



hc1 HL7 Specifications

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Overview

hc1 processes Orders and Result HL7 messages via a standard HL7 MLLP interface. Specific result messages can then be processed within the hc1 Opioid Advisor product offering. This document describes in detail the layout of the HL7 orders and results received and the response message supported by hc1. HL7 messages that do not conform to these definitions may still be supported through custom mappings by hc1 but that is outside of the general scope of this document.

Initially, the HL7 transaction that is supported:

Message Type	Message Mode	Notes
ORM^O01	Inbound	The ORM message will be used to receive Lab Orders.
ORU^R01	Inbound	The ORU is required by hc1 Opioid Advisor to be sent to hc1 to process hc1 Opioid Advisor transactions.
ORU^R01	Outbound	Will be a duplicate of the Inbound message with additional ZTX and ZDR segments delineating hc1 Opioid Advisor results.



Inbound Message Details

This section describes the message structure of the HL7 transactions as supported by hc1.

ORM Inbound Message

The ORM message definition will be supported in both inbound and outbound messages. The segment structure used by hc1 is as follows:

MSH	Message Header
PID	Patient Info
[[NTE]]	Patient Notes
[PV1]	Patient Visit Information
[Insurance Group
{IN1	
[IN2]}	Insurance Info
[GT1]	Guarantor
]	
[ORC]	Common Order Info
{	Orders Group
OBR	Order Detail
[[NTE]]	Order Notes
[[DG1]]	Diagnosis
[Clinical Info Group
{	
OBX	Observation
[[NTE]]	Observation Notes
}	
]	
}	
[[ZRG]]	hc1 Organization Segment
[[ZIQ]]	hc1 Case Creation Segment

1. The order group will repeat for each specimen included in the Lab Order.
2. ORC Break level



ORU Inbound Message

The ORU message definition will be supported for inbound and outbound messages. The segment structure used by hc1 is as follows:

MSH	Message Header
PID	Patient Info
[[NTE]]	Patient Notes
[PV1]	Patient Visit Information
[ORC]	Common Order Info
{	Order Group
OBR	Order Detail
[[NTE]]	Order Notes
[
{	
OBX	Observation
[[NTE]]	Observation Notes
}	
]	
}	
[[ZRG]]	hc1 Organization Segment
[[ZIQ]]	hc1 Case Creation Segment

1. Orders are matched to results by the Order ID and the Patient ID
2. The order group should repeat for each specimen being resultted
3. ORC break level



Inbound Segment Details

The following are descriptions of each segment used by hc1. Fields are identified as optional, required or unused by the following values and colors:

Use Identifier	Description
O	Optional
R	Required
U	Unused
S	User Selected Option

Notes: Selected option groups will be defined in Appendix A.

MSH

The MSH segment is the common header used in all HL7 transactions.

Field	Use	HL7 Name	Example
MSH-0	R	Segment ID	MSH
MSH-1	R	Field Separator	
MSH-2	R	Encoding Characters	^~\&
MSH-3	O	Sending Application	Cerner
MSH-4	S ^{4,5}	Sending Facility	Hospital
MSH-5	O	Receiving Application	hc1.com
MSH-6	O	Receiving Facility	Lab
MSH-7	S ^{4,5}	Message Date/Time	20110923142309
MSH-8	U	Security	
MSH-9.1	R	Message Type	ORM, ORU
MSH-9.2	R	Event Type	O01, R01
MSH-10	R	Message Control ID	1234564
MSH-11	R	Processing ID	P, T
MSH-12	R	Version ID	2.3



PID

The PID segment is used to transmit patient demographic information. Please note that for hc1 Opioid Advisor to function correctly Patient Address and Phone Number are required fields.

Field	Use	HL7 Name	Example
PID-0	R	Segment ID	PID
PID-1	O	Set ID	1
PID-2	S ¹	Patient ID	
PID-3	S ¹	Patient ID List	
PID-4	S ¹	Alternate Patient ID	
PID-5.1	R	Patient Name - Last Name	Smith
PID-5.2	R	Patient Name - First Name	Joseph
PID-5.3	O	Patient Name - Middle Name	A
PID-5.4	O	Patient Name - Suffix	JR
PID-5.5	O	Patient Name - Prefix	DR
PID-6	U	Mother's Maiden Name	
PID-7	O	Date/Time of Birth	19711001
PID-8	O	Sex	M = Male F = Female U = Unknown O = Other
PID-9	U	Patient Alias	
PID-10	U	Race	
PID-11.1	R	Patient Address - Street Address	
PID-11.2	R	Patient Address - Other Designation	
PID-11.3	R	Patient Address - City	
PID-11.4	R	Patient Address - State	
PID-11.5	R	Patient Address - zip	
PID-11.6	O	Patient Address - Country	ISO-3166-3 country code
PID-12	U	County Code	
PID-13	R	Phone Number - Home	
PID-14	O	Phone Number - Business	
PID-15	U	Primary Language	
PID-16	U	Marital Status	
PID-17	U	Religion	
PID-18	S ^{1,3}	Patient Account Number	



Field	Use	HL7 Name	Example
PID-19	S ¹	Patient SSN	
PID-20	U	Patient Driver's License #	
PID-21	U	Mother's Identifier	
PID-22	U	Ethnic Group	
PID-23	U	Birth Place	
PID-24	U	Multiple Birth Indicator	
PID-25	U	Birth Order	
PID-26	O	Citizenship	
PID-27	U	Veterans Military Status	
PID-28	O	Nationality	
PID-29	O	Patient Death Date/Time	
PID-30	U	Patient Death Indicator	

NTE

The NTE segment is used to include notes and comments. Its location within the message determines the context of the note or comment.

Field	Use	HL7 Name	Example
NTE-0	R	Segment ID	NTE
NTE-1	O	Set ID	1
NTE-2	U	Source of Comment	
NTE-3	R	Comment	Example
NTE-4	U	Comment Type	

PV1

The PV1 segment is used to transfer information about a patient visit/encounter.

Field	Use	HL7 Name	Example
PV1-0	R	Segment ID	PV1
PV1-1	O	Set ID	1
PV1-2	O	Patient Class	E, I, O
PV1-3.1	O	Point of Care	
PV1-3.2	O	Room	



Field	Use	HL7 Name	Example
PV1-3.3	O	Bed	
PV1-3.4	S ^{4,5}	Facility	
PV1-4	O	Admission Type	
PV1-5	U	Pre-admit Number	
PV1-6	U	Prior Patient Location	
PV1-7	S ²	Attending Doctor ID	
PV1-8	O	Referring Doctor	
PV1-9	O	Consulting Doctor	
PV1-10	U	Hospital Service	
PV1-11	U	Temporary Location	
PV1-12	U	Pre-admit Test Indicator	
PV1-13	O	Re-admission Indicator	
PV1-14	U	Admit Source	
PV1-15	U	Ambulatory Status	
PV1-16	U	VIP Indicator	
PV1-17	O	Admitting Doctor	
PV1-18	U	Patient Type	
PV1-19	S ³	Visit Number	
PV1-20	U	Financial Class	
PV1-21	U	Charge Price Indicator	
PV1-22	U	Courtesy Code	
PV1-23	U	Credit Rating	
PV1-24	U	Contract Code	
PV1-25	U	Contract Effective Date	
PV1-26	U	Contract Amount	
PV1-27	U	Contract Period	
PV1-28	U	Interest Code	
PV1-29	U	Transfer to Bad Debt Code	
PV1-30	U	Transfer to Bad Debt Date	
PV1-31	U	Bad Debt Agency Code	
PV1-32	U	Bad Debt Transfer Amount	
PV1-33	U	Bad Debt Recovery Amount	
PV1-34	U	Delete Account Indicator	
PV1-35	U	Delete Account Date	
PV1-36	U	Discharge Disposition	
PV1-37	U	Discharge to Location	
PV1-38	U	Diet Type	



Field	Use	HL7 Name	Example
PV1-39	U	Servicing Facility	
PV1-40	U	Bed Status	
PV1-41	U	Account Status	
PV1-42	U	Pending Location	
PV1-43	U	Prior Temporary Location	
PV1-44	O	Admit Date/Time	
PV1-45	O	Discharge Date/Time	
PV1-46	U	Current Patient Balance	
PV1-47	U	Total Charges	
PV1-48	U	Total Adjustments	
PV1-49	U	Total Payments	
PV1-50	S ³	Alternate Visit ID	
PV1-51	U	Visit Indicator	
PV1-52	O	Other Healthcare Provider	

ORC

Field	Use	HL7 Name	Example
ORC-0	R	Segment ID	ORC
ORC-1	R	Order Control	NW,RE,SC,OC,CA,XO
ORC-2	S ^{8,9}	Placer Order Number	
ORC-3	S ^{8,9}	Filler Order Number	
ORC-4	S ^{8,9}	Placer Group Number	
ORC-5	U	Order Status	
ORC-6	U	Response Flag	
ORC-7	U	Quantity/Timing	
ORC-8	U	Parent	
ORC-9	S ⁶	Date/Time of Transaction	
ORC-10	U	Entered By	
ORC-11	U	Verified By	
ORC-12	S ²	Ordering Provider	
ORC-13	S ^{4,5}	Enterer's Location	
ORC-14	U	Call Back Phone Number	
ORC-15	U	Order Effective Date/Time	
ORC-16		Order Control Code Reason	
ORC-17	U	Entering Organization	



Field	Use	HL7 Name	Example
ORC-18	U	Entering Device	
ORC-19	U	Action By	
ORC-20	U	Advanced Beneficiary Notice Code	
ORC-21	S ^{4,5}	Ordering Facility Name	
ORC-22	O	Ordering Facility Address	
ORC-23	O	Ordering Facility Phone Number	
ORC-24	U	Ordering Provider Address	

OBR

Field	Use	HL7 Name	Example
OBR-0	R	Segment ID	OBR
OBR-1	O	Set ID	
OBR-2	S ^{8,9}	Placer Order Number	
OBR-3	S ^{8,9}	Filler Order Number	
OBR-4.1	R	Universal Service ID	CBC
OBR-4.2	O	Service Description	Complete Blood Count
OBR-5	O	Priority	
OBR-6	S ⁶	Requested Date/Time	
OBR-7	S ⁷	Observation Date/Time	
OBR-8	S ⁷	Observation End Date/Time	
OBR-9	U	Collection Volume	
OBR-10	U	Collector Identifier	
OBR-11	O	Specimen Action Code	
OBR-12	U	Danger Code	
OBR-13	U	Relevant Clinical Info.	
OBR-14	O	Specimen Received Date/Time	
OBR-15.1	O	Specimen Type	
OBR-15.2	O	Tube Type	
OBR-16	S ²	Ordering Provider	
OBR-17	U	Order Callback Phone Number	
OBR-18	S ^{8,9}	Placer Field 1	
OBR-19	S ^{8,9}	Placer Field 2	
OBR-20	S ^{8,9}	Filler Field 1	



Field	Use	HL7 Name	Example
OBR-21	S ^{8,9}	Filler Field 2	
OBR-22	R	Results Rpt/Status Change - Date/Time	
OBR-23	U	Charge to Practice	
OBR-24	U	Diagnostic Serv Sect ID	
OBR-25	O	Result Status	
OBR-26	U	Parent Result	
OBR-27.1	U	Quantity	
OBR-27.2	U	Interval	
OBR-27.3	U	Duration	
OBR-27.4	S ⁶	Start Date	
OBR-27.5	U	End Date	
OBR-27.6	U	Priority	
OBR-28	O	Result Copies To	
OBR-29	U	Parent	
OBR-30	U	Transportation Mode	
OBR-31	U	Reason for Study	
OBR-32	U	Principal Result Interpreter	
OBR-33	U	Assistant Result Interpreter	
OBR-34	U	Technician	
OBR-35	U	Transcriptions	
OBR-36	U	Scheduled Date/Time	
OBR-37	U	Number of Sample Containers	
OBR-38	U	Transport Logistics of Collected Sample	
OBR-39	U	Collector's Comment	
OBR-40	U	Transport Arrangement Responsibility	
OBR-41	U	Transport Arranged	
OBR-42	U	Escort Required	
OBR-43	U	Planned Patient Transport Comment	
OBR-44	U	Procedure Code	
OBR-45	U	Procedure Code Modifier	



DG1

The DG1 segment is used to transmit diagnosis relation information.

Field	Use	HL7 Name	Example
DG1-0	R	Segment ID	DG1
DG1-1	O	Set ID	1
DG1-2	U	Diagnosis Coding Method	
DG1-3.1	R	Diagnosis Code	
DG1-3.2	O	Diagnosis Description	
DG1-3.3	U	Name of Coding System	
DG1-4	U	Diagnosis Description	
DG1-5	U	Diagnosis Date/Time	
DG1-6	U	Diagnosis Type	
DG1-7	U	Major Diagnostic Category	
DG1-8	U	Diagnostic Related Group	
DG1-9	U	DRG Approval Indicator	
DG1-10	U	DRG Grouper Review Code	
DG1-11	U	Outlier Type	
DG1-12	U	Outlier Days	
DG1-13	U	Outlier Cost	
DG1-14	U	Grouper Version and Type	
DG1-15	U	Diagnosis Priority	
DG1-16	U	Diagnosing Clinician	
DG1-17	U	Diagnosis Classification	
DG1-18	U	Confidential Indicator	
DG1-19	U	Attestation Date/Time	

OBX

Field	Use	HL7 Name	Example
OBX-0	R	Segment ID	OBX
OBX-1	O	Set ID	1
OBX-2	O	Value Type	NM, TX
OBX-3	R	Observation Identifier	
OBX-4	U	Observation Sub-ID	
OBX-5	R	Observation Value	



Field	Use	HL7 Name	Example
OBX-6	U	Units	
OBX-7	U	Reference Range	
OBX-8	U	Abnormal Flag	
OBX-9	U	Probability	
OBX-10	U	Nature of Abnormal Test	
OBX-11	U	Observation Result Status	
OBX-12	U	Date Last Obs Normal Values	
OBX-13	U	User Defined Access Checks	
OBX-14	O	Date/Time of the Observation	
OBX-15	U	Producer's ID	
OBX-16	U	Responsible Observer	
OBX-17	U	Observation Method	

ZRG

The ZRG segment is used to create and/or update organization records within hc1.

Field	Use	HL7 Name	Example
ZRG-0	R	Segment ID	ZRF
ZRG-1.1	O	Organization Location Name	
ZRG-1.2	O	Organization Location Street1	
ZRG-1.3	O	Organization Location Street2	
ZRG-1.1	O	Organization Location City	
ZRG-1.2	O	Organization Location State	
ZRG-1.3	O	Organization Location Postal Code	
ZRG-1.4	O	Organization Location Country	
ZRG-1.5	O	Organization Location ContactID	
ZRG-1.6	O	Organization Location Phone	
ZRG-1.7	O	Organization Location Specialty	



ZIQ

The ZIQ segment is designed to add Case or Task Activities records within hc1

Field	Use	HL7 Name	Example	Notes
ZIQ-0	R	Segment ID	ZIQ	
ZIQ-1	R	Sequence	1	
ZIQ-2	R	Case/Task Type	CASE,TASK	Must be either CASE or TASK
ZIQ-3	O	ID	C30065	
ZIQ-4	R	Assigned To	lp@hc1.com	Can be either a single user or a distribution group
ZIQ-5	R	Organization	1234	Host code for the organization(will default to ordering organization if not defined)
ZIQ-6.1	O	Subject	Test	
ZIQ-6.2	O	Category	Problem Specimen	Must be prebuilt in hc1, if not included will default to the default category set in hc1
ZIQ-6.3	O	Sub-Category	Wrong Label	Must be Prebuilt in hc1
ZIQ-6.4	O	Description	Wrong Label applied	
ZIQ-6.5	O	Status	New	If not provided will default to the system defined default
ZIQ-7	O	Lab Order Number	F17003	Must match the order number in hc1
ZIQ-8	O	Patient	1234	Patient code
ZIQ-9	{O}	Provider	NPI12345	Provider host code as defined in hc1
ZIQ-10	{O}	Contact	S123	Non-provider contact code as defined in hc1



Field	Use	HL7 Name	Example	Notes
{ZIQ-11.1	O	Custom Field Name	Contact Phone	Insight Name defined in hc1
ZIQ-11.2}	O	Custom Field Value	555-555-5555	Value associated with the name
ZIQ-12	O	Activity Date	20180101120000	Activity Fill Date (will default to MSH: 7 if not defined)

Example Segment: ZIQ|1|CASE||p@hc1.com|1234|Problem^Problem Specimen^Wrong Label^Wrong Label applied|F17003|1234|||Contact Phone^555-555-5555~Contact Fax^555-555-5556|
ZIQ|2|TASK|T1234|smith@smith.com|1234|Label Fix^Fix Label^^Fix Label on tube x123|||Sample^1234|

Notes: ZIQ-9 & ZIQ-10 are repeatable as multiple providers or contacts can be attached to the case/task.

ZIQ-11 is also Repeatable but both ZIQ-11.1 and ZIQ-11.2 are required for all repeat instances.

Outbound Message Details

The following are descriptions of each segment used by hc1 for outbound HL7 hc1 Opioid Advisor results. Please note that the result message that is received by hc1 is used within the response message. The only changes are within the sending and receiving application fields within the MSH segment with the addition of the hc1 Opioid Advisor result segment (ZTX) and the corresponding discrete result segments (ZDR). The hc1 Opioid Advisor segments will only be returned on tests and orders that are specifically hc1 Opioid Advisor Related. If a segment is not listed within the outbound details section, please refer to the inbound section as the definition remains the same.



ORM Outbound Message

The ORM message definition will be supported in both inbound and outbound messages. The segment structure used by hc1 is as follows:

MSH	Message Header
PID	Patient Info
{{NTE}}	Patient Notes
[PV1]	Patient Visit Information
[Insurance Group
{IN1	
[IN2]}	Insurance Info
[GT1]	Guarantor
]	
[ORC]	Common Order Info
{	Orders Group
OBR	Order Detail
[ZTX]	hc1 Opioid Advisor Result
{{NTE}}	Order Notes
{{DG1}}	Diagnosis
[Clinical Info Group
{	
OBX	Observation Segment
[ZDR]	hc1 Opioid Advisor Discrete Result
[{{NTE}}	Observation Notes
}	
]	
}	
[[ZRG]]	
[[ZIQ]]	



Outbound Segment Details

MSH

The MSH segment is the common header used in all HL7 transactions.

Field	Use	HL7 Name	Example
MSH-0	R	Segment ID	MSH
MSH-1	R	Field Separator	
MSH-2	R	Encoding Characters	^~\&
MSH-3	O	Sending Application	hc1 Opioid Advisor
MSH-4	S	Sending Facility	hc1.com
MSH-5	O	Receiving Application	Lab Application
MSH-6	O	Receiving Facility	Lab
MSH-7	S	Message Date/Time	20110923142309
MSH-8	U	Security	
MSH-9.1	R	Message Type	ORU
MSH-9.2	R	Event Type	R01
MSH-10	R	Message Control ID	1234564
MSH-11	R	Processing ID	P, T
MSH-12	R	Version ID	2.5

Note: The Sending Application, Sending Facility, Receiving Application, and Receiving Facility have been reversed from the original Order Result message.



ZTX

The ZTX segment is used to deliver the hc1 Opioid Advisor Result for the Order that was processed.

Field	Data Type	Use	HL7 Field and Values	Field or Segment Delimiter
ZTX-0	ST	R	Segment ID = 'ZTX'	
ZTX-1	ST	R	Patient Match Status <ul style="list-style-type: none">• Matched – Unique match on this patient• Multiple – Multiple potential matches found, unable to identify• None – No Matches found for this patient	
Risk Scores				
ZTX-2	NM	O	2.1 Overdose	^
	NM	O	2.2 Narcotic	^
	NM	O	2.3 Sedative	^
	NM	O	2.4 Stimulant	
ZTX-3	TX	O	hc1 Opioid Advisor URL	

Example ZTX Segment:

ZTX|Matched|345^456^654^123|https://123sfs....



ZDR

The ZDR purpose is to report the discrete hc1 Opioid Advisor values for tests that were configured to be processed by hc1 Opioid Advisor.

Field	Data Type	Use	HL7 Field and Values	Field or Segment Delimiter
ZDR-0	ST	R	Segment ID = 'ZDR'	
ZDR-1	ST	R	Ordered Panel Number	
ZDR-2	ST	R	Test Code	
Consistency Result				
ZDR-3	ST	R	3.1 Consistency Result <ul style="list-style-type: none"> • Prescribed & Detected • Indeterminate • Prescribed & NOT Detected • NOT Prescribed & Detected • NOT Prescribed & NOT Detected 	^
	ST	R	3.2 Consistency Comment <ul style="list-style-type: none"> • Consistent: Patient tested positive for an active prescription • Indeterminate: Patient tested positive for a metabolite of a parent drug and has a prescription for that parent drug • Inconsistent: Patient tested negative for an active prescription. • Inconsistent: Patient tested positive and does not have an active prescription for that drug. • Consistent 	
Match Status				
ZDR-4	ST	R	4.1 Status <ul style="list-style-type: none"> • Direct • Indirect • No_match • Na 	^
	ST	O	4.2 Comment	
ZDR-5	NM	O	Drug Class Category <ul style="list-style-type: none"> • 1 – Illegal 	



			<ul style="list-style-type: none"> • 2 – PDMP • 3 – THC • 6 – Non-controlled • 9 – N/A 	
ZDR-6	ST	O	Direct Ingredients – Repeatable	~ until last which is
ZDR-7	ST	O	Indirect Ingredients – Repeatable	~ until last which is

Example ZDR Segment:

ZDR|0123456|76501-1| Prescribed \& Detected^Consistent: Patient tested positive for an active prescription|Direct^|1||

hc1 Opioid Advisor Example Messages

Inbound Message Example

Note: Example has been truncated for legibility.

```
MSH|^~\&|LAB|MJV|hc1.com|255300|20181009115918||ORU^R01|80000000001366022291|P|2.3.1|
PID|1|XXXXXX;XX|XXXXXXXXXX|XXXXXXXX|XXXXX^XXXXX^XXXXX|XXXXXXXX|F|||||XXXXXXXX|XXXXXXXX|
ORC|RE|XXXXXXXX|JIXXXXXXU||CM|||||1235121963^WATKINS^KENNETH^D^^^^^^^^^UPIN|
OBR|1|XXXXXXXX|JIXXXXXXU|$CPTO^COPY(IES) SENT TO:^^$CPTO^COPY(IES) SENT
TO:||20181004120500|||||20181004154600||1235121963^WATKINS^KENNETH^D^^^^^^^^^~1235
121963^WATKINS^KENNETH^^^^^^^^^||||$CPTO_1018||20181009115000||F|
OBX|1|TX|^^^$CPTO^COPY(IES) SENT TO:^QDIMJV|||||F||20181009115000|
NTE|1|| |
NTE|2|| SAMPLE LABS|
NTE|3|| 123 E MAIN STREET|
NTE|4|| METROPOLIS, IN 55555-5555|
OBR|2|XXXXXXXX|JIXXXXXXU|90348^PAIN MANAGEMENT PROFILE 5 W/ CONFIRMATION,
URINE^^90348RAMD=^PAIN MANAGEMENT PROFILE 5 W/ CONFIRMATION,
URINE||20181004120500|||||20181004154600||1235121963^WATKINS^KENNETH^D^^^^^^^^^~1
235121963^WATKINS^KENNETH^^^^^^^^^||||AMD|20181009115000||F|
```



ZTX|Matched|345^456^654^123|https://123sf
 OBX|1|ST|29305-0^Medication prescribed^LN^82090100^Prescribed Drug
 1^QDIMJV||Hydrocodone||||F||AOE|20181009115000|AMD|
 ZDR|90348|29305-0|Prescribed \& Detected^Consistent: Patient tested positive for an active
 prescription|Direct^|1||
 OBX|2|NM|2161-8^Creat Ur-mCnc^LN^84002730^Creatinine^QDIMJV||107.0|mg/dL|> or =
 20.0||||F|||20181009115000|AMD|
 ZDR|90348|2161-8|Prescribed \& NOT Detected^Inconsistent: Patient tested negative for an
 active prescription.|no_match^|1||

hc1 Opioid Advisor Outbound Message Example

Note: hc1 Opioid Advisor segments are in Red

MSH|^~\&|hc1OpioidAdvisor|hc1.com|Lab|255300|20181009115918||ORU^R01|8000000000136602
 2291|P|2.3.1|
 PID|1|XXXXXX;XX|XXXXXXXXXX|XXXXXXXX|XXXXX^XXXXX^XXXXX|XXXXXXXX|F|||||XXXXXXXX|XXXXXXXX|
 ORC|RE|XXXXXXXX|JIXXXXXXU||CM|||||1235121963^WATKINS^KENNETH^D^^^^^^^^^UPIN|
 OBR|1|XXXXXXXX|JIXXXXXXU|\$CPTO^COPY(IES) SENT TO:^^\$CPTO^COPY(IES) SENT
 TO:||||20181004120500|||||20181004154600||1235121963^WATKINS^KENNETH^D^^^^^^^^^~1235
 121963^WATKINS^KENNETH^^^^^^^^^||||\$CPTO_1018||20181009115000||F|
 OBX|1|TX|^^\$CPTO^COPY(IES) SENT TO:^QDIMJV||||F|||20181009115000|
 NTE|1| |
 NTE|2| SAMPLE LABS|
 NTE|3| 123 E MAIN STREET|
 NTE|4| METROPOLIS, IN 55555-5555|
 OBR|2|XXXXXXXX|JIXXXXXXU|90348^PAIN MANAGEMENT PROFILE 5 W/ CONFIRMATION,
 URINE^^90348RAMD=^PAIN MANAGEMENT PROFILE 5 W/ CONFIRMATION,
 URINE|||20181004120500|||||20181004154600||1235121963^WATKINS^KENNETH^D^^^^^^^^^~1
 235121963^WATKINS^KENNETH^^^^^^^^^||||AMD|20181009115000||F|
 ZTX|Matched|345^456^654^123|https://123sf
 OBX|1|ST|29305-0^Medication prescribed^LN^82090100^Prescribed Drug
 1^QDIMJV||Hydrocodone||||F||AOE|20181009115000|AMD|
 ZDR|90348|29305-0|Prescribed \& Detected^Consistent: Patient tested positive for an active
 prescription|Direct^|1||
 OBX|2|NM|2161-8^Creat Ur-mCnc^LN^84002730^Creatinine^QDIMJV||107.0|mg/dL|> or =
 20.0||||F|||20181009115000|AMD|



ZDR|90348|2161-8|Prescribed \& NOT Detected^Inconsistent: Patient tested negative for an active prescription.[no_match^|1|]

ADT Overview

HealthCloud One (hc1) has the ability to interface with existing systems using HL7 messages. This document describes in detail the layout of the HL7 ADT message supported by hc1 and how the fields map to the native DataFeed objects within hc1. HL7 ADT messages that do not conform to these definitions may still be supported through custom mappings implemented using hc1 Connect, but that is outside the scope of this document.

Initially, the HL7 transactions that will be supported are:

Message Type	Inbound (Received by hc1)	Notes
ADT^A01	Yes	Admit/Visit Notification
ADT^A02	Yes	Transfer a Patient
ADT^A03	Yes	Discharge/End Visit
ADT^A04	Yes	Register a Patient
ADT^A05	Yes	Pre-Admit a Patient
ADT^A06	Yes	Change an Outpatient to an Inpatient
ADT^A07	Yes	Change an Inpatient to an Outpatient
ADT^A08	Yes	Update Patient Information
ADT^A11	Yes	Cancel Admit
ADT^A12	Yes	Cancel Transfer
ADT^A13	Yes	Cancel Discharge / End Visit
ADT^A14	Yes	Pending Admit
ADT^A15	Yes	Pending Transfer
ADT^A16	Yes	Pending Discharge
ADT^A17	Yes	Swap Patients
ADT^A25	Yes	Cancel Pending Discharge
ADT^A26	Yes	Cancel Pending Transfer
ADT^A27	Yes	Cancel Pending Admit
ADT^A28	Yes	Add Person Information
ADT^A31	Yes	Update Person Information
ADT^A38	Yes	Cancel Pre-Admit



ADT Message Details

This section describes the message structure of the HL7 ADT transactions as supported by hc1.

ADT Message

The segment structure used by hc1 is as follows:

MSH	Message Header
EVN	Event Type
PID	Patient Identification
[PD1]	Additional Demographics
[{ NK1 }]	Next of Kin / Associated Parties
PV1	Patient Visit
[PV2]	Patient Visit – Additional Info.
[{ DB1 }]	Disability Information
[{ OBX }]	Observation / Result
[{ AL1 }]	Allergy Information
[{ DG1 }]	Diagnosis Information
[DRG]	Diagnosis Related Group
[{	
PR1	Procedures
[{ ROL }]	Role
}]	
[{ GT1 }]	Guarantor
[{	
IN1	Insurance
[IN2]	Insurance Additional Info.
[{ IN3 }]	Insurance Add'l Info – Cert.
}]	
[ACC]	Accident Information
[UB1]	Universal Bill Information
[UB2]	Universal Bill 92 Information

1. As a whole, this list of segments includes all of the possible segments that hc1 supports across all of the supported Messages Types. Some Message Types can only support a sub-set of all of these segments. The list of segments supported by Message Type is not defined in this document.



ADT Segment Details

The following are descriptions of each segment used by hc1. Fields are identified as optional, required or unused by the following values and colors:

Use Identifier	Description
O	Optional
R	Required
U	Unused
S	User Selected Option

Notes:

- 1) Selected option groups will be defined in Appendix A.
- 2) Not all segment details are included in this document. Only those segments which contain field values that can be stored in hc1 are documented.

ADT MSH

The MSH segment is the common header used in all HL7 transactions.

Field	Use	HL7 Name	Example
MSH-0	R	Segment ID	MSH
MSH-1	R	Field Separator	
MSH-2	R	Encoding Characters	^~\&
MSH-3	O	Sending Application	Epic
MSH-4	O	Sending Facility	Hospital
MSH-5	O	Receiving Application	Hc1
MSH-6	O	Receiving Facility	Hc1
MSH-7	O	Message Date/Time	20110923142309
MSH-8	U	Security	



Field	Use	HL7 Name	Example
MSH-9.1	R	Message Type	ADT
MSH-9.2	R	Event Type	A01, A02, etc.
MSH-10	R	Message Control ID	1234564
MSH-11	R	Processing ID	P, T
MSH-12	R	Version ID	2.3

ADT PID

The PID segment is used to transmit patient demographic information.

Field	Use	HL7 Name	Example
PID-0	R	Segment ID	PID
PID-1	O	Set ID	1
PID-2	S ¹	Patient ID	
PID-3	S ¹	Patient ID List	
PID-4	S ¹	Alternate Patient ID	
PID-5.1	R	Patient Name - Last Name	Smith
PID-5.2	R	Patient Name - First Name	Joseph
PID-5.3	O	Patient Name - Middle Name	A
PID-5.4	O	Patient Name - Suffix	JR
PID-5.5	O	Patient Name - Prefix	DR
PID-5.6	O	Patient Name - Degree	MD
PID-6	U	Mother's Maiden Name	
PID-7	O	Date/Time of Birth	19711001
PID-8	O	Sex	M = Male F = Female U = Unknown O = Other
PID-9	U	Patient Alias	
PID-10	U	Race	
PID-11.1	O	Patient Address - Street Address	123 Main Street
PID-11.2	O	Patient Address - Other Designation	Apt. 1
PID-11.3	O	Patient Address - City	Indianapolis
PID-11.4	O	Patient Address - State	IN
PID-11.5	O	Patient Address - zip	46236
PID-11.6	O	Patient Address - Country	ISO-3166-3 country code



Field	Use	HL7 Name	Example
PID-12	U	County Code	
PID-13	O	Phone Number – Home	555-555-5555
PID-14	O	Phone Number – Business	555-555-5555
PID-15	U	Primary Language	
PID-16	U	Marital Status	
PID-17	U	Religion	
PID-18	U	Patient Account Number	
PID-19	O	SSN	###-##-####
PID-20	U	Patient Driver’s License #	
PID-21	U	Mother’s Identifier	
PID-22	U	Ethnic Group	
PID-23	U	Birth Place	
PID-24	U	Multiple Birth Indicator	
PID-25	U	Birth Order	
PID-26	O	Citizenship	US
PID-27	U	Veterans Military Status	
PID-28	O	Nationality	US
PID-29	O	Patient Death Date/Time	201501011200
PID-30	U	Patient Death Indicator	

ADT PV1

The PV1 segment is used to transfer information about a patient visit/encounter.

Field	Use	HL7 Name	Example
PV1-0	R	Segment ID	PV1
PV1-1	O	Set ID	1
PV1-2	O	Patient Class	E, I, O
PV1-3.1	O	Assigned Patient Location - Point of Care	ORG100
PV1-3.2	O	Assigned Patient Location - Room	R100
PV1-3.3	O	Assigned Patient Location - Bed	B100
PV1-3.4	U	Assigned Patient Location - Facility	
PV1-4	U	Admission Type	
PV1-5	U	Pre-admit Number	



Field	Use	HL7 Name	Example
PV1-6	U	Prior Patient Location	
PV1-7	O	Attending Doctor ID	JSMITH123^SMITH^JOHN
PV1-8	O	Referring Doctor	JDOE123^DOE^JANE
PV1-9	U	Consulting Doctor	
PV1-10	U	Hospital Service	
PV1-11	U	Temporary Location	
PV1-12	U	Pre-admit Test Indicator	
PV1-13	U	Re-admission Indicator	
PV1-14	U	Admit Source	
PV1-15	U	Ambulatory Status	
PV1-16	U	VIP Indicator	
PV1-17	U	Admitting Doctor	
PV1-18	U	Patient Type	
PV1-19	S ²	Visit Number	V12345
PV1-20	U	Financial Class	
PV1-21	U	Charge Price Indicator	
PV1-22	U	Courtesy Code	
PV1-23	U	Credit Rating	
PV1-24	U	Contract Code	
PV1-25	U	Contract Effective Date	
PV1-26	U	Contract Amount	
PV1-27	U	Contract Period	
PV1-28	U	Interest Code	
PV1-29	U	Transfer to Bad Debt Code	
PV1-30	U	Transfer to Bad Debt Date	
PV1-31	U	Bad Debt Agency Code	
PV1-32	U	Bad Debt Transfer Amount	
PV1-33	U	Bad Debt Recovery Amount	
PV1-34	U	Delete Account Indicator	
PV1-35	U	Delete Account Date	
PV1-36	U	Discharge Disposition	
PV1-37	U	Discharge to Location	
PV1-38	U	Diet Type	
PV1-39	U	Servicing Facility	
PV1-40	U	Bed Status	
PV1-41	U	Account Status	
PV1-42	U	Pending Location	



Field	Use	HL7 Name	Example
PV1-43	U	Prior Temporary Location	
PV1-44	O	Admit Date/Time	201501010800
PV1-45	O	Discharge Date/Time	201201011200
PV1-46	U	Current Patient Balance	
PV1-47	U	Total Charges	
PV1-48	U	Total Adjustments	
PV1-49	U	Total Payments	
PV1-50	S ²	Alternate Visit ID	V12345
PV1-51	U	Visit Indicator	
PV1-52	U	Other Healthcare Provider	

ADT Appendix A

Use Identifier		Description				
O		Optional				
R		Required				
S		User Selected Option				
Common Name		Optional HL7 Fields				
Patient ID	S ¹	PID:2	PID:3	PID:4		



hc1 Opioid Advisor Appendix A

Use Identifier	Description
O	Optional
R	Required
S	User Selected Option

Common Name		Optional HL7 Fields								
Patient ID's	S ¹	PID:2	PID:3	PID:4	PID:18	PID:19				
Ordering Provider (NPI)	S ²	PV1:7.1	ORC:12.1	OBR:16.1	OBR:16.10	OBR:12.10				
Visit ID	S ³	PID:18	PV1:19	PV1:50						
Ordering Location	S ⁴	PV1:3.4	ORC:13	ORC:21	MSH:4					
Collection Location	S ⁵	PV1:3.4	ORC:13	ORC:21	MSH:4					
Order Date	S ⁶	ORC:9	OBR:6	OBR:27.4	OBR:7	MSH:7				
Collection Date	S ⁷	OBR:7	OBR:8							
Sample ID's	S ⁸	ORC:2	ORC:3	ORC:4	OBR:2	OBR:3	OBR:18	OBR:19	OBR:20	OBR:21
Order ID	S ⁹	ORC:2	ORC:3	ORC:4	OBR:2	OBR:3	OBR:18	OBR:19	OBR:20	OBR:21

Patient ID, Ordering Location, Order Date, Sample ID and Order ID are required on all messages.

*Sample ID can match Order ID

If encounters or patient class are going to be used Visit ID is also required.



hc1 Opioid Advisor Appendix B

Note: This is an example report for illustrative purposes only. The report can be tailored to meet client specifications and may or may not include the PDMP check button or NARx Scores.

hc1 Opioid Advisor Patient Page | Home Page | Printer Friendly Page

Alice Testpatient Report Date: 06/20/2019 02:00:39PM

DOB: 01/01/1900 Gender: Female Address: 555 Fake Dr. Wichita, KS 67203 Phone: 111-222-3333

Lab Order

Order Number	M375297_1218	Date Collected	12/21/2018 04:23:00PM	Provider	Julie Griffin
Specimen ID	M375297_1218	Date Received	12/24/2018 11:22:00AM	Provider NPI	0899878765
Patient ID	100293852	Date Resulted	12/27/2018 10:47:59AM	Location	
MRN #	887654	Performing Lab		Location Address	

! Patient has a recently dispensed prescription in the PDMP for which there was no test. Review PDMP for details.

Consistency Summary NARx Scores State PDMP Report Viewed View PDMP Report

Dispensed & Detected	Dispensed & Not Detected	Detected & NOT Dispensed
(none)	(none)	BUPRENORPHINE NORBUPRENORPHINE

Filter > All

	Panel	Test	Result	PDMP Prescription	Comments
●	BUPRENORPHINE, QN, URINE	BUPRENORPHINE	Positive	No Match	Inconsistent: Patient tested positive but does not have an active prescription for that drug.
●	BUPRENORPHINE, QN, URINE	NORBUPRENORPHINE	Positive	No Match	Inconsistent: Patient tested positive but does not have an active prescription for that drug.
	OXYCODONE, CONFIRMATION BY GC/MS, URINE	OXYCODONE	Negative	No Match	Consistent



Document History

Revision	Date	Updated By	Notes
0.8	10/15/18	Richard Oder	Initial Draft
0.85	10/28/18	Richard Oder	Added Z Segments and
1.0	10/29/18	Richard Oder	Modified ZDR and added report Appendix B
2.0	1/29/2019	Trista Fawley	Added ADT and Updated Document
3.0	01/09/2020	Stacy Uland	Rebranded, changed Tox Advisor to hc1 Opioid Advisor, updated Opioid Advisor screenshot, removed .com from hc1, changed SSN format to ###-##-####