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HL7 Conformance Statement

Distributed by:

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About This Document

Target Group

This document is intended for system integration and/or software design. It is assumed that the reader is familiar with the terminology and concepts that are used in the HL7 v2 and HL7 v3 Standard. Readers not familiar with HL7 terminology are recommended to first read the appropriate parts of the HL7 Standard itself, prior to working with this conformance statement.

Purpose

This document is a HL7 Conformance Statement and interface manual for the HL7 v2 Services as well as HL7 v3 Services of the sense® infrastructure. Because this product is implementing “profiles” and “actors” as defined by Integrating the Healthcare Enterprise (IHE), parts of this document have been linked to their respective IHE Technical Framework.

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1 HL7 Communications

The HL7 interface supports HL7v2 and HL7v3 messages, which fall into the following groups:

Encounter Administration

To administer patient visits within the sense® infrastructure.

Patient Administration

To administer patients within the sense® infrastructure.

Document Administration

To administer documents to the sense® infrastructure.

1.1 Transport Protocol: MLLP

A large portion of HL7 messaging is transported by Minimal Lower Layer Protocol (MLLP), also known as Lower Layer Protocol (LLP). For transmitting via TCP/IP, header and trailer characters are added to the message to identify the beginning and ending of the message since TCP/IP is a continuous stream of bytes. Hybrid Lower Layer Protocol (HLLP) is a variation of MLLP that includes a checksum to help verify message integrity. The header is a vertical tab character <VT> its hex value is 0x0b.

The trailer is a field separator character <FS> (hex 0x1c) immediately followed by a carriage return <CR> (hex 0x0d)

Table 1: Basic Message Structure

| | | | |
|------------|-----------------------|------------|------------|
| <VT> | | <FS> | <CR> |
| (hex 0x0b) | HL7 Message goes here | (hex 0x1c) | (hex 0x0d) |

1.2 HL7v2 Inbound Interface

The primary goal of the sense® HL7 interface is the communication with third-party systems in heterogeneous healthcare environments. sense® achieves this by receiving and processing various kinds of HL7 messages. The sense® HL7v2 interface is designed according to the HL7 Messaging Standard, version 2.5. Nevertheless, sense® is able to process HL7v2 messages that conform to versions up to version 2.6. Segments and fields that are not known due to a higher HL7v2 standard version are ignored. The following sections describe the relevant HL7v2 messages in detail.

1.3 HL7v2 Message Encoding

Messages are encoded according to the standard HL7 ER7 rules, which describe data fields of variable length that are separated by special delimiter characters.

In HL7v2, message delimiters thus define how data is structured in an HL7 message.

- Field Separator (default |)
- Component Separator (default ^)
- Subcomponent Separator (default &)

- Field Repeat Separator (default ~)
- Escape Character (default \)

Message delimiters can be defined dynamically in the *MSH Segment*. The character immediately following the segment identifier MSH is the first delimiter character, which is the field separator. The rest of the delimiter characters are defined in the *MSH-2 Encoding Characters*: component separator, repetition separator, escape character, and subcomponent separator, in that respective order. The character encoding itself is defined in the *MSH-18 Character Set*.

Note

It is highly recommended to use UTF-8 to ensure correct display of special characters. The character encoding itself is defined in the field *MSH-18 Character Set*. sense® ignores any encoding that might have been specified in this field and will always assume that messages are encoded using UTF-8.

1.4 HL7 Required Elements

Every HL7 message requires certain segments (HL7v2) and elements (HL7v3). Both versions require a message header, for example.

1.4.1 HL7v2

Every HL7 message contains certain things:

- *MSH Segment*
- *EVN Segment*
- *PID Segment*
- *PV1 Segment*

Example 1: HL7v2 Message Header

```
MSH|^~\&|ITEH^1.1.2.1.1^ISO|ITEH^1.1.2^ISO|QUA^1.1.1.1.1^ISO|QUA^1.1.1.1^ISO|20141001233656||ADT^A01|1412199415701|P|2.3.1||AL
```

| HL7-Path, Name | R/O, Rep# |
|--|-----------|
| MSH-1, Field Separator This field contains the separator between the segment ID and the first real field, MSH-2-encoding characters. As such it serves as the separator and defines the character to be used as a separator for the rest of the message. | R, Y |
| MSH-2, Encoding Characters This field contains the four characters in the following order: the component separator, repetition separator, escape character, and subcomponent separator | R, Y |
| MSH-3, Sending Application This field uniquely identifies the sending application among all other applications within the network enterprise. | R, Y |
| MSH-4, Sending Facility This field contains the address of one of several occurrences of the same application within the sending system. | R, Y |

| | |
|---|------|
| MSH-5, Receiving Application | R, Y |
| This field uniquely identifies the receiving application among all other applications within the network enterprise. | |
| MSH-6, Receiving Facility | R, Y |
| This field identifies the receiving application among multiple identical instances of the application running on behalf of different organizations. | |
| MSH-9, Messagetype | R, Y |
| This field contains the message type and trigger event for the message. | |
| MSH-10, Message Control ID | R, Y |
| Globally unique ID of the message. Is used with the MSA-segment of the response message to define to which message will be responded. | |
| MSH-11, Processing ID | R, Y |
| This field is not processed by sense [®] but demanded by the HL7-Standard. | |
| MSH-12, Version ID | R, Y |
| Defines the version of the HL7-Standard. This field is not processed by sense [®] but demanded by the HL7-Standard. | |

R/O = Required/Optional, R = Required, O = Optional, RO = Required if known, REP# = Repetition, Y = entry can be taken from the list, N = Individual Values, Number = Maximum length of the list

Table 2: Processable Message Header Segments

1.4.2 HL7v3

sense[®] adheres strictly to the HL7 Standard. **The order of elements in HL7v3 is critical.**

Example 2: W3C SOAP Envelope

```
<?xml version="1.0" encoding="UTF-8"?><soapenv:Envelope xmlns:soapenv="http://www.w3.org/2003/05/soap-envelope">
  <soapenv:Header xmlns:wsa="http://www.w3.org/2005/08/addressing">
    <wsa:To>http://localhost:1380/PIXPDQ/services/PIXPDQV3ManagerService</wsa:To>
    <wsa:MessageID>urn:uuid:ec9d096b-6261-4bf3-baaa-3f4ddda5e9d2</wsa:MessageID>
    <wsa:Action soapenv:mustUnderstand="1">urn:h17-org:v3:PRPA_IN201301UV02</wsa:Action>
    <wsa:ReplyTo soapenv:mustUnderstand="1">
      <wsa:Address>http://www.w3.org/2005/08/addressing/anonymous</wsa:Address>
    </wsa:ReplyTo>
  </soapenv:Header>
  <soapenv:Body>
    <!-- INSERT HL7 Message Here -->
  </soapenv:Body>
</soapenv:Envelope>
```

The following elements belong in the message header, in this specific order:

- | | | |
|-------------------------|------------------------------|------------------------------|
| 1. <i>id</i> | 4. <i>processingCode</i> | 8. <i>receiver.device</i> |
| 2. <i>creationTime</i> | 5. <i>processingModeCode</i> | 9. <i>receiver.device.id</i> |
| 3. <i>interactionId</i> | 6. <i>acceptAckCode</i> | 10. <i>sender</i> |
| | 7. <i>receiver</i> | 11. <i>sender.device</i> |

Example 3: HL7v3 Message Header

Note that all messages share the same structure, but with different content.

```
<ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root="2.16.840.1.113883.1.6.1" extension="1453941234159"/>
<ns1:creationTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:TS" value="20160127193359"/>
<ns1:interactionId xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root="2.16.840.1.113883.1.6" extension="PRPA_IN201301UV02"/>
```

```

<ns1:processingCode code="P"/>
<ns1:processingModeCode code="T"/>
<ns1:acceptAckCode code="AL"/>
<ns1:receiver typeCode="RCV">
  <ns1:device classCode="DEV" determinerCode="INSTANCE">
    <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
      ="1.3.6.1.4.1.21367.13.30.237"/>
  </ns1:device>
</ns1:receiver>
<ns1:sender typeCode="SND">
  <ns1:device classCode="DEV" determinerCode="INSTANCE">
    <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
      ="1.3.6.1.4.1.21367.13.10.218"/>
  </ns1:device>
</ns1:sender>

```

Note

The interactionId's extension field changes in the header for each function. This corresponding extension is listed in each payload example.

1.5 HL7v3 General Responses

sense® will provide acknowledgement response messages for three situations:

CA

"Commit Accepted". The message has been accepted.

CE

"Commit Error". The message contains an error.

CR

"Commit Rejected". The message is fine, but could not be processed for some reason.

Example 4: Acknowledgement Response Message "Commit Accepted"

See this line: <ns1:typeCode code="CA"/>

```

<ns1:MCCI_IN000002UV01 xmlns:ns1="urn:hl7-org:v3" ITSVersion="XML_1.0">
  <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
    ="1.2.3.4.5" extension="1461835574470.635724"/>
  <ns1:creationTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:TS"
    value="20160428112614"/>
  <ns1:versionCode code="V3PR1"/>
  <ns1:interactionId xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
    root="2.16.840.1.113883" extension="MCCI_IN000002UV01"/>
  <ns1:processingCode code="P"/>
  <ns1:processingModeCode code="T"/>
  <ns1:acceptAckCode code="NE"/>
  <ns1:receiver typeCode="RCV">
    <ns1:device classCode="DEV" determinerCode="INSTANCE">
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
        ="1.2.3.4.5.1000"/>
    </ns1:device>
  </ns1:receiver>
  <ns1:receiver typeCode="RCV">
    <ns1:device classCode="DEV" determinerCode="INSTANCE">
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
        ="1.2.3.4.5.1000"/>
    </ns1:device>
  </ns1:receiver>
  <ns1:sender typeCode="SND">
    <ns1:device classCode="DEV" determinerCode="INSTANCE">
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
        ="2.1.12"/>
    </ns1:device>
  </ns1:sender>
</ns1:acknowledgement>

```

```
<ns1:typeCode code="CA"/>
<ns1:targetMessage>
  <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
    ="2.16.840.1.113883.1.6.1" extension="1461835565496"/>
</ns1:targetMessage>
</ns1:acknowledgement>
</ns1:MCCI_IN000002UV01>
```

2 Encounter Administration

These messages are used to create encounters/visits for a patient. Visits can be uniquely identified by using a composite of the Visit ID and the Assigning Authority ID. Therefore, it is strongly recommended that the Assigning Authority is provided in HL7v2 messages. This is already the required standard for HL7v3.

HL7v2

The PV1-19 field should contain the Assigning Authority ID (PV1-19.4). If a value is present in this field, the patient visit notification will be processed by the [PIX App/PDQ Manager](#) after the patient has been created/updated. The patient class (PV1-2) determines whether the visit refers to an inpatient or outpatient visit. If no patient class is provided, the trigger event determines the patient visit type: A01 for an inpatient visit, A04 for an outpatient visit.

HL7v3

All visit-related inbound messages for HL7v3 must contain an Assigning Authority ID under: `controlActProcess.subject.encounterEvent.id.item`

2.1 Begin Inpatient Visit

2.1.1 HL7v2 Begin Inpatient Visit

The following HL7 messages can be used to notify the [PIX App/PDQ Manager](#) about an inpatient visit:

- **ADT A01** – Admission of an inpatient.
- **ADT A04** – Admission of an outpatient (see hint below).

2.1.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction [Begin Inpatient Visit](#).

Table 3: Begin Inpatient Visit Segments

| Segment | Description |
|---------|--|
| MSH | Message Header |
| MSH-9-1 | The message type must be ADT |
| MSH-9-2 | The trigger event must be A01 or A04 |
| EVN | Event Information |
| PID | Patient Information |
| PV1 | Patient Visit Information |

Message Header:

The HL7 MSH segment is present in all HL7 message types and defines the message's source, purpose, destination and certain syntax specifics like delimiters (separator characters) and character sets. It is always the first segment in the HL7 message, with the only exception being HL7 batch messages.

Event Information:

The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message.

PID Segment:

The PID segment contains all relevant patient data. All the values listed in [Table 21](#) can be stored (or at least processed) by sense®.

PV1 Segment:

The PV1 segment is used by Registration/ADT applications to communicate information on a patient visit-specific basis.

2.1.1.2 Field Overview

The content of the message must be equal to the fields for the HL7 [Create Patient](#) transaction described in [Table 21](#). [Table 4](#) shows all additional fields which are required for the transaction [Begin Inpatient Visit](#):

| HL7-Path, Name | R/O, Rep# |
|---|-----------|
| EVN-5, Operator ID Identifies the individual that triggered the visit notification. The PIX App/PDQ Manager requires at least EVN-5.2 and EVN-5.3 to be present. | R, N |
| PV1-2, Patient Class Determines the type of patient visit. This field is not case sensitive. Only "I" for inpatient is allow for inpatient visits. | RO, N |
| PV1-3, Assigned Patient Location The facility that processes the patient visit. The PIX App/PDQ Manager only processes PV1-3.4.2 and requires this component to be present. | R, N |
| PV1-19, Visit Number The globally unique identifier of the patient visit. The PIX App/PDQ Manager only processes PV1-19.1 and PV1-19.4. If no assigning authority (PV1-19.4) is present, the PIX App/PDQ Manager uses the assigned patient location from PV1-3.4.2 as the visit number assigning authority. | R, N |
| PV1-44, Admit Date/Time The start date/time of the patient visit. | R, N |

R/O = Required/Optional, R = Required, O = Optional, RO = Required if known, REP# = Repitition, Y = entry can be taken from the list, N = Individual Values, Number = Maximum length of the list

Table 4: Processable Visit Information In The Begin Inpatient Visit Transaction.

Example 5:

Submission:

```
MSH|^~\&|Test Sending Application|Test Sending Facility|Test Receiving Application|Test
Receiving Facility|201505051500||ADT^A01|123|P|2.3.1
EVN||201505051500||^Nachname^Vorname^Zweiter Vorname^Jr.^Herr^Dr.|201505051100
PID||1234567890^^^&1.1.1.2.2.1&ISO
PV1|I|^&1.1.1.2.2.1||||||||||||||0001||||||||||||||201505051100
```

Response:

```
MSH|^~\&|QUA^1.1.1.1.1^ISO|QUA^1.1.1^ISO|ITEH^1.1.2.1^ISO|ITEH^1.1.2^ISO|201505051501||ACK
^A01|124|P|2.3.1
MSA|AA|123
```

2.1.2 HL7v3 Begin Inpatient Visit

2.1.2.1 Message Structure

Example 6: HL7v3 Begin Inpatient Visit Root Element

interactionId's extension field: PRPA_IN400001UV01

```
<h17:PRPA_IN400001UV01 ITSVersion="XML_1.0" xmlns:h17="urn:h17-org:v3" xmlns:xsi="http://www
.w3.org/2001/XMLSchema-instance">
  INSERT MESSAGE HEADER
  INSERT PAYLOAD
</h17:PRPA_IN400001UV01>
```

2.1.2.2 Inbound Message Structure

The following elements are required in this specific order:

1. controlActProcess
2. controlActProcess.code
3. controlActProcess.subject
4. controlActProcess.subject.encounterEvent
5. controlActProcess.subject.encounterEvent.id
6. controlActProcess.subject.encounterEvent.id.item
7. controlActProcess.subject.encounterEvent.code
8. controlActProcess.subject.encounterEvent.statusCode
9. controlActProcess.subject.encounterEvent.effectiveTime
10. controlActProcess.subject.encounterEvent.effectiveTime.low
11. controlActProcess.subject.encounterEvent.subject
12. controlActProcess.subject.encounterEvent.subject.patient
13. controlActProcess.subject.encounterEvent.subject.patient.id
14. controlActProcess.subject.encounterEvent.subject.patient.id.item
15. controlActProcess.subject.encounterEvent.subject.patient.patientPerson.name
16. controlActProcess.subject.encounterEvent.responsibleParty
17. controlActProcess.subject.encounterEvent.responsibleParty.time
18. controlActProcess.subject.encounterEvent.responsibleParty.time.low
19. controlActProcess.subject.encounterEvent.responsibleParty.id
20. controlActProcess.subject.encounterEvent.responsibleParty.assignedOrganization
21. controlActProcess.subject.encounterEvent.admitter
22. controlActProcess.subject.encounterEvent.admitter.time
23. controlActProcess.subject.encounterEvent.admitter.assignedPerson
24. controlActProcess.subject.encounterEvent.admitter.assignedPerson.name
25. controlActProcess.subject.encounterEvent.admitter.assignedPerson.name.item
26. controlActProcess.subject.encounterEvent.admitter.assignedPerson.name.item.part

Example 7: HL7v3 Begin In-Patient Visit Payload

The "IMP" in encounterEvent .code refers to stationary patients (in-patients).

```
<h17:controlActProcess classCode="CACT" moodCode="EVN">
  <h17:code code="PRPA_TE400001UV01" />
  <h17:subject typeCode="SUBJ">
    <h17:encounterEvent>
      <h17:id>
        <h17:item root="1.6.7.8.9.0" extension="12345678" />
      </h17:id>
      <h17:code code="IMP" />
      <h17:statusCode code="active" />
      <h17:effectiveTime>
        <h17:low value="20141125155917" />
      </h17:effectiveTime>
      <h17:subject>
        <h17:patient classCode="PAT">
          <h17:id>
            <h17:item root="1.1.1.1.1" extension="23018887746236" />
          </h17:id>
          <h17:patientPerson classCode="PSN" determinerCode="INSTANCE">
            <h17:name></h17:name>
          </h17:patientPerson>
        </h17:patient>
      </h17:subject>
      <h17:responsibleParty>
```

```

<h17:time>
  <h17:low value="20141125155917" />
</h17:time>
<h17:id root="1.6.7.8.9.0" />
<h17:assignedOrganization classCode="ASSIGNED" />
</h17:responsibleParty>
<h17:admitter>
  <h17:time></h17:time>
  <h17:assignedPerson classCode="ASSIGNED">
    <h17:assignedPerson classCode="PSN" determinerCode="INSTANCE">
      <h17:name>
        <h17:item>
          <h17:part type="FAM" value="Admitter" />
          <h17:part type="GIV" value="Alan" />
        </h17:item>
      </h17:name>
    </h17:assignedPerson>
  </h17:assignedPerson>
</h17:admitter>
</h17:encounterEvent>
</h17:subject>
</h17:controlActProcess>

```

2.1.2.3 Outbound Message Structure

See [Section 1.5](#).

2.2 Begin Outpatient Visit

2.2.1 HL7v2 Begin Outpatient Visit

The following HL7 messages can be used to notify the [PIX App/PDQ Manager](#) about an outpatient visit:

- **ADT A01** – Admission of an inpatient (see hint below).
- **ADT A04** – Admission of an outpatient.

2.2.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction [Begin Outpatient Visit](#).

Table 5: Begin Outpatient Visit Segments

| Segment | Description |
|---------|--|
| MSH | Message Header |
| MSH-9-1 | The message type must be ADT |
| MSH-9-2 | The trigger event must be A01 or A04 |
| EVN | Event Information |
| PID | Patient Information |
| PV1 | Patient Visit Information |

Message Header

The HL7 MSH segment is present in all HL7 message types and defines the message's source, purpose, destination and certain syntax specifics like delimiters (separator characters) and character sets. It is always the first segment in the HL7 message, with the only exception being HL7 batch messages.

Event Information

The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message.

PID Segment

The PID segment contains all relevant patient data. All the values listed in [Table 21](#) can be stored (or at least processed) by sense®.

PV1 Segment

The PV1 segment is used by Registration/ADT applications to communicate information on a patient visit-specific basis.

2.2.1.2 Field Overview

The content of the message must be equal to the fields for the HL7 [Create Patient](#) transaction described in [Table 21](#). [Table 6](#) shows all additional fields which are required for the transaction [Begin Outpatient Visit](#):

| HL7-Path, Name | R/O, Rep# |
|---|-----------|
| EVN-5, Operator ID Identifies the individual that triggered the visit notification. The PIX App/PDQ Manager requires at least EVN-5.2 and EVN-5.3 to be present. | R, N |
| PV1-2, Patient Class Determines the type of patient visit. This field is not case sensitive. Only "O" for outpatient and "E" for emergency (will be treated as outpatient) are allowed for outpatient visits. | RO, N |
| PV1-3, Assigned Patient Location The facility that processes the patient visit. The PIX App/PDQ Manager only processes PV1-3.4.2 and requires this component to be present. | R, N |
| PV1-19, Visit Number The globally unique identifier of the patient visit. The PIX App/PDQ Manager only processes PV1-19.1 and PV1-19.4. If no assigning authority (PV1-19.4) is present, the PIX App/PDQ Manager uses the assigned patient location from PV1-3.4.2 as the visit number assigning authority. | R, N |
| PV1-44, Admit Date/Time The start date/time of the patient visit. | R, N |

R/O = Required/Optional, R = Required, O = Optional, RO = Required if known, REP# = Repetition, Y = entry can be taken from the list, N = Individual Values, Number = Maximum length of the list

Table 6: Processable Visit Information In The Begin Outpatient Visit Transaction.

Example 8:

Submission:

```
MSH|^~\&|Test Sending Application|Test Sending Facility|Test Receiving Application|Test Receiving Facility|201505051500||ADT^A04|125|P|2.3.1
EVN||201505051500||^Nachname^Vorname|201505051100
PID||1234567890^^^&1.1.1.2.2.1&ISO
PV1||0|^&1.1.1.2.2.1||||||||||||||0002|||||||||||||||201505051100
```

Response:

```
MSH|^~\&|QUA^1.1.1.1.1^ISO|QUA^1.1.1.1^ISO|ITEH^1.1.2.1.1^ISO|ITEH^1.1.2^ISO|201505051501||ACK^A04|126|P|2.3.1
MSA|AA|125
```

2.2.2 HL7v3 Begin Outpatient Visit

Example 9: HL7v3 Begin Outpatient Visit Root Element

interactionId's extension field: PRPA_IN400001UV01

```
<h17:PRPA_IN400001UV01 ITSVersion="XML_1.0" xmlns:h17="urn:h17-org:v3" xmlns:xsi="http://www
.w3.org/2001/XMLSchema-instance">
  INSERT MESSAGE HEADER
  INSERT PAYLOAD
</h17:PRPA_IN400001UV01>
```

2.2.2.1 Inbound Message Structure

The following elements are required in this specific order:

1. controlActProcess
2. controlActProcess.code
3. controlActProcess.subject
4. controlActProcess.subject.encounterEvent
5. controlActProcess.subject.encounterEvent.id
6. controlActProcess.subject.encounterEvent.id.item
7. controlActProcess.subject.encounterEvent.code
8. controlActProcess.subject.encounterEvent.statusCode
9. controlActProcess.subject.encounterEvent.effectiveTime
10. controlActProcess.subject.encounterEvent.effectiveTime.low
11. controlActProcess.subject.encounterEvent.subject
12. controlActProcess.subject.encounterEvent.subject.patient
13. controlActProcess.subject.encounterEvent.subject.patient.id
14. controlActProcess.subject.encounterEvent.subject.patient.id.item
15. controlActProcess.subject.encounterEvent.subject.patient.patientPerson.name
16. controlActProcess.subject.encounterEvent.responsibleParty
17. controlActProcess.subject.encounterEvent.responsibleParty.time
18. controlActProcess.subject.encounterEvent.responsibleParty.time.low
19. controlActProcess.subject.encounterEvent.responsibleParty.id
20. controlActProcess.subject.encounterEvent.responsibleParty.assignedOrganization
21. controlActProcess.subject.encounterEvent.admitter
22. controlActProcess.subject.encounterEvent.admitter.time
23. controlActProcess.subject.encounterEvent.admitter.assignedPerson
24. controlActProcess.subject.encounterEvent.admitter.assignedPerson.name
25. controlActProcess.subject.encounterEvent.admitter.assignedPerson.name.item
26. controlActProcess.subject.encounterEvent.admitter.assignedPerson.name.item.part

Example 10: HL7v3 Begin Outpatient Visit Payload

Change the `encounterEvent.code` to "AMB" for ambulant patients (out-patients). "EMER", which stands for emergency admission, may also be used for ambulant patients (out-patients).

See [Section 2.1.2 HL7v3 Begin Inpatient Visit](#).

2.2.2.2 Outbound Message Structure

See [Section 1.5](#).

2.3 End Patient Visit

2.3.1 HL7v2 End Patient Visit

The following HL7 message can be used to notify the [PIX App/PDQ Manager](#) about the end of a patient visit (both inpatient and outpatient):

- **ADT A03** – Discharge/End Visit.

Note

The ADT A03 message can be used to end patient visits for both inpatients and outpatients.

2.3.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction **End Patient Visit**.

Table 7: End Patient Visit Segments

| Segment | Description |
|---------|--------------------------------------|
| MSH | Message Header |
| MSH-9-1 | The message type must be ADT |
| MSH-9-2 | The trigger event must be A03 |
| EVN | Event Information |
| PID | Patient Information |
| PV1 | Patient Visit Information |

Message Header:

The HL7 MSH segment is present in all HL7 message types and defines the message's source, purpose, destination and certain syntax specifics like delimiters (separator characters) and character sets. It is always the first segment in the HL7 message, with the only exception being HL7 batch messages.

Event Information:

The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message.

PID Segment:

The PID segment contains all relevant patient data. All the values listed in [Table 21](#) can be stored (or at least processed) by sense®.

PV1 Segment:

The PV1 segment is used by Registration/ADT applications to communicate information on a patient visit-specific basis.

2.3.1.2 Field Overview

The data required for the MSH and EVN segments equals that of the [Create Patient](#) transaction ([Table 21](#)). [Table 8](#) shows the fields which are required for the PV1 segment:

| HL7-Path, Name | R/O, Rep# |
|---|-----------|
| EVN-5, Operator ID Identifies the individual that triggered the end visit notification. The PIX App/PDQ Manager requires at least EVN-5.2 and EVN-5.3 to be present. | R, N |
| PV1-2, Patient Class Determines the type of patient visit. This field is not case sensitive. Use "O" for outpatient, "E" for emergency (will be treated as outpatient) and "I" for inpatient visits. | RO, N |

| | |
|--|------|
| PV1-19, Visit Number | R, N |
| The globally unique identifier of the patient visit. The PIX App/PDQ Manager only processes PV1-19.1 and PV1-19.4. If no assigning authority (PV1-19.4) is present, the PIX App/PDQ Manager uses the assigned patient location from PV1-3.4.2 as the visit number assigning authority. | |
| PV1-45, Discharge Date/Time | R, N |
| The end date/time of the patient visit. | |

R/O = Required/Optional, R = Required, O = Optional, RO = Required if known, REP# = Repetition, Y = entry can be taken from the list, N = Individual Values, Number = Maximum length of the list

Table 8: Processable Visit Information In The End Patient Visit Transaction.

Note

sense® does not process any patient information for the transaction [End Patient Visit](#). Therefore, the PID segment may be empty.

**Example 11:
Submission:**

```
MSH|^~\&|Test Sending Application|Test Sending Facility|Test Receiving Application|Test Receiving Facility|201505051500||ADT^A03|127|P|2.3.1
EVN||201505051500||^Nachname^Vorname|201505051100
PID||1234567890^^^&1.1.1.2.2.1&ISO
PV1||I|^&&1.1.1.2.2.1||||||||||||||0002||||||||||||||||||201505051700
```

Response:

```
MSH|^~\&|QUA^1.1.1.1.1^ISO|QUA^1.1.1.1^ISO|ITEH^1.1.2.1.1^ISO|ITEH^1.1.2^ISO|201505051501||ACK^A03|128|P|2.3.1
MSA|AA|127
```

2.3.2 HL7v3 End Patient Visit

Example 12: HL7v3 End Patient Visit Root Element
interactionId's extension field: PRPA_IN400003UV01

```
<h17:PRPA_IN400003UV01 ITSVersion="XML_1.0" xmlns:h17="urn:h17-org:v3" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  INSERT MESSAGE HEADER
  INSERT PAYLOAD
</h17:PRPA_IN400003UV01>
```

2.3.2.1 Inbound Message Structure

The following elements are required in this specific order:

1. controlActProcess
2. controlActProcess.classcode
3. controlActProcess.moodCode
4. controlActProcess.moodCode.code
5. controlActProcess.moodCode.subject
6. controlActProcess.moodCode.subject.encounterEvent
7. controlActProcess.moodCode.subject.encounterEvent.id
8. controlActProcess.moodCode.subject.encounterEvent.id.item
9. controlActProcess.moodCode.subject.encounterEvent.code
10. controlActProcess.moodCode.subject.encounterEvent.statusCode
11. controlActProcess.moodCode.subject.encounterEvent.effectiveTime
12. controlActProcess.moodCode.subject.encounterEvent.effectiveTime.high

13. controlActProcess.moodCode.subject.encounterEvent.subject
14. controlActProcess.moodCode.subject.encounterEvent.subject.patient
15. controlActProcess.moodCode.subject.encounterEvent.subject.patient.id
16. controlActProcess.moodCode.subject.encounterEvent.subject.patient.id.item
17. controlActProcess.moodCode.subject.encounterEvent.subject.patient.patientPerson
18. controlActProcess.moodCode.subject.encounterEvent.subject.patient.patientPerson.name
19. controlActProcess.moodCode.subject.encounterEvent.subject.patient.patientPerson.name.item
20. controlActProcess.moodCode.subject.encounterEvent.subject.patient.patientPerson.name.item.part
21. controlActProcess.moodCode.subject.encounterEvent.discharger
22. controlActProcess.moodCode.subject.encounterEvent.discharger.time
23. controlActProcess.moodCode.subject.encounterEvent.discharger.assignedPerson
24. controlActProcess.moodCode.subject.encounterEvent.discharger.assignedPerson.assignedPerson
25. controlActProcess.moodCode.subject.encounterEvent.discharger.assignedPerson.assignedPerson
26. controlActProcess.moodCode.subject.encounterEvent.discharger.assignedPerson.assignedPerson.name
27. controlActProcess.moodCode.subject.encounterEvent.discharger.assignedPerson.assignedPerson.name.item
28. controlActProcess.moodCode.subject.encounterEvent.discharger.assignedPerson.assignedPerson.name.item.part

Example 13: HL7v3 End Patient Visit Payload

```

<hl7:controlActProcess
  classCode="CACT"
  moodCode="EVN">
  <hl7:code code="PRPA_TE400003UV01" />
  <hl7:subject typeCode="SUBJ">
    <hl7:encounterEvent>
      <hl7:id>
        <hl7:item root="1.6.7.8.9.0" extension="12345678" />
      </hl7:id>
      <hl7:code code="AMB"></hl7:code>
      <hl7:statusCode code="completed" />
      <hl7:effectiveTime>
        <hl7:high value="20141126155917" />
      </hl7:effectiveTime>
      <hl7:subject>
        <hl7:patient classCode="PAT">
          <hl7:id>
            <hl7:item root="1.1.1.1.1" extension="23018887746236" />
          </hl7:id>
          <hl7:patientPerson>
            <hl7:name>
              <hl7:item>
                <hl7:part type="FAM" value="Mustermann" />
                <hl7:part type="GIV" value="Max" />
              </hl7:item>
            </hl7:name>
          </hl7:patientPerson>
        </hl7:patient>
      </hl7:subject>
      <hl7:discharger>
        <hl7:time></hl7:time>
        <hl7:assignedPerson classCode="ASSIGNED">
          <hl7:assignedPerson classCode="PSN" determinerCode="INSTANCE">
            <hl7:name>
              <hl7:item>
                <hl7:part type="FAM" value="Discharger" />
                <hl7:part type="GIV" value="Dennis" />
              </hl7:item>
            </hl7:name>
          </hl7:assignedPerson>
        </hl7:assignedPerson>
      </hl7:discharger>
    </hl7:encounterEvent>
  </hl7:subject>
</hl7:controlActProcess>

```

2.3.2.2 Outbound Message Structure

See [Section 1.5](#).

2.4 Cancel Patient Visit

2.4.1 HL7v2 Cancel Patient Visit

The following HL7 message can be used to notify the [PIX App/PDQ Manager](#) about the cancellation (deletion) of a patient visit (both inpatient and outpatient):

- **ADT A11** – Cancel Admit/Visit Notification.

Note

The ADT A11 message can be used to cancel patient visits for both inpatients and outpatients.

2.4.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction [Cancel Patient Visit](#).

Table 9: Cancel Patient Visit Segments

| Segment | Description |
|---------|--------------------------------------|
| MSH | Message Header |
| MSH-9-1 | The message type must be ADT |
| MSH-9-2 | The trigger event must be A11 |
| EVN | Event Information |
| PID | Patient Information |
| PV1 | Patient Visit Information |

Message Header:

The HL7 MSH segment is present in all HL7 message types and defines the message's source, purpose, destination and certain syntax specifics like delimiters (separator characters) and character sets. It is always the first segment in the HL7 message, with the only exception being HL7 batch messages.

Event Information:

The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message.

PID Segment:

The PID segment contains all relevant patient data. All the values listed in [Table 21](#) can be stored (or at least processed) by sense®.

PV1 Segment:

The PV1 segment is used by Registration/ADT applications to communicate information on a patient visit-specific basis.

2.4.1.2 Field Overview

The data required for the MSH and EVN segments equals that of the [Create Patient](#) transaction ([Table 21](#)). [Table 10](#) shows the fields which are required for the PV1 segment:

| HL7-Path, Name | R/O, Rep# |
|---|-----------|
| EVN-5, Operator ID Identifies the individual that triggered the cancel visit notification. The PIX App/PDQ Manager requires at least EVN-5.2 and EVN-5.3 to be present. | R, N |

PV1-2, Patient Class RO, N
 Determines the type of patient visit. This field is not case sensitive. Use "O" for outpatient, "E" for emergency (will be treated as outpatient) and "I" for inpatient visits.

PV1-19, Visit Number R, N
 The globally unique identifier of the patient visit. The [PIX App/PDQ Manager](#) only processes PV1-19.1 and PV1-19.4. If no assigning authority (PV1-19.4) is present, the [PIX App/PDQ Manager](#) uses the assigned patient location from PV1-3.4.2 as the visit number assigning authority.

R/O = Required/Optional, R = Required, O = Optional, RO = Required if known, REP# = Repetition, Y = entry can be taken from the list, N = Individual Values, Number = Maximum length of the list

Table 10: Processable Visit Information In The Cancel Patient Visit Transaction.

Note

sense® does not process any patient information for the transaction [Cancel Patient Visit](#). Therefore, the PID segment may be empty.

Example 14:

Submission:

```
MSH|^~\&|Test Sending Application|Test Sending Facility|Test Receiving Application|Test Receiving Facility|201505051900||ADT^A11|129|P|2.3.1
EVN||201505051900||^Nachname^Vorname|201505051100
PID||1234567890^^^&1.1.1.2.2.1&ISO
PV1||0||||||||||||||0002
```

Response:

```
MSH|^~\&|QUA^1.1.1.1.1^ISO|QUA^1.1.1.1^ISO|ITEH^1.1.2.1.1^ISO|ITEH^1.1.2^ISO|201505051501||ACK^A11|130|P|2.3.1
MSA|AA|129
```

2.4.2 HL7v3 Cancel Patient Visit

Example 15: HL7v3 Cancel Patient Visit Root Element

interactionId's extension field: PRPA_IN400006UV01

```
<h17:PRPA_IN400006UV01 ITSVersion="XML_1.0" xmlns:h17="urn:h17-org:v3" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  INSERT MESSAGE HEADER
  INSERT PAYLOAD
</h17:PRPA_IN400006UV01>
```

2.4.2.1 Inbound Message Structure

The following elements are required in this specific order:

1. controlActProcess
2. controlActProcess.code
3. controlActProcess.subject
4. controlActProcess.subject.encounterEvent
5. controlActProcess.subject.encounterEvent.id
6. controlActProcess.subject.encounterEvent.id.item
7. controlActProcess.subject.encounterEvent.statusCode
8. controlActProcess.authorOrPerformer
9. controlActProcess.authorOrPerformer.discharger.assignedPerson
10. controlActProcess.authorOrPerformer.discharger.assignedPerson.assignedPerson
11. controlActProcess.authorOrPerformer.discharger.assignedPerson.assignedPerson

12. controlActProcess.authorOrPerformer.discharger.assignedPerson.assignedPerson.name
13. controlActProcess.authorOrPerformer.discharger.assignedPerson.assignedPerson.name.item
14. controlActProcess.encounterEvent.discharger.assignedPerson.assignedPerson.name.item.part

Example 16: HL7v3 Cancel Patient Visit Payload

```
<hl7:controlActProcess classCode="CACT" moodCode="EVN">
  <hl7:code code="PRPA_TE400999UV01" />
  <hl7:subject typeCode="SUBJ">
    <hl7:encounterEvent>
      <hl7:id>
        <hl7:item root="6.7.8.9.0" extension="12345678" />
      </hl7:id>
      <hl7:statusCode code="nullified" />
    </hl7:encounterEvent>
  </hl7:subject>
  <hl7:authorOrPerformer>
    <hl7:assignedPerson>
      <hl7:assignedPerson>
        <hl7:name>
          <hl7:item>
            <hl7:part type="FAM" value="Canceler" />
            <hl7:part type="GIV" value="Carrie" />
          </hl7:item>
        </hl7:name>
      </hl7:assignedPerson>
    </hl7:assignedPerson>
  </hl7:authorOrPerformer>
</hl7:controlActProcess>
```

2.4.2.2 Outbound Message Structure

See [Section 1.5](#).

2.5 Cancel End Patient Visit

2.5.1 HL7v2 Cancel End Patient Visit

The following HL7 message can be used to notify the [PIX App/PDQ Manager](#) about the cancellation of a prior patient discharge event:

- **ADT A13** – Cancel Discharge/End Visit.

Note

The ADT A13 message can be used to cancel patient discharge events for both inpatients and outpatients. The patient visit will be active again once this message has been processed.

2.5.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction [Cancel End Patient Visit](#).

Table 11: Cancel End Patient Visit Segments

| Segment | Description |
|---------|----------------|
| MSH | Message Header |

Table 11: Cancel End Patient Visit Segments  

| Segment | Description |
|---------|--------------------------------------|
| MSH-9-1 | The message type must be ADT |
| MSH-9-2 | The trigger event must be A13 |
| EVN | Event Information |
| PID | Patient Information |
| PV1 | Patient Visit Information |

Message Header:

The HL7 MSH segment is present in all HL7 message types and defines the message’s source, purpose, destination and certain syntax specifics like delimiters (separator characters) and character sets. It is always the first segment in the HL7 message, with the only exception being HL7 batch messages.

Event Information:

The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message.

PID Segment:

The PID segment contains all relevant patient data. All the values listed in Table 21 can be stored (or at least processed) by sense®.

PV1 Segment:

The PV1 segment is used by Registration/ADT applications to communicate information on a patient visit-specific basis.

2.5.1.2 Field Overview

The data required for the MSH and EVN segments equals that of the Create Patient transaction (Table 21). Table 12 shows the fields which are required for the PV1 segment:

| HL7-Path, Name | R/O, Rep# |
|---|-----------|
| EVN-5, Operator ID Identifies the individual that triggered the cancel end visit notification. The PIX App/PDQ Manager requires at least EVN-5.2 and EVN-5.3 to be present. | R, N |
| PV1-2, Patient Class Determines the type of patient visit. This field is not case sensitive. Use "O" for outpatient, "E" for emergency (will be treated as outpatient) and "I" for inpatient visits. | RO, N |
| PV1-19, Visit Number The globally unique identifier of the patient visit. The PIX App/PDQ Manager only processes PV1-19.1 and PV1-19.4. If no assigning authority (PV1-19.4) is present, the PIX App/PDQ Manager uses the assigned patient location from PV1-3.4.2 as the visit number assigning authority. | R, N |

R/O = Required/Optional, R = Required, O = Optional, RO = Required if known, REP# = Repetition, Y = entry can be taken from the list, N = Individual Values, Number = Maximum length of the list

Table 12: Processable Visit Information In The Cancel End Patient Visit Transaction.

Note
sense® does not process any patient information for the transaction **Cancel End Patient Visit**. Therefore, the PID segment may be empty.

Example 17:
Submission:

```
MSH|^~\&|Test Sending Application|Test Sending Facility|Test Receiving Application|Test  
Receiving Facility|201505051900||ADT^A13|129|P|2.3.1  
EVN||201505051900||^Nachname^Vorname|201505051100  
PID||1234567890^^^&1.1.1.2.2.1&ISO  
PV1|I|||||||||||||||0002
```

Response:

```
MSH|^~\&|QUA^1.1.1.1^ISO|QUA^1.1.1^ISO|ITEH^1.1.2.1.1^ISO|ITEH^1.1.2^ISO|201505051501||ACK  
^A13|130|P|2.3.1  
MSA|AA|129
```

2.5.2 HL7v3 Cancel End Patient Visit

2.5.2.1 Message Structure

Example 18: HL7v3 Cancel End Patient Visit Root Element

interactionId's extension field: PRPA_IN400007UV01

```
<ns0:PRPA_IN400007UV01 xmlns:ns0="urn:h17-org:v3" xmlns:xsi="http://www.w3.org/2001/  
XMLSchema-instance" ITSVersion="XML_1.0">  
INSERT MESSAGE HEADER  
INSERT PAYLOAD  
</ns0:PRPA_IN400007UV01>
```

2.5.2.2 Inbound Message Structure

The following elements are required in this specific order:

1. controlActProcess
2. controlActProcess.code
3. controlActProcess.subject
4. controlActProcess.subject.encounterEvent
5. controlActProcess.subject.encounterEvent.id
6. controlActProcess.subject.encounterEvent.id.item
7. controlActProcess.subject.encounterEvent.code
8. controlActProcess.subject.encounterEvent.statusCode
9. controlActProcess.subject.encounterEvent.effectiveTime
10. controlActProcess.subject.encounterEvent.effectiveTime.low
11. controlActProcess.subject.encounterEvent.subject
12. controlActProcess.subject.encounterEvent.subject.patient
13. controlActProcess.subject.encounterEvent.subject.patient.id
14. controlActProcess.subject.encounterEvent.subject.patient.id.item
15. controlActProcess.subject.encounterEvent.subject.patient.patientPerson
16. controlActProcess.subject.encounterEvent.subject.patient.patientPerson.name
17. controlActProcess.subject.encounterEvent.subject.patient.patientPerson.name.item
18. controlActProcess.subject.encounterEvent.subject.patient.patientPerson.name.item.part
19. controlActProcess.subject.encounterEvent.discharger
20. controlActProcess.subject.encounterEvent.discharger.time
21. controlActProcess.subject.encounterEvent.discharger.assignedPerson
22. controlActProcess.subject.encounterEvent.discharger.assignedPerson.assignedPerson
23. controlActProcess.subject.encounterEvent.discharger.assignedPerson.assignedPerson.name
24. controlActProcess.subject.encounterEvent.discharger.assignedPerson.assignedPerson.name.item
25. controlActProcess.subject.encounterEvent.discharger.assignedPerson.assignedPerson.name.item.part

Example 19: HL7v3 Cancel End Patient Visit Payload

```
<ns0:controlActProcess classCode="CACT" moodCode="EVN">  
  <ns0:code code="PRPA_MT400001UV01" />  
  <ns0:subject typeCode="SUBJ">  
    <ns0:encounterEvent classCode="ENC">
```

```

<ns0:id>
  <ns0:item root="1.6.7.8.9.0" extension="12345678" />
</ns0:id>
<ns0:code code="IMP" />
<ns0:statusCode code="active" />
<ns0:effectiveTime>
  <ns0:low value="20150217114002" />
</ns0:effectiveTime>
<ns0:subject>
  <ns0:patient classCode="PAT">
    <ns0:id>
      <ns0:item root="1.1.1.1.1" extension="23018887746236" />
    </ns0:id>
    <ns0:patientPerson>
      <ns0:name>
        <ns0:item>
          <ns0:part value="Max" type="GIV" />
          <ns0:part value="Mustermann" type="FAM" />
        </ns0:item>
      </ns0:name>
    </ns0:patientPerson>
  </ns0:patient>
</ns0:subject>
<ns0:discharger>
  <ns0:time></ns0:time>
  <ns0:assignedPerson classCode="ASSIGNED">
    <ns0:assignedPerson classCode="PSN" determinerCode="INSTANCE">
      <ns0:name>
        <ns0:item>
          <ns0:part type="FAM" value="Reactivator" />
          <ns0:part type="GIV" value="Ronald" />
        </ns0:item>
      </ns0:name>
    </ns0:assignedPerson>
  </ns0:assignedPerson>
</ns0:discharger>
</ns0:encounterEvent>
</ns0:subject>
</ns0:controlActProcess>

```

2.5.2.3 Outbound Message Structure

See [Section 1.5](#).

2.6 Delegate Patient Visit

2.6.1 HL7v2 Delegate Patient Visit

The following HL7 message can be used to notify the [PIX App/PDQ Manager](#) about the delegation of a patient visit to another responsible organization:

- **ADT A02** – Transfer A Patient.

Note

The ADT A02 message requires that the patient visit that should be delegated is already registered with the [PIX App/PDQ Manager](#).

2.6.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction [Delegate Patient Visit](#).

Table 13: Delegate Patient Visit Segments

| Segment | Description |
|---------|--------------------------------------|
| MSH | Message Header |
| MSH-9-1 | The message type must be ADT |
| MSH-9-2 | The trigger event must be A02 |
| EVN | Event Information |
| PID | Patient Information |
| PV1 | Patient Visit Information |

Message Header:

The HL7 MSH segment is present in all HL7 message types and defines the message’s source, purpose, destination and certain syntax specifics like delimiters (separator characters) and character sets. It is always the first segment in the HL7 message, with the only exception being HL7 batch messages.

Event Information:

The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message.

PID Segment:

The PID segment contains all relevant patient data. All the values listed in [Table 21](#) can be stored (or at least processed) by sense®.

PV1 Segment:

The PV1 segment is used by Registration/ADT applications to communicate information on a patient visit-specific basis.

2.6.1.2 Field Overview

The data required for the MSH and EVN segments equals that of the [Create Patient](#) transaction ([Table 21](#)). [Table 14](#) shows the fields which are required for the PV1 segment:

| HL7-Path, Name | R/O, Rep# |
|--|-----------|
| EVN-5, Operator ID Identifies the individual that triggered the visit delegation. The PIX App/PDQ Manager requires at least EVN-5.2 and EVN-5.3 to be present. | R, N |
| PV1-2, Patient Class Determines the type of the delegated patient visit. This field is not case sensitive. Use “O” for outpatient, “E” for emergency (will be treated as outpatient) and “I” for inpatient visits. | RO, N |
| PV1-3, Assigned Patient Location The facility that assumes responsibility for the patient visit. The PIX App/PDQ Manager only processes PV1-3.4.2 and requires this component to be present. | R, N |
| PV1-6, Prior Patient Location The facility that gives up responsibility the patient visit. The PIX App/PDQ Manager only processes PV1-6.4.2 and requires this component to be present. | R, N |
| PV1-19, Visit Number The globally unique identifier of the patient visit that should be changed. The PIX App/PDQ Manager only processes PV1-19.1 and PV1-19.4. If no assigning authority (PV1-19.4) is present, the PIX App/PDQ Manager uses the assigned patient location from PV1-3.4.2 as the visit number assigning authority. | R, N |
| PV1-44, Admit Date/Time The time when the new responsible organization assumed responsibility for the patient visit. | R, N |

R/O = Required/Optional, R = Required, O = Optional, RO = Required if known, REP# = Repetition, Y = entry can be taken from the list, N = Individual Values, Number = Maximum length of the list

Table 14: Processable Visit Information In The Delegate Patient Visit Transaction.

Note

sense® does not process any patient information for the transaction [Delegate Patient Visit](#). Therefore, the PID segment may be empty.

Example 20:

Submission:

```
MSH|^~\&|Test Sending Application|Test Sending Facility|Test Receiving Application|Test Receiving Facility|201505061600||ADT^A02|133|P|2.3.1
EVN||201505061600||^Nachname^Vorname^Zweiter Vorname^Jr.^Herr^Dr.|201505061200
PID||1234567890^^^&1.1.1.2.2.1&ISO
PV1||I|^&1.1.1.2.2.2||^&1.1.1.2.2.1|||||||
0002|||||||201505061200
```

Response:

```
MSH|^~\&|QUA^1.1.1.1.1^ISO|QUA^1.1.1.1^ISO|ITEH^1.1.2.1.1^ISO|ITEH^1.1.2^ISO|201505051501||ACK
^A02|134|P|2.3.1
MSA|AA|133
```

2.6.2 HL7v3 Delegate Patient Visit

Example 21: HL7v3 Delegate Patient Visit Root Element

interactionId's extension field: PRPA_IN303011UV01

```
<h17:PRPA_IN303011UV01 ITSVersion="XML_1.0" xmlns:h17="urn:h17-org:v3" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  INSERT MESSAGE HEADER
  INSERT PAYLOAD
</h17:PRPA_IN303011UV01>
```

2.6.2.1 Inbound Message Structure

The following elements are required in this specific order:

1. controlActProcess
2. controlActProcess.code
3. controlActProcess.subject
4. controlActProcess.subject.encounterEvent
5. controlActProcess.subject.encounterEvent.id
6. controlActProcess.subject.encounterEvent.id.item
7. controlActProcess.subject.encounterEvent.responsibleParty1
8. controlActProcess.subject.encounterEvent.responsibleParty1.time
9. controlActProcess.subject.encounterEvent.responsibleParty1.time.low
10. controlActProcess.subject.encounterEvent.responsibleParty1.statusCode
11. controlActProcess.subject.encounterEvent.responsibleParty1.assignedOrganization
12. controlActProcess.subject.encounterEvent.responsibleParty1.assignedOrganization.id
13. controlActProcess.subject.encounterEvent.responsibleParty1.assignedOrganization.id.item
14. controlActProcess.subject.encounterEvent.responsibleParty2
15. controlActProcess.subject.encounterEvent.responsibleParty2.time
16. controlActProcess.subject.encounterEvent.responsibleParty2.time.high
17. controlActProcess.subject.encounterEvent.responsibleParty2.statusCode
18. controlActProcess.subject.encounterEvent.responsibleParty2.assignedOrganization
19. controlActProcess.subject.encounterEvent.responsibleParty2.assignedOrganization.id.item
20. controlActProcess.authorOrPerformer

21. controlActProcess.authorOrPerformer.assignedPerson
22. controlActProcess.authorOrPerformer.assignedPerson.assignedPerson
23. controlActProcess.authorOrPerformer.assignedPerson.assignedPerson.name
24. controlActProcess.authorOrPerformer.assignedPerson.assignedPerson.name.item
25. controlActProcess.authorOrPerformer.assignedPerson.assignedPerson.name.item.part

Example 22: HL7v3 Delegate Patient Visit Payload

```

<hl7:controlActProcess classCode="CACT" moodCode="EVN">
  <hl7:code code="PRPA_TE303011UV01" />
  <hl7:subject typeCode="SUBJ">
    <hl7:encounterEvent>
      <hl7:id>
        <hl7:item root="6.7.8.9.0" extension="12345678" />
      </hl7:id>
      <hl7:responsibleParty1>
        <hl7:time>
          <hl7:low value="20141127160100" />
        </hl7:time>
        <hl7:statusCode code="active" />
        <hl7:assignedOrganization classCode="ASSIGNED">
          <hl7:id>
            <hl7:item root="6.7.8.9.0" />
          </hl7:id>
        </hl7:assignedOrganization>
      </hl7:responsibleParty1>
      <hl7:responsibleParty2>
        <hl7:time>
          <hl7:high value="20141127160000" />
        </hl7:time>
        <hl7:statusCode code="completed" />
        <hl7:assignedOrganization classCode="ASSIGNED">
          <hl7:id>
            <hl7:item root="1.2.3.4.5" />
          </hl7:id>
        </hl7:assignedOrganization>
      </hl7:responsibleParty2>
    </hl7:encounterEvent>
  </hl7:subject>
  <hl7:authorOrPerformer>
    <hl7:assignedPerson>
      <hl7:assignedPerson>
        <hl7:name>
          <hl7:item>
            <hl7:part type="FAM" value="Delegater" />
            <hl7:part type="GIV" value="Dennis" />
          </hl7:item>
        </hl7:name>
      </hl7:assignedPerson>
    </hl7:assignedPerson>
  </hl7:authorOrPerformer>
</hl7:controlActProcess>

```

2.6.2.2 Outbound Message Structure

See [Section 1.5](#).

2.7 Change Outpatient To Inpatient

2.7.1 HL7v2 Change Outpatient To Inpatient

The following HL7 message can be used to notify the sense[®] PIX/PDQ Manager about the change of a preexisting outpatient visit to an inpatient visit:

- **ADT A06** – Change An Outpatient To An Inpatient.

Note

The ADT A06 message requires that the outpatient visit that should be changed is already registered with the [PIX App/PDQ Manager](#).

2.7.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction [Change Outpatient To Inpatient](#).

Table 15: Change Outpatient To Inpatient Segments

| Segment | Description |
|---------|--------------------------------------|
| MSH | Message Header |
| MSH-9-1 | The message type must be ADT |
| MSH-9-2 | The trigger event must be A06 |
| EVN | Event Information |
| PID | Patient Information |
| PV1 | Patient Visit Information |

Message Header:

The HL7 MSH segment is present in all HL7 message types and defines the message's source, purpose, destination and certain syntax specifics like delimiters (separator characters) and character sets. It is always the first segment in the HL7 message, with the only exception being HL7 batch messages.

Event Information:

The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message.

PID Segment:

The PID segment contains all relevant patient data. All the values listed in [Table 21](#) can be stored (or at least processed) by sense®.

PV1 Segment:

The PV1 segment is used by Registration/ADT applications to communicate information on a patient visit-specific basis.

2.7.1.2 Field Overview

The data required for the MSH and EVN segments equals that of the [Create Patient](#) transaction ([Table 21](#)). [Table 16](#) shows the fields which are required for the PV1 segment:

| HL7-Path, Name | R/O, Rep# |
|---|-----------|
| EVN-5, Operator ID Identifies the individual that triggered the visit change notification. The PIX App/PDQ Manager requires at least EVN-5.2 and EVN-5.3 to be present. | R, N |
| PV1-2, Patient Class Determines the new type of patient visit. This field is not case sensitive. Only "I" for inpatient visits is allowed for this transaction. | RO, N |

PV1-19, Visit Number R, N
 The globally unique identifier of the patient visit that should be changed. The [PIX App/PDQ Manager](#) only processes PV1-19.1 and PV1-19.4. If no assigning authority (PV1-19.4) is present, the [PIX App/PDQ Manager](#) uses the assigned patient location from PV1-3.4.2 as the visit number assigning authority.

PV1-44, Admit Date/Time R, N
 The change time of the patient visit.

R/O = Required/Optional, **R** = Required, **O** = Optional, **RO** = Required if known, **REP#** = Repetition, **Y** = entry can be taken from the list, **N** = Individual Values, **Number** = Maximum length of the list

Table 16: Processable Visit Information In The Change Outpatient To Inpatient Transaction.

Note

sense® does not process any patient information for the transaction [Change Outpatient To Inpatient](#). Therefore, the PID segment can be empty.

Example 23:
Submission:

```
MSH|^~\&|Test Sending Application|Test Sending Facility|Test Receiving Application|Test Receiving Facility|201506051500||ADT^A06|131|P|2.3.1
EVN||201506051500||^Nachname^Vorname^Zweiter Vorname^Jr.^Herr^Dr.|201506051100
PID||1234567890^^&1.1.1.2.2.1&ISO
PV1|I|^&&1.1.1.2.2.1||||||||||||||0002||||||||||||||201506051100
```

Response:

```
MSH|^~\&|QUA^1.1.1.1.1^ISO|QUA^1.1.1^ISO|ITEH^1.1.2.1.1^ISO|ITEH^1.1.2^ISO|201505051501||ACK^A06|132|P|2.3.1
MSA|AA|131
```

2.7.2 HL7v3 Change Outpatient To Inpatient

2.7.2.1 Message Structure

There is no separate message for this type. See [Section 2.1.2 HL7v3 Begin Inpatient Visit](#).

Example 24: HL7v3 Change Outpatient to Inpatient Root Element
 See [Section 2.1.2 HL7v3 Begin Inpatient Visit](#).

Example 25: HL7v3 Change Outpatient to Inpatient Payload
 Change the encounterEvent . code to "IMP", which refers to stationary patients (in-patients). See [Section 2.1.2 HL7v3 Begin Inpatient Visit](#).

2.8 Change Inpatient To Outpatient

2.8.1 HL7v2 Change Inpatient To Outpatient

The following HL7 message can be used to notify the [PIX App/PDQ Manager](#) about the change of a preexisting inpatient visit to an outpatient visit:

- **ADT A07** – Change An Inpatient To An Outpatient.

Note

The ADT A07 message requires that the inpatient visit that should be changed is already registered with the [PIX App/PDQ Manager](#).

2.8.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction [Change Inpatient To Outpatient](#).

Table 17: Change Inpatient To Outpatient Segments

| Segment | Description |
|---------|--------------------------------------|
| MSH | Message Header |
| MSH-9-1 | The message type must be ADT |
| MSH-9-2 | The trigger event must be A07 |
| EVN | Event Information |
| PID | Patient Information |
| PV1 | Patient Visit Information |

Message Header:

The HL7 MSH segment is present in all HL7 message types and defines the message's source, purpose, destination and certain syntax specifics like delimiters (separator characters) and character sets. It is always the first segment in the HL7 message, with the only exception being HL7 batch messages.

Event Information:

The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message.

PID Segment:

The PID segment contains all relevant patient data. All the values listed in [Table 21](#) can be stored (or at least processed) by sense®.

PV1 Segment:

The PV1 segment is used by Registration/ADT applications to communicate information on a patient visit-specific basis.

2.8.1.2 Field Overview

The data required for the MSH and EVN segments equals that of the [Create Patient](#) transaction ([Table 21](#)). [Table 18](#) shows the fields which are required for the PV1 segment:

| HL7-Path, Name | R/O, Rep# |
|---|-----------|
| EVN-5, Operator ID Identifies the individual that triggered the visit change notification. The PIX App/PDQ Manager requires at least EVN-5.2 and EVN-5.3 to be present. | R, N |
| PV1-2, Patient Class Determines the new type of patient visit. This field is not case sensitive. Only "O" for outpatient visits is allowed for this transaction. | RO, N |

PV1-19, Visit Number R, N
 The globally unique identifier of the patient visit that should be changed. The [PIX App/PDQ Manager](#) only processes PV1-19.1 and PV1-19.4. If no assigning authority (PV1-19.4) is present, the [PIX App/PDQ Manager](#) uses the assigned patient location from PV1-3.4.2 as the visit number assigning authority.

PV1-44, Admit Date/Time R, N
 The change time of the patient visit.

R/O = Required/Optional, R = Required, O = Optional, RO = Required if known, REP# = Repetition, Y = entry can be taken from the list, N = Individual Values, Number = Maximum length of the list

Table 18: Processable Visit Information In The Change Inpatient To Outpatient Transaction.

Note

sense® does not process any patient information for the transaction [Change Inpatient To Outpatient](#). Therefore, the PID segment may be empty.

Example 26:

Submission:

```
MSH|^~\&|Test Sending Application|Test Sending Facility|Test Receiving Application|Test
  Receiving Facility|201506051500||ADT^A06|131|P|2.3.1
EVN||201506051500||^Nachname^Vorname^Zweiter Vorname^Jr.^Herr^Dr.|201506051100
PID||1234567890^^&1.1.1.2.2.1&ISO
PV1|I|^&1.1.1.2.2.1|||0002|||201506051100
```

Response:

```
MSH|^~\&|QUA^1.1.1.1.1^ISO|QUA^1.1.1^ISO|ITEH^1.1.2.1.1^ISO|ITEH^1.1.2^ISO|201505051501||ACK
  ^A06|132|P|2.3.1
MSA|AA|131
```

2.8.2 HL7v3 Change Inpatient To Outpatient

2.8.2.1 Inbound Message Structure

Example 27: HL7v3 Change Inpatient to Outpatient Root Element

See [Section 2.1.2 HL7v3 Begin Inpatient Visit](#).

Example 28: HL7v3 Change Inpatient to Outpatient Payload

Change the encounterEvent.code to “AMB” for ambulant patients (out-patients). “EMER”, which stands for emergency admission, may also be used for ambulant patients (out-patients).

See [Section 2.1.2 HL7v3 Begin Inpatient Visit](#).

2.8.2.2 Outbound Message Structure

See [Section 1.5](#).

3 Patient Administration

These messages are used to create or update patients. IHE defines specific transactions to manage patient information:

ITI-8:

used to communicate patient information, including corroborating demographic data, after a patient's identity is established, modified or merged or after the key corroborating demographic data has been modified.

ITI-9:

used to query Patient Identifiers from the [PIX App/PDQ Manager](#) using the local (or any other known) patient identifier.

ITI-21:

used to query one or multiple patients (demographics including their identifiers).

Within these transactions, individual HL7 messages and events are used to administrate patient information. Other HL7 messages do not correspond directly to an IHE transaction, but are used for sense®proprietary transactions. [Table 19](#) shows all supported HL7v2 events of sense®.

Table 19: Patient Administration Supported Events

| Event Type | Action | Action Reference |
|------------|---|---|
| ADT^A01 | Admit a patient | Create Patient Section 3.1 , Section 3.2 |
| ADT^A02 | Transfer a patient | Transfer a patient Delegate Patient Visit Section 2.6 |
| ADT^A03 | Discharge a patient | Discharge a patient End Patient Visit Section 2.3 |
| ADT^A04 | Register a patient | Register a patient Create Patient Section 3.1 and Section 3.2 |
| ADT^A05 | Pre-admit an inpatient | Create Patient Section 3.1 and Section 3.2 |
| ADT^A06 | Change an outpatient to an inpatient | Change Outpatient to Inpatient Section 2.7 |
| ADT^A07 | Change an inpatient to an outpatient | Change Inpatient to Outpatient Section 2.8 |
| ADT^A08 | Update patient information | Create Patient Section 3.1 |
| ADT^A11 | Cancel visit notification | Cancel Patient Visit Section 2.4 |
| ADT^A13 | Cancel patient discharge | Cancel End Patient Visit Section 2.5 |
| ADT^A28 | Add person information (similar to ADT^A01) | Create Patient Section 3.1 , Section 3.2 |
| ADT^A30 | Merge person information | Merge Patient Section 3.3 |
| ADT^A31 | Update person information | Create Patient Section 3.1 and Section 3.2 |
| ADT^A34 | Merge patient information—patient ID only] | Merge Patient Section 3.3 |
| ADT^A39 | Merge person with external ID | Merge Patient Section 3.3 |
| ADT^A40 | Merge patient—patient identifier list | Merge Patient Section 3.3 |
| ADT^A41 | Merge patient account (similar to ADT^A30) | Merge Patient Section 3.3 |
| ADT^A42 | Merge patient based on visit (similar to ADT^A30) | Merge Patient Section 3.3 |
| ADT^A43 | Move patient information—patient identifier list | Merge Patient Section 3.3 |
| ADT^A47 | Update-Merge | Merge Patient Section 3.3 |
| QBP^Q22 | Find Candidates | Query Patient IDs Section 3.5 |
| QBP^Q23 | Get Corresponding Identifiers | Query Patients Section 3.4 |
| MDM^T02 | Submit new document | Submit Document Section 4.1 |
| MDM^T06 | | Append a document to an existing one. |
| MDM^T08 | | Append Document Section 4.2 |
| MDM^T10 | | Submit a replacement of an existing document, Replace Document Section 4.4 |

Table 19: Patient Administration Supported Events 

| Event Type | Action | Action Reference |
|------------|--------|--|
| MDM^T11 | | Deprecate document Deprecate Document Section 4.5 |

3.1 Create Patient

3.1.1 HL7v2 Create Patient

The following HL7 messages can be received and processed to create a new patient:

- **ADT-A01 Patient Admit**
- **ADT-A04 Patient Registration**
- **ADT-A05 Patient Pre-admission**
- **ADT-A08 Patient Information Update** (see hint below)
- **ADT-A28 Add Person Information**
- **ADT-A31 Update Person Information** (see hint below)

Note

Despite the different trigger events (admit, update etc.) the sense® processes the received patient data identically: it always checks whether the given patient already exists in another domain. If so, the patient data is compared/linked. Only when no equivalent patient exists a new patient is created.

3.1.1.1 Message Structure

This section provides an overview and description of the message structure of the **Create Patient** transaction.

Table 20: List of Segments - Create Patient.

| Segment | Description |
|-----------------------------------|--|
| MSH Segment | Message Header |
| MSH-9-1 message type (ID) | The message type must be ADT |
| MSH-9-2 trigger event (ID) | The trigger event must be A01, A04, A05, A08, A28 or A31 |
| EVN Segment | Event Information |
| PID Segment | Patient Information |
| PV1 Segment | Patient Visit Information |

All the values listed in **Table 21** can be stored (or at least processed) by sense® in the PID.

3.1.1.2 Field Overview

Table 21 shows a detailed field description for the transaction **Create Patient**.

| HL7-Path, Name | R/O, Rep# |
|---|-----------|
| EVN-2, Recorded Date/Time Time when the message was sent. | R, Y |

| | |
|---|-------|
| PID-2, Patient ID External ID | O, Y |
| PID-3, Patient-Identifier-List List of all Patient IDs. (e.g. Social Security Number, Driver License Number, CIS-ID). Datatype: CX | R, Y |
| PID-3.1, ID-Number The actual identification number. Must be unique within the facility that assigned it. In combination with the OID of the assigning authority (PID-3.4) the value becomes globally unique. | R, N |
| PID-3.4, Assigning Authority Institution that has issued the identification number. This value must be placed if the Assigning Facility (PID-3.6) is not obtained. Datatype: HD | RO, N |
| PID-3.5, Identifier Typ-Code Type of Identifier. See Enumeration: Identifier Type Code | O, N |
| PID-3.6, Assigning Facility Facility that has issued the identification number. Datatype: HD | RO, N |
| PID-5, Patient Name List of all known names of the person. Datatype: XPN | R, Y |
| PID-6, List of names of the mother. List of known names of the patients mother. Datatype: XPN | O, Y |
| PID-7, Birthdate Birthdate of the Patient. DataType: TS | R, N |
| PID-8, Gender Gender of the Patient. Enumeration: Administrative Sex | R, N |
| PID-11, List of Addresses List of known addresses of the patient. Datatype: XAD | O, Y |
| PID-13, Phonenumbers (privat) List of all known private telephone numbers of the Patient. | O, Y |
| PID-14, Phonenumbers (business) List of all known business phone numbers. | O, Y |
| PID-15, Native Language Native language of the Patient. | O, N |
| PID-16, Marital Status Marital Status of the Patient. | O, N |
| PID-17, Religion Religion of the Patient. Datatype: CE | O, N |
| PID-24, Multiple Birth indicator Gives the sequence, if the patient is part of a multiple birth. | O, N |
| PID-25, Sequence in the multiple Birth Gives the sequence, if the patient is part of a multiple birth. | O, N |
| PID-26, Citizenships List of citizenships of the Patient. This field can also include multiple nationalities of a patient. It should only be filled out if a nationality of a patient is set (PID 28). Datatype: CE | O, Y |
| PID-28, Citizenships Contrary to the examples of the HL7-Standard this field defines the main nationality of the Patient. Datatype: CE | O, N |
| PID-29, Date/Time of Death Date/Time of death if the Patient has died. | O, N |

| | |
|--|------|
| PID-30, Death Indicator | O, N |
| Has the patient already died? „Y“ = yes, „N“ = no | |
| PV1-2, Patient Class | R, N |
| This field is not case sensitive, it identifies the type of the patient visit. Accepted values are “B” for obstetrics, “C” for commercial account, “E” for emergency, “I” for inpatient, “N” for not applicable, “O” for outpatient, “P” for pre-admit, “R” for recurring patient. | |

R/O = Required/Optional, R = Required, O = Optional, RO = Required if known, REP# = Repetition, Y = entry can be taken from the list, N = Individual Values, Number = Maximum length of the list

Table 21: Processable Data In The Create Patient Transaction.

Note

To be able to identify a given patient uniquely and unambiguously, it is advisable to include at least PID-3.1, PID-3.4.2 and PID-3.4.3 in submitted patient identifiers. Nevertheless, IHE permits an alternative way of patient identification: namespace IDs specified in PID-3.4.1. The default configuration of the *PIX/PDQ Manager* does not include namespace IDs in patient identifier queries.

Example 29: HL7v2 Create Patient Message

Submission:

```
MSH|^~\&|ITEH^1.1.2.1.1^ISO|ITEH^1.1.2^ISO|QUA^1.1.1.1.1^ISO|QUA^1.1.1.1^ISO|20141001233656||ADT^A01|1412199415701|P|2.3.1||AL
EVN||20141001233656||^unknown
PID||1412199415782^^&1.1.1.1.3&ISO^PI~66127483762232^
^^AUSTRIAN SOCIAL SECURITY ASSOCIATION&1.3.6.1.4.1.9784.999200.2.1&ISO^SS||Robinson^Asa
||19030930233655|M
PV1||N
```

Response:

```
MSH|^~\&|QUA^1.1.1.1.1^ISO|QUA^1.1.1.1^ISO|ITEH^1.1.2.1.1^ISO|ITEH^1.1.2^ISO
|20141001233657||ACK^A01|1412199417491285|P|2.3.1
MSA|AA|1412199415701
```

3.1.2 HL7v3 Create Patient

Example 30: HL7v3 Create Patient Root Element

interactionId's extension field: PRPA_IN201301UV02

```
<ns1:PRPA_IN201301UV02 xmlns:ns1="urn:h17-org:v3" ITSVersion="XML_1.0">
  INSERT MESSAGE HEADER
  INSERT PAYLOAD
</ns1:PRPA_IN201301UV02>
```

3.1.2.1 Inbound Message Structure

The following elements are required in this specific order:

1. controlActProcess
2. controlActProcess.code
3. controlActProcess.subject
4. controlActProcess.subject.registrationEvent
5. controlActProcess.subject.registrationEvent.id
6. controlActProcess.subject.registrationEvent.statusCode
7. controlActProcess.subject.registrationEvent.subject1
8. controlActProcess.subject.registrationEvent.subject1.patient

9. controlActProcess.subject.registrationEvent.subject1.patient.id
10. controlActProcess.subject.registrationEvent.subject1.patient.statusCode
11. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson
12. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson.name
13. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson.name.given
14. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson.name.family
15. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson.administrativeGenderCode
16. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson.birthTime
17. controlActProcess.subject.registrationEvent.subject1.patient.providerOrganization
18. controlActProcess.subject.registrationEvent.subject1.patient.providerOrganization.id
19. controlActProcess.subject.registrationEvent.subject1.patient.providerOrganization.contactParty
20. controlActProcess.subject.registrationEvent.custodian
21. controlActProcess.subject.registrationEvent.custodian.assignedEntity
22. controlActProcess.subject.registrationEvent.custodian.id
23. controlActProcess.subject.registrationEvent.custodian.assignedOrganization
24. controlActProcess.subject.registrationEvent.custodian.assignedOrganization.name
25. controlActProcess.subject.registrationEvent.custodian.assignedOrganization.delimiter

Example 31: HL7v3 Create Patient Payload

```

<ns1:controlActProcess classCode="CACT" moodCode="EVN">
  <ns1:code xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:CD" code="
  PRPA_TE201301UV02"/>
  <ns1:subject typeCode="SUBJ">
    <ns1:registrationEvent classCode="REG" moodCode="EVN">
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
      nullFlavor="NA"/>
      <ns1:statusCode code="active"/>
      <ns1:subject1 typeCode="SBJ">
        <ns1:patient classCode="PAT">
          <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
          root="1.3.6.1.4.1.21367.13.20extension=icoserveRandomPatient944137299460026"/>
          <ns1:statusCode code="active"/>
          <ns1:patientPerson classCode="PSN" determinerCode="INSTANCE">
            <ns1:name xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:PN
            ">
              <ns1:given>knZJxsPAaCOBAbJaUPQy</ns1:given>
              <ns1:family>cbVbEGiuJnOeJsMuLYwf</ns1:family>
            </ns1:name>
            <ns1:administrativeGenderCode code="F"/>
            <ns1:birthTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
            ns1:TS" value="19820707"/>
          </ns1:patientPerson>
          <ns1:providerOrganization classCode="ORG" determinerCode="INSTANCE">
            <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
            root="1.1.2.1.1"/>
            <ns1:contactParty classCode="CON"/>
          </ns1:providerOrganization>
        </ns1:patient>
      </ns1:subject1>
      <ns1:custodian typeCode="CST">
        <ns1:assignedEntity classCode="ASSIGNED">
          <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
          root="1.3.6.1.4.1.21367.13.10.218"/>
          <ns1:assignedOrganization classCode="ORG" determinerCode="INSTANCE">
            <ns1:name xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:EN
            ">
              <ns1:delimiter>1.3.6.1.4.1.21367.13.30.237</ns1:delimiter>
            </ns1:name>
          </ns1:assignedOrganization>
        </ns1:assignedEntity>
      </ns1:custodian>
    </ns1:registrationEvent>
  </ns1:subject>
</ns1:controlActProcess>

```

3.1.2.2 Outbound Message Structure

See [Section 1.5](#).

3.2 Update Patient

3.2.1 HL7v2 Update Patient

The following HL7 messages can be received and processed in order to update a patient:

- **ADT-A01 Patient Admit**
- **ADT-A04 Patient Registration**
- **ADT-A05 Patient Pre-admission**
- **ADT-A08 Patient Information Update**
- **ADT-A28 Add Person Information**
- **ADT-A31 Update Person Information**

Note

Despite the different trigger events (admit, update etc.) sense® processes the received patient data identically: it always checks whether the given patient already exists in another domain. If so, the patient data is compared/linked. Only when no equivalent patient exists a new patient is created.

3.2.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction **Update Patient**. The required patient data for this transaction equals that of the preceding **Update Patient** transaction ([Table 21](#)).

Table 22: List of Segments - Update Patient.

| Segment | Description |
|-----------------------------------|--|
| MSH Segment | Message Header |
| MSH-9-1 message type (ID) | The message type must be ADT |
| MSH-9-2 trigger event (ID) | The trigger event must be A01, A04, A05, A08, A28 or A31 |
| EVN Segment | Event Information |
| PID Segment | Patient Information |
| PV1 Segment | Patient Visit Information |

3.2.1.2 Field Overview

The content of the message must equal the fields for the HL7 **Create Patient** message described in [Table 21](#).

Example 32: HL7v2 Update Patient

Submission:

```
MSH|^~\&|ITEH^1.1.2.1.1^ISO|ITEH^1.1.2^ISO|QUA^1.1.1.1.1^ISO|QUA^1.1.1^ISO|20141001234455||  
ADT^A08|1412199893935|P|2.3.1  
EVN||20141001234455|||^unknown  
PID||1412199894037^^&1.3.6.1.4.1.21367.2010.2.1.419&ISO^PI~23649402402049^^^AUSTRIAN  
SOCIAL SECURITY ASSOCIATION&1.3.6.1.4.1.9784.999200.2.1&ISO^SS||NOLL^Levi  
||19370310234454|U
```

PV1 | | N

Response:

```
MSH|^~\&|QUA^1.1.1.1.1^ISO|QUA^1.1.1.1^ISO|ITEH^1.1.2.1.1^ISO|ITEH^1.1.2^ISO|20141001234455||  
ACK^A08|1412199895764279|P|2.3.1  
MSA|AA|1412199893935
```

3.2.2 HL7v3 Update Patient

Example 33: HL7v3 Update Patient Root Element

interactionId's extension field=PRPA_IN201302UV02

```
<ns1:PRPA_IN201302UV02 xmlns:ns1="urn:h17-org:v3" ITSVersion="XML_1.0">  
  INSERT MESSAGE HEADER  
  INSERT PAYLOAD  
</ns1:PRPA_IN201302UV02>
```

3.2.2.1 Inbound Message Structure

The following elements are required in this specific order:

1. controlActProcess
2. controlActProcess.code
3. controlActProcess.subject
4. controlActProcess.subject.registrationEvent
5. controlActProcess.subject.registrationEvent.id
6. controlActProcess.subject.registrationEvent.statusCode
7. controlActProcess.subject.registrationEvent.subject1
8. controlActProcess.subject.registrationEvent.subject1.patient
9. controlActProcess.subject.registrationEvent.subject1.patient.id
10. controlActProcess.subject.registrationEvent.subject1.patient.statusCode
11. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson
12. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson.name
13. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson.name.given
14. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson.name.family
15. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson.administrativeGenderCode
16. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson.deceasedInd
17. controlActProcess.subject.registrationEvent.subject1.patient.providerOrganization
18. controlActProcess.subject.registrationEvent.subject1.patient.providerOrganization.id
19. controlActProcess.subject.registrationEvent.subject1.patient.providerOrganization.contactParty
20. controlActProcess.subject.registrationEvent.custodian
21. controlActProcess.subject.registrationEvent.custodian.assignedEntity
22. controlActProcess.subject.registrationEvent.custodian.id
23. controlActProcess.subject.registrationEvent.custodian.assignedOrganization
24. controlActProcess.subject.registrationEvent.custodian.assignedOrganization.name
25. controlActProcess.subject.registrationEvent.custodian.assignedOrganization.delimiter

Example 34: HL7v3 Update Patient Payload

```
<ns1:controlActProcess classCode="CACT" moodCode="EVN">  
  <ns1:code xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:CD" code="PRPA_TE201302UV02"/>  
  <ns1:subject typeCode="SUBJ" contextConductionInd="false">  
    <ns1:registrationEvent classCode="REG" moodCode="EVN">  
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" nullFlavor="NA"/>  
      <ns1:statusCode code="active"/>  
      <ns1:subject1 typeCode="SBJ">  
        <ns1:patient classCode="PAT">  
          <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:PRPA_MT201302UV02.Patient.id" root="1.3.6.1.4.1.21367.13.20.202" extension="icoserveRandomPatient665657615417511" assigningAuthorityName="ICOSERVE"/>  
          <ns1:statusCode xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
```



```

ns1:PRPA_MT201302UV02.Patient.statusCode" code="active"/>
  <ns1:patientPerson xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type
="ns1:PRPA_MT201302UV02.Patient.patientPerson" classCode="PSN" determinerCode="INSTANCE
">
    <ns1:name xsi:type="ns1:PN">
      <ns1:given>Jane</ns1:given>
      <ns1:family>Doe</ns1:family>
    </ns1:name>
    <ns1:administrativeGenderCode code="F"/>
    <ns1:deceasedInd xsi:type="ns1:BL" value="false"/>
  </ns1:patientPerson>
  <ns1:providerOrganization classCode="ORG" determinerCode="INSTANCE">
    <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
root="1.3.6.1.4.1.21367.13.20.202"/>
    <ns1:contactParty classCode="CON">
      <ns1:telecom xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:TEL" value="http://www.ith-icoverse.com" use="PUB"/>
    </ns1:contactParty>
  </ns1:providerOrganization>
</ns1:patient>
</ns1:subject1>
<ns1:custodian typeCode="CST">
  <ns1:assignedEntity classCode="ASSIGNED">
    <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
root="1.3.6.1.4.1.21367.13.10.218"/>
    <ns1:assignedOrganization classCode="ORG" determinerCode="INSTANCE">
      <ns1:name xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:EN
">
        <ns1:delimiter>1.3.6.1.4.1.21367.13.30.237</ns1:delimiter>
      </ns1:name>
    </ns1:assignedOrganization>
  </ns1:assignedEntity>
</ns1:custodian>
</ns1:registrationEvent>
</ns1:subject>
</ns1:controlActProcess>

```

3.2.2.2 Outbound Message Structure

See [Section 1.5](#).

3.3 Merge Patient

3.3.1 HL7v2 Merge Patient

The following HL7 messages can be received and processed in order to merge a patient:

- *ADT-A30 Merge Person Information*
- *ADT-A34 Merge Patient Information*
- *ADT-A34 Merge Patient Information*
- *ADT-A40 Merge Patient*
- *ADT-A41 Merge Patient Account*
- *ADT-A42 Merge Patient Based On Visit*
- *ADT-A43 Merge Person With External ID*
- *ADT-A47 Move Patient Information*

The [PIX App/PDQ Manager](#) provides the ability to merge (combine) two patients into one resulting patient. One of those patients is the „surviving/dominant“ patient, while the other one is „deleted/recessive“. The [PIX App/PDQ Manager](#) adds all patient identifiers (e.g. local identifier, social security numbers, ...) of the

recessive patient to the dominant patient. In the final step the recessive patient is deprecated, rendering it inaccessible by clients.

Note

The recessive patient may or may not be known by the PIX/PDQ Manager. Merging an unknown recessive patient with an unknown dominant patient is not supported, and therefore results in an error response.

3.3.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction **Merge Patient**.

Table 23: Merge Patient Segments

| Segment | Description |
|---------|--|
| MSH | Message Header |
| MSH-9-1 | The message type must be ADT |
| MSH-9-2 | The trigger event must be A30, A34, A39, A40, A41, A42, A43 or A47 |
| EVN | Event Information |
| PID | Patient Information |
| PV1 | Patient Visit Information |

Message Header:

The HL7 MSH segment is present in every HL7 message type and defines the message’s source, purpose, destination, and certain syntax specifics like delimiters (separator characters) and character sets. It is always the first segment in the HL7 message, with the only exception being HL7 batch messages.

Event Information:

The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message.

PID Segment:

The PID segment contains all relevant patient data. All the values listed in [Table 21](#) can be stored (or at least processed) by sense®.

PV1 Segment:

The PV1 segment is used by Registration/ADT applications to communicate information on a visit-specific basis. This segment can be used to send multiple-visit statistic records to the same patient account or single-visit records to more than one account.

3.3.1.2 Field Overview

The HL7 **Merge Patient** message identifies the dominant/surviving patient in the PID segment by specifying all known patient identifiers in PID-3 shown in [Table 24](#).

| HL7-Path, Name | R/O, Rep# |
|---|-----------|
| PID-3, Patient-Identifier-List List of all Patient IDs. (e.g. Social Security Number, Driver License Number, CIS-ID). Datatype: CX | R, Y |
| PID-3.1, ID-Number The actual identification number. Must be unique within the facility that assigned it. In combination with the OID of the assigning authority (PID-3.4) the value becomes globally unique. | R, N |

| | |
|--|-------|
| PID-3.4, Assigning Authority Institution that has issued the identification number. This value must be set if the Assigning Facility (PID-3.6) is not obtained. Datatype: HD | RO, N |
| PID-3.5, Identifier Typ-Code Type of Identifier. See Enumeration: Identifier Type Code | O, N |
| PID-3.6, Assigning Facility Facility that has issued the identification number. Datatype: HD | RO, N |

R/O = Required/Optional, R = Required, O = Optional, RO = Required if known, REP# = Repetition, Y = entry can be taken from the list, N = Individual Values, Number = Maximum length of the list

Table 24: List of data set in the PID segment to identify the dominant patient.

Additional data in the PID segment is not interpreted. The recessive patient is identified in the MRG segment shown in [Table 25](#).

| HL7-Path, Name | R/O, Rep# |
|---|-----------|
| MRG-1, Patient-Identifier-List List of all Patient Ids of the recessive patient. (e.g. Social Security Number, Driver License Number, CIS-ID). Datatype: CX | R, Y |
| MRG-1.1, ID-Nummer The actual identification number. Must be unique within the facility that assigned it. In combination with the OID of the assigning authority (PID-3.4) the value becomes globally unique. | R, N |
| MRG-1.4, Assigning Authority List of all Patient IDs. (Institution that has issued the identification number. Datatype: HD) | R, N |
| MRG-1.5, Identifier Typ-Code Type of Identifier. See Enumeration: Identifier Type Code | O, N |

R/O = Required/Optional, R = Required, O = Optional, RO = Required if known, REP# = Repetition, Y = entry can be taken from the list, N = Individual Values, Number = Maximum length of the list

Table 25: List of data set in the MRG segment to identify the recessive patient.

Example 35:

Submission:

```
MSH|^~\&|ITEH^1.1.2.1.1^ISO|ITEH^1.1.2^ISO|QUA^1.1.1.1.1^ISO|QUA^1.1.1^ISO|20141001235158||
ADT^A40|1412200317060|P|2.3.1
EVN||20141001235158||^unknown
PID||1412200317139^^^&1.1.1.1.3&ISO^PI-648786472101230541^^^AUSTRIAN SOCIAL SECURITY
ASSOCIATION&1.3.6.1.4.1.9784.999200.2.1&ISO^SS||ROSARIO^Carlo||18770926235157|M
MRG|1412200318179^^^&1.1.1.1.3&ISO^PI-2569605884678423^^^AUSTRIAN SOCIAL SECURITY
ASSOCIATION&1.3.6.1.4.1.9784.999200.2.1&ISO^SS
```

Response:

```
MSH|^~\&|QUA^1.1.1.1.1^ISO|QUA^1.1.1^ISO|ITEH^1.1.2.1.1^ISO|ITEH^1.1.2^ISO|20141001235159||
ACK^A40|1412200319353285|P|2.3.1
MSA|AA|1412200317060
```

3.3.2 HL7v3 Merge Patient

Example 36: HL7v3 Merge Patient Root Element

interactionId's extension field: PRPA_IN201304UV02

```
<ns1:PRPA_IN201304UV02 xmlns:ns1="urn:h17-org:v3" ITSVersion="XML_1.0">
  INSERT MESSAGE HEADER
  INSERT PAYLOAD
</ns1:PRPA_IN201304UV02>
```

3.3.2.1 Inbound Message Structure

The following elements are required in this specific order:

1. controlActProcess
2. controlActProcess.code
3. controlActProcess.subject
4. controlActProcess.subject.registrationEvent
5. controlActProcess.subject.registrationEvent.id
6. controlActProcess.subject.registrationEvent.statusCode
7. controlActProcess.subject.registrationEvent.subject1
8. controlActProcess.subject.registrationEvent.subject1.patient
9. controlActProcess.subject.registrationEvent.subject1.patient.id
10. controlActProcess.subject.registrationEvent.subject1.patient.statusCode
11. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson
12. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson.name
13. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson.name.given
14. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson.name.family
15. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson.administrativeGenderCode
16. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson.deceasedInd
17. controlActProcess.subject.registrationEvent.subject1.patient.providerOrganization
18. controlActProcess.subject.registrationEvent.subject1.patient.providerOrganization.id
19. controlActProcess.subject.registrationEvent.subject1.patient.providerOrganization.contactParty
20. controlActProcess.subject.registrationEvent.custodian
21. controlActProcess.subject.registrationEvent.custodian.assignedEntity
22. controlActProcess.subject.registrationEvent.custodian.id
23. controlActProcess.subject.registrationEvent.custodian.assignedOrganization
24. controlActProcess.subject.registrationEvent.custodian.assignedOrganization.name
25. controlActProcess.subject.registrationEvent.custodian.assignedOrganization.delimiter

Example 37: HL7v3 Merge Patient Payload

```
<ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
  ="2.16.840.1.113883.1.6.1" extension="1461852144741"/>
<ns1:creationTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:TS"
  value="20160428160226"/>
<ns1:interactionId xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
  root="2.16.840.1.113883.1.6" extension="PRPA_IN201304UV02"/>
<ns1:processingCode code="P"/>
<ns1:processingModeCode code="T"/>
<ns1:acceptAckCode code="AL"/>
<ns1:receiver typeCode="RCV">
  <ns1:device classCode="DEV" determinerCode="INSTANCE">
    <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
      ="1.3.6.1.4.1.21367.13.30.237"/>
    </ns1:device>
  </ns1:receiver>
<ns1:sender typeCode="SND">
  <ns1:device classCode="DEV" determinerCode="INSTANCE">
    <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
      ="1.3.6.1.4.1.21367.13.10.218"/>
    </ns1:device>
  </ns1:sender>
<ns1:controlActProcess classCode="CACT" moodCode="EVN">
  <ns1:code xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:CD" code="
    PRPA_TE201304UV02"/>
  <ns1:subject typeCode="SUBJ" contextConductionInd="false">
    <ns1:registrationEvent classCode="REG" moodCode="EVN">
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
```

```

nullFlavor="NA"/>
  <ns1:statusCode code="active"/>
  <ns1:subject1 typeCode="SBJ">
    <ns1:patient classCode="PAT">
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
root="1.3.6.1.4.1.21367.13.20.202" extension="icoserveRandomPatient211253822522044"
assigningAuthorityName="ICOSERVE"/>
      <ns1:statusCode code="active"/>
      <ns1:patientPerson classCode="PSN" determinerCode="INSTANCE">
        <ns1:name xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:PN
">
          <ns1:given>Jane</ns1:given>
          <ns1:family>Doe</ns1:family>
        </ns1:name>
        <ns1:administrativeGenderCode code="F"/>
        <ns1:deceasedInd xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type
="ns1:BL" value="false"/>
        </ns1:patientPerson>
        <ns1:providerOrganization classCode="ORG" determinerCode="INSTANCE">
          <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
root="1.3.6.1.4.1.21367.13.20.202"/>
          <ns1:contactParty classCode="CON">
            <ns1:telecom xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:TEL" value="http://www.ith-icoserve.com" use="PUB"/>
            </ns1:contactParty>
          </ns1:providerOrganization>
        </ns1:patient>
      </ns1:subject1>
      <ns1:custodian typeCode="CST">
        <ns1:assignedEntity classCode="ASSIGNED">
          <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
root="1.3.6.1.4.1.21367.13.10.218"/>
          <ns1:assignedOrganization classCode="ORG" determinerCode="INSTANCE">
            <ns1:name xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:EN
">
              <ns1:delimiter>1.3.6.1.4.1.21367.13.30.237</ns1:delimiter>
              </ns1:name>
            </ns1:assignedOrganization>
          </ns1:assignedEntity>
        </ns1:custodian>
        <ns1:replacementOf typeCode="RPLC">
          <ns1:priorRegistration classCode="REG" moodCode="EVN">
            <ns1:statusCode code="obsolete"/>
            <ns1:subject1 typeCode="SBJ">
              <ns1:priorRegisteredRole classCode="PAT">
                <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
" root="1.3.6.1.4.1.21367.13.20.202" extension="icoserveRandomPatient045665053175362"
assigningAuthorityName="ICOSERVE"/>
                </ns1:priorRegisteredRole>
              </ns1:subject1>
            </ns1:priorRegistration>
          </ns1:replacementOf>
        </ns1:registrationEvent>
      </ns1:subject>
    </ns1:controlActProcess>

```

3.3.2.2 Outbound Message Structure

See [Section 1.5](#).

3.4 Query Patient IDs

3.4.1 HL7v2 Query Patient IDs

The PIX/PDQ Manager provides two patient query methods: [Query Patient IDs](#) and [Query Patients](#) ([Section 3.5](#)). The transaction [Query Patient IDs](#) passes one patient identifier (most commonly the identifier of the local CIS, PACS, ...) and receives all identifiers (or optionally only identifiers from a given subset of patient assigning authorities) in return.

3.4.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction Query Patient IDs.

The Query:

The Request for Corresponding Patient Identifiers transaction is conducted by the QBP Q23 message. The segments of the message listed in [Table 26](#) are required:

Table 26: Query Patient ID Segments

| Segment | Description |
|---------|-------------------------------------|
| MSH | Message Header |
| MSH-9-1 | The messageType must be QBP |
| MSH-9-2 | The TriggerEvent must be Q23 |
| QPD | Query Parameter Definition |
| RCP | Response Control Parameter |

Message Header:

The HL7 MSH segment is present in every HL7 message type and defines the message's source, purpose, destination, and certain syntax specifics like delimiters (separator characters) and character sets. It is always the first segment in the HL7 message, with the only exception being HL7 batch messages.

Query Parameter Definition:

echo the QPD Segment value that was sent in the QBP Q23 message.

Response Control Parameter:

The RCP Segment must only have the first element populated with an "I", indicating that this message must be processed immediately.

The Response:

The response message is (in difference to administrative ACK responses) a RSP K23 message (see [Table 27](#)).

Table 27: Query Patient ID Responses

| Segment | Description |
|---------|-------------------------------------|
| MSH | Message Header |
| MSH-9-1 | The messageType must be RSP |
| MSH-9-2 | The TriggerEvent must be K23 |
| MSA | Message Acknowledgement |
| ERR | Error |
| QAK | Query Acknowledgement |
| QPD | Query Parameter Definition |
| PID | Patient Identifier |

Message Header:

The HL7 MSH segment is present in every HL7 message type and defines the message's source, purpose, destination, and certain syntax specifics like delimiters (separator characters) and character sets. It is always the first segment in the HL7 message, with the only exception being HL7 batch messages.

Message Acknowledgement:

Message Acknowledgement displaying the success of the message.

Error:

If an error occurred this segment is populated with the details

Query Acknowledgement:

The Query Acknowledgement repeats the Query Tag (send by the client in the QPD-2 field) and a query status.

Query Parameter Definition:

echo the QPD Segment value that was sent in the QBP Q23 message.

Patient Identifier:

If the corresponding patient was found, a PID segment having only PID-3 (requested Identifiers) and PID-5 (names) valued.

Response Control Parameter:

The RCP Segment must only have the first element populated with an "I", indicating that this message must be processed immediately.

3.4.1.2 Field Overview

Table 28 shows a field description for the QPD Segment of the query message (see Table 26).

| HL7-Path, Name | R/O, Rep# |
|---|-----------|
| QPD-1 , Query Parameter Definition This is a constant value and must be „IHE PIX Query“ (defined by the IHE). | R, N |
| QPD-2 , Query Tag Name for the query. This value will be returned to find matching responses to queries. | R, N |
| QPD-3 , Person Identifier One or more Patient Identifier used to query the patient in the PIX/PDQ. Datatype: CX | R, N |
| QPD-8 , What Domains Returned Instead of querying all patient IDs, the requesting system is also able to query only a selected number of patient IDs. It does so by populating QPD-4-What Domains Returned with as many repetitions as needed. The number of repetitions equals the number of domains from which the patient IDs are supposed to come from. | O, Y |

R/O = Required/Optional, R = Required, O = Optional, RO = Required if known, REP# = Repitition, Y = entry can be taken from the list, N = Individual Values, Number = Maximum length of the list

Table 28: List of data set in the QPD segment to query patient IDs.

Example 38:

Submission:

```
MSH|^~\&|ITEH^1.1.2.1.1^ISO|ITEH^1.1.2^ISO|QUA^1.1.1.1.1^ISO|QUA^1.1.1^ISO|20141001235552||  
QBP^Q23^QBP_Q21|1412200551815|P|2.5||AL  
QPD|IHE PIX Query|QRY1412200552364|1412200317139^^^&1.1.1.1.3&ISO  
RCP|I
```

Response:

```
MSH|^~\&|QUA^1.1.1.1.1^ISO|QUA^1.1.1^ISO|ITEH^1.1.2.1.1^ISO|ITEH^1.1.2^ISO|20141001235552||  
RSP^K23^RSP_K23|141220055272243497|P|2.5  
MSA|AA|1412200551815  
QAK|QRY1412200552364|OK|IHE PIX Query|5  
QPD|IHE PIX Query|QRY1412200552364|1412200317139^^^&1.1.1.1.3&ISO  
PID|||648786472101230541^^^OTHER AUSTRIAN SOCIAL SECURITY ASSOCIATION
```

```
&1.3.6.1.4.1.9784.999200.2.1&
ISO^SS~2569605884678423^^OTHER AUSTRIAN SOCIAL SECURITY ASSOCIATION&1.3.6.1.4.1.9784.
999200.2.1&ISO^SS~de2dbe72-dc87-492b-baa6-dccbda635ac1^^XDS Affinity Domain 1&1.1.1&ISO^
GPI||~^^^AS
```

3.4.2 HL7v3 Query Patient IDs

Example 39: HL7v3 Query Patient IDs Root Element

interactionId's extension field: PRPA_IN201309UV02

```
<ns1:PRPA_IN201309UV02 xmlns:ns1="urn:hl7-org:v3" ITSVersion="XML_1.0">
  INSERT MESSAGE HEADER
  INSERT PAYLOAD
</ns1:PRPA_IN201309UV02>
```

3.4.2.1 Inbound Message Structure

The following elements are required in this specific order:

1. controlActProcess
2. controlActProcess.code
3. controlActProcess.authorOrPerformer
4. controlActProcess.authorOrPerformer.assignedDevice
5. controlActProcess.authorOrPerformer.assignedDevice.id
6. controlActProcess.authorOrPerformer.assignedDevice.assignedDevice
7. controlActProcess.queryByParameter
8. controlActProcess.queryByParameter.queryId
9. controlActProcess.queryByParameter.statusCode
10. controlActProcess.queryByParameter.responsePriorityCode
11. controlActProcess.queryByParameter.parameterList
12. controlActProcess.queryByParameter.parameterList.value
13. controlActProcess.queryByParameter.parameterList.value
14. controlActProcess.queryByParameter.parameterList.semanticsText

Example 40: HL7v3 Query Patient IDs Payload

```
<ns1:controlActProcess classCode="CACT" moodCode="EVN">
  <ns1:code xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:CD" code="
  PRPA_TE201309UV02"/>
  <ns1:authorOrPerformer typeCode="AUT">
    <ns1:assignedDevice classCode="ASSIGNED">
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
      ="1.3.6.1.4.1.21367.13.10.218"/>
      <ns1:assignedDevice classCode="DEV" determinerCode="INSTANCE"/>
    </ns1:assignedDevice>
  </ns1:authorOrPerformer>
  <ns1:queryByParameter>
    <ns1:queryId xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
    root="1.3.6.1.4.1.21367.13.10.218" extension="1461919522407"/>
    <ns1:statusCode code="new"/>
    <ns1:responsePriorityCode code="I"/>
    <ns1:parameterList>
      <ns1:patientIdentifier>
        <ns1:value xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
        root="1.1.1.1.2" extension="ID-Value - 8642741598patientID0"/>
        <ns1:semanticsText>Patient.id</ns1:semanticsText>
      </ns1:patientIdentifier>
    </ns1:parameterList>
  </ns1:queryByParameter>
</ns1:controlActProcess>
```


Example 41: HL7v3 Query Patient IDs with Domain Restriction Payload

```
<ns1:controlActProcess classCode="CACT" moodCode="EVN">
  <ns1:code xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:CD" code="
  PRPA_TE201309UV02"/>
  <ns1:authorOrPerformer typeCode="AUT">
    <ns1:assignedDevice classCode="ASSIGNED">
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
      ="1.3.6.1.4.1.21367.13.10.218"/>
      <ns1:assignedDevice classCode="DEV" determinerCode="INSTANCE"/>
    </ns1:assignedDevice>
  </ns1:authorOrPerformer>
  <ns1:queryByParameter>
    <ns1:queryId xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
    root="1.3.6.1.4.1.21367.13.10.218" extension="1461857158532"/>
    <ns1:statusCode code="new"/>
    <ns1:responsePriorityCode code="I"/>
    <ns1:parameterList>
      <ns1:dataSource>
        <ns1:value xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
        root="1.3.6.1.4.1.21367.13.20.2000"/>
        <ns1:semanticsText>DataSource.id</ns1:semanticsText>
      </ns1:dataSource>
      <ns1:patientIdentifier>
        <ns1:value xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
        root="1.3.6.1.4.1.21367.3000.1.6" extension="IHEFACILITY-998"/>
        <ns1:semanticsText>Patient.id</ns1:semanticsText>
      </ns1:patientIdentifier>
    </ns1:parameterList>
  </ns1:queryByParameter>
</ns1:controlActProcess>
</ns1:PRPA_IN201309UV02>
```

3.4.2.2 Outbound Message Structure

Example 42: HL7v3 Query Patient IDs Response with Results

```
<ns1:PRPA_IN201310UV02 xmlns:ns1="urn:hl7-org:v3" ITSVersion="XML_1.0">
  <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
  ="1.2.3.4.5" extension="30"/>
  <ns1:creationTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:TS"
  value="20160429104522"/>
  <ns1:versionCode code="V3PR1"/>
  <ns1:interactionId xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
  root="2.16.840.1.113883" extension="PRPA_IN201310UV02"/>
  <ns1:processingCode code="P"/>
  <ns1:processingModeCode code="T"/>
  <ns1:acceptAckCode code="NE"/>
  <ns1:receiver typeCode="RCV">
    <ns1:device classCode="DEV" determinerCode="INSTANCE">
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
      ="1.2.3.4.5.1000"/>
    </ns1:device>
  </ns1:receiver>
  <ns1:sender typeCode="SND">
    <ns1:device classCode="DEV" determinerCode="INSTANCE">
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
      ="1.2.3.4.5.1000"/>
    </ns1:device>
  </ns1:sender>
  <ns1:acknowledgement>
    <ns1:typeCode code="AA"/>
    <ns1:targetMessage>
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
      ="2.16.840.1.113883.1.6.1" extension="1461919519877"/>
    </ns1:targetMessage>
  </ns1:acknowledgement>
  <ns1:controlActProcess classCode="CACT" moodCode="EVN">
    <ns1:code xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:CD" code="
    PRPA_TE201310UV02"/>
```

```

<ns1:subject typeCode="SUBJ">
  <ns1:registrationEvent classCode="REG" moodCode="EVN">
    <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
    nullFlavor="NA"/>
    <ns1:statusCode code="active"/>
    <ns1:subject1 typeCode="SBJ">
      <ns1:patient classCode="PAT">
        <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
        root="1.3.6.1.4.1.9784.999200.2.1.1" extension="2776347772" assigningAuthorityName="
        AUSTRIAN SOCIAL SECURITY ASSOCIATION"/>
        <ns1:statusCode code="active"/>
        <ns1:patientPerson classCode="PSN" determinerCode="INSTANCE">
          <ns1:name xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
          PN" nullFlavor="NA"/>
          <ns1:asOtherIDs classCode="ROL">
            <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
            II" root="1.1.1" extension="3ae7a73a-7200-4cd3-99c9-f2653a06cfc7"
            assigningAuthorityName="XDS Affinity Domain 1"/>
            <ns1:scopingOrganization classCode="ORG" determinerCode="INSTANCE">
              <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
              ns1:II" root="1.1.1.1"/>
              </ns1:scopingOrganization>
            </ns1:asOtherIDs>
            <ns1:asOtherIDs classCode="ROL">
              <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
              II" root="1.1.1.1.2" extension="ID-Value - 8642741598patientID0" assigningAuthorityName
              ="Landeskrankenhaus Innsbruck"/>
              <ns1:scopingOrganization classCode="ORG" determinerCode="INSTANCE">
                <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
                ns1:II" root="1.1.1.1.2"/>
                </ns1:scopingOrganization>
              </ns1:asOtherIDs>
            </ns1:patientPerson>
          </ns1:patient>
        </ns1:subject1>
        <ns1:custodian typeCode="CST">
          <ns1:assignedEntity classCode="ASSIGNED">
            <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
            root="1.3.6.1.4.1.21367.2010.1.2.600" extension="xxx"/>
            <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
            root="1.3.6.1.4.1.21367.2010.1.2.600" extension="xxx"/>
            <ns1:assignedOrganization classCode="ORG" determinerCode="INSTANCE">
              <ns1:name xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
              EN">
                <ns1:given>org</ns1:given>
              </ns1:name>
            </ns1:assignedOrganization>
          </ns1:assignedEntity>
        </ns1:custodian>
      </ns1:registrationEvent>
    </ns1:subject>
  </ns1:queryAck>
  <ns1:queryId xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
  root="1.3.6.1.4.1.21367.13.10.218" extension="1461919522407"/>
  <ns1:statusCode code="deliveredResponse"/>
  <ns1:queryResponseCode code="OK"/>
</ns1:queryAck>
<ns1:queryByParameter>
  <ns1:queryId xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
  root="1.3.6.1.4.1.21367.13.10.218" extension="1461919522407"/>
  <ns1:statusCode code="new"/>
  <ns1:responsePriorityCode code="I"/>
  <ns1:parameterList>
    <ns1:patientIdentifier>
      <ns1:value xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
      root="1.1.1.1.2" extension="ID-Value - 8642741598patientID0"/>
      <ns1:semanticsText>Patient.id</ns1:semanticsText>
    </ns1:patientIdentifier>
  </ns1:parameterList>
</ns1:queryByParameter>
</ns1:controlActProcess>
</ns1:PRPA_IN201310UV02>

```

Example 43: HL7v3 Query Patient IDs Response without Results

```
<ns1:PRPA_IN201310UV02 xmlns:ns1="urn:hl7-org:v3" ITSVersion="XML_1.0">
  <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
    ="1.2.3.4.5" extension="30"/>
  <ns1:creationTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:TS"
    value="20160428174949"/>
  <ns1:versionCode code="V3PR1"/>
  <ns1:interactionId xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
    root="2.16.840.1.113883" extension="PRPA_IN201310UV02"/>
  <ns1:processingCode code="P"/>
  <ns1:processingModeCode code="T"/>
  <ns1:acceptAckCode code="NE"/>
  <ns1:receiver typeCode="RCV">
    <ns1:device classCode="DEV" determinerCode="INSTANCE">
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
        ="1.2.3.4.5.1000"/>
    </ns1:device>
  </ns1:receiver>
  <ns1:sender typeCode="SND">
    <ns1:device classCode="DEV" determinerCode="INSTANCE">
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
        ="1.2.3.4.5.1000"/>
    </ns1:device>
  </ns1:sender>
  <ns1:acknowledgement>
    <ns1:typeCode code="AA"/>
    <ns1:targetMessage>
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
        ="2.16.840.1.113883.1.6.1" extension="1461858586585"/>
    </ns1:targetMessage>
  </ns1:acknowledgement>
  <ns1:controlActProcess classCode="CACT" moodCode="EVN">
    <ns1:code xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:CD" code="
      PRPA_TE201310UV02"/>
    <ns1:queryAck>
      <ns1:queryId xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
        root="1.3.6.1.4.1.21367.13.10.218" extension="1461858589205"/>
      <ns1:statusCode code="deliveredResponse"/>
      <ns1:queryResponseCode code="NF"/>
    </ns1:queryAck>
    <ns1:queryByParameter>
      <ns1:queryId xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
        root="1.3.6.1.4.1.21367.13.10.218" extension="1461858589205"/>
      <ns1:statusCode code="new"/>
      <ns1:responsePriorityCode code="I"/>
      <ns1:parameterList>
        <ns1:dataSource>
          <ns1:value xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
            root="1.3.6.1.4.1.21367.13.20.2000"/>
          <ns1:semanticsText>DataSource.id</ns1:semanticsText>
        </ns1:dataSource>
        <ns1:patientIdentifier>
          <ns1:value xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
            root="1.3.6.1.4.1.21367.3000.1.6" extension="IHEFACILITY-998"/>
          <ns1:semanticsText>Patient.id</ns1:semanticsText>
        </ns1:patientIdentifier>
      </ns1:parameterList>
    </ns1:queryByParameter>
  </ns1:controlActProcess>
</ns1:PRPA_IN201310UV02>
```

3.5 Query Patients

3.5.1 HL7v2 Query Patients

The difference between the transactions [Query Patient IDs \(Section 3.4\)](#) and [Query Patients](#) is that the focus of [Query Patients](#) is to find entire patient records. The client generates the query message whenever

it needs to select from a list of patients whose information matches a minimal set of demographic data. To provide the option of retrieving a big amount it is possible to segment the responses by defining the maximum amount of patients returned per response, and by repeating the query having a continuation pointer set one can retrieve the next set of patients.

3.5.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction **Query Patients**.

The Query

The Patient Demographics Query is conducted by the QBP Q22 message (see [Table 31](#)).

Table 29: Message Segment Overview.

| Segment | Description |
|---------|-------------------------------------|
| MSH | Message Header |
| MSH-9-1 | The messageType must be QBP |
| MSH-9-2 | The TriggerEvent must be Q22 |
| QPD | Query Parameter Definition |
| RCP | Response Control Parameter |
| DSC | Continuation Pointer |

Message Header:

The HL7 MSH segment is present in every HL7 message type and defines the message’s source, purpose, destination, and certain syntax specifics like delimiters (separator characters) and character sets. It is always the first segment in the HL7 message, with the only exception being HL7 batch messages.

Query Parameter Definition:

echo the QPD Segment value that was sent in the QBP Q23 message.

Response Control Parameter:

The RCP Segment must only have the first element populated with an “I”, indicating that this message must be processed immediately.

Continuation Pointer:

If the PIX/PDQ holds more patients to this query, the DSC-1 is filled with the Continuation Pointer, which can be used to retrieve the next patients.

The Response:

The response message is a RSP K22 message (see [Table 30](#)):

Table 30: Patient Query Responses

| Segment | Description |
|---------|-------------------------------------|
| MSH | Message Header |
| MSH-9-1 | The messageType must be RSP |
| MSH-9-2 | The TriggerEvent must be K22 |
| MSA | Message Acknowledgement |
| ERR | Error |
| QAK | Query Acknowledgement |

Table 30: Patient Query Responses  

| Segment | Description |
|---------|-----------------------|
| QPD | QPD Segment |
| PID | PID Segment |
| DSC | Continuation Pointers |

Message Header:

The HL7 MSH segment is present in every HL7 message type and defines the message's source, purpose, destination, and certain syntax specifics like delimiters (separator characters) and character sets. It is always the first segment in the HL7 message, with the only exception being HL7 batch messages.

Message Acknowledgement:

displaying the success of the message.

Error:

If an error occurred this segment is populated with the details

Query Acknowledgement

The Query Acknowledgement repeats the Query Tag (send by the client in the QPD-2 field) and a query status.

QPD Segment:

echo the QPD Segment value that was sent in the QBP Q23 message. in the QPD-2 field) and a query status.

PID Segment:

If the corresponding patients were found, a fully filled PID segment per found patient is provided.

Continuation Pointer:

if the PIX/PDQ holds more patients to this query, the DSC-1 is filled with the Continuation Pointer, which can be used to retrieve the next patients.

3.5.1.2 Field Overview

Table 31 shows a detailed field description for the transaction [Query Patients](#).

| HL7-Path, Name | R/O, Rep# |
|--|-----------|
| QPD-1, Query Parameter Definition This is a constant value and must be „IHE PDQ Query“ (defined by the IHE) | R, N |
| QPD-2, Query Tag Name for the query. This value will be returned to find matching responses to queries. | R, N |
| QPD-3, Demographics Field A list of Key-Value pairs defining the Query parameter. | R, Y |
| QPD-8, What Domains Returned List of all Patient IDs. (Instead of querying all patient IDs, the requesting system is also able to query only a selected number of patient IDs. It does so by populating QPD-4-What Domains Returned with as many repetitions as needed. The number of repetitions equals the number of domains from which the patient IDs are supposed to come from. | O, Y |
| RCP-1, Query Priority This is a constant value and must be "I" to force an immediate response. | R, N |
| RCP-2, Quantity Limited Request Specifies the amount of patient records returned per result page. | O, N |

DSC-1, Continuation Pointer O, N
 To request additional increments of data, DSC-1 (Continuation Pointer) shall echo the value from RSP^K22 DSC-1.

DSC-2, Continuation Style O, N
 This is a constant value and must be "I" to force the following responses to be immediate as well.

R/O = Required/Optional, R = Required, O = Optional, RO = Required if known, REP# = Repetition, Y = entry can be taken from the list, N = Individual Values, Number = Maximum length of the list

Table 31: List of data set in the QPD segment to query patients.

Note
 In this transaction the RCP segment is responsible to set the quantity of returned patients.

Note
 The DSC Segment must be set, when the "next" result of an forked response (whenever the total response is bigger than the requested amount of patients in RCP-2).

Field **QPD-3-Demographics Fields** consists of one or more repetitions, each of which contains two components that together contain the name and value of a distinct parameter to the query. These parameters are values of the PID-segment:

@<seg>.<field no>.<component no>.<subcomponent no>

- <seg>
 represents a 3-character segment ID from the HL7 Standard. Since only PID parameters are allowed, this must be PID
- <field no>
 is the number of a field within the segment as shown in the SEQ column of the segment attribute table for the segment selected.
- <component no>
 for fields whose data types contain multiple components, shall contain the cardinal number of the component being valued. For fields whose data types do not contain multiple components, <component no> shall not be valued and its preceding period shall not appear.
- <subcomponent no>
 for components whose data types contain multiple subcomponents, shall contain the cardinal number of the subcomponent being valued. For components whose data types do not contain multiple subcomponents, <subcomponent no> shall not be valued and its preceding period shall not appear.

Example 44:
Submission:

```
MSH|^~\&|ITEH^1.1.2.1.1^ISO|ITEH^1.1.2.1^ISO|QUAD^1.1.1^ISO|QUAD^1.1.1^ISO|20141001115903||
QBP^Q22^QBP_Q21|1412200743762.1|P|2.5|||AL
QPD|IHE PDQ Query|QRY1412200743832|@PID.5.1.1^Mar*~@PID.8^F
RCP|I|10^RD
```

Response:

```
MSH|^~\&|QUAD^1.1.1^ISO|QUAD^1.1.1^ISO|ITEH^1.1.2.1.1^ISO|ITEH^1.1.2.1^ISO|20141001235904||
RSP^K22^RSP_K21|141220074423143501|P|2.5
MSA|AA|1412200743762.1
QAK|QRY1412200743832|OK|IHE PDQ Query|1
QPD|IHE PDQ Query|QRY1412200743832|@PID.5.1.1^Mar*~@PID.8^F
PID|||1409917720110^^^NeuGotzner Schonheitsklinik&1.1.1.3&ISO^PI~719332451557239827^^^
OTHER AUSTRIAN
SOCIAL SECURITY ASSOCIATION&1.3.6.1.4.1.9784.999200.2.1&ISO^SS~4d0d4212-d626-4894-984b-297
c5ca2ac10^^^XDS
```

3.5.2 HL7v3 Query Patients

Example 45: HL7v3 Query Patients Root Element

interactionId's extension field: PRPA_IN201305UV02

```
<ns1:PRPA_IN201305UV02 xmlns:ns1="urn:h17-org:v3" ITSVersion="XML_1.0">
  INSERT MESSAGE HEADER
  INSERT PAYLOAD
</ns1:PRPA_IN201305UV02>
```

3.5.2.1 Inbound Message Structure

The following elements are required in this specific order:

1. controlActProcess
2. controlActProcess.code
3. controlActProcess.queryByParameter
4. controlActProcess.queryByParameter.queryId
5. controlActProcess.queryByParameter.statusCode
6. controlActProcess.queryByParameter.statusCoderesponseModalityCode
7. controlActProcess.queryByParameter.responsePriorityCode
8. controlActProcess.queryByParameter.initialQuantity
9. controlActProcess.queryByParameter.initialQuantityCode
10. controlActProcess.queryByParameter.parameterList
11. controlActProcess.queryByParameter.parameterList.id
12. controlActProcess.queryByParameter.parameterList.livingSubjectAdministrativeGender
13. controlActProcess.queryByParameter.parameterList.livingSubjectName
14. controlActProcess.queryByParameter.parameterList.livingSubjectName.value
15. controlActProcess.queryByParameter.parameterList.livingSubjectName.value.given
16. controlActProcess.queryByParameter.parameterList.livingSubjectName.value.family
17. controlActProcess.queryByParameter.parameterList.semanticsText

Example 46: HL7v3 Query Patients Payload (Results in multiple pages)

```
<ns1:controlActProcess classCode="CACT" moodCode="EVN">
  <ns1:code xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:CD" code="
  PRPA_TE201305UV02"/>
  <ns1:queryByParameter>
    <ns1:queryId xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
    root="1.3.6.1.4.1.21367.13.10.218" extension="1461930384492"/>
    <ns1:statusCode code="new"/>
    <ns1:responseModalityCode code="R"/>
    <ns1:responsePriorityCode code="I"/>
    <ns1:initialQuantity xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1
    :INT" value="3"/>
    <ns1:initialQuantityCode code="RD"/>
    <ns1:parameterList>
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
      ="2.16.840.1.113883.1.6.1" extension="1461930382073"/>
      <ns1:livingSubjectAdministrativeGender>
        <ns1:value code="F"/>
        <ns1:semanticsText>LivingSubject.administrativeGender</ns1:semanticsText>
      </ns1:livingSubjectAdministrativeGender>
      <ns1:livingSubjectName>
        <ns1:value xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:PN"
        use="SRCH">
          <ns1:given>ine</ns1:given>
          <ns1:family>Bir</ns1:family>
        </ns1:value>
        <ns1:semanticsText>LivingSubject.name</ns1:semanticsText>
      </ns1:livingSubjectName>
    </ns1:parameterList>
  </ns1:queryByParameter>
```

```
</ns1:controlActProcess>
```

3.5.2.2 Outbound Message Structure

Example 47: HL7v3 Query Patients Response (Results in multiple pages)

```
<ns1:PRPA_IN201306UV02 xmlns:ns1="urn:hl7-org:v3" ITSVersion="XML_1.0">
  <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
    ="1.2.3.4.5" extension="30"/>
  <ns1:creationTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:TS"
    value="20160429134624"/>
  <ns1:versionCode code="V3PR1"/>
  <ns1:interactionId xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
    root="2.16.840.1.113883" extension="PRPA_IN201306UV02"/>
  <ns1:processingCode code="P"/>
  <ns1:processingModeCode code="T"/>
  <ns1:acceptAckCode code="NE"/>
  <ns1:receiver typeCode="RCV">
    <ns1:device classCode="DEV" determinerCode="INSTANCE">
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
        ="1.2.3.4.5.1000"/>
    </ns1:device>
  </ns1:receiver>
  <ns1:sender typeCode="SND">
    <ns1:device classCode="DEV" determinerCode="INSTANCE">
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
        ="1.2.3.4.5.1000"/>
    </ns1:device>
  </ns1:sender>
  <ns1:acknowledgement>
    <ns1:typeCode code="AA"/>
    <ns1:targetMessage>
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
        ="2.16.840.1.113883.1.6.1" extension="1461930382073"/>
    </ns1:targetMessage>
  </ns1:acknowledgement>
  <ns1:controlActProcess classCode="CACT" moodCode="EVN">
    <ns1:code xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:CD" code="
    PRPA_TE201306UV02"/>
    <ns1:subject typeCode="SUBJ" contextConductionInd="false">
      <ns1:registrationEvent classCode="REG" moodCode="EVN">
        <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
        nullFlavor="NA"/>
        <ns1:statusCode code="active"/>
        <ns1:subject1 typeCode="SBJ">
          <ns1:patient classCode="PAT">
            <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
            root="1.1.1.1.1" extension="23043655300181" assigningAuthorityName="Marias Kreuz
            Krankenhaus"/>
            <ns1:statusCode code="active"/>
            <ns1:patientPerson classCode="PSN" determinerCode="INSTANCE">
              <ns1:name xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
              PN">
                <ns1:given>Nadine</ns1:given>
                <ns1:family>Birne</ns1:family>
              </ns1:name>
              <ns1:administrativeGenderCode code="F"/>
              <ns1:birthTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type
              ="ns1:TS" value="19760615"/>
              <ns1:addr xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
              AD">
                <ns1:city>VEICHTER</ns1:city>
                <ns1:state>Lower Austria</ns1:state>
                <ns1:postalCode>4232</ns1:postalCode>
                <ns1:streetAddressLine>Spittelwiese 16</ns1:streetAddressLine>
              </ns1:addr>
              <ns1:asOtherIDs classCode="PAT">
                <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
                II" root="1.3.6.1.4.1.9784.999200.2.1.1" extension="3931150676" assigningAuthorityName="
                AUSTRIAN SOCIAL SECURITY ASSOCIATION"/>
              </ns1:asOtherIDs>
            </ns1:patientPerson>
          </ns1:subject1>
        </ns1:registrationEvent>
      </ns1:subject>
    </ns1:controlActProcess>
  </ns1:controlActProcess>

```



```

        <ns1:statusCode code="active"/>
        <ns1:scopingOrganization classCode="ORG" determinerCode="INSTANCE">
          <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:II" root="1.3.6.1.4.1.9784.999200.2.1.1"/>
        </ns1:scopingOrganization>
      </ns1:asOtherIDs>
      <ns1:asOtherIDs classCode="PAT">
        <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
II" root="1.2.3.3.3.1.3" extension="74113"/>
        <ns1:statusCode code="active"/>
        <ns1:scopingOrganization classCode="ORG" determinerCode="INSTANCE">
          <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:II" root="1.2.3.3.3.1.3"/>
        </ns1:scopingOrganization>
      </ns1:asOtherIDs>
      <ns1:asOtherIDs classCode="PAT">
        <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
II" root="1.2.3.3.3.2.1" extension="576c1266f33a4c9687d6dc636d29efd4"/>
        <ns1:statusCode code="active"/>
        <ns1:scopingOrganization classCode="ORG" determinerCode="INSTANCE">
          <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:II" root="1.2.3.3.3.2.1"/>
        </ns1:scopingOrganization>
      </ns1:asOtherIDs>
      <ns1:asOtherIDs classCode="PAT">
        <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
II" root="1.2.3.3.3.2.2" extension="84113"/>
        <ns1:statusCode code="active"/>
        <ns1:scopingOrganization classCode="ORG" determinerCode="INSTANCE">
          <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:II" root="1.2.3.3.3.2.2"/>
        </ns1:scopingOrganization>
      </ns1:asOtherIDs>
      <ns1:asOtherIDs classCode="PAT">
        <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
II" root="1.2.3.3.3.1.2" extension="94a33cb9-7526-4a3b-a7ef-524e263fae26"/>
        <ns1:statusCode code="active"/>
        <ns1:scopingOrganization classCode="ORG" determinerCode="INSTANCE">
          <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:II" root="1.2.3.3.3.1.2"/>
        </ns1:scopingOrganization>
      </ns1:asOtherIDs>
      <ns1:asOtherIDs classCode="PAT">
        <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
II" root="1.2.3.3.3.1.1" extension="23043655300181"/>
        <ns1:statusCode code="active"/>
        <ns1:scopingOrganization classCode="ORG" determinerCode="INSTANCE">
          <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:II" root="1.2.3.3.3.1.1"/>
        </ns1:scopingOrganization>
      </ns1:asOtherIDs>
      <ns1:asOtherIDs classCode="PAT">
        <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
II" root="1.1.1.1.3" extension="74113" assigningAuthorityName="NeuGötzner
Schönheitsklinik"/>
        <ns1:statusCode code="active"/>
        <ns1:scopingOrganization classCode="ORG" determinerCode="INSTANCE">
          <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:II" root="1.1.1.1.3"/>
        </ns1:scopingOrganization>
      </ns1:asOtherIDs>
      <ns1:asOtherIDs classCode="PAT">
        <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
II" root="1.1.1" extension="8056dfc9-22cc-4199-838a-c89486c23fdf"
assigningAuthorityName="XDS Affinity Domain 1"/>
        <ns1:statusCode code="active"/>
        <ns1:scopingOrganization classCode="ORG" determinerCode="INSTANCE">
          <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:II" root="1.1.1"/>
        </ns1:scopingOrganization>
      </ns1:asOtherIDs>
    </ns1:patientPerson>

```

```

        <ns1:providerOrganization classCode="ORG" determinerCode="INSTANCE">
          <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
" root="1.3.6.1.4.1.21367.13.20.2000"/>
          <ns1:contactParty classCode="CON"/>
        </ns1:providerOrganization>
        <ns1:subjectOf1>
          <ns1:queryMatchObservation classCode="COND" moodCode="EVN">
            <ns1:code xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:CD" code="IHE_PDQ"/>
            <ns1:value xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:INT" value="100"/>
          </ns1:queryMatchObservation>
        </ns1:subjectOf1>
      </ns1:patient>
    </ns1:subject1>
    <ns1:custodian typeCode="CST">
      <ns1:assignedEntity classCode="ASSIGNED">
        <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
root="1.3.6.1.4.1.21367.2010.1.2.600"/>
        <ns1:assignedOrganization classCode="ORG" determinerCode="INSTANCE">
          <ns1:name xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
EN">
            <ns1:given>org</ns1:given>
          </ns1:name>
        </ns1:assignedOrganization>
      </ns1:assignedEntity>
    </ns1:custodian>
  </ns1:registrationEvent>
</ns1:subject>
<ns1:subject typeCode="SUBJ" contextConductionInd="false">
  <ns1:registrationEvent classCode="REG" moodCode="EVN">
    <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
nullFlavor="NA"/>
    <ns1:statusCode code="active"/>
    <ns1:subject1 typeCode="SBJ">
      <ns1:patient classCode="PAT">
        <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
root="1.2.3.3.3.2.1" extension="910bee683aa7456fbec15cf0e6783f2f"/>
        <ns1:statusCode code="active"/>
        <ns1:patientPerson classCode="PSN" determinerCode="INSTANCE">
          <ns1:name xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
PN">
            <ns1:given>Christine</ns1:given>
            <ns1:family>Birne</ns1:family>
          </ns1:name>
          <ns1:administrativeGenderCode code="F"/>
          <ns1:birthTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type
="ns1:TS" value="19710520"/>
          <ns1:addr xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
AD">
            <ns1:city>PERNAROTTE</ns1:city>
            <ns1:state>Lower Austria</ns1:state>
            <ns1:postalCode>3213</ns1:postalCode>
            <ns1:streetAddressLine>Spanheimerstrasse 57</ns1:streetAddressLine>
          </ns1:addr>
          <ns1:asOtherIDs classCode="PAT">
            <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
II" root="1.2.3.3.3.2.2" extension="84118"/>
            <ns1:statusCode code="active"/>
            <ns1:scopingOrganization classCode="ORG" determinerCode="INSTANCE">
              <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:II" root="1.2.3.3.3.2.2"/>
            </ns1:scopingOrganization>
          </ns1:asOtherIDs>
          <ns1:asOtherIDs classCode="PAT">
            <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
II" root="1.1.1" extension="e7249f3c-29af-4d16-8fe8-72a453639bf3"
assigningAuthorityName="XDS Affinity Domain 1"/>
            <ns1:statusCode code="active"/>
            <ns1:scopingOrganization classCode="ORG" determinerCode="INSTANCE">
              <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:II" root="1.1.1"/>

```

```

    </ns1:scopingOrganization>
  </ns1:asOtherIDs>
  <ns1:asOtherIDs classCode="PAT">
    <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
II" root="1.1.1.2.1" extension="910bee683aa7456fbec15cf0e6783f2f" assigningAuthorityName
="Linzer Schnittenspital"/>
    <ns1:statusCode code="active"/>
    <ns1:scopingOrganization classCode="ORG" determinerCode="INSTANCE">
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:II" root="1.1.1.2.1"/>
    </ns1:scopingOrganization>
  </ns1:asOtherIDs>
  <ns1:asOtherIDs classCode="PAT">
    <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
II" root="1.2.3.3.3.1.3" extension="74118"/>
    <ns1:statusCode code="active"/>
    <ns1:scopingOrganization classCode="ORG" determinerCode="INSTANCE">
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:II" root="1.2.3.3.3.1.3"/>
    </ns1:scopingOrganization>
  </ns1:asOtherIDs>
  <ns1:asOtherIDs classCode="PAT">
    <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
II" root="1.2.3.3.3.1.2" extension="bcc49584-2094-44f8-acd7-9274c2e82a26"/>
    <ns1:statusCode code="active"/>
    <ns1:scopingOrganization classCode="ORG" determinerCode="INSTANCE">
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:II" root="1.2.3.3.3.1.2"/>
    </ns1:scopingOrganization>
  </ns1:asOtherIDs>
  <ns1:asOtherIDs classCode="PAT">
    <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
II" root="1.2.3.3.3.1.1" extension="23043660004680"/>
    <ns1:statusCode code="active"/>
    <ns1:scopingOrganization classCode="ORG" determinerCode="INSTANCE">
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:II" root="1.2.3.3.3.1.1"/>
    </ns1:scopingOrganization>
  </ns1:asOtherIDs>
  <ns1:asOtherIDs classCode="PAT">
    <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
II" root="1.3.6.1.4.1.9784.999200.2.1.1" extension="7704200571" assigningAuthorityName="
AUSTRIAN SOCIAL SECURITY ASSOCIATION"/>
    <ns1:statusCode code="active"/>
    <ns1:scopingOrganization classCode="ORG" determinerCode="INSTANCE">
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:II" root="1.3.6.1.4.1.9784.999200.2.1.1"/>
    </ns1:scopingOrganization>
  </ns1:asOtherIDs>
  <ns1:asOtherIDs classCode="PAT">
    <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
II" root="1.1.1.1.1" extension="23043660004680" assigningAuthorityName="Maria's Kreuz
Krankenhaus"/>
    <ns1:statusCode code="active"/>
    <ns1:scopingOrganization classCode="ORG" determinerCode="INSTANCE">
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:II" root="1.1.1.1.1"/>
    </ns1:scopingOrganization>
  </ns1:asOtherIDs>
</ns1:patientPerson>
<ns1:providerOrganization classCode="ORG" determinerCode="INSTANCE">
  <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II
" root="1.3.6.1.4.1.21367.13.20.2000"/>
  <ns1:contactParty classCode="CON"/>
</ns1:providerOrganization>
<ns1:subjectOf1>
  <ns1:queryMatchObservation classCode="COND" moodCode="EVN">
    <ns1:code xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:CD" code="IHE_PDQ"/>
    <ns1:value xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:INT" value="100"/>
  </ns1:queryMatchObservation>

```

```

        </ns1:subjectOf1>
    </ns1:patient>
</ns1:subject1>
    <ns1:custodian typeCode="CST">
        <ns1:assignedEntity classCode="ASSIGNED">
            <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
root="1.3.6.1.4.1.21367.2010.1.2.600"/>
            <ns1:assignedOrganization classCode="ORG" determinerCode="INSTANCE">
                <ns1:name xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
EN">
                    <ns1:given>org</ns1:given>
                </ns1:name>
            </ns1:assignedOrganization>
        </ns1:assignedEntity>
    </ns1:custodian>
</ns1:registrationEvent>
</ns1:subject>
<ns1:queryAck>
    <ns1:queryId xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
root="1.3.6.1.4.1.21367.13.10.218" extension="1461930384492"/>
    <ns1:statusCode code="deliveredResponse"/>
    <ns1:queryResponseCode code="OK"/>
    <ns1:resultTotalQuantity xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:
type="ns1:INT" value="2"/>
    <ns1:resultCurrentQuantity xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:
type="ns1:INT" value="2"/>
    <ns1:resultRemainingQuantity xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi
:type="ns1:INT" value="0"/>
</ns1:queryAck>
<ns1:queryByParameter>
    <ns1:queryId xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
root="1.3.6.1.4.1.21367.13.10.218" extension="1461930384492"/>
    <ns1:statusCode code="new"/>
    <ns1:responseModalityCode code="R"/>
    <ns1:responsePriorityCode code="I"/>
    <ns1:initialQuantity xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:INT" value="3"/>
    <ns1:initialQuantityCode code="RD"/>
    <ns1:parameterList>
        <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
="2.16.840.1.113883.1.6.1" extension="1461930382073"/>
        <ns1:livingSubjectAdministrativeGender>
            <ns1:value code="F"/>
            <ns1:semanticsText>LivingSubject.administrativeGender</ns1:semanticsText>
        </ns1:livingSubjectAdministrativeGender>
        <ns1:livingSubjectName>
            <ns1:value xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:PN"
use="SRCH">
                <ns1:given>ine</ns1:given>
                <ns1:family>Bir</ns1:family>
            </ns1:value>
            <ns1:semanticsText>LivingSubject.name</ns1:semanticsText>
        </ns1:livingSubjectName>
    </ns1:parameterList>
</ns1:queryByParameter>
</ns1:controlActProcess>
</ns1:PRPA_IN201306UV02>

```

Example 48: HL7v3 Query Patients Response with one Result

```

<ns1:PRPA_IN201306UV02 xmlns:ns1="urn:hl7-org:v3" ITSVersion="XML_1.0">
    <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
="1.2.3.4.5" extension="30"/>
    <ns1:creationTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:TS"
value="20160429132958"/>
    <ns1:versionCode code="V3PR1"/>
    <ns1:interactionId xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
root="2.16.840.1.113883" extension="PRPA_IN201306UV02"/>
    <ns1:processingCode code="P"/>
    <ns1:processingModeCode code="T"/>
    <ns1:acceptAckCode code="NE"/>

```

```

<ns1:receiver typeCode="RCV">
  <ns1:device classCode="DEV" determinerCode="INSTANCE">
    <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
    ="1.2.3.4.5.1000"/>
  </ns1:device>
</ns1:receiver>
<ns1:sender typeCode="SND">
  <ns1:device classCode="DEV" determinerCode="INSTANCE">
    <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
    ="1.2.3.4.5.1000"/>
  </ns1:device>
</ns1:sender>
<ns1:acknowledgement>
  <ns1:typeCode code="AA"/>
  <ns1:targetMessage>
    <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
    ="2.16.840.1.113883.1.6.1" extension="1461929395451"/>
  </ns1:targetMessage>
</ns1:acknowledgement>
<ns1:controlActProcess classCode="CACT" moodCode="EVN">
  <ns1:code xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:CD" code="
  PRPA_TE201306UV02"/>
  <ns1:subject typeCode="SUBJ" contextConductionInd="false">
    <ns1:registrationEvent classCode="REG" moodCode="EVN">
      <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
      nullFlavor="NA"/>
      <ns1:statusCode code="active"/>
      <ns1:subject1 typeCode="SBJ">
        <ns1:patient classCode="PAT">
          <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
          root="1.1.1.1.1" extension="12272436094084" assigningAuthorityName="Marias Kreuz
          Krankenhaus"/>
          <ns1:statusCode code="active"/>
          <ns1:patientPerson classCode="PSN" determinerCode="INSTANCE">
            <ns1:name xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
            PN">
              <ns1:given>Karin</ns1:given>
              <ns1:family>Thalberg</ns1:family>
            </ns1:name>
            <ns1:administrativeGenderCode code="F"/>
            <ns1:birthTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type
            ="ns1:TS" value="19491206"/>
            <ns1:addr xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
            AD">
              <ns1:city>GRIESBACH</ns1:city>
              <ns1:state>Lower Austria</ns1:state>
              <ns1:postalCode>3822</ns1:postalCode>
              <ns1:streetAddressLine>Salzburgerstrasse 37</ns1:streetAddressLine>
            </ns1:addr>
            <ns1:asOtherIDs classCode="PAT">
              <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
              II" root="1.1.1" extension="13ea7dcc-59e2-40de-87a9-439c68418d0f"
              assigningAuthorityName="XDS Affinity Domain 1"/>
              <ns1:statusCode code="active"/>
              <ns1:scopingOrganization classCode="ORG" determinerCode="INSTANCE">
                <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
                ns1:II" root="1.1.1"/>
              </ns1:scopingOrganization>
              </ns1:asOtherIDs>
            </ns1:patientPerson>
            <ns1:providerOrganization classCode="ORG" determinerCode="INSTANCE">
              <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II
              " root="1.3.6.1.4.1.21367.13.20.2000"/>
              <ns1:contactParty classCode="CON"/>
            </ns1:providerOrganization>
            <ns1:subjectOf1>
              <ns1:queryMatchObservation classCode="COND" moodCode="EVN">
                <ns1:code xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
                ns1:CD" code="IHE_PDQ"/>
                <ns1:value xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
                ns1:INT" value="100"/>
              </ns1:queryMatchObservation>

```

```

        </ns1:subjectOf1>
    </ns1:patient>
</ns1:subject1>
    <ns1:custodian typeCode="CST">
        <ns1:assignedEntity classCode="ASSIGNED">
            <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
root="1.3.6.1.4.1.21367.2010.1.2.600"/>
            <ns1:assignedOrganization classCode="ORG" determinerCode="INSTANCE">
                <ns1:name xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
EN">
                    <ns1:given>org</ns1:given>
                </ns1:name>
            </ns1:assignedOrganization>
        </ns1:assignedEntity>
    </ns1:custodian>
</ns1:registrationEvent>
</ns1:subject>
<ns1:queryAck>
    <ns1:queryId xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
root="1.3.6.1.4.1.21367.13.10.218" extension="1461929398022"/>
    <ns1:statusCode code="deliveredResponse"/>
    <ns1:queryResponseCode code="OK"/>
    <ns1:resultTotalQuantity xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:
type="ns1:INT" value="1"/>
    <ns1:resultCurrentQuantity xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:
type="ns1:INT" value="1"/>
    <ns1:resultRemainingQuantity xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi
:type="ns1:INT" value="0"/>
</ns1:queryAck>
<ns1:queryByParameter>
    <ns1:queryId xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
root="1.3.6.1.4.1.21367.13.10.218" extension="1461929398022"/>
    <ns1:statusCode code="new"/>
    <ns1:responseModalityCode code="R"/>
    <ns1:responsePriorityCode code="I"/>
    <ns1:initialQuantity xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:INT" value="30"/>
    <ns1:initialQuantityCode code="RD"/>
    <ns1:parameterList>
        <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II" root
="2.16.840.1.113883.1.6.1" extension="1461929395451"/>
        <ns1:livingSubjectAdministrativeGender>
            <ns1:value code="F"/>
            <ns1:semanticsText>LivingSubject.administrativeGender</ns1:semanticsText>
        </ns1:livingSubjectAdministrativeGender>
        <ns1:livingSubjectBirthTime>
            <ns1:value xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
IVL_TS" value="19491206"/>
            <ns1:semanticsText>LivingSubject.BirthTime</ns1:semanticsText>
        </ns1:livingSubjectBirthTime>
        <ns1:livingSubjectName>
            <ns1:value xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:PN
">
                <ns1:given>Karin</ns1:given>
                <ns1:family>Thalberg</ns1:family>
            </ns1:value>
            <ns1:semanticsText>LivingSubject.name</ns1:semanticsText>
        </ns1:livingSubjectName>
    </ns1:parameterList>
</ns1:queryByParameter>
</ns1:controlActProcess>
</ns1:PRPA_IN201306UV02>

```

4 Document Administration

The IHE defines how documents are submitted within the XDS infrastructure in *ITI-41 Provide and Register Document Set-b*. The client submits a document to the Document Repository by first “providing” it to the Document Repository and consequently “registering” it in the Document Registry. According to the IHE, this transaction is based on ebXML, not HL7. *sense*[®] provides a [Document Administration](#) interface based on the HL7v2 MDM messages to enable systems which already have a working MDM interface to submit documents within the XDS infrastructure. [Table 32](#) shows all supported transactions for administrating documents.

The [Consumer App](#) supports importing documents using HL7 MDM to a local system e.g. archive. To ensure that documents will be assigned to the correct patient, the identifiers SVNR and XAD PID (global identifier) are used. It is possible to replace the XAD PID with the local patient ID, however, the following rule applies: If the local patient ID and the patient assigning authority are transmitted within the integration call-up such as a URL call or over SAML, the MDM must include these parameters instead of the global identifier (XAD PID).

Table 32: Document Administration Supported Transactions.

| Message type | Description |
|--------------|--|
| MDM^T02 | Submit new Document. |
| MDM^T04 | Document status change notification and content. |
| MDM^T06 | Append a Document to an existing one. |
| MDM^T08 | Submit a Transformation of an existing Document |
| MDM^T10 | Submit a Replacement of an existing Document |
| MDM^T11 | Deprecate a document. |

4.1 Submit Document

4.1.1 HL7v2 Submit Document

The following HL7 message can be received and processed in order to submit a new document to the XDS infrastructure:

- **MDM T02** – Submit Document.

Note

Additionally, the HL7 message [Submit Document](#) updates documents if the unique ID of the document is already known.

4.1.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction [Submit Document](#).

Table 33: Message Structure Segments

| Segment | Description |
|---------|-------------------------------------|
| MSH | Message Header |
| MSH-9-1 | The messageType must be MDM |
| MSH-9-2 | The TriggerEvent must be T02 |
| EVN | Event Information |
| PID | Patient Information |
| PV1 | Case Information |
| OBR | Observation Information |
| TXA | Document Header |
| OBX | Document |
| ZRI | Document Reference ID List |

4.1.1.2 Field Overview

The the mapping from the MDM^T02 to the XDS datastructure is shown in the following tables:

SessionInfo:

Containing information about the current Session (Table 34).

SubmissionInfo:

Containing information about the current submission (Table 35).

DocumentMetadata:

Metadata describing the document (Table 36).

Document:

The document itself (Table 37).

| HL7-Path, Name | R/O, Rep# |
|--|-----------|
| MSH-3-1 , sendingApplication.name Name of the sending application. | R |
| MSH-3-2 , sendingApplication.oid OID of the sending application. | R |
| MSH-4-1 , sendingFacility.name Name of the sending facility. | R |
| MSH-4-2 , sendingFacility.oid OID of the sending facility | R |
| EVN-5 , userName Name of the user who triggered the submission. | R |
| EVN-5 , userID Name of the user who triggered the submission. | R |
| MSH-10 , sessionID Unique identifier of this session. | R |

R/O = Required/Optional, R = Required, O = Optional, RO = Required if known, REP# = Repetition, Y = entry can be taken from the list, N = Individual Values, Number = Maximum length of the list

Table 34: Mapping from HL7 MDM message to XDS Data - SessionInfo.

| HL7-Path, Name | R/O, Rep# |
|---|-----------|
| MSH-4-2 , submissionSetUniqueID Unique ID of the submission. This value is generated using the pattern: MSH-4-2 + . + Thead-ID + . + currentMillis. | R |
| PV1-3-4-1 , institution.name Name of the institution where the document originates from. | R |
| PV1-3-4-2 , institution.oid OID of the institution where the document originates from. | R |
| OBR-31-1 , contentTypeCode.value Content Type of the Submission: Value. | R |
| OBR-31-2 , contentTypeCode.displayName Content Type of the Submission: human readable display name. | R |
| OBR-31-3 , contentTypeCode.codingScheme Content Type of the Submission: Coding Scheme. | R |
| TXA-9-2 , author.lastName Given name of the author of the submission. This is the same as the author of the document. | R |
| TXA-9-3 , author.firstName Family name of the author of the submission. This is the same as the author of the document. | R |
| TXA-16 , title Title of the submission. This is the title of the document. | R |

R/O = Required/Optional, R = Required, O = Optional, RO = Required if known, REP# = Repetition, Y = entry can be taken from the list, N = Individual Values, Number = Maximum length of the list

Table 35: Mapping from HL7 MDM message to XDS Data - SubmissionInfo.

| HL7-Path, Name | R/O, Rep# |
|--|-----------|
| MSH-6-2 , homeCommunityID OID of the affinity domain where the document will be stored. | R |
| MSH-19 , languageCode Specifies the human language of the document. Format according RFC-3066. | R |
| PID-3 , patientInfo.socialSecurityNumber Social security number of the patient. Important: The social security number will be identified within the list of patient identifiers (PID-3) by the OID of the social security association. | R |
| PID-3 , patientInfo.sourcePatientID Patient identifier of the local CIS/RIS/PACS...Important: The Patient Identifier will be identified within the list of patient identifiers (PID-3) by the identifier type code PI. | R |
| PID-5-1 , patientInfo.familyName Family name of the patient. | R |
| PID-5-2 , patientInfo.givenName Given name of the patient. | R |
| PID-5-3 , patientInfo.secondAndFurtherNames[0] Second and further names of the patient | O |
| PID-5-4 , patientInfo.suffix Name suffix of the patient. | O |

| | |
|--|---|
| PID-5-5, patientInfo.prefix Name prefix of the patient. | O |
| PID-7, patientInfo.birthdate Birtdate of the patient, who has the document assigned. | R |
| PID-8, patientInfo.gender Gender of the patient. | R |
| PID-11-1, patientInfo.address.street Address of the patient: streetline with dwelling number. | R |
| PID-11-3, patientInfo.address.city Address of the patient: city. | R |
| PID-11-5, patientInfo.address.postalCode Address of the patient: postal code. | R |
| PID-11-6, patientInfo.address.country Address of the patient: country. | R |
| PV1-2-1, eventCodes[0].value Event Codes contain additional information to the document. Part 1: Obersvation Type. (inpatient, outpatient,...): typecode. | R |
| PV1-2-2, eventCodes[0].displayName Event Codes contain additional information to the document. Part 1: Obersvation Type. (inpatient, outpatient,...): display name. | R |
| PV1-2-3, eventCodes[0].codingScheme Event Codes contain additional information to the document. Part 1: Obersvation Type. (inpatient, outpatient,...): coding scheme. | R |
| PV1-3-4-1, institution.name Name of the institution where the document originates from. | R |
| PV1-3-4-2, institution.oid OID of the institution where the document originates from. | R |
| PV1-3-4-2 + TXA-12-1, sourceDocumentID Globally unique identifier of the document. To achieve to be globally unique the OID of the institution (PV1-3-4-2) will be concatenated with the local document identifier (TXA-12-1). | R |
| PV1-3-7-2, department Name of the Department where the document originates from. | O |
| PV1-3-7-3, subDepartment Name of the Sub-department where the document originates from. | O |
| PV1-3-10-1, practiceSettingCode.value Specifies the speciality of the department where the document originates from: value. | R |
| PV1-3-10-2, practiceSettingCode.displayName Specifies the speciality of the department where the document originates from: human readable display name. | R |
| PV1-3-10-3, practiceSettingCode.codingScheme Specifies the speciality of the department where the document originates from: coding scheme. | R |
| PV1-10-1, healthcareFacilityTypeCode.value Specifies the type of the facility where the document originates from: value. | R |
| PV1-10-2, healthcareFacilityTypeCode.displayName Specifies the type of the facility where the document originates from: human readable display name. | R |
| PV1-10-3, healthcareFacilityTypeCode.codingScheme Specifies the type of the facility where the document originates from: coding scheme. | R |

| | |
|--|---|
| OBR-7, serviceStartTime Start time of the medical service. | R |
| OBR-8, serviceStopTime End time of the medical service. | R |
| OBR-31, eventCodes Additional EventCodes: listed values are possible. | O |
| TXA-2-1, typeCode.value Code specifying the particular type of the document: value. Note that the field classCode.value will be directly mapped to this value. | R |
| TXA-2-2, typeCode.displayName.value Code specifying the particular type of the document: Human readable display name. | R |
| TXA-2-2, classCode.displayName Code specifying the particular type of the document: Human readable display name. | R |
| TXA-2-3, classCode.codingScheme Code specifying the particular type of the document: Coding scheme. | R |
| TXA-2-3, typeCode.codingScheme Code specifying the particular type of the document: Coding scheme. | R |
| TXA-3-1, mimeType Mime type of the document. | R |
| TXA-3-2, formatCode.value This code identifies the format of the document (e.g. "ScanPDF/IHE 1.0"): value | R |
| TXA-3-3, formatCode.displayName This code identifies the format of the document (e.g. "ScanPDF/IHE 1.0"): human readable display name. | R |
| TXA-3-4, formatCode.codingScheme This code identifies the format of the document (e.g. "ScanPDF/IHE 1.0"): coding scheme. | R |
| TXA-6, creationTime Time when the Author created the document. | R |
| TXA-9-2, author.lastName Family Name of the author. | R |
| TXA-9-3, author.firstName Given Name of the author. | R |
| TXA-10-2, legalAuthenticator.lastName Family name of the authenticator of the document. | R |
| TXA-10-3, legalAuthenticator.firstName Given name of the authenticator of the document. | R |
| TXA-16, title Title of the document. | R |
| TXA-18, confidentialityCodes[0].value This code is used to specify the level of confidentiality: value. | R |
| TXA-18-2, confidentialityCodes[0].codingScheme This code is used to specify the level of confidentiality: coding scheme. | R |
| TXA-19, availabilityStatus Availability status of the document. Possible values are: F if the document is final and should be stored/updated. D if the document is deprecated and should be deleted. | R |
| ZRI-1, set-id.uniqueId Unique numeric HL7 Segment ID (required field). | O |

| | |
|--|-----|
| ZRI-2 , cx.referenceId | O |
| The Reference ID with Assigning Authority (required field). | |
| ZRI-3 , cwe.identifierTypeCode | R/O |
| The Identifier Type Code of the Reference ID (required field) e.g. for a case visit ID, see urn:sense:2015:caseld | |

R/O = Required/Optional, R = Required, O = Optional, RO = Required if known, REP# = Repetition, Y = entry can be taken from the list, N = Individual Values, Number = Maximum length of the list

Table 36: Mapping from HL7 MDM message to XDS Data - Document Metadata.

| HL7-Path, Name | R/O, Rep# |
|---|-----------|
| OBX-2 , Document submission type | R |
| This represents how the document is submitted. In this case the value must be set to ED (Embedded Document) to signalize that the binary content can be found in OBX-5. | |
| OBX-5 , Binary Content | R |
| The binary content Base64 encoded. | |

R/O = Required/Optional, R = Required, O = Optional, RO = Required if known, REP# = Repetition, Y = entry can be taken from the list, N = Individual Values, Number = Maximum length of the list

Table 37: Mapping from HL7 MDM message to XDS Data - Document.

Example 49: Submitting Documents

```
MSH|^~\&|SendingApplicationName^1.2.3.4.5^ISO|SendingFacilityName^1.1.1.2.98^ISO||^1.1.1.1^
ISO||MDM^T02|||||de-AT-1996
EVN||||^UserFamilyName^UserGivenName
PID||1231451^^^AUSTRIAN SOCIAL SECURITY ASSOCIATION&2.1.414.1.4.14&ISO^SS-pat1125^^^
SendingFacilityName&1.2.3.4.6&ISO||PatientFamilyName^PatientGivenName||20110706094842|M
||Mainstreet 23^^Innsbruck^^6020
PV1||^SendingFacilityName&1.2.3.4.6&ISO^^^Department&SubDepartment^^^419192003&Innere
Medizin&SNOMED_CT|||||ETU^Notfall- / Traumaeinheit^2.16.840.1.113883.5.11
OBR|||||20110706094842|20110706094842|||||ABC1^DEF^1.3.4.2|Counseling^
Konsil^sense_contentTypeCodes|ABC3^DEF^1.3.4.2
TXA||11490-0^Zusammenfassung bei Entlassung (Arzt)^LOINC|application/pdf^ScanPDF/IHE 1.x^
ScanPDF/IHE 1.x^sense_formatCodes||20110706094842||^AuthorFamilyName^AuthorGivenName|^
LegalAuthenticatorFamilyName^LegalAuthenticatorGivenName||docID1309938522620|||HL7v2
TestDocument||N^2.16.840.1.113883.5.25|F
OBX|1|ED|^DOCBLOCK|0|
JVBERi0xLjQKJc0kw7zDts0fCjIgmCBvYmoKPDwvTGvUz3RoIDMgMCBSL0ZpbHRlcj9GbGF0ZURlY29kZT4+
CnN0cmVhbQp4n0Ubyf4okufHeX5HnAdcpJSUCYuhqqvL+Nj2gD9g7V1jpm1mL/v7lJjDdcgIRVX32GYNyzAzSK1
...i0k1uI|||||F|
OBX|2|ED|^DOCBLOCK|1|bpJEw+
Mfu5XSQYsU7VByhF1eDUmARDRBk1JkG1wuDN1a9nY7pDtpxIKmGMHg31bSacSM7fJg6K+//u0xmHT+bw5o1+
h4Kds2Q8RK2VYPe+1yp3MsyS+JrhdwRfuFXkVAr4hjonREzBEdbz3CREdJZ2niLu5UMv/dKKRvILZSOBK....+
A75Tv|||||F|
OBX|3|ED|^DOCBLOCK|2|tE/hm2CE1ItbsmHJySwssAQvaQn6atqrN1Qz1fvcvJid+YEyZI/
t6HDMHFNH7SeIVUTOQKCykidLaiNCOD30oS1mY979lavhhZjtlwmm0ZEoE+wi35r8VmJvYd15B3WaM/
ncLI7WApXIO5h/wzf3iizLzjX1nP/KDP/CX5/qnsX...VPRgo=|||||F|
ZRI|1|1.3.6.1.4.101^^^&1.2.3.4&ISO|urn:sense:2016:studyInstanceUID
ZRI|2|1.2.7.8.1.1^^^&1.2.7.3.2&ISO|urn:ihe:iti:xds:2013:accession
ZRI|3|1.2.7.8.1.2^^^&1.2.7.3.2&ISO|urn:ihe:iti:xds:2013:accession
```

4.2 Append Document

4.2.1 HL7v2 Append Document

The following HL7 message can be received and processed in order to append a document:

■ **MDM T06** – Append Document.

The submission of an addendum document creates a linkage between an existing document and the addendum document. The append relationship leaves the original document with its availabilityStatus unchanged (Approved).

Note

An appended document might be any document that is associated with the initial document but differs in content.

4.2.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction **Append Document**.

Table 38: Append Document Segments

| Segment | Description |
|---------|-------------------------------------|
| MSH | Message Header |
| MSH-9-1 | The messageType must be MDM |
| MSH-9-2 | The TriggerEvent must be T06 |
| EVN | Event Information |
| PID | Patient Information |
| PV1 | Case Information |
| OBR | Observation Information |
| TXA | Document Header |
| OBX | Document |

4.2.1.2 Field Overview

The message syntax does not differ from the syntax of submitting a document (see [Table 34](#), [Table 35](#), [Table 36](#), [Table 37](#)), but one exception: Within the document metadata the document ID of the initial document (which gets the addendum) must be set as shown in [Table 39](#):

| HL7-Path, Name | R/O, Rep# |
|--|-----------|
| TXA-13 , document.parentDocumentID Document ID of the Parent document. | R |

R/O = Required/Optional, **R** = Required, **O** = Optional, **RO** = Required if known, **REP#** = Repetition, **Y** = entry can be taken from the list, **N** = Individual Values, **Number** = Maximum length of the list

Table 39: Mapping from HL7 MDM message to XDS Data for Document Addendum.

Example 50:

```
MSH|^~\&|SendingApplicationName^1.2.3.4.5^ISO|SendingFacilityName^1.1.1.2.98^ISO||^1.1.1.1^
ISO||MDM^T06|||||||de-AT-1996
EVN||||^UserFamilyName^UserGivenName
PID|||1231451^^^AUSTRIAN SOCIAL SECURITY ASSOCIATION&2.1.414.1.4.14&ISO^SS~pat1125^^^
SendingFacilityName&1.2.3.4.6&ISO||PatientFamilyName^PatientGivenName||20110706094842|M
||Mainstreet 23^^Innsbruck^^6020
PV1|||^SendingFacilityName&1.2.3.4.6&ISO^^^&Department&SubDepartment^^^419192003&Innere
Medizin&SNOMED_CT|||||ETU^Notfall- / Traumaeinheit^2.16.840.1.113883.5.11
```

```

OBR|||20110706094842|20110706094842|||ABC1^DEF^1.3.4.2|Counseling^
Konsil^sense_contentTypeCodes|ABC3^DEF^1.3.4.2
TXA||11490-0^Zusammenfassung bei Entlassung (Arzt)^L0INC|application/pdf^ScanPDF/IHE 1.x^
ScanPDF/IHE 1.x^sense_formatCodes||20110706094842||^AuthorFamilyName^AuthorGivenName|^
LegalAuthenticatorFamilyName^LegalAuthenticatorGivenName||docID1309938522620|
parentDocID1309938522620||HL7v2 TestDocument||N^2.16.840.1.113883.5.25|F
OBX|1|ED|^DOCBLOCK|0|
JVBERi0xLjQKJc0kw7zDts0fCjIgmCBvYmoKPDwvTGvUz3RoIDMgMCBSL0ZpbHRlci9GbGF0ZURlY29kZT4+
CnN0cmVhbQp4n0Uby4okufHeX5HnAdcqPJSUCYuhqqvL+Nj2gD9g7V1jpm1mL/v71jJDocgIRVX32GYNyzAzSK1
...i0k1uI|||F|
OBX|2|ED|^DOCBLOCK|1|bpJEw+
Mfu5XSQYsU7VByhF1eDUmARDRBk1JkG1wuDN1a9nY7pDTpxIKmGMHg31bSacSM7fJg6K+//u0xmHT+bw5o1+
h4Kds2Q8RK2VYPe+1yp3MsyS+JrhdWRfUfXkVAR4hjonREzBEDbz3CREdJZ2niLu5UMv/dKKRvILZS0BK...+
A75Tv|||F|
OBX|3|ED|^DOCBLOCK|2|tE/hm2CE1ItbsmHJySwssAQvaQn6atqrN1Qz1fcvJid+YEyZI/
t6HdMHfNH7SeIVUtOQKCykidLaiNCOD30oS1mY979lavhhZjtlWwmm0ZEoE+wi35r8VmJVyD15B3WaM/
ncLI7WApXI05h/wzf3iizLzjX1nP/KDP/CX5/qnsX...VPRgo=|||F|

```

4.3 Transform Document

4.3.1 HL7v2 Transform Document

The following HL7 message can be received and processed in order to transform a document:

- **MDM T08** – Transform Document.

The submission of a transformation document creates a linkage between an existing document and the transformation document. The transform relationship leaves the original document with its availability status unchanged (Approved).

Note

A transformation document might be a translation or different representation (PDF and plain-text) version of the initial document.

4.3.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction Transform Document.

Table 40: Transform Document Segments

| Segment | Description |
|---------|-------------------------------------|
| MSH | Message Header |
| MSH-9-1 | The messageType must be MDM |
| MSH-9-2 | The TriggerEvent must be T08 |
| EVN | Event Information |
| PID | Patient Information |
| PV1 | Case Information |
| OBR | Observation Information |
| TXA | Document Header |
| OBX | Document |

4.3.1.2 Field Overview

The message syntax does not differ from the syntax of submitting a document (see [Table 34](#), [Table 35](#), [Table 36](#), [Table 37](#)), but one exception: The document ID of the initial document (which gets the transformation) must be set as shown in [Table 41](#):

| HL7-Path, Name | R/O, Rep# |
|--|-----------|
| TXA-13 , document.parentDocumentID Document ID of the Parent document. | R |

R/O = Required/Optional, R = Required, O = Optional, RO = Required if known, REP# = Repetition, Y = entry can be taken from the list, N = Individual Values, Number = Maximum length of the list

Table 41: Mapping from HL7 MDM message to XDS Data for Document Transform.

Example 51:

```
MSH|^~\&|SendingApplicationName^1.2.3.4.5^ISO|SendingFacilityName^1.1.1.2.98^ISO||^1.1.1.1^
ISO||MDM^T08|||||de-AT-1996
EVN||||^UserFamilyName^UserGivenName
PID||1231451^^^AUSTRIAN SOCIAL SECURITY ASSOCIATION&2.1.414.1.4.14&ISO^SS-pat1125^^^
SendingFacilityName&1.2.3.4.6&ISO|PatientFamilyName^PatientGivenName||20110706094842|M
||Mainstreet 23^^Innsbruck^^6020
PV1||^S^SendingFacilityName&1.2.3.4.6&ISO^^^&Department&SubDepartment^^^419192003&Innere
Medizin&SNOMED_CT|||||ETU^Notfall- / Traumaeinheit^2.16.840.1.113883.5.11
OBR|||||20110706094842|20110706094842|||||ABC1^DEF^1.3.4.2|Counseling^
Konsil^sense_contentTypeCodes|ABC3^DEF^1.3.4.2
TXA||11490-0^Zusammenfassung bei Entlassung (Arzt)^L0INC|application/pdf^ScanPDF/IHE 1.x^
ScanPDF/IHE 1.x^sense_formatCodes||20110706094842||^AuthorFamilyName^AuthorGivenName|^
LegalAuthenticatorFamilyName^LegalAuthenticatorGivenName||docID1309938522620|
parentDocID1309938522620||HL7v2 TestDocument|^N^2.16.840.1.113883.5.25|F
OBX|1|ED|^DOCBLOCK|0|
JVBERi0xLjQKJc0kw7zDts0fCjIgmCBvYmoKPDwvTGvuZ3RoIDMgMCBSL0ZpbHRlci9GbGF0ZURlY29kZT4+
CnN0cmVhbQp4n0Uby4okufHeX5HnAdcqPJSUCYuhqqvL+Nj2gD9g7V1jpm1mL/v71jJDocgIRVX32GYNyzAzSK1
...i0kLuI||||F|
OBX|2|ED|^DOCBLOCK|1|bpJEw+
Mfu5XSQYsU7VByhF1eDUmARDRBk1JkG1wuDN1a9nY7pDTpxIKmGMHg31bSacSM7fJg6K+//u0xmHT+bw5o1+
h4Kds2Q8RK2YYPe+1yp3MsyS+JrhdWRfUFXkVAR4hjonREzBEDbz3CREdJZ2niLu5UMv/dKKRviLZSOBK....+
A75Tv||||F|
OBX|3|ED|^DOCBLOCK|2|tE/hm2CE1ItbsMHJySwssAQvaQn6atqrN1Qz1fvcvJid+YEyZI/
t6HDMHfNH7SeIVUtOQKCykidLaiNCOD30oS1mY979lavhhZjtlwmm0ZEoE+wi35r8VmJVyD15B3WaM/
ncLI7WApXI05h/wzF3iizLzjX1nP/KDP/CX5/qnsX...VPRgo=||||F|
```

4.4 Replace Document

4.4.1 HL7v2 Replace Document

The following HL7 message can be received and processed in order to replace a document:

■ MDM T10 – Replace Document.

The submission of an replacement document creates a linkage between an existing document and the replacement document. The availabilityStatus of the initial document will be changed to “deprecated” and the newly created replacement document is set to “approved”.

4.4.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction Replace Document.

Table 42: Replace Document Segments

| Segment | Description |
|---------|-------------------------------------|
| MSH | Message Header |
| MSH-9-1 | The messageType must be MDM |
| MSH-9-2 | The TriggerEvent must be T10 |
| EVN | Event Information |
| PID | Patient Information |
| PV1 | Case Information |
| OBR | Observation Information |
| TXA | Document Header |
| OBX | Document |

4.4.1.2 Field Overview

The message syntax does not differ from the syntax of submitting a document (see [Table 34](#), [Table 35](#), [Table 36](#), [Table 37](#)), but one exception: The document ID of the initial document (which gets the replacement) must be set as shown in [Table 43](#):

| HL7-Path, Name | R/O, Rep# |
|--|-----------|
| TXA-13 , document.parentDocumentID Document ID of the Parent document. | R |

R/O = Required/Optional, R = Required, O = Optional, RO = Required if known, REP# = Repetition, Y = entry can be taken from the list, N = Individual Values, Number = Maximum length of the list

Table 43: Mapping from HL7 MDM message to XDS Data for Document Replacement.

Example 52:

```
MSH|^~\&|SendingApplicationName^1.2.3.4.5^ISO|SendingFacilityName^1.1.1.2.98^ISO||^1.1.1.1^
ISO||MDM^T10|||||de-AT-1996
EVN||||^UserFamilyName^UserGivenName
PID||1231451^^^AUSTRIAN SOCIAL SECURITY ASSOCIATION&2.1.414.1.4.14&ISO^SS~pat1125^^^
SendingFacilityName&1.2.3.4.6&ISO||PatientFamilyName^PatientGivenName||20110706094842|M
||Mainstreet 23^^Innsbruck^^6020
PV1||^SS^SendingFacilityName&1.2.3.4.6&ISO^^^&Department&SubDepartment^^^419192003&Innere
Medizin&SNOMED_CT|||||ETU^Notfall- / Traumaeinheit^2.16.840.1.113883.5.11
OBR|||||20110706094842|20110706094842|||||ABC1^DEF^1.3.4.2|Counseling^
Konsil^sense_contentTypeCodes|ABC3^DEF^1.3.4.2
TXA||11490-0^Zusammenfassung bei Entlassung (Arzt)^LOINC|application/pdf^ScanPDF/IHE 1.x^
ScanPDF/IHE 1.x^sense_formatCodes||20110706094842||^AuthorFamilyName^AuthorGivenName|^
LegalAuthenticatorFamilyName^LegalAuthenticatorGivenName||docID1309938522620|
parentDocID1309938522620||HL7v2 TestDocument|^N^2.16.840.1.113883.5.25|F
OBX|1|ED|^DOCBLOCK|0|
JVBERi0xLjQKJc0kw7zDtsOfCjIgmCBvYmoKPDwvTGvUz3RoIDMgMCBSL0ZpbHRlci9GbGF0ZURlY29kZT4+
CnN0cmVhbQp4n0Uby4okufHex5HnAdcqpJSUCYuhqqvL+Nj2gd9g7V1jpm1mL/v71jJDocgIRVX32GYnyzAzSK1
...i0k1uI|||||F|
OBX|2|ED|^DOCBLOCK|1|bpJEw+
Mfu5XSQYsU7VByhF1eDumARDBk1JkG1wuDN1a9nY7pDTpxIKmGMHg31bSacSM7fJg6K+//u0xmHT+bw5o1+
h4Kds2Q8RK2VYPe+lyp3Mys+JrhdrWrfuFkVAR4hjonREzBEdbz3CREdJZ2niLu5UMv/dKKRViLZS0BK...+
A75Tv|||||F|
OBX|3|ED|^DOCBLOCK|2|tE/hm2CE1ItbsmHJySwssAQvaQn6atqrN1Qz1fcvJid+YEyZI/
t6HDMhFNH7SeIVUtOQKCykidLaiNCOD30oS1mY979lavhhZjtlWwmmOZEoE+wi35r8VmJVyD15B3WaM/
ncLI7WApXI05h/wzF3iizLzjX1nP/KDP/CX5/qnsX...VPRgo=|||||F|
```


4.5 Deprecate Document

4.5.1 HL7v2 Deprecate Document

The following HL7 message can be received and processed in order to deprecate a document:

- **MDM T11** – Deprecate Document.

This method is used to deprecate a document. The deprecated document is not removed from the infrastructure but set from the document status *approved* to *deprecated*.

Note

Setting a document to the status “deprecated” does still display the document in the default result set. Nevertheless, the document is clearly recognisable as “deprecated” since it is crossed out in the [Consumer App](#).

4.5.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction *Reprecate Document*.

Table 44: Deprecate Document Segments

| Segment | Description |
|---------|-------------------------------------|
| MSH | Message Header |
| MSH-9-1 | The messageType must be MDM |
| MSH-9-2 | The TriggerEvent must be T11 |
| EVN | Event Information |
| PID | Patient Information |
| PV1 | Case Information |
| OBR | Observation Information |
| TXA | Document Header |

4.5.1.2 Field Overview

The message syntax differs only little from the syntax of submitting a document (see [Table 34](#), [Table 35](#), [Table 36](#)): it entirely misses the binary document itself (the OBX segment is missing).

Example 53:

```
MSH|^~\&|SendingApplicationName^1.2.3.4.5^ISO|SendingFacilityName^1.1.1.2.98^ISO||^1.1.1.1^
ISO|||MDM^T11|||||de-AT-1996
EVN||||^UserFamilyName^UserGivenName
PID|||1231451^^^AUSTRIAN SOCIAL SECURITY ASSOCIATION&2.1.414.1.4.14&ISO^SS~pat1125^^^
SendingFacilityName&1.2.3.4.6&ISO||PatientFamilyName^PatientGivenName||20110706094842|M
||Mainstreet 23^^Innsbruck^^6020
PV1||^&SendingFacilityName&1.2.3.4.6&ISO^^&Department&SubDepartment^^419192003&Innere
Medizin&SNOMED_CT|||||ETU^Notfall- / Traumaeinheit^2.16.840.1.113883.5.11
OBR|||||20110706094842|20110706094842|||||ABC1^DEF^1.3.4.2|Counseling^
Konsil^sense_contentTypeCodes|ABC3^DEF^1.3.4.2
TXA||11490-0^Zusammenfassung bei Entlassung (Arzt)^LOINC|application/pdf^ScanPDF/IHE 1.x^
ScanPDF/IHE 1.x^sense_formatCodes||20110706094842||^AuthorFamilyName^AuthorGivenName|^
LegalAuthenticatorFamilyName^LegalAuthenticatorGivenName||docID1309938522620|||HL7v2
TestDocument||N^2.16.840.1.113883.5.25|F
```

5 User-defined Tables

5.1 MDM Tables

5.1.1 Reference ID Type Codes

urn:ihe:iti:xds:2013:uniqueId
Unique ID

urn:ihe:iti:xds:2013:accession
Accession Number

urn:ihe:iti:xds:2013:referral
Referral Number

urn:ihe:iti:xds:2013:order
Order Number

urn:ihe:iti:xdw:2013:workflowId
XDW Workflow ID

urn:sense:2015:caseId
Visit Number/Case ID

urn:sense:2016:studyInstanceUID
DICOM Study Instance UID

Table 45: sense-0001

HL7v2 Supported Segments

This is an incomplete list of supported segments referenced within this document.

Admit Discharge Transfer (ADT) Message This type of message is intended to provide patient demographic information and trigger event information such as patient admission, discharge, transfer, and registration.

ADT-A01 Patient Admit Admission of an inpatient. 34, 38

ADT-A04 Patient Registration Admission of an outpatient. 34, 38

ADT-A05 Patient Pre-admission Pre-admission of an inpatient. Messages of this type are sent before the patient checks in at the hospital. 34, 38

ADT-A08 Patient Information Update Update patient information. 34, 38

ADT-A28 Add Person Information Add person information. 34, 38

ADT-A30 Merge Person Information Merge the information of persons. 40

ADT-A31 Update Person Information Update person information. 34, 38

ADT-A34 Merge Patient Information Merge patient ID only. 40

ADT-A34 Merge Person With External ID Merge person with external ID. 40

ADT-A40 Merge Patient Merge patients using patient identifier list. 40

ADT-A41 Merge Patient Account Merge patient accounts. 40

ADT-A42 Merge Patient Based On Visit Merge patients based on visits. 40

ADT-A43 Merge Person With External ID Merge person with external ID. 40

ADT-A47 Move Patient Information Move patient information based on the patient identifier lists. 40

EVN Segment Time when the message was sent. The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message. 7, 34, 38

MSH Segment The HL7 MSH segment is present in all HL7 message types and defines the message's source, purpose, destination, and certain syntax specifics like delimiters (separator characters) and character sets. It is always the first segment in the HL7 message, with the only exception being HL7 batch messages. 7, 34, 38

MSH-18 Character Set This defines the character set e.g. "UNICODE UTF-8". 7

MSH-2 Encoding Characters This field contains the four characters in the following order: the component separator, repetition separator, escape character, and subcomponent separator. 7

MSH-9-1 message type (ID) The message type. 34, 38

MSH-9-2 trigger event (ID) The trigger event. 34, 38

PID Segment The PID segment contains all relevant patient data. 7, 34, 38

PV1 Segment The PV1 segment is used by Registration/ADT applications to communicate information on a patient visit-specific basis. 7, 34, 38

HL7v3 Supported Elements

This is an incomplete list of supported elements referenced within this document.

acceptAckCode Describe the conditions under which accept or application level acknowledgements are required to be returned in response to the message send operation. [8](#)

creationTime The date/time that the sending system created the transmission. [8](#)

id A globally-unique identifier for the interaction. [8](#)

interactionId A globally unique identifier for the interaction type. The allowable identifiers are predefined by the HL7 Group. [8](#)

processingCode Defines whether the message is part of a production, training, or debugging system. Sense does not process this value, but it is nevertheless required by the standard. [8](#)

processingModeCode Defines whether the message is being sent in current processing, archive mode, initial load mode or restore from archive mode. [8](#)

receiver The receiver of the interaction. HL7 allows multiple receivers, but IHE restricts this to exactly one receiver for all interactions. [8](#)

receiver.device The receiving application/device. [8](#)

receiver.device.id [8](#)

sender [8](#)

sender.device The sending application/device. [8](#)

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