|||201511241345|OBRJ^JEFF
O'BRIEN^L|MT^Meditech^Joseph^^^^^^^^^^XX|
OBX|4|ST|RESP.POSAT^O2 Sat (Pulse Oximetry)^L||98|||||F|||201511241345|OBRJ^JEFF
O'BRIEN^L|MT^Meditech^Joseph^^^^^^^^^^XX|
OBX|5|ST|VS.PULSE^Pulse Rate^L||90|||||F|||201511241345|OBRJ^JEFF O'BRIEN^L|MT^Meditech^Joseph^^^^^^^^^^XX|
OBX|6|ST|VS.RESP^Respiration Rate^L||16|||||F|||201511241345|OBRJ^JEFF
O'BRIEN^L|MT^Meditech^Joseph^^^^^^^^^^XX|
OBX|7|NM|VS.TEMP^Temperature^L||0|degf|||||F|||201511241345|OBRJ^JEFF O'BRIEN^L|MT^Meditech^Joseph^^^^^^^^^^XX|
OBR|47||MM MONITOR^Monitor Data|||201511241346|
OBX|1|ST|CARD.HDCO^Cardiac Output^L||50|||||F|||201511241346|OBRJ^JEFF
O'BRIEN^L|MT^Meditech^Joseph^^^^^^^^^^XX|
OBX|2|ST|CARD.HDPVR^Pulmonary Vascular Resistance^L||10|||||F|||201511241346|OBRJ^JEFF
O'BRIEN^L|MT^Meditech^Joseph^^^^^^^^^^XX|
OBX|3|ST|CARD.HDRA^Central Venous (RA) Pressure^L||10|||||F|||201511241346|OBRJ^JEFF
O'BRIEN^L|MT^Meditech^Joseph^^^^^^^^^^XX|
OBX|4|ST|RESP.POSAT^O2 Sat (Pulse Oximetry)^L||98|||||F|||201511241346|OBRJ^JEFF
O'BRIEN^L|MT^Meditech^Joseph^^^^^^^^^^XX|
OBX|5|ST|VS.PULSE^Pulse Rate^L||90|||||F|||201511241346|OBRJ^JEFF O'BRIEN^L|MT^Meditech^Joseph^^^^^^^^^^XX|
OBX|6|ST|VS.RESP^Respiration Rate^L||16|||||F|||201511241346|OBRJ^JEFF
O'BRIEN^L|MT^Meditech^Joseph^^^^^^^^^^XX|
OBX|7|NM|VS.TEMP^Temperature^L||0|degf|||||F|||201511241346|OBRJ^JEFF O'BRIEN^L|MT^Meditech^Joseph^^^^^^^^^^XX|
OBR|48||MM MONITOR^Monitor Data|||201511241346|
OBX|1|ST|CARD.HDCO^Cardiac Output^L||50|||||F|||201511241346|OBRJ^JEFF
O'BRIEN^L|MT^Meditech^Joseph^^^^^^^^^^XX|
OBX|2|ST|CARD.HDPVR^Pulmonary Vascular Resistance^L||10|||||F|||201511241346|OBRJ^JEFF
O'BRIEN^L|MT^Meditech^Joseph^^^^^^^^^^XX|
OBX|3|ST|CARD.HDRA^Central Venous (RA) Pressure^L||10|||||F|||201511241346|OBRJ^JEFF
O'BRIEN^L|MT^Meditech^Joseph^^^^^^^^^^XX|
OBX|4|ST|RESP.POSAT^O2 Sat (Pulse Oximetry)^L||98|||||F|||201511241346|OBRJ^JEFF
O'BRIEN^L|MT^Meditech^Joseph^^^^^^^^^^XX|
OBX|5|ST|VS.PULSE^Pulse Rate^L||90|||||F|||201511241346|OBRJ^JEFF O'BRIEN^L|MT^Meditech^Joseph^^^^^^^^^^XX|
OBX|6|ST|VS.RESP^Respiration Rate^L||16|||||F|||201511241346|OBRJ^JEFF
O'BRIEN^L|MT^Meditech^Joseph^^^^^^^^^^XX|
OBX|7|NM|VS.TEMP^Temperature^L||0|degf|||||F|||201511241346|OBRJ^JEFF O'BRIEN^L|MT^Meditech^Joseph^^^^^^^^^^XX|

Error Handling