



# PC ECG 1200 system HL7 Conformance Statement

**VERSION 1**

# 1 Introduction

## 1.1 Purpose of this Document

This document is an HL7 conformance statement, describing the HL7 message structures supported by the HL7 Interface component of the Norav PCECG package. The HL7 Interface handles incoming and outgoing HL7 messages.

The reader of this document is assumed to have a working understanding of the concepts that are used in the HL7 2.xx standard, and this document should be read in conjunction with that standard.

## 2 Communication Protocols

### 2.1 Socket Interface

Not supported in Norav PCECG HL7 Interface.

### 2.2 File Interface

Norav PCECG HL7 Interface supports a file based interface, whereby each incoming/outgoing HL7 message is stored in individual file and placed into shared directory in network. Files are processed with no preference order. The naming convention requires the .HL7 filename extension (case insensitive).

### 2.3 Message Structure

Messages are structured as specified in the HL7 v2.xx standard, with a message consisting of a number of segments, each of which consists of a number of fields. Segments may be terminated with a Line Feed code (0x0A) or a Carriage Return/Line Feed pair (0x0D + 0x0A). Characters are expected to be in 8-bit ASCII format; any characters with a code lower than 0x20 other than file or line terminators are ignored.

### 2.4 Delimiters and Escape Sequences

The delimiters used when processing HL7 messages are locked to the following Encoding Characters:

Encoding Character	ASCII Code	Function
	0x7C	Field Separator
^	0x5E	Component Separator
&	0x26	Sub-Component Separator
~	0x7E	Repetition Separator

## 3 Acknowledgement Messages

Not supported in Norav PCECG HL7 Interface.

## 4 HL7 Messages

### 4.1 Methods

Methods supported by the HL7 Interface in Norav PCECG are:

- Receive Patient Demographics
- Receive Booking Orders
- Send Observation Results

The following sections detail the information that is required for each of the above methods and the HL7 message types and fields that may be used to supply it. Any HL7 message fields that are not noted in the Norav PCECG HL7 Interface are ignored when the message is read.

### 4.2 Required Segments

Segments MSH and PID are required in HL7 messages to be handled by the Norav PCECG HL7 Interface.

### 4.3 Receive Patient Demographics

The table below details the information that is required and optional for receive patient demographics input method on the Norav PCECG HL7 Interface. Suggested HL7 message fields are noted where relevant.

Suitable HL7 message types for supplying this information include ADT messages (but are not limited to).

Norav PCECG Data Field	R/O	Suggested HL7 Field	
Patient ID	O(*)	PID-2 or PID-3	(*) Note: patient data cannot be blank 100%. Therefore at least one of the PID-2/PID-3 fields or the PID-5.1 field must be filled
Patient Last Name	O(*)	PID-5.1	
Patient First Name	O(*)	PID-5.2	
Date of Birth	O	PID-7	
Sex	O	PID-8	
Weight	O	OBX-4 (requires the OBX-2 = 'NM', OBX-3 = 'WT', OBX-5 = 'KG' or 'LBS' )	
Height	O	OBX-4 (requires the OBX-2 = 'NM', OBX-3 = 'HT', OBX-5 = 'CM' or 'IN' )	

### 4.4 Receive Booking Orders

The table below details the information that is required and optional for the booking orders input method on the Norav PCECG HL7 Interface. Suggested HL7 message fields are noted where relevant.

HL7 message types for supplying this information include the ORM^O01 orders (but are not limited to).

Norav PCECG Data Field	R/O	Suggested HL7 Field	
Patient ID	O(*)	PID-2 or PID-3	(*) Note: patient data cannot be blank 100%. Therefore at least one of the PID-2/PID-3 fields or the PID-5.1 field must be filled
Patient Last Name	O(*)	PID-5.1	
Patient First Name	O(*)	PID-5.2	
Date of Birth	O	PID-7	
Sex	O	PID-8	
Weight	O	OBX-4 (requires the OBX-2 = 'NM', OBX-3 = 'WT', OBX-5 = 'KG' or 'LBS' )	
Height	O	OBX-4 (requires the OBX-2 = 'NM', OBX-3 = 'HT', OBX-5 = 'CM' or 'IN' )	
Order Control	R	ORC-1 (the value must be 'NW' or 'SC')	
Order ID	O	ORC-2 or OBR-2	
Test Type	O	OBR-4 (expected values should be configured in Norav PCECG setup too)	
Scheduled Date	O	OBR-6 or OBR-7 or OBR-27 (when the ordered test has to be performed)	
Location	O	OBR-16 (the office requesting or performing the examination)	

## 4.5 Send Observation Results

The table below details the information that is required and optional for the observation results send method on Norav PCECG HL7 Interface. Suggested HL7 message fields are noted where relevant.

The HL7 message type for supplying this information is ORU^R01 observation results message.

Norav PCECG Data Field	R/O	Suggested HL7 Field	
Message header	R	is always 'MSH'	
HL7 Field Separator	R	MSH-1 (is always ' ')	
Encoding Characters	R	MSH-2 (is always '^~\&')	
Sending Application	O	MSH-3 (configured in Norav PCECG setup )	
Sending Facility	O	MSH-4 (configured in Norav PCECG setup )	
Receiving Application	O	MSH-5 (configured in Norav PCECG setup )	
Receiving Facility	O	MSH-6 (configured in Norav PCECG setup )	
Date/Time Of Message	R	MSH-7 (generated automatically as 'YYYYMMDDHHmmss' string)	
Security	R	MSH-8 (is always '0')	
Message Type	R	MSH-9 (is always 'ORU^R01')	
Message Control ID	R	MSH-10 (generated automatically as 'YYYYMMDDHHmmssfff' time string)	
Processing ID	R	MSH-11 (is always 'P')	
HL7 Version	R	MSH-12 (is always '2.3')	
Set ID of PID segment	R	PID-1 (is always '1')	
Patient ID	O(*)	PID-2, PID-3, and PID-18	(*) Note: patient data cannot be blank 100%. Therefore at least PID-2/PID-3/PID-18 fields or the PID-5 field will be filled
Patient Last Name	O(*)	PID-5.1	
Patient First Name	O(*)	PID-5.2	
Date of Birth	O	PID-7 ('YYYYMMDD' format string)	
Set ID of OBR segment	R	OBR-1 (is always '1')	
Order ID	O	OBR-2 and OBR-3	
Test Type	R	OBR-4 (configured in Norav PCECG setup )	
Test Time	R	OBR-7 (examination date/time as 'YYYYMMDDHHmmss' string )	
Ordering Provider	O	OBR-16 (configured in Norav PCECG setup )	
Result Status	R	OBR-25 and OBX-11 (is always 'F')	
Set ID of OBX segment	R	OBX-1	
Report Type	R	OBX-2 (supported types: 'RP', 'ED', 'TX', 'NM', 'ST')	
Result Type	R	OBX-3 (LOINC code of the result or type of the embedded document)	
Result Value	R	OBX-5 (textual value or base64 embedded document)	
Result Units	O	OBX-6 ('ms', 'mV', etc.)	

## Appendix: Example Messages

### Receive Patient Demographics

HIS:

MSH|^~\&|HIS|HIS|Norav|Norav|199912271408|CHARRIS|ADT^A04|1817457|D|2.5|  
PID||0493575^^^2^ID 1|454721||DOE^JOHN^^^^|DOE^JOHN^^^^|19480203|M||B|MYSTREET^^MYTOWN^OH^44123^USA||||M|NON|40003403~1129086|  
NK1||ROE^MARIE^^^^|SPO||||EC||||||||||||||||||||||||||||||||  
PV1||O|168~219~C~PMA^^^^^^^^^^|277^MYLASTNAME^^^^^|2688684|||||||199912271408|||||002376853

### New Order (ORM^O01)

HIS:

MSH|^~\&|HIS|HIS|Norav|Norav|20150609150358|ORM^O01|20150609155803834|P|2.3||  
PID|1||123456789^^^CUH||Doe^John^^^Mr.||19600119|M||99 Street addr.^City||||Married||||  
PV1|1|CAT02|^Cardiology^CARD2||||EE128^Smith^John||||||||||||||||||||||||||||NA||||20150609150358|20150609150358||||  
ORC|NW|001BQXKKR|001BQXKKR|||^2.032||20150609150358|EE128^Smith^John||||20150910||||  
OBR|1|001BQXKKR|001BQXKKR|ECG^Resting ECG||20150910094500||||20150910||261704|||||^20150910094500|||Hypertension||||

### Observation Results (ORU^R01)

NEMS-Q:

MSH|^~\&|RAD|NoravECG|Athena|4633|20150628094040|ORU^R01|20150628094040546|P|2.3||  
PID|1|011111|011111|||||||||011111|  
OBR|1|XXXXXX|XXXXXX|34534-8^EKG 12 channel panel^LN||20152806133947|||||1234567^Dr. Smith|||||F|||||  
OBX|1|ED|PDF^PDF^ADTX|ADTX^Img^PDF^Base64^JVBERi0xLjQNCiXH7I... ..embedded PDF file... ..RU9GDQo=|||||F|||||