Protocol Specifications

Bedside Monitor

SVM-7500 series, SVM-7600 series

Vital Signs Monitor

SVM-7100 series

0614-907871

NIHON KOHDEN

The contents of this manual are subject to change without notice. If you have any comments or suggestions on this manual, please contact us at: https://www.nihonkohden.com/

⚠ **WARNING**	A warning alerts the user to possible injury or death associated with the use or misuse of the instrument.
⚠ **CAUTION**	A caution alerts the user to possible injury or problems with the instrument associated with its use or misuse such as instrument malfunction, instrument failure, damage to the instrument, or damage to other property.

⚠ WARNING

When several medical instruments are used together, ground all instruments to the same one-point ground. Any potential difference between instruments may cause electrical shock to the patient and operator.

⚠ WARNING

When using the HL7 output data in a bedside monitor or vital signs monitor, connect only the specified instrument to the bedside monitor or vital signs monitor, and follow the specified procedure. Otherwise, the patient or operator may receive electrical shock.

⚠ WARNING

Do not use the HL7 output data as monitoring data for diagnosis. For monitoring a patient, use monitoring equipment such as a bedside monitor or a vital signs monitor in continuous mode. Shanghai Kohden is not responsible for use and application of output data.

⚠ CAUTION

Before connecting or disconnecting instruments, make sure that each instrument is turned off and the power cord is disconnected from the AC socket. Otherwise, it may cause electrical shock to the patient or operator, or it may cause data loss, malfunction or instrument failure.

⚠ CAUTION

Do not pull the cables with too much force and keep the cables out of the way. Otherwise, people may trip over them, the personal computer, bedside monitor or vital signs monitor may fall and injure the patient or operator, and monitoring may be affected.

⚠ CAUTION

Be careful to avoid computer viruses when connecting instruments to the HL7 output port on the bedside monitor or vital signs monitor.

⚠ CAUTION

Shanghai Kohden is not responsible for the following:

- Installation and management problems of an instrument or connector connected to the HL7 output port on the bedside monitor or vital signs monitor.
- Problems on the bedside monitor or vital signs monitor caused by the connected instruments or connector.

⚠ CAUTION

Using the same IP address on multiple instruments or making a loop connection on the network hub may cause serious damage to the connected instruments. Network management must only be done by qualified service personnel or a person with technical knowledge.

⚠ CAUTION

The bedside monitor and vital signs monitor are medical instruments and strict standards are applied.
However, there is a possibility that connecting the bedside monitor or vital signs monitor to a personal computer causes leakage current to flow to the patient or operator and leads to a dangerous situation. It could be a legal matter if the HIS supplier does not provide sufficient information or training to the customer in regard to the above issues.
Take necessary measures such as isolation by a light isolator or isolation transformer, and provide sufficient training to the customer or medical staff.

⚠ CAUTION

For customer convenience, Shanghai Kohden provides information for outputting HL7 data as needed.
However, Shanghai Kohden is not responsible for any use of output HL7 data directly involved with the patient life such as alarms or feedback system.
Also, be careful about effect from ECG artifact or data loss caused by noise from data transfer.

⚠ CAUTION

The specifications in this Protocol Specification are correct as of September 2019. If the bedside monitor or vital signs monitor software is updated, the specifications, especially messages, may change.

⚠ CAUTION

This document contains confidential technical information which is intended only for use of authorized customers, and may not be shared with any other third party. If you need to share this information with a third party, contact Shanghai Kohden.

Contents

1. Overview

This document describes the HL7 version 2.4-based interface specifications for the bedside monitor / vital signs monitor protocol.

Responsibility

Shanghai Kohden is not responsible for any damage or harm caused by use of this product.
Shanghai Kohden is not responsible for any damage or harm caused by use of data from the bedside monitor / vital signs monitor.
The user is responsible for any use of data from the bedside monitor / vital signs monitor.

1.1. Behavior

The bedside monitor / vital signs monitor

- The data output from the bedside monitor / vital signs monitor to an external system can not be used for the diagnosis.
- The bedside monitor / vital signs monitor assumes cooperation with an external system (such as HIS) and handles information that is monitored by the bedside monitor / vital signs monitor.
- Based on a patient ID entered from the bedside monitor / vital signs monitor, the external system is queried about patient information through the HL7 protocol and the information is returned to the bedside monitor / vital signs monitor.
- The information retrieved from the bedside monitor / vital signs monitor is sent to the external system actively on a regular basis or as required by the system.
- The information to send is the information retrieved from the bedside monitor / vital signs monitor, including observation information, and patient attribute information (retrieved from the external system).
- Continuous data output might fail because of a high load or temporary error in the network or the bedside monitor / vital signs monitor.

1.2. Interfaces

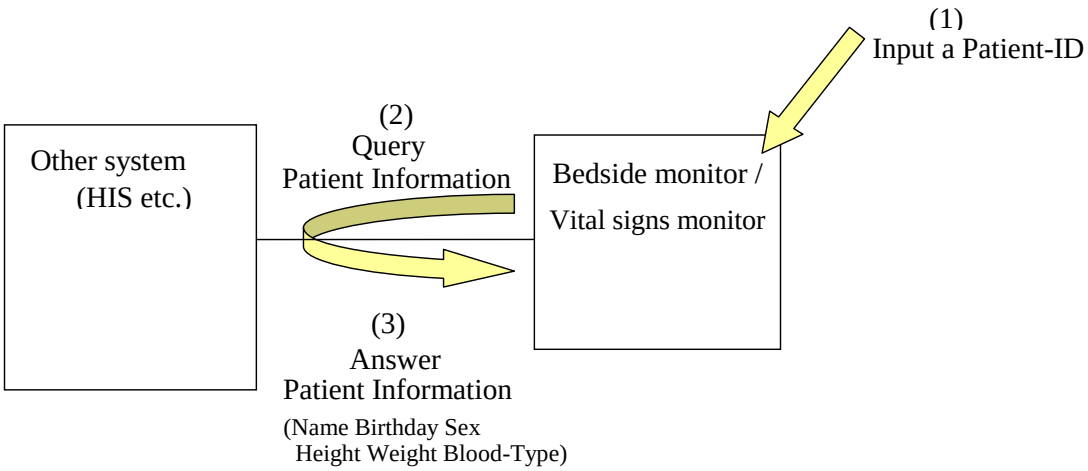
The bedside monitor /vital signs monitor provides the following information exchanges by the single-session.

1) Query and response of patient information

When a patient ID is entered by the bedside monitor / vital signs monitor, it requests the patient attribute information from the external system, and registers the patient attribute information received from the external system into itself.

This function uses QRY/ADR of HL7 (Event A19).

External system	<	[	QRY^A19	]	<	Bedside monitor / vital signs monitor
External system	>	[	ADR^A19	]	>	Bedside monitor / vital signs monitor



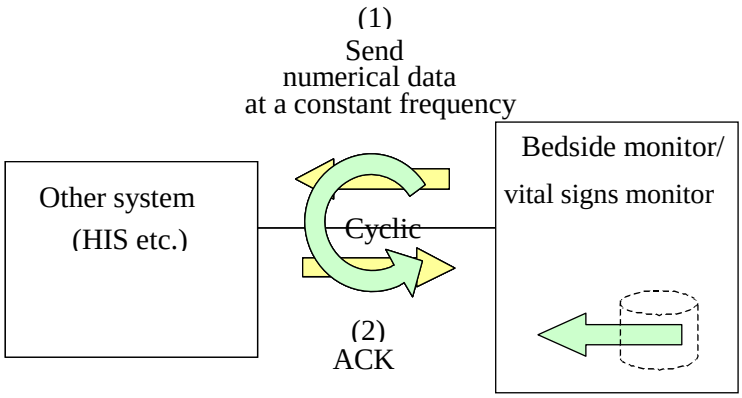
- Any query is limited to a query and response for only one patient at a time.

2) Unsolicited transmission of observation values

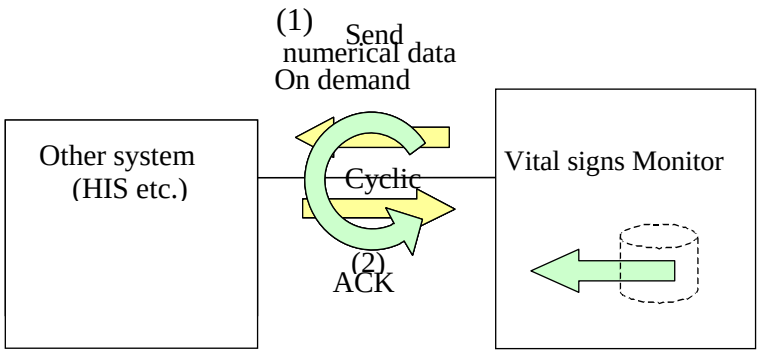
By using the Session Open from the external system as a trigger, the bedside monitor / vital signs monitor (continuous mode) automatically sends the recent observation information to the external system at the preset interval. And vital signs monitor also sends the on-demand observation information to the external system non-periodically.

This function uses ORU/ACK of HL7 (Event R01).

External system	<	[	ORU^R01	]	<	Bedside monitor / vital signs monitor
External system	>	[	ACK^R01	]	>	Bedside monitor / vital signs monitor



- This function returns the recent value monitored by the bedside monitor or vital signs monitor, but the value is not real-time information.



- This function returns the values by the vital signs monitor non-periodically.

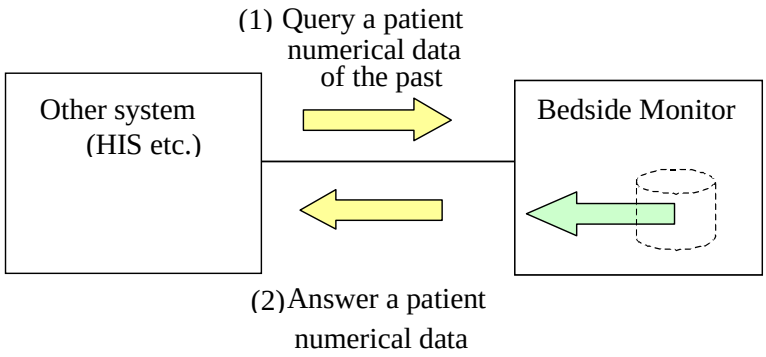
3) Query and response of observation values

When the external system makes a query, with a patient ID and period specified, to find previous observation information, the bedside monitor sends the observation value to the external system at the preset sampling.

The function uses QRY/ORF of HL7 (Events R02 and R04).

External system > [QRY^R02] > Bedside monitor

External system < [ORF^R04] < Bedside monitor



- The width of a single request with the period specified is 10 samplings or less. A one-minute interval provides 10 minutes or less.
- This function returns the numerical observation data corresponding to a specified patient ID and it is stored by the bedside monitor. The data storage period depends on the bedside monitor.
- An excessive request will cause an overload in the bedside monitor or network, probably leading to a problem such as an instable monitoring system or data output discontinuation. The problem must be solved by the client (external system) side.

2. Communication Protocol

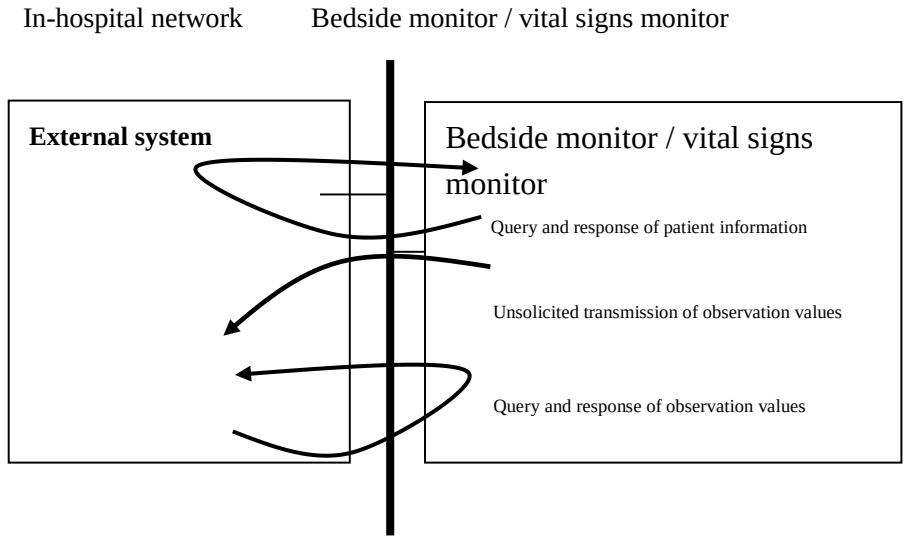
2.1. Communication Acceptance

TCP/IP socket connections

Query and response of patient information	The bedside monitor / vital signs monitor acts as a client.
Unsolicited transmission of observation values	The bedside monitor / vital signs monitor acts as a server.
Query and response of observation values	The bedside monitor acts as a server.

- Port numbers are required individually for the above table.
- A client establishes a communication (socket open).
- It is assumed that any open socket will be closed the moment when a single request has been completed, unless an event such as a failure or restart occurs. If a connection is refused, the client application must make connection attempts until the connection is accepted.
- Any failure of the bedside monitor must be displayed on the HIS side as an alert.

Once communication is established between the two systems, message exchanges start. The sending system initiates message transmission. After transmitting a message, the sending application must wait for an HL7 message-type response before transmitting the next message. If the sending application does not receive an HL7 message-type response within a specified time, it retransmits the message.



3. Data Structure

Every HL7 message ends with <EOM> (End of message).

4. Data Items

Patient information (information sent to a monitor)

Patient name: PID-5
Patient ID (internal ID): PID-3
Birth date: PID-7
Sex: PID-8
Diagnosis: DG1-4 *1)
Height: OBX-2,3,5,6
Weight: OBX-2,3,5,6
Blood type: OBX-2,3,5,6

The following two items are automatically generated from the above information.
Age: Calculated from the birth date.
Body surface area (BSA): Calculated from the height and weight.

*1) It is unsuitable to use DG1-4 information as a doctor name.

Vital sign data (information sent to the other system)

HR, Resp, Temp, BP (SYS, DIAS, MEAN), SpO2, NIBP (SYS, DIAS, MEAN), etc.

The data indicates instantaneous values.
The transmission interval is a time interval set in the bedside monitor / vital signs monitor.
Up to 255 items of vital sign data are sent from a single bedside monitor/ vital signs monitor.
For irregular data such as NIBP, the value measured within the transmission interval is sent.
An excessive request will cause an overload in the central monitor, the bedside monitor / vital signs monitor, network, probably leading to a problem such as an instable monitoring system or data output discontinuation. The problem must be solved by the client (external system) side.
Manual Input Parameter (information sent to the system)

Pain level, Respiration rate, AVPU, etc.
All selected up to 30 items of manual input parameters, measurement position, up to 6 items of notes, and EWS score are sent from a single vital signs monitor by pressing [Save/send] key.
256 characters can be entered into Note function.

5. Description of Abbreviations

Abbreviations used in each message or segment table are described below. (Common to all tables)

SEQ: Ordinal position of the data field within the segment. This number is used to refer to the data field in the text comments that follow the segment definition table.

LEN: Maximum number of characters that one occurrence of the data field may occupy.

DT: Restrictions on the contents of the data field.

OPT: Whether the field is required, optional, or conditional in a segment.

- R - required
- O - optional
- C - conditional on the trigger event or on some other field(s). The field definitions following the segment attribute table should specify the algorithm that defines the conditionality for this field.
- X - not used with this trigger event
- B - left in for backward compatibility with previous versions of HL7. The field definitions following the segment attribute table should denote the optionality of the field for prior versions.

BSM: A setup by this specification (this item defines the existence of segment in this system, or an element setup) Bedside monitor SVM-7500 Series. / SVM-7600 Series.

- R - required
- O - optional
- C - conditional on the trigger event or on some other field(s). The field definitions following the segment attribute table should specify the algorithm that defines the conditionality for this field.
- X - not used with this trigger event
- B - left in for backward compatibility with previous versions of HL7. The field definitions following the segment attribute table should denote the optionality of the field for prior versions.
- N - Usually, it is not used (it is used only in institution).

SVM: A setup by this specification (this item defines the existence of segments in this system, or element setup) Vital signs monitor SVM-7100 Series.

- R - required
- O - optional
- C - conditional on the trigger event or on some other field(s). The field definitions following the segment attribute table should specify the algorithm that defines the conditionality for this field.
- X - not used with this trigger event
- B - left in for backward compatibility with previous versions of HL7. The field definitions following the segment attribute table should denote the optionality of the field for prior versions.
- N - Usually not used (it is used only in Institution).

RP/#: Whether the field may repeat.

N or blank	-	no repetition
Y	-	the field may repeat an indefinite or site-determined number of times
(integer)	-	the field may repeat up to the number of times specified by the integer

Remarks: Fixed value is described in this column.

6. Message Delimiters

In constructing a message, certain special characters are used. They are the segment terminator, the field separator, the component separator, subcomponent separator, repetition separator, and escape character. The segment terminator is always a carriage return (in ASCII, a hex 0D). The other delimiters are defined in the MSH segment, with the field delimiter in the 4th character position, and the other delimiters occurring as in the field called Encoding Characters, which is the first field after the segment ID. The delimiter values used in the MSH segment are the delimiter values used throughout the entire message. In the absence of other considerations, HL7 recommends the suggested values found in Figure 2-1. Delimiter values.

At any given site, the subset of the possible delimiters may be limited by negotiations between applications. This implies that the receiving applications will use the agreed upon delimiters, as they appear in the Message Header segment (MSH), to parse the message.

Delimiter	Suggested Value	Encoding Character Position	Usage
Segment Terminator	<cr> (hex 0D)	-	Terminates a segment record. This value cannot be changed by implementers.
Field Separator	|	-	Separates two adjacent data fields within a segment. It also separates the segment ID from the first data field in each segment.
Component Separator	^	1	Separates adjacent components of data fields where allowed.
Subcomponent Separator	&	4	Separates adjacent subcomponents of data fields where allowed. If there are no subcomponents, this character may be omitted.
Repetition Separator	~	2	Separates multiple occurrences of a field where allowed.
Escape Character	\	3	Escape character for use with any field represented by an ST, TX or FT data type, or for use with the data (fourth) component of the ED data type. If no escape characters are used in a message, this character may be omitted. However, it must be present if subcomponents are used in the message.

Figure 2-1. Delimiter values

In the standard HL7 message protocol, these are no definition about the message start code. In this system, we define the message start code as hex 0x0b in ASCII.

In the standard HL7 message protocol, these are no definition about the message terminator. In this system, we define the message terminator as hex 0x1c 0x0d in ASCII.

7. HL7 Messages and Segments

7.1. Message List

No.	Function	Message	HL7		Section	
			MSG	EVT	Sending	Receiving
1	Query and response of patient Information	Query, original mode	QRY	A19	Bedside monitor / Vital signs monitor	Other system
		ADT response	ADR		Other system	Bedside monitor / Vital signs monitor
2	Unsolicited transmission of observation values	Unsolicited transmission of an observation message	ORU	R01	Bedside monitor / Vital signs monitor	Other system
		General acknowledgement message	ACK		Other system	Bedside monitor / Vital signs monitor
3	Query and response of observation values	Query, original mode	QRY	R02	Other system	Bedside monitor
		Vital numerical value information response message	ORF	R04	Bedside monitor–	Other system

Table 1. Message list

7.2. Patient Information Query (Event A19)

7.2.1. Query of Patient Information: QRY^A19

A patient basic information query message consists of the following segments.

No.	Segment	Segment	BSM/SVM	Remarks
1	MSH	Message Header	R	
2	QRD	Query Definition	R	
3	(QRF)	Query Filter	N	

Table 2. Query, original mode message (QRY^A19)

- Braces {...} indicate one or more repetitions of the enclosed group of segments.
- Brackets [...] indicate that the enclosed group of segments is optional.
- If a group of segments is optional and may repeat it should be enclosed in brackets and braces {[...]}.

7.2.1.1. Patient Basic Information Query Message: MSH Segment

The MSH segment in a patient basic information query message consists of the following elements.

SEQ	LEN	DT	OPT	BSM/ SVM	RP/#	Element	Remarks
1	1	ST	R	R	-	Field Separator	|
2	4	ST	R	R	-	Encoding Characters	^~\&
3	180	HD	O	O	-	Sending Application	
4	180	HD	O	O	-	Sending Facility	
5	180	HD	O	O	-	Receiving Application	
6	180	HD	O	O	-	Receiving Facility	
7	26	TS	O	O	-	Date/Time of Message	
8	40	ST	O	N	-	Security	
9	13	CM	R	R	-	Message Type	QRY^A19^QRY _A19
10	20	ST	R	R	-	Message Control ID	
11	3	PT	R	R	-	Processing ID	P
12	60	VID	R	R	-	Version ID	2.4
13	15	NM	O	N	-	Sequence Number	
14	180	ST	O	N	-	Continuation Pointer	
15	2	ID	O	N R	-	Accept Acknowledgement Type	
16	2	ID	O	R	-	Application Acknowledgement Type	
17	3	ID	O	O	-	Country Code	
18	16	ID	O	O	Y	Character Set	
19	250	CE	O	N	-	Principal Language of Message	
20	20	ID	O	O	-	Alternate Character Set Handling Scheme	
21	10	ID	O	N	Y	Conformance Statement ID	

Table 3. Patient basic information query message: MSH Segment

The field definition of an indispensable setup in MSH segment and an arbitrary setup is shown below.

MSH-1. Field Separator

Value	Description
| (fixed)	Separator between the fields

MSH-2. Encoding Characters

Value	Description
^~\& (fixed)	Component separator, repetitive separator, an escape character, subcomponent separator

MSH-3. Sending Application

Value	Description
<Sending Application>	(example) HL7 Gateway * In the case of the BSM / SVM, set in the SYSTEM CONFIGURATION screen.

MSH-4. Sending Facility

Value	Description
<Institution>^<Section>	(example) Nihon Kohden * In the case of the BSM / SVM, set in the SYSTEM CONFIGURATION screen.

MSH-5. Receiving Application

Value	Description
<Receiving Application>	(example) HL7 Client * In the case of the BSM / SVM, set in the SYSTEM CONFIGURATION screen.

MSH-6. Receiving Facility

Value	Description
<Institution>^<Section>	(example) Receiving Facility * In the case of the BSM / SVM, set in the SYSTEM CONFIGURATION screen.

MSH-7. Date/Time of Message

Value	Description
YYYYMMDDHHMMSS	Year/month/day/hour/minute/second (example) 20070401171823 (Usually this field is not used)

MSH-9. Message Type

Value	Description
QRY^A19^QRY_A19 (fixed)	<Message Type>^<Event Type> Message Type: Reference of HL7Table0076

	Event Type: Reference of HL7Table0003

MSH-10. Message Control ID

Value	Description
YYYYMMDDNNNNNN	Year/Month/Day/Sequence Number (example) 20070401123456

MSH-11. Processing ID

Value	Description
P (fixed)	Production: Reference of HL7Table0103

MSH-12. Version ID

Value	Description
2.4 (fixed)	HL7 protocol version 2.4

MSH-15. Accept Acknowledgment

Value	Description
NE (fixed)	“necessary” The PCD TF requires that this field be valued as NE.

MSH-16. Application Acknowledgment

Value	Description
AL (fixed)	“always” The PCD TF requires that this field be valued as AL.

MSH-18. Character Set

Value	Description
ASCII	

MSH-20. Alternate Character Set Handling Scheme

Value	Description
ASCII	

7.2.1.2. Patient Basic Information Query Message: QRD Segment

The QRD segment in a patient basic information query message consists of the following elements.

SEQ	LEN	DT	OPT	BSM/ SVM	RP/#	Element	Remarks
1	26	TS	R	R	-	Query Date / Time	
2	1	ID	R	R	-	Query Format Code	R
3	1	ID	R	R	-	Query Priority	I
4	10	ST	R	R	-	Query ID	
5	1	ID	O	N	-	Deferred Response Type	
6	26	TS	O	N	-	Deferred Response Date/Time	
7	10	CQ	R	R	-	Quantity Limited Request	RD^1
8	250	XCN	R	R	Y	Who Subject Filter	
9	250	CE	R	R	Y	What Subject Filter	
10	250	CE	R	R	Y	What Department Data Code	
11	20	ST	O	N	Y	What Data Code Value Qual	
12	1	ID	O	N	-	Query Results Level	

Table 4. Patient basic information query message: QRD Segment

The field definition of an indispensable setup in QRD segment and an arbitrary setup is shown below.

QRD-1. Query Date/Time

Value	Description
YYYYMMDDHHMMSS	Year/month/day/hour/minute/second (example) 20010131171823

QRD-2. Query Format Code

Value	Description
R (fixed)	Response is in record-oriented format: Reference of HL7Table0106

QRD-3. Query Priority

Value	Description
I (fixed)	Immediate: Reference of HL7Table0091

QRD-4. Query ID

Value	Description
MMDDNNNNNN	month/day/Sequence Number (example) 0131123456

QRD-7. Quantity Limited Request

Value	Description
RD^1 (fixed)	Records: Reference of HL7Table0126

QRD-8. Who Subject Filter

Value	Description
<Patient ID number (ST)>^<family name (ST)>^<given name (ST)> ^<middle initial or name (ST)> ^<suffix (e.g., JR or III) (ST)> ^<prefix (e.g., DR) (ST)> ^<degree (e.g., MD) (IS)> ^<source table (IS)> ^<assigning authority (HD)> ^<name type code (ID)> ^<code identifying the check digit scheme employed (ID)> ^<identifier type code (IS)> ^<assigning facility (HD)>	A candidate patient is set up. Only <Patient ID Number> is used.

QRD-9. What Subject Filter

Value	Description
APN (fixed)	Patient name lookup Reference of HL7Table0048

QRD-10. What Department Data Code

Value	Description
<identifier (ID)>^<text (ST)> ^<name of coding system (ST)> ^<alternate identifier (ID)> ^<alternate text (ST)> ^<name of alternate coding system (ST)>	(Usually this field is not used)

7.2.2. Patient Basic Information Response Message: ADT Response (ADR^A19)

A patient basic information response message consists of the following segments.

NO.	Segment	Segment Name	BSM / SVM	Remarks
1	MSH	Message header	R	
2	MSA	Message Acknowledgment	R	
3	[ERR]	Error	N	
4	[QAK]	Query Acknowledgment	N	
5	QRD	Query Definition	R	
6	[QRF]	Query Filter	N	
	{			
7	[EVN]	Event Type	N	
8	PID	Patient Identification	R	
9	[PD1]	Additional Demographics	N	
10	[{ROL}]	Role	N	
11	[{NK1}]	Next of Kin/Associated Parties	N	
12	PV1	Patient Visit	R	
13	[PV2]	Patient Visit－Additional Info	N	
14	[{ROL}]	Disability Information	N	
15	[{DB1}]	Observation/Result	N	
16	[{OBX}]	Allergy Information	O	
17	[{AL1}]	Diagnosis Information	N	
18	[{DG1}]	Diagnosis Related Group	O	
19	[DRG]	Next of Kin/Associated Parties	N	
	[{			
20	PR1	Procedures	N	
21	[{ROL}]	Role	N	
	}]			
22	[{GT1}]	Guarantor	N	
	[{			
23	IN1	Insurance	N	
24	[IN2]	Insurance－Additional Info	N	
25	[{IN3}]	Insurance Additional Info – Cert	N	
26	[{ROL}]	Role	N	
	}]			
27	[ACC]	Accident Information	N	
28	[UB1]	Universal Bill Information	N	
29	[UB2]	Universal Bill 2 Information	N	
	}			
30	[DSC]	Continuation Pointer	N	

Table 5. Patient basic information response message (ADR)

- Braces {...} indicate one or more repetitions of the enclosed group of segments.
- Brackets [...] indicate that the enclosed group of segments is optional.
- If a group of segments is optional and may repeat it should be enclosed in brackets and braces {[...]}.

7.2.2.1. Patient Basic Information Response Message: MSH Segment

The MSH segment in a patient basic information response message consists of the following elements.

SEQ	LEN	DT	OPT	BSM/ SVM	RP/#	Element	Remarks
1	1	ST	R	R	-	Field Separator	|
2	4	ST	R	R	-	Encoding Characters	^~\&
3	180	HD	O	O	-	Sending Application	
4	180	HD	O	O	-	Sending Facility	
5	180	HD	O	O	-	Receiving Application	
6	180	HD	O	O	-	Receiving Facility	
7	26	TS	O	O	-	Date/Time of Message	
8	40	ST	O	N	-	Security	
9	13	CM	R	R	-	Message Type	ADR^A19^ADR_ A19
10	20	ST	R	R	-	Message Control ID	
11	3	PT	R	R	-	Processing ID	P
12	60	VID	R	R	-	Version ID	2.4
13	15	NM	O	N	-	Sequence Number	
14	180	ST	O	N	-	Continuation Pointer	
15	2	ID	O	N	-	Accept Acknowledgement Type	
16	2	ID	O	N	-	Application Acknowledgement Type	
17	3	ID	O	N	-	Country Code	
18	16	ID	O	O	Y	Character Set	
19	250	CE	O	N	-	Principal Language of Message	
20	20	ID	O	O	-	Alternate Character Set Handling Scheme	
21	10	ID	O	N	Y	Conformance Statement ID	

Table 6. Patient basic information response message: MSH Segment

The field definition of an indispensable setup in MSH segment and an arbitrary setup is shown below.

MSH-1. Field Separator

Value	Description
| (fixed)	Separator between the fields

MSH-2. Encoding Characters

Value	Description
^~\& (fixed)	Component separator, repetitive separator, an escape character, subcomponent separator

MSH-3. Sending Application

Value	Description
<Sending Application>	(example) HL7 Client

	* In the case of the BSM / SVM, set in the SYSTEM CONFIGURATION screen.

MSH-4. Sending Facility

Value	Description
<Institution>^<Section>	(example) Receiving Facility * In the case of the BSM / SVM, set in the SYSTEM CONFIGURATION screen.

MSH-5. Receiving Application

Value	Description
<Receiving Application>	(example) HL7 Gateway * In the case of the BSM / SVM, set in the SYSTEM CONFIGURATION screen.

MSH-6. Receiving Facility

Value	Description
<Institution>^<Section>	(example) Nihon Kohden * In the case of the BSM / SVM, set in the SYSTEM CONFIGURATION screen.

MSH-7. Date/Time of Message

Value	Description
YYYYMMDDHHMMSS	Year/month/day/hour/minute/second (example) 20010131171823

MSH-9. Message Type

Value	Description
ADR^A19^ADR_A19 (fixed)	<Message Type>^<Event Type> Message Type: Reference of HL7Table0076 Event Type: Reference of HL7Table0003

MSH-10. Message Control ID

Value	Description
<Message Control ID>	ID of a partner system rule Set QRY^A19 MSH-10 Message Control ID.

MSH-11. Processing ID

Value	Description
P (fixed)	Production: Reference of HL7Table0103

MSH-12. Version ID

Value	Description
2.4 (fixed)	HL7 protocol version 2.4

MSH-15. Accept Acknowledgment

Value	Description
NE (fixed)	“necessary” The PCD TF requires that this field be valued as NE.

MSH-16. Application Acknowledgment

Value	Description
AL (fixed)	“always” The PCD TF requires that this field be valued as AL.

MSH-18. Character Set

Value	Description
ASCII	

MSH-20. Alternate Character Set Handling Scheme

Value	Description
ASCII	

7.2.2.2. Patient Basic Information Response Message: MSA Segment

The MSA segment in a patient basic information response message consists of the following elements.

SEQ	LEN	DT	OPT	BSM/ SVM	RP/#	Element	Remarks
1	2	ID	R	R	-	Acknowledgment Code	
2	20	ST	R	R	-	Message Control ID	
3	80	ST	O	N	-	Text Message	
4	15	NM	O	N	-	Expected Sequence Number	
5	1	ID	B	N	-	Delayed Acknowledgment Type	
6	250	CE	O	O	-	Error Condition	

Table 7. Patient basic information response message: MSA Segment

The field definition of an indispensable setup in MSA segment and an arbitrary setup is shown below.

MSA-1. Acknowledgment Code

Value	Description
<Acknowledgment Code>	Reference of HL7Table0008

MSA-2. Message Control ID

Value	Description
<Message Control ID>	Set QRY^A19 MSH-10 Message Control ID.

MSA-6. Error Condition

Value	Description
<identifier (ST)>^<text (ST)> ^<name of coding system (IS)> ^<alternate identifier (ST)> ^<alternate text (ST)> ^<name of alternate coding system (IS)>	This field allows the acknowledging system to use a user-defined error code to further specify AR or AE type acknowledgments. (Usually this field is not used)

7.2.2.3. Patient Basic Information Response Message: QRD Segment

The QRD segment in a patient basic information response message consists of the following elements.

SEQ	LEN	DT	OPT	BSM/ SVM	RP/#	Element	Remarks
1	26	TS	R	R	-	Query Date/Time	
2	1	ID	R	R	-	Query Format Code	R
3	1	ID	R	R	-	Query Priority	I
4	10	ST	R	R	-	Query ID	
5	1	ID	O	N	-	Deferred Response Type	
6	26	TS	O	N	-	Deferred Response Date/Time	
7	10	CQ	R	R	-	Quantity Limited Request	RD^1
8	250	XCN	R	R	Y	Who Subject Filter	
9	250	CE	R	R	Y	What Subject Filter	
10	250	CE	R	R	Y	What Department Data Code	
11	20	ST	O	N	Y	What Data Code Value Qual	
12	1	ID	O	N	-	Query Results Level	

Table 8. Patient basic information response message: QRD Segment

The field definition of an indispensable setup in QRD segment and an arbitrary setup is shown below.

QRD-1. Query Date/Time

Value	Description
YYYYMMDDHHMMSS	Year/month/day/hour/minute/second (example) 20010131171823

QRD-2. Query Format Code

Value	Description
R (fixed)	Response is in record-oriented format Reference of HL7Table0106

QRD-3. Query Priority

Value	Description
I (fixed)	Immediate: Reference of HL7Table0091

QRD-4. Query ID

Value	Description

QRD-7. Quantity Limited Request

Value	Description
RD^1 (fixed)	Records: Reference of HL7Table0126

QRD-8. Who Subject Filter

Value	Description
<Patient ID number (ST)>^<family name (ST)>^<given name (ST)> ^<middle initial or name (ST)> ^<suffix (e.g., JR or III) (ST)> ^<prefix (e.g., DR) (ST)> ^<degree (e.g., MD) (IS)> ^<source table (IS)> ^<assigning authority (HD)> ^<name type code(ID)> ^<code identifying the check digit scheme employed (ID)> ^<identifier type code (IS)> ^<assigning facility (HD)>	A candidate patient is set up. Only <Patient ID number> is used.

QRD-9. What Subject Filter

Value	Description
APN (fixed)	Patient name lookup: Reference of HL7Table0048 (Usually this field is not used)

QRD-10. What Department Data Code

Value	Description
<identifier (ID)>^<text (ST)> ^<name of coding system (ST)> ^<alternate identifier (ID)> ^<alternate text (ST)> ^<name of alternate coding system (ST)>	(Usually this field is not used)

7.2.2.4. Patient Basic Information Response Message: PID Segment

The PID segment in a patient basic information response message consists of the following elements.

SEQ	LEN	DT	OPT	BSM/ SVM	RP/#	Element	Remarks
1	4	SI	O	N	-	Set ID - PID	
2	20	CX	B	N	-	Patient ID	
2	250	CX	R	R	Y	Patient Identifier List	
4	20	ST	O	N	Y	Alternate Patient ID - PID	
5	250	XPN	R	R	Y	Patient Name	
6	250	XPN	O	N	-	Mother’s Maiden Name	
7	26	TS	O	R	-	Date/Time of Birth	
8	1	IS	O	R	-	Administrative Sex	
9	250	XPN	B	N	Y	Patient Alias	
10	250	CE	O	N	-	Race	
11	250	XAD	O	N	Y	Patient Address	
12	4	IS	O	N	-	County Code	
13	250	XTN	O	N	Y	Phone Number - Home	
14	250	XTN	O	N	Y	Phone Number - Business	
15	250	CE	O	N	-	Primary Language	
16	250	CE	O	N	-	Marital Status	
17	250	CE	O	N	-	Religion	
18	250	CX	O	N	-	Patient Account Number	
19	16	ST	B	N	-	SSN Number - Patient	
20	25	DLN	O	N	-	Driver's License Number - Patient	
21	250	CX	O	N	-	Mother's Identifier	
22	250	CE	O	N	-	Ethnic Group	
23	250	ST	O	N	-	Birth Place	
24	1	ID	O	N	-	Multiple Birth Indicator	
25	2	NM	O	N	-	Birth Order	
26	250	CE	O	N	-	Citizenship	
27	250	CE	O	N	-	Veterans Military Status	
28	250	CE	O	N	-	Nationality	
29	26	TS	O	N	-	Patient Death Date and Time	
30	1	ID	O	N	-	Patient Death Indicator	
31	1	ID	O	N	-	Identity Unknown Indicator	
32	20	IS	O	N	Y	Identity Reliability Code	
33	26	TS	O	N	-	Last Update Date/Time	
34	40	HD	O	N	-	Last Update Facility	
35	250	CE	C	N	-	Species Code	
36	250	CE	C	N	-	Breed Code	
37	80	ST	O	N	-	Strain	
38	250	CE	O	N	-	Production Class Code	

Table 9. Patient basic information response message: PID Segment

The field definition of an indispensable setup in PID segment and an arbitrary setup is shown below.

PID-3. Patient ID (Internal ID)

Value	Description
<Patient ID>	

PID-5. Patient Name

Value	Description
<family name (ST)> ^<given name (ST)> ^<middle initial or name (ST)> ^<suffix (e.g., JR or III) (ST)> ^<prefix (e.g., DR) (ST)> ^<degree (e.g., MD) (IS)> ^<name type code (ID)> ^<name representation code (ID)>	Name type code: Reference of HL7Table0200 Name representation code: Reference of HL7Table0465 (example) Kohden^Tarou^^^^^L^A

PID-7. Date/Time of Birth

Value	Description
YYYYMMDD(HHMM(SS))	Year/month/day/hour/minute/second (example) 20010131171823

PID-8. Sex

Value	Description
<Sex>	Reference of HL7Table0001
F	Female
M	Male
O	Other
U	Unknown

7.2.2.5. Patient Basic Information Response Message: PV1 Segment

The PV1 segment in a patient basic information response message consists of the following elements.

SEQ	LEN	DT	OPT	BSM/ SVM	RP/#	Element	Remarks
1	4	SI	O	N	-	Set ID - PV1	
2	1	IS	R	R	-	Patient Class	
3	80	PL	O	N	-	Assigned Patient Location	
4	2	IS	O	N	-	Admission Type	
5	250	CX	O	N	-	Preadmit Number	
6	80	PL	O	N	-	Prior Patient Location	
7	250	XCN	O	N	Y	Attending Doctor	
8	250	XCN	O	N	Y	Referring Doctor	
9	250	XCN	B	N	Y	Consulting Doctor	
10	3	IS	O	N	-	Hospital Service	
11	80	PL	O	N	-	Temporary Location	
12	2	IS	O	N	-	Preadmit Test Indicator	
13	2	IS	O	N	-	Re-admission Indicator	
14	6	IS	O	N	-	Admit Source	
15	2	IS	O	N	Y	Ambulatory Status	
16	2	IS	O	N	-	VIP Indicator	
17	250	XCN	O	N	Y	Admitting Doctor	
18	2	IS	O	N	-	Patient Type	
19	250	CN	O	N	-	Visit Number	
20	50	FC	O	N	Y	Financial Class	
21	2	IS	O	N	-	Charge Price Indicator	
22	2	IS	O	N	-	Courtesy Code	
23	2	IS	O	N	-	Credit Rating	
24	2	IS	O	N	Y	Contract Code	
25	8	DT	O	N	Y	Contract Effective Date	
26	12	NM	O	N	Y	Contract Amount	
27	3	NM	O	N	Y	Contract Period	
28	2	IS	O	N	-	Interest Code	
29	1	IS	O	N	-	Transfer to Bad Debt Code	
30	8	DT	O	N	-	Transfer to Bad Debt Date	
31	10	IS	O	N	-	Bad Debt Agency Code	
32	12	NM	O	N	-	Bad Debt Transfer Amount	
33	12	NM	O	N	-	Bad Debt Recovery Amount	
34	1	IS	O	N	-	Delete Account Indicator	
35	8	DT	O	N	-	Delete Account Date	
36	3	IS	O	N	-	Discharge Disposition	
37	25	CM	O	N	-	Discharged to Location	
38	250	CE	O	N	-	Diet Type	
39	2	IS	O	N	-	Servicing Facility	
40	1	ID	B	N	-	Bed Status	
41	2	IS	O	N	-	Account Status	

42	80	PL	O	N	-	Pending Location	
43	80	PL	O	N	-	Prior Temporary Location	
44	26	TS	O	N	-	Admit Date/Time	
45	26	TS	O	N	Y	Discharge Date/Time	
46	12	NM	O	N	-	Current Patient Balance	
47	12	NM	O	N	-	Total Charges	
48	12	NM	O	N	-	Total Adjustments	
49	12	NM	O	N	-	Total Payments	
50	250	CX	O	N	-	Alternate Visit ID	
51	1	IS	O	N	-	Visit Indicator	
52	250	XCN	B	N	Y	Other Healthcare Provider	

Table 10. Patient basic information response message: PV1 segment

The field definition of an indispensable setup in PV1 segment and an arbitrary setup is shown below.

PV1-2. Patient Class

Value	Description
<Patient class>	Records: Reference of HL7Table0126 (Usually this field is not used)

7.2.2.6. Patient Basic Information Response Message: OBX Segment

Here, the receipt of height, weight, and a blood type is assumed.

The OBX segment in a patient basic information response message consists of the following elements.

SEQ	LEN	DT	OPT	BSM/ SVM	RP/#	Element	Remarks
1	4	SI	O	O	-	Set ID - OBX	
2	2	ID	C	R	-	Value Type	
3	250	CE	R	R	-	Observation Identifier	
4	20	ST	C	N	-	Observation Sub-ID	
5	65536	*	C	R	Y	Observation Value	
6	250	CE	O	O	-	Units	
7	60	ST	O	N	-	References Range	
8	5	IS	O	N	Y/5	Abnormal Flags	
9	5	NM	O	N	-	Probability	
10	2	ID	O	N	Y	Nature of Abnormal Test	
11	1	ID	R	R	-	Observation Result Status	
12	26	TS	O	N	-	Date Last Observation Normal Value	
13	20	ST	O	N	-	User Defined Access Checks	
14	26	TS	O	N	-	Date/Time of the Observation	
15	250	CE	O	N	-	Producer's ID	
16	250	XCN	O	N	-	Responsible Observer	
17	250	CE	O	N	-	Observation Method	
18	22	EI	O	N	Y	Equipment Instance Identifier	
19	26	TS	O	N	-	Date/Time of the Analysis	

Table 11. Patient basic information response message: OBX segment

The field definition of an indispensable setup in OBX segment and an arbitrary setup is shown below.

OBX-1. Set ID

Value	Description
	This field contains the sequence number.

OBX-2. Value Type

Value	Description
	Value type: Reference of HL7Table0125
NM	Numeric
ST	String Data
The rest is omitted.	

OBX-3. Observation Identifier

Value	Description
<identifier (ST)>^<text (ST)>^<name of coding system (IS)>^<alternate identifier (ST)>^<alternate text (ST)>^<name of alternate coding system (IS)>	Height, weight, blood type The name should be given according to the NK definition. Height: 2522^Height Weight: 2523^Weight Blood type: 520^Blood

OBX-5. Observation Value

Value	Description
	The model specified by OBX-2 is followed. The height and weight are expressed by numeric values. The blood type is indicated by the following: A+, A-, B+, B-, O+, O-, AB+, and AB-.

OBX-6. Units

Value	Description
	The model specified by OBX-2 or OBX-5 is followed. Height and weight are in cm and kg.

OBX-11. Observation Result Status

Value	Description
F	Order detail description only (no result) Reference of HL7Table0085

7.2.2.7. Patient Basic Information Response Message: DG1 Segment

The DG1 segment in a patient basic information response message consists of the following elements.

SEQ	LEN	DT	OPT	BSM/ SVM	RP/#	Element	Remarks
1	4	SI	R	R	-	Set ID - DG1	
2	2	ID	(B)R	N	-	Diagnosis Coding Method	
3	250	CE	O	O	-	Diagnosis Code - DG1	
4	40	ST	B	O	-	Diagnosis Description	
5	26	TS	O	N	-	Diagnosis Date/Time	
6	2	IS	R	N	-	Diagnosis Type	
7	250	CE	B	N	-	Major Diagnostic Category	
8	250	CE	B	N	-	Diagnostic Related Group	
9	1	ID	B	N	-	DRG Approval Indicator	
10	2	IS	B	N	-	DRG Grouper Review Code	
11	250	CE	B	N	-	Outlier Type	
12	3	NM	B	N	-	Outlier Days	
13	12	CP	B	N	-	Outlier Cost	
14	4	ST	B	N	-	Grouper Version And Type	
15	2	ID	O	N		Diagnosis Priority	
16	250	XCN	O	O	Y	Diagnosing Clinician	
17	3	IS	O	N	-	Diagnosis Classification	
18	1	ID	O	N	-	Confidential Indicator	
19	26	TS	O	N	-	Attestation Date/Time	

Table 12. Patient basic information response message: DG1 segment

The field definition of an indispensable setup in DG1 segment and an arbitrary setup is shown below.

DG1-1. Set ID

Value	Description
	This field contains the sequence number. It does not have any special purpose.

DG1-3. Diagnosis Code

Value	Description
<identifier (ST)>^<text (ST)> ^<name of coding system (IS)> ^<alternate identifier (ST)> ^<alternate text (ST)> ^<name of alternate coding system (IS)>	DG1-3-diagnosis code contains the diagnosis code assigned to this diagnosis. Refer to user-defined HL7Table0051 – Diagnosis code for suggested values. (Usually this field is not used)

DG1-4. Diagnosis Description

Value	Description
	Diagnosis description (Usually, this field is not used) *This field has been retained for backward compatibility only.* Use the components of *DG1-3 - diagnosis code-DG1* field instead of this field.

DG1-16. Diagnosing Clinician

Value	Description
<ID number (ST)>^<family name (ST)>^<given name (ST)>^<middle initial or name (ST)>^<suffix (e.g., JR or III) (ST)>^<prefix (e. g., DR) (ST)>^<degree (e. g., MD) (IS)>^<source table (IS)>^<assigning authority (HD)>^<name type code(ID)> ^<identifier check digit (ST)>^<code identifying the check digit scheme employed (ID)>^<identifier type code (IS)>^<assigning facility (HD)>^ <name representation code (ID)>^<name context (CE)>^<name validity range (DR)>	(Usually this field is not used) It may be unsuitable although this field is used when a doctor name is displayed by the monitor side.

7.3. Unsolicited Transmission of Vital Data (Event R01)

7.3.1. Unsolicited Transmission of an Observation Message: ORU^R01

A vital numerical information distribution message consists of the following segments.

No.	Segment	Segment Name	BSM / SVM	Remarks
1	MSH	Message Header Segment	R	
	{			
	[			
2	PID	Patient Identification Segment	R	
3	[PD1]	Additional Demographics	N	
4	[{NK1}]	Next of Kin/Associated Parties	N	
5	[{NTE}]	Notes and Comments	N	
6	[PV1	Patient Visit	R	
7	[PV2]]	Patient Visit - Additional Info	N	
	]			
	{			
8	[ORC]	Order common	R	
9	OBR	Observations Report ID	R	
10	[{NTE}]	Notes and comments	N	
11	[CTD]	Contact Data	N	
	{			
12	[OBX]	Observation/Result	R	
13	{[NTE]}	Notes and comments	N	
	}			
14	{[FTI]}	Financial Transaction	N	
15	{[CTI]}	Clinical Trial Identification	N	
	}			
	}			
16	[DSC]	Continuation Pointer	N	

Table 13. Vital numerical information distribution message: ORU^R01

- Braces {…} indicate one or more repetitions of the enclosed group of segments.
- Brackets [...] indicate that the enclosed group of segments is optional.
- If a group of segments is optional and may repeat it should be enclosed in brackets and braces {[...]}.

7.3.1.1. Unsolicited Transmission of an Observation Message: MSH Segment

The MSH segment in an unsolicited transmission of an observation message consists of the following elements.

SEQ	LEN	DT	OPT	BSM/SVM	RP/#	Element	Remarks
1	1	ST	R	R	-	Field Separator	|
2	4	ST	R	R	-	Encoding Characters	^~\&
3	180	HD	O	O	-	Sending Application	
4	180	HD	O	O	-	Sending Facility	
5	180	HD	O	O	-	Receiving Application	
6	180	HD	O	O	-	Receiving Facility	
7	26	TS	O	O	-	Date/Time of Message	
8	40	ST	O	N	-	Security	
9	13	CM	R	R	-	Message Type	ORU^R01^ ORU_R01
10	20	ST	R	R	-	Message Control ID	
11	3	PT	R	R	-	Processing ID	P
12	60	VID	R	R	-	Version ID	2. 4
13	15	NM	O	N	-	Sequence Number	
14	180	ST	O	N	-	Continuation Pointer	
15	2	ID	O	R	-	Accept Acknowledgement Type	
16	2	ID	O	R	-	Application Acknowledgement Type	
17	3	ID	O	O	-	Country Code	
18	16	ID	O	O	Y	Character Set	ASCII
19	250	CE	O	N	-	Principal Language of Message	
20	20	ID	O	O	-	Alternate Character Set Handling Scheme	ASCII
21	10	ID	O	N	Y	Conformance Statement ID	

Table 14. Unsolicited transmission of an observation message: MSH segment

The field definition of an indispensable setup in MSH segment and an arbitrary setup is shown below.

MSH-1. Field Separator

Value	Description
| (fixed)	Separator between the fields

MSH-2. Encoding Characters

Value	Description
^~\& (fixed)	Component separator, repetitive separator, an escape character, subcomponent separator

MSH-3. Sending Application

Value	Description
<Sending Application>	(example) HL7 Gateway *In the case of the BSM / SVM, set in the SYSTEM CONFIGURATION screen.

MSH-4. Sending Facility

Value	Description
<Institution>^<Section>	(example) Nihon Kohden *In the case of the BSM / SVM, set in the SYSTEM CONFIGURATION screen.

MSH-5. Receiving Application

Value	Description
<Receiving Application>	(example) HL7 Client *In the case of the BSM / SVM, set in the SYSTEM CONFIGURATION screen.

MSH-6. Receiving Facility

Value	Description
<Institution>^<Section>	(example) Receiving Facility *In the case of the BSM / SVM, set in the SYSTEM CONFIGURATION screen.

MSH-7. Date/Time of Message

Value	Description
YYYYMMDDHHMMSS	Year/month/day/hour/minute/second (example) 20070401171823

MSH-9. Message Type

Value	Description
ORU^R01^ORU_R01 (fixed)	Message Type: Reference of HL7Table0076 Event Type: Reference of HL7Table0003

MSH-10. Message Control ID

Value	Description
YYYYMMDDNNNNNN	Year/Month/Day/Sequence Number (example) 20070401123456

MSH-11. Processing ID

Value	Description
P (fixed)	Production: Reference of HL7Table0103

MSH-12. Version ID

Value	Description
2.4 (fixed)	HL7 protocol version 2.4

MSH-15. Accept Acknowledgment

Value	Description
NE (fixed)	“necessary” The PCD TF requires that this field be valued as NE.

MSH-16. Application Acknowledgment

Value	Description
AL (fixed)	“always” The PCD TF requires that this field be valued as AL.

MSH-18. Character Set

Value	Description
ASCII	

MSH-20. Alternate Character Set Handling Scheme

Value	Description
ASCII	

7.3.1.2. Unsolicited Transmission of an Observation Message: PID Segment

The PID segment in an unsolicited transmission of an observation message consists of the following elements.

SEQ	LEN	DT	OPT	BSM/SVM	RP/#	Element	Remarks
1	4	SI	O	N	-	Set ID - PID	
2	20	CX	B	N	-	Patient ID	
3	250	CX	R	R	Y	Patient Identifier List	
4	20	ST	O	N	Y	Alternate Patient ID - PID	
5	250	XPN	R	R	Y	Patient Name	
6	250	XPN	O	N	-	Mother’s Maiden Name	
7	26	TS	O	R	-	Date/Time of Birth	
8	1	IS	O	R	-	Administrative Sex	
9	250	XPN	B	N	Y	Patient Alias	
10	250	CE	O	N	-	Race	
11	250	XAD	O	N	Y	Patient Address	
12	4	IS	O	N	-	County Code	
13	250	XTN	O	N	Y	Phone Number - Home	
14	250	XTN	O	N	Y	Phone Number - Business	
15	250	CE	O	N	-	Primary Language	
16	250	CE	O	N	-	Marital Status	
17	250	CE	O	N	-	Religion	
18	250	CX	O	N	-	Patient Account Number	
19	16	ST	B	N	-	SSN Number - Patient	
20	25	DLN	O	N	-	Driver's License Number - Patient	
21	250	CX	O	N	-	Mother's Identifier	
22	250	CE	O	N	-	Ethnic Group	
23	250	ST	O	N	-	Birth Place	
24	1	ID	O	N	-	Multiple Birth Indicator	
25	2	NM	O	N	-	Birth Order	
26	250	CE	O	N	-	Citizenship	
27	250	CE	O	N	-	Veterans Military Status	
28	250	CE	O	N	-	Nationality	
29	26	TS	O	N	-	Patient Death Date and Time	
30	1	ID	O	N	-	Patient Death Indicator	
31	1	ID	O	N	-	Identity Unknown Indicator	
32	20	IS	O	N	Y	Identity Reliability Code	
33	26	TS	O	N	-	Last Update Date/Time	
34	40	HD	O	N	-	Last Update Facility	
35	250	CE	C	N	-	Species Code	
36	250	CE	C	N	-	Breed Code	
37	80	ST	O	N	-	Strain	
38	250	CE	O	N	-	Production Class Code	

Table 15. Unsolicited Transmission of an Observation Message: PID segment

The field definition of an indispensable setup in PID segment and an arbitrary setup is shown below.

PID-3. Patient ID (Internal ID)

Value	Description
<Patient ID>	

PID-5. Patient Name

Value	Description
<family name (ST)> ^<given name (ST)> ^<middle initial or name (ST)> ^<suffix (e.g., JR or III) (ST)> ^<prefix (e.g., DR) (ST)> ^<degree (e.g., MD) (IS)> ^<name type code (ID)> ^<name representation code (ID)>	Name type code: Reference of HL7Table0200 Name representation code: Reference of HL7Table0465 (example) Kohden^Tarou^^^^^L^A

PID-7. Date/Time of Birth

Value	Description
YYYYMMDD(HHMM(SS))	Year/month/day/hour/minute/second (example) 20010131171823

PID-8. Sex

Value	Description
<Sex>	Reference of HL7Table0001
F	Female
M	Male
O	Other
U	Unknown

7.3.1.3. Unsolicited Transmission of an Observation Message: PV1 segment

The PV1 segment in a patient basic information response message consists of the following elements.

SEQ	LEN	DT	OPT	BSM/SVM	RP/#	Element	Remarks
1	4	SI	O	N	-	Set ID - PV1	
2	1	IS	R	R	-	Patient Class	
3	80	PL	O	R	-	Assigned Patient Location	
4	2	IS	O	N	-	Admission Type	
5	250	CX	O	N	-	Preadmit Number	
6	80	PL	O	N	-	Prior Patient Location	
7	250	XCN	O	N	Y	Attending Doctor	
8	250	XCN	O	N	Y	Referring Doctor	
9	250	XCN	B	N	Y	Consulting Doctor	
10	3	IS	O	N	-	Hospital Service	
11	80	PL	O	N	-	Temporary Location	
12	2	IS	O	N	-	Preadmit Test Indicator	
13	2	IS	O	N	-	Re-admission Indicator	
14	6	IS	O	N	-	Admit Source	
15	2	IS	O	N	Y	Ambulatory Status	
16	2	IS	O	N	-	VIP Indicator	
17	250	XCN	O	N	Y	Admitting Doctor	
18	2	IS	O	N	-	Patient Type	
19	250	CN	O	N	-	Visit Number	
20	50	FC	O	N	Y	Financial Class	
21	2	IS	O	N	-	Charge Price Indicator	
22	2	IS	O	N	-	Courtesy Code	
23	2	IS	O	N	-	Credit Rating	
24	2	IS	O	N	Y	Contract Code	
25	8	DT	O	N	Y	Contract Effective Date	
26	12	NM	O	N	Y	Contract Amount	
27	3	NM	O	N	Y	Contract Period	
28	2	IS	O	N	-	Interest Code	
29	1	IS	O	N	-	Transfer to Bad Debt Code	
30	8	DT	O	N	-	Transfer to Bad Debt Date	
31	10	IS	O	N	-	Bad Debt Agency Code	
32	12	NM	O	N	-	Bad Debt Transfer Amount	
33	12	NM	O	N	-	Bad Debt Recovery Amount	
34	1	IS	O	N	-	Delete Account Indicator	
35	8	DT	O	N	-	Delete Account Date	
36	3	IS	O	N	-	Discharge Disposition	
37	25	CM	O	N	-	Discharged to Location	
38	250	CE	O	N	-	Diet Type	

39	2	IS	O	N	-	Servicing Facility	
40	1	ID	B	N	-	Bed Status	
41	2	IS	O	N	-	Account Status	
42	80	PL	O	N	-	Pending Location	
43	80	PL	O	N	-	Prior Temporary Location	
44	26	TS	O	N	-	Admit Date/Time	
45	26	TS	O	N	Y	Discharge Date/Time	
46	12	NM	O	N	-	Current Patient Balance	
47	12	NM	O	N	-	Total Charges	
48	12	NM	O	N	-	Total Adjustments	
49	12	NM	O	N	-	Total Payments	
50	250	CX	O	N	-	Alternate Visit ID	
51	1	IS	O	N	-	Visit Indicator	
52	250	XCN	B	N	Y	Other Healthcare Provider	

Table 16. Unsolicited Transmission of an Observation Message: PV1 segment

The field definition of an indispensable setup in PV1 segment and an arbitrary setup is shown below.

PV1-2. Patient Class

Value	Description
<Patient class>	Refer to HL7Table0004 (Usually this field is not used)

PV1-3. Assigned Patient Location

Value	Description
<point of care (IS)>^<room (IS)>^<bed (IS)>^<facility (HD)>^<location status (IS)>^<person location type (IS)>^<building (IS)>^<floor (IS)>^<location description (ST)	<bed> : monitor name <facility> : IP address + Bed Index No. ex) ^^BSM001^192.10.1.1:1 In the case of the bedside monitor, only a bed name is set to <bed>. ex) ^^BED-001^

7.3.1.4. Unsolicited Transmission of an Observation Message: ORC Segment

The ORC segment in an unsolicited transmission of an observation message consists of the following elements.

SEQ	LEN	DT	OPT	BSM/SVM	RP/#	Element	Remarks
1	2	ID	R	R	N	Order Control	RE
2	22	EI	C	N	-	Placer Order Number	
3	22	EI	C	N	—	Filler Order Number	
4	22	EI	O	N	—	Placer Group Number	
5	2	ID	O	N	N	Order Status	
6	1	ID	O	N	-	Response Flag	
7	200	TQ	O	N	Y	Quantity/Timing	
8	200	CM	O	N	-	Parent	
9	26	TS	O	N		Date/Time of Transaction	
10	250	XCN	O	N	Y	Entered By	
11	250	XCN	O	N	Y	Verified By	
12	250	XCN	O	N	Y	Ordering Provider	
13	80	PL	O	N	-	Enterer's Location	
14	250	XTM	O	N	Y/2	Call Back Phone Number	
15	26	TS	O	N	-	Order Effective Date/Time	
16	250	CE	O	N	-	Order Control Code Reason	
17	250	CE	O	N	-	Entering Organization	
18	250	CE	O	N	-	Entering Device	
19	250	XCN	O	N	Y	Action By	
20	250	CE	O	N	-	Advanced Beneficiary Notice Code	
21	250	XON	O	N	Y	Ordering Facility Name	
22	250	XAD	O	N	Y	Ordering Facility Address	
23	250	XTN	O	N	Y	Ordering Facility Phone Number	
24	250	XAD	O	N	Y	Ordering Provider Address	
25	250	CWE	O	N	N	Order Status Modifier	

Table 17. Unsolicited transmission of an observation message: ORC segment

The field definition of an indispensable setup in ORC segment and an arbitrary setup is shown below.

ORC-1. Order Control

Value	Description
RE	Determines the function of the order segment. Refer to HL7Table0119

7.3.1.5. Unsolicited Transmission of an Observation Message: OBR Segment

The OBR segment in an unsolicited transmission of an observation message consists of the following elements.

SEQ	LEN	DT	OPT	BSM/SVM	RP/#	Element	Remarks
1	4	SI	O	R	-	Set ID - OBR	
2	22	EI	C	N	-	Placer Order Number	
3	22	EI	C	N	—	Filler Order Number	
4	250	CE	R	R	—	Universal Service Identifier	
5	2	ID	B	N	—	Priority - OBR	
6	26	TS	B	N	-	Requested Date/Time	
7	26	TS	C	C	-	Observation Date/Time #	
8	26	TS	O	N	-	Observation End Date/Time #	
9	20	CQ	O	N	-	Collection Volume *	
10	250	XCN	O	N	Y	Collector Identifier *	
11	1	ID	O	N	-	Specimen Action Code *	
12	250	CE	O	N	-	Danger Code	
13	300	ST	O	N	—	Relevant Clinical Info.	
14	26	TS	C	N	-	Specimen Received Date/Time *	
15	300	CM	O	N	-	Specimen Source *	
16	250	XCN	O	N	Y	Ordering Provider	
17	250	XTN	O	N	Y/2	Order Callback Phone Number	
18	60	ST	O	N	-	Placer Field 1	
19	60	ST	O	N	-	Placer Field 2	
20	60	ST	O	N	-	Filler Field 1 +	
21	60	ST	O	N	-	Filler Field 2 +	
22	26	TS	C	N	-	Results Rpt/Status Chng - Date/Time +	
23	40	CM	O	N	-	Charge to Practice +	
24	10	ID	O	N		Diagnostic Serv Sect ID	
25	1	ID	C	C	-	Result Status +	
26	400	CM	O	N	-	Parent Result +	
27	200	TQ	O	N	Y	Quantity/Timing	
28	250	XCN	O	N	Y/5	Result Copies To	
29	200	CM	O	N		Parent	
30	20	ID	O	N	-	Transportation Mode	
31	250	CE	O	N	Y	Reason for Study	
32	200	CM	O	N	-	Principal Result Interpreter +	
33	200	CM	O	N	Y	Assistant Result Interpreter +	
34	200	CM	O	N	Y	Technician +	
35	200	CM	O	N	Y	Transcriptionist +	
36	26	TS	O	N	-	Scheduled Date/Time +	
37	4	NM	O	N	-	Number of Sample Containers *	
38	250	CE	O	N	Y	Transport Logistics of Collected Sample *	
39	250	CE	O	N	Y	Collector's Comment *	
40	250	CE	O	N	-	Transport Arrangement Responsibility	
41	30	ID	O	N	-	Transport Arranged	
42	1	ID	O	N	-	Escort Required	
43	250	CE	O	N	Y	Planned Patient Transport Comment	
44	250	CE	O	N		Procedure Code	

45	250	CE	O	N	Y	Procedure Code Modifier	
46	250	CE	O	N	Y	Placer Supplemental Service Information	
47	250	CE	O	N	Y	Filler Supplemental Service Information	

Table 18. Unsolicited transmission of an observation message: OBR segment

The field definition of an indispensable setup in OBR segment and an arbitrary setup is shown below.

OBR-1. Set ID

Value	Description
	sequence number

OBR-4. Universal Service identifier

Value	Description
	The code and name about the general term “vital sign” of output information enter. A default is the name and code which are received from BSM/SVM. Other than observation value NIBP, SPOT TEMP, Manual Input Parameter: VITAL Observation value NIBP: NIBP Observation value SPOTTEMP:SPOTTEMP Observation value Manual Input Parameter: MANUALINPUT

OBR-7. Observation Date/Time

Value	Description
YYYYMMDDHHMMSS	Year/Month/Day/Hour/minute/second (example) 20070401171823 BSM: Measurement Time SVM : VITAL, MANUALINPUT: Time when data was confirmed NIBP, SPOTTEMP: Measurement Time

OBR-25. Result Status

Value	Description
A (fixed)	This field is the status of results for this order.

7.3.1.6. Unsolicited Transmission of an Observation Message: OBX Segment

The OBX segment in an unsolicited transmission of an observation message consists of the following elements.

SEQ	LEN	DT	OPT	BSM/SVM	RP/#	Element	Remarks
1	4	SI	O	O	-	Set ID - OBX	
2	2	ID	C	R	-	Value Type	
3	250	CE	R	R	-	Observation Identifier	
4	20	ST	C	N	-	Observation Sub-ID	
5	65536	*	C	R	Y	Observation Value	
6	250	CE	O	O	-	Units	
7	60	ST	O	N	-	References Range	
8	5	IS	O	N	Y/5	Abnormal Flags	
9	5	NM	O	N	-	Probability	
10	2	ID	O	N	Y	Nature of Abnormal Test	
11	1	ID	R	R	-	Observation Result Status	
12	26	TS	O	N	-	Date Last Observation Normal Value	
13	20	ST	O	N	-	User Defined Access Checks	
14	26	TS	O	R	-	Date/Time of the Observation	
15	250	CE	O	N	-	Producer’s ID	
16	250	XCN	O	N	-	Responsible Observer	
17	250	CE	O	N	-	Observation Method	
18	22	EI	O	N	Y	Equipment Instance Identifier	
19	26	TS	O	N	-	Date/Time of the Analysis	

Table 19. Unsolicited transmission of an observation message: OBX segment

The field definition of an indispensable setups in OBX segment and an arbitrary setup is shown below.

OBX-1. Set ID

Value	Description
	This field contains the sequence number.

OBX-2. Value Type

Value	Description
	Value type: Reference of HL7Table0125
NM	Numeric
ST	String Data
The rest is omitted.	

OBX-3. Observation Identifier

Value	Description
<identifier (ST)>^<text (ST)>	The parameter code is set in <identifier> and the universal ID plus the parameter name are set in <text>. Example: 001000^VITAL HR Use the parameter code and the parameter name received from the monitor network or acquired from the bedside monitor / /vital signs monitor. In the case of SPOTTEMP Example:141000^SPOTTEMP TEMP In the case of MANUALINPUT Example: 254000^MANUALINPUT Pain Level

OBX-5. Observation Value

Value	Description
	This field contains the value observed by the Bedside monitor / Vital signs monitor. OBX-2-value type contains the data type for this field according to which observation value is formatted.

OBX-6. Units

Value	Description
	The unit defined with the monitor system is set.

OBX-11. Observation Result Status

Value	Description
F	Final results. Can only be changed with a corrected result. Reference of HL7Table0085

OBX-14. Date/Time of Observations

Value	Description
YYYYMMDDHHMMSS	Observation date/time Year/Month/Day/hour/minute/second (example) 20070401171823

7.3.2. Observation Unsolicited Transmission Response Message: ACK^R01

A vital numerical information distribution message consists of the following segments.

No.	Segment	Segment name	BSM / SVM	Remarks
1	MSH	Message Header	R	
2	MSA	Message Acknowledgment	R	

Table 20. Observation unsolicited transmission response message: ACK^R01

The HL7 Gateway closes the socket under the following conditions.

1. MSA-1 Acknowledgment Code is AE.
2. ACK^R01 MSA-2 MsgCtrlID is not the same as ORU^R01 MSH-10 MsgCtrlID.
3. ACK^R01 cannot be received within five seconds after ORU^R01 is transmitted.

7.3.2.1. Vital Numerical Information Distribution Message: MSH Segment

The MSH segment in a vital numerical information distribution message consists of the following elements.

SEQ	LEN	DT	OPT	BSM/ SVM	RP/#	Element	Remarks
1	1	ST	R	R	-	Field Separator	|
2	4	ST	R	R	-	Encoding Characters	^~\&
3	180	HD	O	O	-	Sending Application	
4	180	HD	O	O	-	Sending Facility	
5	180	HD	O	O	-	Receiving Application	
6	180	HD	O	O	-	Receiving Facility	
7	26	TS	O	O	-	Date/Time of Message	
8	40	ST	O	N	-	Security	
9	13	CM	R	R	-	Message Type	ACK^R01 ^ACK
10	20	ST	R	R	-	Message Control ID	
11	3	PT	R	R	-	Processing ID	P
12	60	VID	R	R	-	Version ID	2.4
13	15	NM	O	N	-	Sequence Number	
14	180	ST	O	N	-	Continuation Pointer	
15	2	ID	O	R	-	Accept Acknowledgement Type	
16	2	ID	O	R	-	Application Acknowledgement Type	
17	3	ID	O	N	-	Country Code	
18	16	ID	O	O	Y	Character Set	ASCII
19	250	CE	O	N	-	Principal Language of Message	
20	20	ID	O	O	-	Alternate Character Set Handling Scheme	ASCII
21	10	ID	O	N	Y	Conformance Statement ID	

Table 21. Vital numerical information distribution message: MSH segment

The field definition of an indispensable setup in MSH segment and an arbitrary setup is shown below.

MSH-1. Field Separator

Value	Description
| (fixed)	Separator between the fields

MSH-2. Encoding Characters

Value	Description
^~\& (fixed)	Component separator, repetitive separator, an escape character, subcomponent separator

MSH-3. Sending Application

Value	Description
<Sending Application>	(example) HL7 Client *In the case of the BSM / SVM, set in the SYSTEM CONFIGURATION screen.

MSH-4. Sending Facility

Value	Description
<Institution>^<Section>	(example) Receiving Facility *In the case of the BSM / SVM, set in the SYSTEM CONFIGURATION screen.

MSH-5. Receiving Application

Value	Description
<Receiving Application>	(example) HL7 Gateway *In the case of the BSM / SVM, set in the SYSTEM CONFIGURATION screen.

MSH-6. Receiving Facility

Value	Description
<Institution>^<Section>	(example) Nihon Kohden *In the case of the BSM / SVM, set in the SYSTEM CONFIGURATION screen.

MSH-7. Date/Time of Message

Value	Description
YYYYMMDDHHMMSS	Year/month/day/hour/minute/second (example) 20070401171823 (Usually this field is not used)

MSH-9. Message Type

Value	Description
ACK^R01^ACK (fixed)	Message Type: Reference of HL7Table0076 Event Type: Reference of HL7Table0003

MSH-10. Message Control ID

Value	Description
YYYYMMDDNNNNNN	ID of a partner system rule. Set ORU^R01 MSH-10 Message Control ID.

MSH-11. Processing ID

Value	Description
P (fixed)	Production: Reference of HL7Table0103

MSH-12. Version ID

Value	Description
2.4 (fixed)	HL7 protocol version 2.4

MSH-15. Accept Acknowledgment

Value	Description
NE (fixed)	“necessary” The PCD TF requires that this field be valued as NE.

MSH-16. Application Acknowledgment

Value	Description
AL (fixed)	“always” The PCD TF requires that this field be valued as AL.

MSH-18. Character Set

Value	Description
ASCII	

MSH-20. Alternate Character Set Handling Scheme

Value	Description
ASCII	

7.3.2.2. Observation Unsolicited Transmission Response Message: MSA segment

The MSA segment in a vital numerical information distribution message consists of the following elements.

SEQ	LEN	DT	OPT	BSM/ SVM	RP/#	Element	Remarks
1	2	ID	R	R	-	Acknowledgment Code	
2	20	ST	R	R	-	Message Control ID	
3	80	ST	O	N	-	Text Message	
4	15	NM	O	N	-	Expected Sequence Number	
5	1	ID	B	N	-	Delayed Acknowledgment Type	
6	250	CE	O	O	-	Error Condition	

Table 22. Observation unsolicited transmission response message: MSA segment

The field definition of an indispensable setup in MSA segment and an arbitrary setup is shown below.

MSA-1. Acknowledgment Code

Value	Description
<Acknowledgment code>	Refer to HL7Table0008

MSA-2. Message Control ID

Value	Description
YYYYMMDDNNNNNN	This field contains the message control ID (MSH-10) of the message sent by the sending system.

MSA-6. Error Condition

Value	Description
<identifier (ST)>^<text (ST)>^<name of coding system (IS)>^<alternate identifier (ST)>^<alternate text (ST)>^<name of alternate coding system (IS)>	The Message Error Condition codes are defined by HL7Table0357. (Usually this field is not used)

7.4. Query for Results of Observation (Events R02, R04)

7.4.1. Vital Information Query Message: QRY^R02

A Vital Information Query Message consists of the following segments.

No.	Segment	Segment name	BSM	Remarks
1	MSH	Message Header	R	
2	QRD	Query Definition	R	
3	QRF	Query Filter	O	

Table 23. Query, original mode message (QRY^R02)

- Braces {...} indicate one or more repetitions of the enclosed group of segments.
- Brackets [...] indicate that the enclosed group of segments is optional.
- If a group of segments is optional and may repeat it should be enclosed in brackets and braces {[...]}.

7.4.1.1. Observation Result Query - Query Message: MSH segment

The MSH segment in a Vital Information Query Message consists of the following elements.

SEQ	LEN	DT	OPT	BSM	RP/#	Element	Remarks
1	1	ST	R	R	-	Field Separator	|
2	4	ST	R	R	-	Encoding Characters	^~\&
3	180	HD	O	O	-	Sending Application	
4	180	HD	O	O	-	Sending Facility	
5	180	HD	O	O	-	Receiving Application	
6	180	HD	O	O	-	Receiving Facility	
7	26	TS	O	O	-	Date/Time of Message	
8	40	ST	O	N	-	Security	
9	13	CM	R	R	-	Message Type	QRY^R02^QRY_R02
10	20	ST	R	R	-	Message Control ID	
11	3	PT	R	R	-	Processing ID	P
12	60	VID	R	R	-	Version ID	2.4
13	15	NM	O	N	-	Sequence Number	
14	180	ST	O	N	-	Continuation Pointer	
15	2	ID	O	R	-	Accept Acknowledgement Type	
16	2	ID	O	R	-	Application Acknowledgement Type	
17	3	ID	O	N	-	Country Code	
18	16	ID	O	O	Y	Character Set	ASCII
19	250	CE	O	N	-	Principal Language of Message	
20	20	ID	O	O	-	Alternate Character Set Handling Scheme	ASCII
21	10	ID	O	N	Y	Conformance Statement ID	

Table 24. Observation result query - query message: MSH segment

The field definition of an indispensable setup in MSH segment and an arbitrary setup is shown below.

MSH-1. Field Separator

Value	Description
| (fixed)	Separator between the fields

MSH-2. Encoding Characters

Value	Description
^~\& (fixed)	Component separator, repetitive separator, an escape character, subcomponent separator

MSH-3. Sending Application

Value	Description
<Sending Application>	(example) HL7 Client *In the case of the BSM, set in the SYSTEM CONFIGURATION screen.

MSH-4. Sending Facility

Value	Description
<Institution>^<Section>	(example) Receiving Facility *In the case of the BSM, set in the SYSTEM CONFIGURATION screen.

MSH-5. Receiving Application

Value	Description
<Receiving Application>	(example) HL7 Gateway *In the case of the BSM, set in the SYSTEM CONFIGURATION screen.

MSH-6. Receiving Facility

Value	Description
<Institution>^<Section>	(example) Nihon Kohden *In the case of the BSM, set in the SYSTEM CONFIGURATION screen.

MSH-7. Date/Time of Message

Value	Description
YYYYMMDDHHMMSS	Year/month/day/hour/minute/second (example) 20010131171823 (Usually this field is not used)

MSH-9. Message Type

Value	Description
QRY^R02^QRY_R02 (fixed)	Message Type: Reference of HL7Table0076 Event Type: Reference of HL7Table0003

MSH-10. Message Control ID

Value	Description
<Message Control ID>	ID of a partner system rule.

MSH-11. Processing ID

Value	Description
P (fixed)	Production: Reference of HL7Table0103

MSH-12. Version ID

Value	Description
2.4 (fixed)	HL7 v2.4

MSH-15. Accept Acknowledgment

Value	Description
NE (fixed)	“necessary” The PCD TF requires that this field be valued as NE.

MSH-16. Application Acknowledgment

Value	Description
AL (fixed)	“always” The PCD TF requires that this field be valued as AL.

MSH-18. Character Set

Value	Description
ASCII	

MSH-20. Alternate Character Set Handling Scheme

Value	Description
ASCII	

7.4.1.2. Observation Result Query - Query Message: QRD segment

The QRD segment in a Vital Information Query Message consists of the following elements.

SEQ	LEN	DT	OPT	BSM	RP/#	Element	Remarks
1	26	TS	R	R	-	Query Date/Time	
2	1	ID	R	R	-	Query Format Code	R
3	1	ID	R	R	-	Query Priority	I
4	10	ST	R	R	-	Query ID	
5	1	ID	O	N	-	Deferred Response Type	
6	26	TS	O	N	-	Deferred Response Date/Time	
7	10	CQ	R	R	-	Quantity Limited Request	RD^1
8	250	XCN	R	R	Y	Who Subject Filter	
9	250	CE	R	R	Y	What Subject Filter	
10	250	CE	R	R	Y	What Department Data Code	
11	20	ST	O	N	Y	What Data Code Value Qual	
12	1	ID	O	N	-	Query Results Level	

Table 25. Observation Result Query - Query Message: QRD segment

The field definition of an indispensable setup in QRD segment and an arbitrary setup is shown below.

QRD-1. Query Date/Time

Value	Description
YYYYMMDDHHMMSS	Year/month/day/hour/minute/second (example) 20010131171823

QRD-2. Query Format Code

Value	Description
R (fixed)	Response is in record-oriented format: Reference of HL7Table0106

QRD-3. Query Priority

Value	Description
I (fixed)	Immediate: Reference of HL7Table0091

QRD-4. Query ID

Value	Description
	ID of the rule defined by the HL7 gateway or the bedside monitor

QRD-7. Quantity Limited Request

Value	Description
RD^1 (fixed)	Records: Reference of HL7Table0126

QRD-8. Who Subject Filter

Value	Description
<ID number (ST)>^<family name (ST)>^<given name (ST)> ^<middle initial or name (ST)> ^<suffix (e. g., JR or III) (ST)> ^<prefix (e. g., DR) (ST)> ^<degree (e. g., MD) (IS)> ^<source table (IS)> ^<assigning authority (HD)> ^<name type code(ID)> ^<code identifying the check digit scheme employed (ID)> ^<identifier type code (IS)> ^<assigning facility (HD)>	A candidate patient is set up. Only <Patient ID Number> is used.

QRD-9. What Subject Filter

Value	Description
RES (fixed)	Result Reference of HL7Table0048

QRD-10. What Department Data Code

Value	Description
<identifier (ID)>^<text (ST)>^<name of coding system (ST)>^<alternate identifier (ID)>^<alternate text (ST)>^<name of alternate coding system (ST)>	(Usually this field is not used)

7.4.1.3. Observation Result Query - Query Message: QRF segment

SEQ	LEN	DT	OPT	BSM	RP/#	Element	Remarks
1	20	ST	R	R	Y	Where Subject Filter	
2	26	TS	B	N	-	When Data Start Date/Time	
3	26	TS	B	N	-	When Data End Date/Time	
4	60	ST	O	N	Y	What User Qualifier	
5	60	ST	O	N	Y	Other QRY Subject Filter	
6	12	ID	O	N	Y	Which Date/Time Qualifier	
7	12	ID	O	N	Y	Which Date/Time Status Qualifier	
8	12	ID	O	N	Y	Date/Time Selection Qualifier	
9	60	TQ	O	O	-	When Quantity/Timing Qualifier	
10	10	NM	O	N	-	Search Confidence Threshold	

Table 26. Observation Result Query - Query Message: QRF segment

The field definition of an indispensable setup in QRF segment and an arbitrary setup is shown below.

QRF-1. Where Subject Filter

Value	Description
	This field identifies the department, system, or subsystem to which the query pertains. (example) HL7 Gateway

QRF-9. When Quantity/Timing Qualifier

Value	Description
^^^YYYYMMDDhhmmss (start date/time)^ YYYYMMDDhhmmss (end date/time)	

7.4.2. Observation Result Query - Response Message: ORF^R04

No.	Segment	Segment name	BSM	Remarks
1	MSH	Message Header	R	
2	MSA	Message Acknowledgment	R	
3	QRD	Query Definition	R	
4	(QRF)	Query Filter	N	
	{			
	[			
5	PID	Patient ID	R	
6	[{NTE}]	Notes and Comments	N	
	]			
	{			
7	[ORC]	Order common	R	
8	OBR	Observation request	R	
9	{[NTE]}	Notes and comments	N	
10	[CTD]	Contact Data	N	
	{			
11	[OBX]	Observation/Result	R	
12	{[NTE]}	Notes and comments	N	
	}			
13	{[CTI]}	Clinical Trial Identification	N	
	}}			
14	[ERR]	Error	N	
15	[QAK]	Query Acknowledgement	N	
16	[DSC]	Continuation Pointer	N	

Table 27. Vital Information Response Message: ORF

- Braces {...} indicate one or more repetitions of the enclosed group of segments.
- Brackets [...] indicate that the enclosed group of segments is optional.
- If a group of segments is optional and may repeat it should be enclosed in brackets and braces {[...]}.

7.4.2.1. Observation Result Query - Response Message: MSH segment

SEQ	LEN	DT	OPT	BSM	RP/#	Element	Remarks
1	1	ST	R	R	-	Field Separator	|
2	4	ST	R	R	-	Encoding Characters	^~\&
3	180	HD	O	O	-	Sending Application	
4	180	HD	O	O	-	Sending Facility	
5	180	HD	O	O	-	Receiving Application	
6	180	HD	O	O	-	Receiving Facility	
7	26	TS	O	O	-	Date/Time of Message	
8	40	ST	O	N	-	Security	
9	13	CM	R	R	-	Message Type	ORF^R04^ORF_R04
10	20	ST	R	R	-	Message Control ID	
11	3	PT	R	R	-	Processing ID	P
12	60	VID	R	R	-	Version ID	2.4
13	15	NM	O	N	-	Sequence Number	
14	180	ST	O	N	-	Continuation Pointer	
15	2	ID	O	R	-	Accept Acknowledgement Type	
16	2	ID	O	R	-	Application Acknowledgement Type	
17	3	ID	O	O	-	Country Code	
18	16	ID	O	O	Y	Character Set	ASCII
19	250	CE	O	N	-	Principal Language of Message	
20	20	ID	O	O	-	Alternate Character Set Handling Scheme	ASCII
21	10	ID	O	N	Y	Conformance Statement ID	

Table 28. Observation Result Query - Response Message: MSH segment

The field definition of an indispensable setup in MSH segment and an arbitrary setup is shown below.

MSH-1. Field Separator

Value	Description
| (fixed)	Separator between the fields

MSH-2. Encoding characters

Value	Description
^~\& (fixed)	Component separator, repetitive separator, an escape character, subcomponent separator

MSH-3. Sending Application

Value	Description
<Sending Application>	(example) HL7 Gateway *In the case of the BSM, set in the SYSTEM CONFIGURATION screen.

MSH-4. Sending Facility

Value	Description
<Institution>^<Section>	(example) Nihon Kohden *In the case of the BSM, set in the SYSTEM CONFIGURATION screen.

MSH-5. Receiving Application

Value	Description
<Receiving Application>	(example) HL7 Client *In the case of the BSM, set in the SYSTEM CONFIGURATION screen.

MSH-6. Receiving Facility

Value	Description
<Institution>^<Section>	(example) Receiving Facility *In the case of the BSM, set in the SYSTEM CONFIGURATION screen.

MSH-7. Date/Time of Message

Value	Description
YYYYMMDDHHMMSS	Year/month/day/hour/minute/second (example) 20070401171823 (Usually this field is not used)

MSH-9. Message Type

Value	Description
ORF^R04^ORF_R04 (fixed)	Message Type: Reference of HL7Table0076 Event Type: Reference of HL7Table0003

MSH-10. Message Control ID

Value	Description

YYYYMMDDNNNNNN	Year/Month/Day/Sequence Number (example) 20070401123456 ID of the partner system rule The message control ID of MSH-10 in QRY^R02 is returned.

MSH-11. Processing ID

Value	Description
P (fixed)	Production: Reference of HL7Table0103

MSH-12. Version ID

Value	Description
2.4 (fixed)	HL7 protocol version 2.4

MSH-15. Accept Acknowledgment

Value	Description
NE (fixed)	“necessary” The PCD TF requires that this field be valued as NE.

MSH-16. Application Acknowledgment

Value	Description
AL (fixed)	“always” The PCD TF requires that this field be valued as AL.

MSH-18. Character Set

Value	Description
ASCII	

MSH-20. Alternate Character Set Handling Scheme

Value	Description
ASCII	

7.4.2.2. Observation Result Query - Response Message: MSA segment

SEQ	LEN	DT	OPT	BSM	RP/#	Element	Remarks
1	2	ID	R	R	-	Acknowledgment Code	
2	20	ST	R	R	-	Message Control ID	
3	80	ST	O	N	-	Text Message	
4	15	NM	O	N	-	Expected Sequence Number	
5	1	ID	B	N	-	Delayed Acknowledgment Type	
6	250	CE	O	N	-	Error Condition	

Table 29. Observation Result Query - Response Message: MSA segment

The field definition of an indispensable setup in MSA segment and an arbitrary setup is shown below.

MSA-1. Acknowledgment Code

Value	Description
	Refer to HL7Table0008
AA	Original mode: Application Accept Enhanced mode: Application acknowledgment: Accept
AE	Original mode: Application Error Enhanced mode: Application acknowledgment: Error

MSA-2. Message Control

Value	Description
	Set QRY^A19 MSH-10 Message Control ID. This field contains the message control ID of the message sent by the sending system.

7.4.2.3. Observation Result Query - Response Message: QRD segment

The QRD segment in a Vital Information Query Message consists of the following elements.

Each value is the same as the QRD segment of the QRY message.

SEQ	LEN	DT	OPT	BSM	RP/#	Element	Remarks
1	26	TS	R	R	-	Query Date/Time	
2	1	ID	R	R	-	Query Format Code	R
3	1	ID	R	R	-	Query Priority	I
4	10	ST	R	R	-	Query ID	
5	1	ID	O	N	-	Deferred Response Type	
6	26	TS	O	N	-	Deferred Response Date/Time	
7	10	CQ	R	R	-	Quantity Limited Request	RD^1
8	250	XCN	R	R	Y	Who Subject Filter	
9	250	CE	R	R	Y	What Subject Filter	
10	250	CE	R	R	Y	What Department Data Code	
11	20	ST	O	N	Y	What Data Code Value Qual	
12	1	ID	O	N	-	Query Results Level	

Table 30. Observation Result Query - Response Message: QRD segment

The field definition of an indispensable setup in QRD segment and an arbitrary setup is shown below.

QRD-1. Query Date/Time

Value	Description
YYYYMMDDHHMMSS	Year/month/day/hour/minute/second (example) 20010131171823

QRD-2. Query Format Code

Value	Description
R (fixed)	Response is in record-oriented format: Reference of HL7Table0106

QRD-3. Query Priority

Value	Description
I (fixed)	Immediate: Reference of HL7Table0091

QRD-4. Query ID

Value	Description
	Same as QRD-4 of QRY

QRD-7. Quantity Limited Request

Value	Description
RD^1 (fixed)	Records: Reference of HL7Table0126

QRD-8. Who Subject Filter

Value	Description
<ID number (ST)>^<family name (ST)>^<given name (ST)> ^<middle initial or name (ST)> ^<suffix (e. g., JR or III) (ST)> ^<prefix (e. g., DR) (ST)> ^<degree (e. g., MD) (IS)> ^<source table (IS)> ^<assigning authority (HD)> ^<name type code(ID)> ^<code identifying the check digit scheme employed (ID)> ^<identifier type code (IS)> ^<assigning facility (HD)>	A candidate patient setup. Only <Patient ID Number > is used.

QRD-9. What Subject Filter

Value	Description
RES (fixed)	Result Reference of HL7Table0048

QRD-10. What Department Data Code

Value	Description
<identifier (ID)>^<text (ST)>^<name of coding system (ST)>^<alternate identifier (ID)>^<alternate text (ST)>^<name of alternate coding system (ST)>	(Usually this field is not used)

7.4.2.4. Observation Result Query - Response Message: PID segment

The PID segment in a Vital Information Response Message consists of the following elements.

SEQ	LEN	DT	OPT	BSM	RP/#	Element	Remarks
1	4	SI	O	N	-	Set ID - PID	
2	20	CX	B	N	-	Patient ID	
3	250	CX	R	R	Y	Patient Identifier List	
4	20	ST	O	N	Y	Alternate Patient ID - PID	
5	250	XPN	R	R	Y	Patient Name	
6	250	XPN	O	N	-	Mother’s Maiden Name	
7	26	TS	O	R	-	Date/Time of Birth	
8	1	IS	O	R	-	Administrative Sex	
9	250	XPN	B	N	Y	Patient Alias	
10	250	CE	O	N	-	Race	
11	250	XAD	O	N	Y	Patient Address	
12	4	IS	O	N	-	County Code	
13	250	XTN	O	N	Y	Phone Number - Home	
14	250	XTN	O	N	Y	Phone Number - Business	
15	250	CE	O	N	-	Primary Language	
16	250	CE	O	N	-	Marital Status	
17	250	CE	O	N	-	Religion	
18	250	CX	O	N	-	Patient Account Number	
19	16	ST	B	N	-	SSN Number - Patient	
20	25	DLN	O	N	-	Driver's License Number - Patient	
21	250	CX	O	N	-	Mother's Identifier	
22	250	CE	O	N	-	Ethnic Group	
23	250	ST	O	N	-	Birth Place	
24	1	ID	O	N	-	Multiple Birth Indicator	
25	2	NM	O	N	-	Birth Order	
26	250	CE	O	N	-	Citizenship	
27	250	CE	O	N	-	Veterans Military Status	
28	250	CE	O	N	-	Nationality	
29	26	TS	O	N	-	Patient Death Date and Time	
30	1	ID	O	N	-	Patient Death Indicator	
31	1	ID	O	N	-	Identity Unknown Indicator	
32	20	IS	O	N	Y	Identity Reliability Code	
33	26	TS	O	N	-	Last Update Date/Time	
34	40	HD	O	N	-	Last Update Facility	
35	250	CE	C	N	-	Species Code	
36	250	CE	C	N	-	Breed Code	
37	80	ST	O	N	-	Strain	
38	250	CE	O	N	-	Production Class Code	

Table 31. Observation Result Query - Response Message: PID Segment

The field definition of an indispensable setup in PID segment and an arbitrary setup is shown below.

PID-3. Patient ID (Internal ID)

Value	Description
<Patient ID>	

PID-5. Patient Name

Value	Description
<family name (ST)> ^<given name (ST)> ^<middle initial or name (ST)> ^<suffix (e. g., JR or III) (ST)> ^<prefix (e. g., DR) (ST)> ^<degree (e.g., MD) (IS)> ^<name type code (ID)> ^<name representation code (ID)>	Name type code: Reference of HL7Table0200 Name representation type: Reference of HL7Table0465 (example) Kohden^Tarou^^^^^L^A

PID-7. Date/Time of Birth

Value	Description
YYYYMMDD(HHMM(SS))	Year/month/day/hour/minute/second (example) 20010131171823

PID-8. Sex

Value	Description
<Sex>	Reference of HL7Table0001
F	Female
M	Male
O	Other
U	Unknown

7.4.2.5. Observation Result Query - Response Message: ORC segment

The ORC segment in a Vital Information Response Message consists of the following elements.

SEQ	LEN	DT	OPT	BSM	RP/#	Element	Remarks
1	2	ID	R	R	N	Order Control	RE
2	22	EI	C	N	-	Placer Order Number	
3	22	EI	C	N	―	Filler Order Number	
4	22	EI	O	N	―	Placer Group Number	
5	2	ID	O	N	N	Order Status	
6	1	ID	O	N	-	Response Flag	
7	200	TQ	O	N	Y	Quantity/Timing	
8	200	CM	O	N	-	Parent	
9	26	TS	O	N		Date/Time of Transaction	
10	250	XCN	O	N	Y	Entered By	
11	250	XCN	O	N	Y	Verified By	
12	250	XCN	O	N	Y	Ordering Provider	
13	80	PL	O	N	-	Enterer's Location	
14	250	XTM	O	N	Y/2	Call Back Phone Number	
15	26	TS	O	N	-	Order Effective Date/Time	
16	250	CE	O	N	-	Order Control Code Reason	
17	250	CE	O	N	-	Entering Organization	
18	250	CE	O	N	-	Entering Device	
19	250	XCN	O	N	Y	Action By	
20	250	CE	O	N	-	Advanced Beneficiary Notice Code	
21	250	XON	O	N	Y	Ordering Facility Name	
22	250	XAD	O	N	Y	Ordering Facility Address	
23	250	XTN	O	N	Y	Ordering Facility Phone Number	
24	250	XAD	O	N	Y	Ordering Provider Address	
25	250	CWE	O	N	N	Order Status Modifier	

Table 32. Observation Result Query - Response Message: ORC segment

The field definition of an indispensable setup in ORC segment and an arbitrary setup is shown below.

ORC-1. Order control

Value	Description
RE	Determines the function of the order segment. Refer to HL7Table0119

7.4.2.6. Observation Result Query - Response Message: OBR segment

The OBR segment in a Vital Information Response Message consists of the following elements.

SEQ	LEN	DT	OPT	BSM	RP/#	Element	Remarks
1	4	SI	O	R	-	Set ID - OBR	
2	22	EI	C	N	-	Placer Order Number	
3	22	EI	C	N	—	Filler Order Number	
4	250	CE	R	R	—	Universal Service Identifier	
5	2	ID	B	N	—	Priority - OBR	
6	26	TS	B	N	-	Requested Date/Time	
7	26	TS	C	C	-	Observation Date/Time #	
8	26	TS	O	N	-	Observation End Date/Time #	
9	20	CQ	O	N	-	Collection Volume *	
10	250	XCN	O	N	Y	Collector Identifier *	
11	1	ID	O	N	-	Specimen Action Code *	
12	250	CE	O	N	-	Danger Code	
13	300	ST	O	N	—	Relevant Clinical Info.	
14	26	TS	C	N	-	Specimen Received Date/Time *	
15	300	CM	O	O	-	Specimen Source *	
16	250	XCN	O	N	Y	Ordering Provider	
17	250	XTN	O	N	Y/2	Order Callback Phone Number	
18	60	ST	O	N	-	Placer Field 1	
19	60	ST	O	N	-	Placer Field 2	
20	60	ST	O	N	-	Filler Field 1 +	
21	60	ST	O	N	-	Filler Field 2 +	
22	26	TS	C	N	-	Results Rpt/Status Chng - Date/Time +	
23	40	CM	O	N	-	Charge to Practice +	
24	10	ID	O	N		Diagnostic Serv Sect ID	
25	1	ID	C	C	-	Result Status +	
26	400	CM	O	N	-	Parent Result +	
27	200	TQ	O	N	Y	Quantity/Timing	
28	250	XCN	O	N	Y/5	Result Copies To	
29	200	CM	O	N		Parent	
30	20	ID	O	N	-	Transportation Mode	
31	250	CE	O	N	Y	Reason for Study	
32	200	CM	O	N	-	Principal Result Interpreter +	
33	200	CM	O	N	Y	Assistant Result Interpreter +	
34	200	CM	O	N	Y	Technician +	
35	200	CM	O	N	Y	Transcriptionist +	
36	26	TS	O	N	-	Scheduled Date/Time +	
37	4	NM	O	N	-	Number of Sample Containers *	
38	250	CE	O	N	Y	Transport Logistics of Collected Sample *	
39	250	CE	O	N	Y	Collector's Comment *	
40	250	CE	O	N	-	Transport Arrangement Responsibility	
41	30	ID	O	N	-	Transport Arranged	
42	1	ID	O	N	-	Escort Required	
43	250	CE	O	N	Y	Planned Patient Transport Comment	

44	250	CE	O	N		Procedure Code	
45	250	CE	O	N	Y	Procedure Code Modifier	
46	250	CE	O	N	Y	Placer Supplemental Service Information	
47	250	CE	O	N	Y	Filler Supplemental Service Information	

Table 33. Observation Result Query - Response Message: OBR segment

The field definition of an indispensable setup in OBR segment and an arbitrary setup is shown below.

OBR-1. Set ID

Value	Description
	sequence number

OBR-4. Universal Service Identifier

Value	Description
	The code and name about the general term “vital sign” of output information enter. A default is the name and code which are received from other system. Other than observation value NIBP: VITAL Observation value NIBP: NIBP

OBR-7. Observation Date/Time

Value	Description
YYYYMMDDHHMMSS	Year/Month/Day/Hour/minute/second (example) 20070401171823

OBR-15. Specimen Source

Value	Description
Specimen Source (fixed)	

OBR-25. Result Status

Value	Description
A (fixed)	This field is the status of results for this order.

7.4.2.7. Vital Information Response Message: OBX segment

The OBX segment in a Vital Information Response Message consists of the following elements.

SEQ	LEN	DT	OPT	BSM	RP/#	Element	Remarks
1	4	SI	O	O	-	Set ID - OBX	
2	2	ID	C	R	-	Value Type	
3	250	CE	R	R	-	Observation Identifier	
4	20	ST	C	N	-	Observation Sub-ID	
5	65536	*	C	R	Y	Observation Value	
6	250	CE	O	O	-	Units	
7	60	ST	O	N	-	References Range	
8	5	IS	O	N	Y/5	Abnormal Flags	
9	5	NM	O	N	-	Probability	
10	2	ID	O	N	Y	Nature of Abnormal Test	
11	1	ID	R	R	-	Observation Result Status	
12	26	TS	O	N	-	Date Last Observation Normal Value	
13	20	ST	O	N	-	User Defined Access Checks	
14	26	TS	O	O	-	Date/Time of the Observation	
15	250	CE	O	N	-	Producer's ID	
16	250	XCN	O	N	-	Responsible Observer	
17	250	CE	O	N	-	Observation Method	
18	22	EI	O	N	Y	Equipment Instance Identifier	
19	26	TS	O	N	-	Date/Time of the Analysis	

Table 34. Vital Information Response Message: OBX segment

The field definition of an indispensable setup in OBX segment and an arbitrary setup is shown below.

OBX-1. Set ID

Value	Description
	This field contains the sequence number.

OBX-2. Value Type

Value	Description
	Value type: Reference of HL7Table0125
NM	Numeric
ST	String Data
The rest is omitted.	

OBX-3. Observation Identifier

Value	Description
<identifier (ST)>^<text (ST)>	The parameter code is set in <identifier> and the universal ID plus the parameter name are set in <text>. Example: 001000^VITAL HR Use the parameter code and the parameter name received from the monitor network or acquired from the bedside monitor.

OBX-5. Observation Value

Value	Description
	This field contains the value observed by the Bedside monitor. OBX-2-value type contains the data type for this field according to which observation value is formatted.

OBX-6. Units

Value	Description
	The unit defined with the monitor system is set.

OBX-11. Observation Result Status

Value	Description
F	Final results. Can only be changed with a corrected result. Reference of HL7Table0085

OBX-14. Date/Time of Observation

Value	Description
YYYYMMDDHHMMSS	Observation date/time. Year/Month/Day/hour/minute/second (example) 20070401171823

8. Error Condition Table

8.1. HL7Table0357 – Message Error Condition Codes

Error Condition Code	Error Condition Text	Description/Comment
0	Message accepted	Success. Optional, as the AA conveys success. Used for systems that must always return a status code.
100	Segment sequence error	Errors. The message segments were not in the proper order, or required segments are missing.
101	Required field missing	Errors. A required field is missing from a segment.
102	Data type error	Errors. The field contained data of the wrong data type, e.g. an NM field contained "FOO."
103	Table value not found	Errors. A field of data type ID or IS was compared against the corresponding table, and no match was found.
200	Unsupported message type	Rejection. The Message Type is not supported.
201	Unsupported event code	Rejection. The Event Code is not supported.
202	Unsupported processing ID	Rejection. The Processing ID is not supported.
203	Unsupported version id	Rejection. The Version ID is not supported.
204	Unknown key identifier	Rejection. The ID of the patient, order, etc., was not found. Used for transactions *other than* additions, e. g. transfer of a non-existent patient.
205	Duplicate key identifier	Rejection. The ID of the patient, order, etc., already exists. Used in response to addition transactions (Admit, New Order, etc).
206	Application record locked	Rejection. The transaction could not be performed at the application storage level, e. g. database locked.
207	Application internal error	Rejection. A catchall for internal errors not explicitly covered by other codes.

Table 35. Message error condition codes

Appendix

Contents

Appendix A ParameterList

	Parameter		Parameter Subcode	String Code	String	Remarks
1	ECG	0	Average HR (beats/min)	001000	HR||80|bpm	*11
2	VPC	0	VPC / minute	002000	VPC||5|/min	*11
3	ST	0	I (mV)	003000	ST1||-0.07|mV	*11
		1	II (mV)	003001	ST2||-0.06|mV	*11
		2	III (mV)	003002	ST3||-0.05|mV	*11
		3	AVR (mV)	003003	STVR||-0.04|mV	*11
		4	AVL (mV)	003004	STVL||-0.03|mV	*11
		5	AVF (mV)	003005	STVF||-0.02|mV	*11
		6	V1 (mV)	003006	STV1||-0.01|mV	*11
		7	V2 (mV)	003007	STV2||0.00|mV	*11
		8	V3 (mV)	003008	STV3||0.01|mV	*11
		9	V4 (mV)	003009	STV4||0.02|mV	*11
		10	V5 (mV)	003010	STV5||0.03|mV	*11
		11	V6 (mV)	003011	STV6||0.04|mV	*11
		12	V (mV)	003012	STV||0.05|mV	*11
		13	MCL (mV)	003013	STMCL||0.06|mV	*11
		14	ECG1 (mV)	003014	STecg1||0.07|mV	*11
		15	ECG2 (mV)	003015	STecg2||0.08|mV	*11
4	Respiration	0	Average Resp Rate (/min)	004000	RESP||12|/min	*11
		1	Apnea (sec)	004001	APSEC(RESP)||5|sec	*11
		5	Impedance Resp Rate (/min)	004005	rRESP(imp)||15|/min	*11
		6	Thermistor Resp Rate (/min)	004006	rRESP(the)||15|/min	*1*11
		73	CO2 Resp Rate (/min)	004073	rRESP(co2)||15|/min	*11
		85	Flow Resp Rate (/min)	004085	rRESP(flow)||15|/min	*1*11
		91	Anesthesia Resp Rate (/min)	004091	rRESP(anes)||15|/min	*1*11
5	Impedance Respiration	0	Impedance Resp Rate (/min)	005000	RESP||14|/min	*11
		1	Apnea (sec)	005001	APSEC(RESP)||0|sec	*11
6	Thermistor Respiration	0	Thermistor Respiration (/min)	006000	RESP_T||14|/min	*1*11
		1	Apnea (sec)	006001	APSEC(RESP_T)||5|sec	*1*11
7	SpO2	0	SpO2 (%)	007000	SpO2||98|%	
		1	Average PR (/min)	007001	PR(spo2)||82|/min	
8	SpO2-2	0	SpO2 (%)	008000	SpO2_2||90|%	*1*11
		1	Average PR (/min)	008001	PR(spo2_2)||80|/min	*1*11
9	NiBP	0	Systolic (mmHg)	009000	SYS||127|mmHg	*2
		1	Diastolic (mmHg)	009001	DIAS||77|mmHg	*2
		2	Mean (mmHg)	009002	MEAN||90|mmHg	*2
11	Tskin	0	Temperature (C)	011000	TSKIN||36.9|C	*1*11
12	Tskin-2	0	Temperature (C)	012000	TSKIN_2||36.9|C	*1*11
13	Tskin-3	0	Temperature (C)	013000	TSKIN_3||36.9|C	*1*11

14	Trect	0	Temperature (C)	014000	TRECT||37.1|C	*1*11
15	Tcore	0	Temperature (C)	015000	TCORE||37.1|C	*1*11
16	Tnaso	0	Temperature (C)	016000	TNASO||37.1|C	*1*11
17	Teso	0	Temperature (C)	017000	TESO||36.8|C	*1*11
18	Ttymp	0	Temperature (C)	018000	TTYMP||37.0|C	*1*11
21	Tblad	0	Temperature (C)	021000	TBLAD||37.1|C	*1*11
22	Taxil	0	Temperature (C)	022000	TAXIL||37.1|C	*1*11
27	Temp	0	Temperature (C)	027000	TEMP||37.1|C	*11
28	Temp-2	0	Temperature (C)	028000	TEMP2||36.9|C	*11
29	Temp-3	0	Temperature (C)	029000	TEMP3||36.8|C	*1*11
30	Temp-4	0	Temperature (C)	030000	TEMP4||37.0|C	*1*11
31	Temp-5	0	Temperature (C)	031000	TEMP5||37.1|C	*1*11
32	Temp-6	0	Temperature (C)	032000	TEMP6||37.1|C	*1*11
33	Temp-7	0	Temperature (C)	033000	TEMP7||37.1|C	*1*11
34	Temp-8	0	Temperature (C)	034000	TEMP8||37.1|C	*1*11
37	Delta-T	0	Delta-T (C)	037000	dT1||2.1|C	*1*11
38	Delta-T2	0	Delta-T (C)	038000	dT2||2.2|C	*1*11
39	Delta-T3	0	Delta-T (C)	039000	dT3||2.3|C	*1*11
40	Delta-T4	0	Delta-T (C)	040000	dT4||2.4|C	*1*11
41	Tb (Cath)	0	Temperature (C)	041000	TB||37.1|C	*1*11
43	Tb (CCO)	0	Temperature (C)	043000	TB_CCO||37.1|C	*1*11
44	ART	0	Systolic (mmHg)	044000	ART(S)||120|mmHg	*1*11
		1	Diastolic (mmHg)	044001	ART(D)||60|mmHg	*1*11
		2	Mean (mmHg)	044002	ART(M)||85|mmHg	*1*11
		6	Average PR (/min)	044006	PR(art)||80|/min	*1*11
45	ART-2	0	Systolic (mmHg)	045000	ART_2(S)||120|mmHg	*1*11
		1	Diastolic (mmHg)	045001	ART_2(D)||60|mmHg	*1*11
		2	Mean (mmHg)	045002	ART_2(M)||85|mmHg	*1*11
		6	Average PR (/min)	045006	PR(art_2)||79|/min	*1*11
46	RAD	0	Systolic (mmHg)	046000	RAD(S)||120|mmHg	*1*11
		1	Diastolic (mmHg)	046001	RAD(D)||60|mmHg	*1*11
		2	Mean (mmHg)	046002	RAD(M)||85|mmHg	*1*11
		6	Average PR (/min)	046006	PR(rad)||79|/min	*1*11
47	DORS	0	Systolic (mmHg)	047000	DORS(S)||120|mmHg	*1*11
		1	Diastolic (mmHg)	047001	DORS(D)||60|mmHg	*1*11
		2	Mean (mmHg)	047002	DORS(M)||85|mmHg	*1*11
		6	Average PR (/min)	047006	PR(dors)||79|/min	*1*11
48	AO	0	Systolic (mmHg)	048000	AO(S)||120|mmHg	*1*11
		1	Diastolic (mmHg)	048001	AO(D)||60|mmHg	*1*11
		2	Mean (mmHg)	048002	AO(M)||85|mmHg	*1*11
		6	Average PR (/min)	048006	PR(ao)||79|/min	*1*11
49	FEM	0	Systolic (mmHg)	049000	FEM(S)||120|mmHg	*1*11
		1	Diastolic (mmHg)	049001	FEM(D)||60|mmHg	*1*11
		2	Mean (mmHg)	049002	FEM(M)||85|mmHg	*1*11
		6	Average PR (/min)	049006	PR(fem)||79|/min	*1*11
50	UA	0	Systolic (mmHg)	050000	UA(S)||120|mmHg	*1*11

		1	Diastolic (mmHg)	050001	UA(D)||60|mmHg	*1*11
		2	Mean (mmHg)	050002	UA(M)||85|mmHg	*1*11
		3	Average PR (/min)	050003	PR(ua)||79|/min	*1*11
51	UV	0	Systolic (mmHg)	051000	UV(S)||12|mmHg	*1*11
		1	Diastolic (mmHg)	051001	UV(D)||6|mmHg	*1*11
		2	Mean (mmHg)	051002	UV(M)||8|mmHg	*1*11
		3	Average PR (/min)	051003	PR(uv)||79|/min	*1*11
52	PAP	0	Systolic (mmHg)	052000	PAP(S)||21|mmHg	*1*11
		1	Diastolic (mmHg)	052001	PAP(D)||7|mmHg	*1*11
		2	Mean (mmHg)	052002	PAP(M)||14|mmHg	*1*11
53	CVP	0	Systolic (mmHg)	053000	CVP(S)||8|mmHg	*1*11
		1	Diastolic (mmHg)	053001	CVP(D)||3|mmHg	*1*11
		2	Mean (mmHg)	053002	CVP(M)||5|mmHg	*1*11
		3	Average PR (/min)	053003	PR(cvp)||6|/min	*1*11
54	RAP	0	Systolic (mmHg)	054000	RAP(S)||135|mmHg	*1*11
		1	Diastolic (mmHg)	054001	RAP(D)||80|mmHg	*1*11
		2	Mean (mmHg)	054002	RAP(M)||102|mmHg	*1*11
		3	Average PR (/min)	054003	PR(rap)||79|/min	*1*11
55	RVP	0	Systolic (mmHg)	055000	RVP(S)||9|mmHg	*1*11
		1	Diastolic (mmHg)	055001	RVP(D)||4|mmHg	*1*11
		2	Mean (mmHg)	055002	RVP(M)||6|mmHg	*1*11
		3	Average PR (/min)	055003	PR(rvp)||79|/min	*1*11
56	LAP	0	Systolic (mmHg)	056000	LAP(S)||9|mmHg	*1*11
		1	Diastolic (mmHg)	056001	LAP(D)||4|mmHg	*1*11
		2	Mean (mmHg)	056002	LAP(M)||6|mmHg	*1*11
		3	Average PR (/min)	056003	PR(lap)||79|/min	*1*11
57	LVP	0	Systolic (mmHg)	057000	LVP(S)||120|mmHg	*1*11
		1	Diastolic (mmHg)	057001	LVP(D)||60|mmHg	*1*11
		2	Mean (mmHg)	057002	LVP(M)||85|mmHg	*1*11
		3	Average PR (/min)	057003	PR(lvp)||79|/min	*1*11
58	ICP	0	Maximum (mmHg)	058000	ICP(S)||8|mmHg	*1*11
		1	Minimum (mmHg)	058001	ICP(D)||3|mmHg	*1*11
		2	Mean (mmHg)	058002	ICP(M)||5|mmHg	*1*11
59	ICP-2	0	Maximum (mmHg)	059000	ICP_2(S)||8|mmHg	*1*11
		1	Minimum (mmHg)	059001	ICP_2(D)||3|mmHg	*1*11
		2	Mean (mmHg)	059002	ICP_2(M)||5|mmHg	*1*11
60	ICP-3	0	Maximum (mmHg)	060000	ICP_3(S)||8|mmHg	*1*11
		1	Minimum (mmHg)	060001	ICP_3(D)||3|mmHg	*1*11
		2	Mean (mmHg)	060002	ICP_3(M)||5|mmHg	*1*11
61	ICP-4	0	Maximum (mmHg)	061000	ICP_4(S)||8|mmHg	*1*11
		1	Minimum (mmHg)	061001	ICP_4(D)||3|mmHg	*1*11
		2	Mean (mmHg)	061002	ICP_4(M)||5|mmHg	*1*11
62	Press	0	Systolic (mmHg)	062000	PRESS(S)||135|mmHg	*11
		1	Diastolic (mmHg)	062001	PRESS(D)||80|mmHg	*11
		2	Mean (mmHg)	062002	PRESS(M)||102|mmHg	*11
		3	Average PR (/min)	062003	PR(p1)||79|/min	*11

63	Press-2	0	Systolic (mmHg)	063000	PRESS_2(S)||12|mmHg	*11
		1	Diastolic (mmHg)	063001	PRESS_2(D)||6|mmHg	*11
		2	Mean (mmHg)	063002	PRESS_2(M)||8|mmHg	*11
		3	Average PR (/min)	063003	PR(p2)||79|/min	*11
64	Press-3	0	Systolic (mmHg)	064000	PRESS_3(S)||12|mmHg	*1*11
		1	Diastolic (mmHg)	064001	PRESS_3(D)||6|mmHg	*1*11
		2	Mean (mmHg)	064002	PRESS_3(M)||8|mmHg	*1*11
		3	Average PR (/min)	064003	PR(p3)||79|/min	*1*11
65	Press-4	0	Systolic (mmHg)	065000	PRESS_4(S)||12|mmHg	*1*11
		1	Diastolic (mmHg)	065001	PRESS_4(D)||6|mmHg	*1*11
		2	Mean (mmHg)	065002	PRESS_4(M)||8|mmHg	*1*11
		3	Average PR (/min)	065003	PR(p4)||79|/min	*1*11
66	Press-5	0	Systolic (mmHg)	066000	PRESS_5(S)||12|mmHg	*1*11
		1	Diastolic (mmHg)	066001	PRESS_5(D)||6|mmHg	*1*11
		2	Mean (mmHg)	066002	PRESS_5(M)||8|mmHg	*1*11
		3	Average PR (/min)	066003	PR(p5)||79|/min	*1*11
67	Press-6	0	Systolic (mmHg)	067000	PRESS_6(S)||12|mmHg	*1*11
		1	Diastolic (mmHg)	067001	PRESS_6(D)||6|mmHg	*1*11
		2	Mean (mmHg)	067002	PRESS_6(M)||8|mmHg	*1*11
		3	Average PR (/min)	067003	PR(p6)||79|/min	*1*11
68	Press-7	0	Systolic (mmHg)	068000	PRESS_7(S)||12|mmHg	*1*11
		1	Diastolic (mmHg)	068001	PRESS_7(D)||6|mmHg	*1*11
		2	Mean (mmHg)	068002	PRESS_7(M)||8|mmHg	*1*11
		3	Average PR (/min)	068003	PR(p7)||79|/min	*1*11
69	Press-8	0	Systolic (mmHg)	069000	PRESS_8(S)||12|mmHg	*1*11
		1	Diastolic (mmHg)	069001	PRESS_8(D)||6|mmHg	*1*11
		2	Mean (mmHg)	069002	PRESS_8(M)||8|mmHg	*1*11
		3	Average PR (/min)	069003	PR(p8)||79|/min	*1*11
72	PR	0	Average PR (/min)	072000	PR||79|/min	*11
		7	SpO2 Avg PR (/min)	072007	rPR(spo2)||80|/min	*11
		8	SpO2_2 Avg PR (/min)	072008	rPR(spo2_2)||80|/min	*1*11
		44	ART Avg PR (/min)	072044	rPR(art)||80|/min	*1*11
		45	ART-2 Avg PR (/min)	072045	rPR(art_2)||80|/min	*1*11
		46	RAD Avg PR (/min)	072046	rPR(rad)||80|/min	*1*11
		47	DORS Avg PR (/min)	072047	rPR(dors)||80|/min	*1*11
		48	AO Avg PR (/min)	072048	rPR(ao)||80|/min	*1*11
		49	FEM Avg PR (/min)	072049	rPR(fem)||80|/min	*1*11
		50	UA Avg PR (/min)	072050	rPR(ua)||80|/min	*1*11
		51	UV Avg PR (/min)	072051	rPR(uv)||80|/min	*1*11
		52	PAP Avg PR (/min)	072052	rRP(pap)||80|/min	*1*11
		53	CVP Avg PR (/min)	072053	rPR(cvp)||80|/min	*1*11
		54	RAP Avg PR (/min)	072054	rPR(rap)||80|/min	*1*11

		55	RVP Avg PR (/min)	072055	rPR(rvp)||80|/min	*1*11
		56	LAP Avg PR (/min)	072056	rPR(lap)||80|/min	*1*11
		57	LVP Avg PR (/min)	072057	rPR(lvp)||80|/min	*1*11
		62	Press Avg PR (/min)	072062	rPR(press)||80|/min	*1*11
		63	Press-2 Avg PR (/min)	072063	rPR(press2)||80|/min	*1*11
		64	Press-3 Avg PR (/min)	072064	rPR(press3)||80|/min	*1*11
		65	Press-4 Avg PR (/min)	072065	rPR(press4)||80|/min	*1*11
		66	Press-5 Avg PR (/min)	072066	rPR(press5)||80|/min	*1*11
		67	Press-6 Avg PR (/min)	072067	rPR(press6)||80|/min	*1*11
		68	Press-7 Avg PR (/min)	072068	rPR(press7)||80|/min	*1*11
		69	Press-8 Avg PR (/min)	072069	rPR(press8)||80|/min	*1*11
73	CO2	0	Average Resp Rate (/min)	073000	RESP(co2)||12|/min	*11
		1	Exp CO2 (EtCO2) (mmHg)	073001	EtCO2||4.0|mmHg	*11
		2	Insp CO2 (FiCO2) (mmHg)	073002	FiCO2||1.0|mmHg	*11
		3	Apnea (sec)	073003	APSEC(CO2)||0|sec	*11
75	FiO2	0	Inspired O2 (FiO2) (%)	075000	FiO2||23.00|%	*1*11
		1	Expired O2 (EtO2) (%)	075001	EtO2||50.00|%	*1*11
76	CCO	0	CCO (L/min)	076000	CCO||5.12|L/min	*1*11
		1	Tb (C)	076001	CCOTb||37.2|C	*1*11
		2	CI (L/min/m^2)	076002	CCI||2.93|L/(min*sq,m,)	*1*11
83	SvO2 (CCO)	0	SvO2 (CCO) (%)	083000	SvO2_CCO||69|%	*1*11
84	tcP (tcPO2 + tcPCO2)	0	TcPO2 (mmHg)	084000	tcPO2||40|mmHg	*1*11
		1	TcPCO2 (mmHg)	084001	tcPCO2||50|mmHg	*1*11
85	Flow	0	Average Resp Rate (/min)	085000	RESP(Flow)||14|/min	*1*11
		1	MV (L/min)	085001	MV(Flow)||5.3|L/min	*1*11
		2	Expired TV (mL)	085002	TV(Flow)||500|mL	*1*11
		12	Apnea Time (sec)	085012	APSEC(Flow)||6|sec	*1*11
86	PAW	0	Maximum (Ppeak) (cmH_2O)	086000	Ppeak||16.00|cmH2O	*1*11
		3	PEEP (cmH_2O)	086003	PEEP||3.00|cmH2O	*1*11
88	Ventilator	0	Compliance (mL/cmH_2O)	088000	EVITAC||0.1|mL/cmH2O	*1*11
		1	Resistance (cmH_2O/L/sec)	088001	EVITAR||2|cmH2O/L/sec	*1*11
		2	PAW Minimum (cmH_2O)	088002	EVITAPmin||1.00|cmH2O	*1*11
		3	PAW Mean (cmH_2O)	088003	EVITAPmean||1.00|cmH2O	*1*11
		5	PEEP (cmH_2O)	088005	EVITAPEEP||1.00|cmH2O	*1*11
		6	PAW Peak (cmH_2O)	088006	EVITAPpeak||1.00|cmH2O	*1*11
		7	TV (L)	088007	EVITATV||0.08|L	*1*11
		8	Spont Resp Rate (/min)	088008	EVITARRspo||9|/min	*1*11
		9	Spont MV (L/min)	088009	EVITAMVspo||1.0|L/min	*1*11
		10	MV (L/min)	088010	EVITAMV||1.1|L/min	*1*11
		11	Airway Temperature	088011	EVITATemp||1.2|C	*1*11

			(C)			
		12	Resp Rate (/min)	088012	EVITARR||13|/min	*1*11
		13	ExpCO2 (EtCO2) (mmHg)	088013	EVITAEtCO2||10.0|mmHg	*1*11
		14	InspO2 (FiO2) (%)	088014	EVITAFiO2||1.00|%	*1*11
91	Anesthesia	0	ExpAgent CO2 (EtCO2) (mmHg)	091000	ANESEtCO2||40.0|mmHg	*1*11
		1	InspAgent CO2 (FiCO2) (mmHg)	091001	ANESFiCO2||0.0|mmHg	*1*11
		2	ExpAgent N2O (EtN2O) (%)	091002	ANESEtN2O||58.00|%	*1*11
		3	InspAgent N2O (FiN2O) (%)	091003	ANESFiN2O||64.00|%	*1*11
		4	ExpAgent O2 (EtO2) (%)	091004	ANESEtO2||28.00|%	*1*11
		5	InspAgent O2 (FiO2) (%)	091005	ANESFiO2||34.00|%	*1*11
		6	ExpHal (EtHAL) (%)	091006	ANESEtHal||1.00|%	*1*11
		7	InspHal (FiHAL) (%)	091007	ANESFiHal||1.00|%	*1*11
		8	ExpIso (EtISO) (%)	091008	ANESEtISO||2.50|%	*1*11
		9	InspIso (FiISO) (%)	091009	ANESFiISO||3.50|%	*1*11
		10	ExpEnf (EtENF) (%)	091010	ANESEtENF||3.50|%	*1*11
		11	InspEnf (FiENF) (%)	091011	ANESFiENF||4.00|%	*1*11
		12	ExpDes (EtDES) (%)	091012	ANESEtDES||10.00|%	*1*11
		13	InspDes (FiDES) (%)	091013	ANESFiDES||10.00|%	*1*11
		14	ExpSev (EtSEV) (%)	091014	ANESEtSEV||1.00|%	*1*11
		15	InspSev (FiSEV) (%)	091015	ANESFiSEV||1.00|%	*1*11
		18	Agent Resp Rate (/min)	091018	ANESRESP||14|/min	*1*11
		19	Agent Apnea (sec)	091019	APSEC(ANES)||5|sec	*1*11
103	BIS	0	BIS	103000	BIS||68.0|	*1*11
108	Delta-SpO2	0	Delta-SpO2 (%)	108000	dSpO2||8|%	*1*11
111	EEG1	0	SEF (Spectral Edge Frequency) (Hz)	111000	SEF1||5.9|Hz	*1*11
		3	TP (Total Power) (nW)	111003	TP1||9.99|nW	*1*11
112	EEG2	0	SEF (Spectral Edge Frequency) (Hz)	112000	SEF2||5.9|Hz	*1*11
		3	TP (Total Power) (nW)	112003	TP2||9.99|nW	*1*11
113	CNIBP	0	Systolic (mmHg)	113000	SYS(cnibp)||200|mmHg	*1*11
		1	Diastolic (mmHg)	113001	DIAS(cnibp)||100|mmHg	*1*11
		2	Mean (mmHg)	113002	MEAN(cnibp)||155|mmHg	*1*11
115	TOF	1	Slow TOF (%)	115001	SlowTOF||1|%	*1*11
		2	TimeToNext(NMT) (sec)	115002	TimeToNext(NMT)||1|sec	*1*11
		3	TEMP(NMT)（C）	115003	TEMP(NMT)||0.1|C	*1*11
		4	TOFRatio (%)	115004	TOFRatio||1|%	*1*11
		5	TOFCount	115005	TOFCount||1|	*1*11
		6	Twitch1 (%)	115006	Twitch1||1|%	*1*11
		7	Twitch2 (%)	115007	Twitch2||1|%	*1*11
		8	Twitch3 (%)	115008	Twitch3||1|%	*1*11
		9	Twitch4 (%)	115009	Twitch4||1|%	*1*11

		10	Twitch(%)	115010	Twitch||90|%	*1*11
		11	Pre twitch(%)	115011	PreTwitch||10|%	*1*11
		12	Pre twitch seq. number	115012	PreTwitchSeqNo||1|	*1*11
		13	PTCTwich (%)	115013	PTCTwich||1|%	*1*11
		14	PTCStimSeqNo	115014	PTCStimSeqNo||1|	*1*11
		15	PTC	115015	PTC||1|	*1*11
		16	StimWidth	115016	StimWidth||1|usec	*1*11
		17	StimCur (mA)	115017	StimCur||0.01|mA	*1*11
		18	CalCur1 (mA)	115018	CalCur1||0.01|mA	*1*11
		19	CalCur2 (mA)	115019	CalCur2||0.01|mA	*1*11
		20	TransSens	115020	TransSens||1|	*1*11
		21	SlowTOFTime (min)	115021	SlowTOFTime||1|min	*1*11
119	PiCCO	0	PCCO (L/min)	119000	PCCO(EXT)||5.12|L/min	*1*11
		1	PCCI (L/min/m2)	119001	PCCI(EXT)||2.93|L/(min*sq,m,)	*1*11
		9	Tb(EXT) (C)	119009	Tb(EXT)||37.2|C	*1*11
		17	ScvO2 (%)	119017	ScvO2(EXT)||69|%	*1*11
120	EEG3	0	SEF (Spectral Edge Frequency) (Hz)	120000	SEF1||5.9|Hz	*1*11
		3	TP (Total Power) (nW)	120003	TP1||9.99|nW	*1*11
121	EEG4	0	SEF (Spectral Edge Frequency) (Hz)	121000	SEF1||5.9|Hz	*1*11
		3	TP (Total Power) (nW)	121003	TP1||9.99|nW	*1*11
122	EEG5	0	SEF (Spectral Edge Frequency) (Hz)	122000	SEF1||5.9|Hz	*1*11
		3	TP (Total Power) (nW)	122003	TP1||9.99|nW	*1*11
123	EEG6	0	SEF (Spectral Edge Frequency) (Hz)	123000	SEF1||5.9|Hz	*1*11
		3	TP (Total Power) (nW)	123003	TP1||9.99|nW	*1*11
124	EEG7	0	SEF (Spectral Edge Frequency) (Hz)	124000	SEF1||5.9|Hz	*1*11
		3	TP (Total Power) (nW)	124003	TP1||9.99|nW	*1*11
125	EEG8	0	SEF (Spectral Edge Frequency) (Hz)	125000	SEF1||5.9|Hz	*1*11
		3	TP (Total Power) (nW)	125003	TP1||9.99|nW	*1*11
129	rSO2-1	0	rSO2 (%)	129000	rSO2(CH1)||50|%	*1*11
		1	Baseline (%)	129001	BL(CH1)||30|%	*1*11
		2	BVI	129002	BVI(CH1)||20|	*1*11
		8	AUC (min%)	129008	AUC(CH1)||1235|min%	*1*11
130	rSO2-2	0	rSO2 (%)	130000	rSO2(CH2)||50|%	*1*11
		1	Baseline (%)	130001	BL(CH2)||30|%	*1*11
		2	BVI	130002	BVI(CH2)||20|	*1*11
		8	AUC (min%)	130008	AUC(CH2)||1235|min%	*1*11
131	rSO2-3	0	rSO2 (%)	131000	rSO2(CH3)||50|%	*1*11
		1	Baseline (%)	131001	BL(CH3)||30|%	*1*11
		2	BVI	131002	BVI(CH3)||20|	*1*11
		8	AUC (min%)	131008	AUC(CH3)||1235|min%	*1*11
132	rSO2-4	0	rSO2 (%)	132000	rSO2(CH4)||50|%	*1*11

		1	Baseline (%)	132001	BL(CH4)||30|%	*1*11
		2	BVI	132002	BVI(CH4)||20|	*1*11
		8	AUC (min%)	132008	AUC(CH4)||1235|min %	*1*11
137	StO2-1	0	StO2 (%)	137000	StO2(CH1)||70|%	*1*11
		1	TPI	137001	StO2TPI(CH1)||4|	*1*11
138	StO2-2	0	StO2 (%)	138000	StO2(CH2)||70|%	*1*11
		1	TPI	138001	StO2TPI(CH2)||4|	*1*11
139	StO2-3	0	StO2 (%)	139000	StO2(CH3)||70|%	*1*11
		1	TPI	139001	StO2TPI(CH3)||4|	*1*11
140	StO2-4	0	StO2 (%)	140000	StO2(CH4)||70|%	*1*11
		1	TPI	140001	StO2TPI(CH4)||4|	*1*11
141	Spot Temp	0	Temperature(C)	141000	TEMP|1|36.50|C	*1
142 ～ 253	Reserved (this range of parameter codes should be ignored)	-	-	-	-	
254	Manual Input Parameter	000 ～ 031	Any selected manual input parameter	254000 ～	Respiration Rate|1|25|/min	*1
		032 ～ 099	Reserved			
		100	Patient Position	254100	Position(Patient)||Lying| Lying/Reclining/Sitting/Standing/Other	*1
		101	Cuff Position	254101	Position(Cuff)||L-ram| L-arm/R-arm/L-leg/R-leg/Other	*1
		102	SpO2 Location	254102	Location(SpO2)||Nose| Nose/Lobe/Finger/Toe/Other	*1
		103	Temp Location	254103	Location(TEMP)||Forehead| Forehead/Ear/Oral/Axillary/Rectal/Other	*1
		200	Note1	254200	Note1||This is for Note1.|	*1
		201	Note2	254201	Note2||This is for Note2.|	*1
		202	Note3	254202	Note3||This is for Note3.|	*1
		203	Note4	254203	Note4||This is for Note4.|	*1
		204	Note5	254204	Note5||This is for Note5.|	*1
		205	Note6	254205	Note6||This is for Note6.|	*1
		206 ～ 209	Reserved			
		210	EWS (Early Waring Score)	254210	EWS(SUM||16|	*1*

255	-	-	-	-	-	

*1 SVM-7500 / SVM-7600 series does not support.
*2 OBR2 (non-reguler data)
*3 OBR1 (reguler data)
*11 SVM-7100 series does not support.

Appendix B samples

1. Patient information query 【QRY^A19　ADR^A19】

【 QRY^A19 】Bedside monitor / vital signs monitor → Other system

MSH|^~\&|NIHON KOHDEN|NIHON KOHDEN|CLIENT APP|CLIENT FACILITY|20080123110707||
QRY^A19^QRY_A19|20080123000000|P|2.4|||NE|AL|Japan|ASCII||ASCII
QRD|20080123110707|R|I|0123000000^|||RD^1|id-sbr1203|APN|||

【 ADR^A19 】Other system → Bedside monitor/ vital signs monitor

MSH|^~\&|CLIENT APP|CLIENT FACILITY|NIHON KOHDEN|NIHON KOHDEN|||ADR^A19^ADR_A19|20080123000000|P|2.4|||NE|AL||ASCII||ASCII
MSA|AA|20080123000000
QRD|20080123110707|R|I|0123000000|||RD^1|id-sbr1203|APN|
PID|||id-sbr1203||Kohden^Taro^^^^^L^A||19600101|M|
OBX|1|NM|2522^Height||170|cm|||||F||||||
OBX|2|NM|2523^Weight||65|kg|||||F||||||
OBX|3|NM|520^Blood||A+|||||F||||||
DG1|1|||||||||||||||||||

The hexadecimal representation of the above ADR^A19
*The message start code is 0x0b, the segment terminator is 0x0d, the message terminator is 0x1c 0x0d.

[MSH Segment] *0x0b is the message start code.
0b 4d 53 48 7c 5e 7e 5c 26 7c 43 4c 49 45 4e 54 20 41 50 50 7c 43 4c 49 45 4e 54 20 46 41 43 49 4c 49 54 59 7c 4e 49 48 4f 4e 20 4b 4f 48 44 45 4e 7c 4e 49 48 4f 4e 20 4b 4f 48 44 45 4e 7c 7c 7c 41 44 52 5e 41 31 39 5e 41 44 52 5f 41 31 39 7c 32 30 30 38 30 31 32 33 30 30 30 30 30 30 7c 50 7c 32 2e 34 7c 7c 7c 4e 45 7c 41 4c 7c 7c 41 53 43 49 49 7c 7c 41 53 43 49 49 0d

[MSA Segment]
4d 53 41 7c 41 41 7c 32 30 30 38 30 31 32 33 30 30 30 30 30 30 0d

[QRD Segment]
51 52 44 7c 32 30 30 38 30 31 32 33 31 31 30 37 30 37 7c 52 7c 49 7c 30 31 32 33 30 30 30 30 30 30 7c 7c 7c 52 44 5e 31 7c 69 64 2d 73 62 72 31 32 30 33 7c 41 50 4e 7c 0d

[PID Segment]
50 49 44 7c 7c 7c 69 64 2d 73 62 72 31 32 30 33 7c 7c 4b 6f 68 64 65 6e 5e 54 61 72 6f 5e 5e 5e 5e 5e 4c 5e 41 7c 7c 31 39 36 30 30 31 30 31 7c 4d 7c 0d

[OBX Segment：Height]
4f 42 58 7c 31 7c 4e 4d 7c 32 35 32 32 5e 48 65 69 67 68 74 7c 7c 31 37 30 7c 63 6d 7c 7c 7c 7c 7c 46 7c 7c 7c 7c 7c 7c 0d

[OBX Segment：Weight]
4f 42 58 7c 32 7c 4e 4d 7c 32 35 32 33 5e 57 65 69 67 68 74 7c 7c 36 35 7c 6b 67 7c 7c 7c 7c 7c 46 7c 7c 7c 7c 7c 7c 0d

[OBX Segment : Blood Type]
4f 42 58 7c 33 7c 4e 4d 7c 35 32 30 5e 42 6c 6f 6f 64 7c 7c 41 2b 7c 7c 7c 7c 7c 7c 46 7c 7c 7c 7c 7c 7c 0d

[DG1] *0x1c 0x0d is the message terminator.
44 47 31 7c 31 7c 7c 7c 7c 7c 7c 7c 7c 7c 7c 7c 7c 7c 7c 7c 7c 7c 7c 7c 7c 7c 0d 1c 0d

2. Unsolicited observation - measurement value 【ORU^R01　ACK^R01】

【 ORU^R01 】Bedside monitor / vital signs monitor　→　Other system

MSH|^~\&|NIHON KOHDEN|NIHON KOHDEN|CLIENT APP|CLIENT FACILITY|20080123143207||ORU^R01^ORU_R01|20080123000205|P|2.4|||NE|AL|Japan|ASCII||ASCII
PID|||id-sbr1203||Kohden^Taro^^^^^L^A||19600101|M
PV1||I|^^sbr003^10.2.2.12:3
ORC|RE
OBR|1|||VITAL|||20080123143206|||||||||||||||||A
OBX|1|NM|001000^VITAL HR|1|80|bpm|||||F|||20080123143206|||
OBX|2|NM|002000^VITAL VPC|1|5|/min|||||F|||20080123143206|||
OBX|3|NM|003001^VITAL ST2|1|-0.06|mV|||||F|||20080123143206|||
OBX|4|NM|004001^VITAL APSEC(RESP)|1|5|sec|||||F|||20080123143206|||
OBX|5|NM|004005^VITAL rRESP(imp)|1|15|/min|||||F|||20080123143206|||
OBX|6|NM|005000^VITAL RESP|1|14|/min|||||F|||20080123143206|||
OBX|7|NM|007000^VITAL SpO2|1|98|%|||||F|||20080123143206|||
OBX|8|NM|007001^VITAL PR(spo2)|1|82|/min|||||F|||20080123143206|||
OBX|9|NM|062000^VITAL PRESS(S)|1|135|mmHg|||||F|||20080123143206|||
OBX|10|NM|062001^VITAL PRESS(D)|1|80|mmHg|||||F|||20080123143206|||
OBX|11|NM|062002^VITAL PRESS(M)|1|102|mmHg|||||F|||20080123143206|||
OBX|12|NM|062003^VITAL PR(p1)|1|79|/min|||||F|||20080123143206|||
OBR|2|||NIBP|||20071030103052|||||||||||||||||A
OBX|1|NM|009000^NIBP SYS|1|127|mmHg|||||F|||20071030103052|||
OBX|2|NM|009001^NIBP DIAS|1|77|mmHg|||||F|||20071030103052|||
OBX|3|NM|009002^NIBP MEAN|1|90|mmHg|||||F|||20071030103052|||

【 ACK^R01 】Other system　→　Bedside monitor / vital signs monitor

MSH|^~\&|CLIENT APP|CLIENT FACILITY|NIHON KOHDEN|NIHON KOHDEN|||ACK^R01^ACK|20080123000205|P|2.4|||NE|AL||ASCII||ASCII
MSA|AA|20080123000205

The hexadecimal representation of the above ACK ^ R01
[MSH Segment] *0x0b is the message start code.
0b 4d 53 48 7c 5e 7e 5c 26 7c 43 4c 49 45 4e 54 20 41 50 50 7c 43 4c 49 45 4e 54 20 46 41 43 49 4c 49 54 59 7c 4e 49 48 4f 4e 20 4b 4f 48 44 45 4e 7c 4e 49 48 4f 4e 20 4b 4f 48 44 45 4e 7c 7c 7c 41 43 4b 5e 52 30 31 5e 41 43 4b 7c 32 30 30 38 30 31 32 33 30 30 30 32 30 35 7c 50 7c 32 2e 34 7c 7c 7c 4e 45 7c 41 4c 7c 7c 41 53 43 49 49 7c 7c 41 53 43 49 49 0d

[MSA Segment] *0x1c 0x0d is the message terminator.
4d 53 41 7c 41 41 7c 32 30 30 38 30 31 32 33 30 30 30 32 30 35 0d 1c 0d

3. Query for measurement value 【QRY^R02　ORF^R04】

【 QRY^R02 】Other system　→　Bedside monitor

MSH|^~\&|Trend Data Test Client|HIS Send TEST|Trend Data Server|RCV TEST|
20080118115103||QRY^R02^QRY_R02|20080118115103|P|2.4|||NE|AL||ASCII||
QRD|20080118115103|R|I|Trend|||RD^1|id-sbr097|RES|||
QRF|||||||||^^^20080118095000^20080118100000

【 ORF^R04 】Bedside monitor　→　Other system

MSH|^~\&|NIHON KOHDEN|NIHON KOHDEN|CLIENT APP|CLIENT FACILITY
|20080118114856||ORF^R04^ORF_R04|20080118115103|P|2.4|||NE|AL|Japan|ASCII||
MSA|AA|20080118115103
QRD|20080118115103|R|I|Trend|||RD^1|id-sbr097|RES|||
PID|||id-sbr097||Kohden_097^Subaru^^^^^L^A||19670119|M
ORC|RE
OBR|1|||VITAL|||20080118095000|||||||SpecimenSource|||||||||A
OBX|1|NM|001000^VITAL HR|1|80|bpm|||||F|||20080118095000|||
OBX|2|NM|002000^VITAL VPC|1|5|/min|||||F|||20080118095000|||
OBX|3|NM|003000^VITAL ST1|1|-7|mV|||||F|||20080118095000|||
OBX|4|NM|004001^VITAL APSEC(RESP)|1|5|sec|||||F|||20080118095000|||
OBX|5|NM|005000^VITAL RESP|1|14|/min|||||F|||20080118095000|||
OBX|6|NM|007000^VITAL SpO2|1|98|%|||||F|||20080118095000|||
OBX|7|NM|007001^VITAL PR(spo2)|1|82|/min|||||F|||20080118095000|||
OBX|8|NM|062000^VITAL PRESS(S)|1|135|mmHg|||||F|||20080118095000|||
OBX|9|NM|062001^VITAL PRESS(D)|1|80|mmHg|||||F|||20080118095000|||
OBX|10|NM|062002^VITAL PRESS(M)|1|102|mmHg|||||F|||20080118095000|||
OBX|11|NM|027000^VITAL TEMP|1|371|C|||||F|||20080118095000|||
OBX|12|NM|044000^VITAL ART(S)|1|120|mmHg|||||F|||20080118095000|||
OBX|13|NM|044001^VITAL ART(D)|1|60|mmHg|||||F|||20080118095000|||
OBX|14|NM|044002^VITAL ART(M)|1|85|mmHg|||||F|||20080118095000|||
OBR|2|||VITAL|||20080118095100|||||||SpecimenSource|||||||||A
OBX|1|NM|001000^VITAL HR|1|80|bpm|||||F|||20080118095100|||
OBX|2|NM|002000^VITAL VPC|1|5|/min|||||F|||20080118095100|||
OBX|3|NM|003000^VITAL ST1|1|-7|mV|||||F|||20080118095100|||
OBX|4|NM|005000^VITAL RESP|1|14|/min|||||F|||20080118095100|||
OBX|5|NM|007000^VITAL SpO2|1|98|%|||||F|||20080118095100|||
:
OBX|7|NM|007001^VITAL PR(spo2)|1|82|/min|||||F|||20080118095900|||
OBX|8|NM|062000^VITAL PRESS(S)|1|135|mmHg|||||F|||20080118095900|||
OBX|9|NM|062001^VITAL PRESS(D)|1|80|mmHg|||||F|||20080118095900|||
OBX|10|NM|062002^VITAL PRESS(M)|1|102|mmHg|||||F|||20080118095900|||
OBX|11|NM|027000^VITAL TEMP|1|371|C|||||F|||20080118095900|||
OBX|12|NM|044000^VITAL ART(S)|1|120|mmHg|||||F|||20080118095900|||
OBX|13|NM|044001^VITAL ART(D)|1|60|mmHg|||||F|||20080118095900|||
OBX|14|NM|044002^VITAL ART(M)|1|85|mmHg|||||F|||20080118095900|||

4. Unsolicited observation - measurement value 【ORU^R01　ACK^R01】

4-1. when [Save/Send] key is pressed in vital signs monitor

【ORU^R01】Vital signs Monitor → Other system

```
MSH|^~\&|NIHON KOHDEN|NIHON KOHDEN|CLIENT APP|CLIENT
FACILITY|20190618173345||ORU^R01^ORU_R01|20190618000001|P|2.4|||NE|AL||ASCII||ASCII
PID|||098765||KOHDEN^TARO^^^^^L^A|||M
PV1||I|^^BED-001^192.168.0.123:1
ORC|RE
OBR|1|||VITAL|||20190618173341|||||||||||||||||A
OBX|1|NM|007000^VITAL SpO2|1|99|%|||||F|||20190618173341|||
OBX|2|NM|007001^VITAL PR(spo2)|1|53|/min|||||F|||20190618173341|||
OBR|2|||NIBP|||20190618173052|||||||||||||||||A
OBX|1|NM|009000^NIBP SYS|1|122|mmHg|||||F|||20190618173052|||
OBX|2|NM|009001^NIBP DIAS|1|63|mmHg|||||F|||20190618173052|||
OBX|3|NM|009002^NIBP MEAN|1|82|mmHg|||||F|||20190618173052|||
OBR|3|||SPOTTEMP|||20190618173252|||||||||||||||||A
OBX|1|NM|141000^SPOTTEMP TEMP|1|35.29|C|||||F|||20190618173252|||
OBR|4|||MANUALINPUT|||20190618173341|||||||||||||||||A
OBX|1|NM|254000^MANUALINPUT Pain Level|1|5|||||F|||20190618173341|||
OBX|2|NM|254001^MANUALINPUT Respiration Rate|1|24|/min|||||F|||20190618173341|||
OBX|3|ST|254002^MANUALINPUT AVPU|1|Pain|||||F|||20190618173341|||
OBX|4|ST|254100^MANUALINPUT Position(Patient)|1|Sitting|||||F|||20190618173341|||
OBX|5|ST|254101^MANUALINPUT Position(Cuff)|1|R-arm|||||F|||20190618173341|||
OBX|6|ST|254102^MANUALINPUT Location(SpO2)|1|Finger|||||F|||20190618173341|||
OBX|7|ST|254103^MANUALINPUT Location(TEMP)|1|Oral|||||F|||20190618173341|||
OBX|8|ST|254200^MANUALINPUT Note1|1|TEST SAMPLE MESSAGE|||||F|||20190618173341|||
OBX|9|NM|254210^MANUALINPUT EWS(SUM)|1|7|||||F|||20190618173341|||
```

【ACK^R01】 Other system → Vital signs Monitor

```
MSH|^~\&||||||ACK^R01^ACK|20190618000001|P||||||ASCII||ASCII
MSA|AA|20190618000001
```

4-2. when sent periodically from the vital signs monitor
(Vital signs monitor does not send Manual Input Parameter)

【ORU^R01】Vital signs Monitor → Other system

```
MSH|^~\&|NIHON KOHDEN|NIHON KOHDEN|CLIENT APP|CLIENT
FACILITY|20190618173400||ORU^R01^ORU_R01|20190618000002|P|2.4|||NE|AL||ASCII||ASCII
PID|||098765||KOHDEN^TARO^^^^^L^A||19710902|M
PV1||I|^^BED-001^192.168.0.123:1
ORC|RE
OBR|1|||VITAL|||20190618173400|||||||||||||||||A
OBX|1|NM|007001^VITAL PR(spo2)|1|52|/min|||||F|||20190618173400|||
OBX|2|NM|007000^VITAL SpO2|1|98|%|||||F|||20190618173400|||
OBR|2|||NIBP|||20190618173052|||||||||||||||||A
OBX|1|NM|009000^NIBP SYS|1|122|mmHg|||||F|||20190618173052|||
OBX|2|NM|009001^NIBP DIAS|1|63|mmHg|||||F|||20190618173052|||
OBX|3|NM|009002^NIBP MEAN|1|82|mmHg|||||F|||20190618173052|||
OBR|3|||SPOTTEMP|||20190618173252|||||||||||||||||A
OBX|1|NM|141000^SPOTTEMP TEMP|1|35.29|C|||||F|||20190618173252|||
```

【ACK^R01】 Other system → Vital signs Monitor

```
MSH|^~\&||||||ACK^R01^ACK|20190618000002|P||||||ASCII||ASCII
MSA|AA|20190618000002
```

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Contact information is accurate as of September 2019. Visit https://www.nihonkohden.com/ for the latest information.

The model and serial number of your device are identified on the rear or bottom of the unit.
Write the model and serial number in the spaces provided below. Whenever you call your representative concerning this device, mention these two pieces of information for quick and accurate service.

Model _____ Serial Number _____

Your Representative

Note for users in the territory of the EEA and Switzerland:
Any serious incident that has occurred in relation to the device should be reported to the European Representative designated by the manufacturer and the Competent Authority of the Member State of the EEA and Switzerland in which the user and/or patient is established.

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