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HL7 Conformance Statement

SIEMENS Healthineers

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1 HL7 Communications

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

- Patient Administration
  For managing patients within the eHealth Solutions infrastructure.
- Encounter Administration
  For managing patient encounters within the eHealth Solutions infrastructure.
- Document Administration
  For processing documents within the eHealth Solutions infrastructure.

1.1 HL7v2

The primary goal of the eHealth Solutions HL7v2 interface is to facilitate communication with third-party systems in heterogeneous healthcare environments. The eHealth Solutions HL7v2 interface is designed according to the HL7 Messaging Standard, version 2.5. Nevertheless, eHealth Solutions is able to process HL7v2 messages that conform to the standard versions 2.2, 2.3.1, 2.4, 2.5, 2.6, 2.7, (that is, 2.3 is not supported). Segments and fields that are not recognized due to the use of a higher HL7v2 standard version are ignored. The following sections describe the relevant HL7v2 messages in detail. Messages and trigger events not listed in these sections are not supported by eHealth Solutions and will result in an error response.

Warning
When sending HL7 V2 ADT messages to the PIXPDQ which are then forwarded to the ADT Interface on the Source, please pay attention to which data you submit. Ensure especially that you only submit *one* source patient identifier per request to the PIXPDQ and that it is the *correct* one respectively to the Source that is queried.

1.1.1 Transport Protocol: MLLP

The HL7v2 standard defines the Minimal Lower Layer Protocol (MLLP) as its message transport mechanism, the eHealth Solutions infrastructure uses this protocol to process both incoming and outgoing HL7 messages. The MLLP defines special start and stop bytes to demarcate HL7 messages in a TCP stream. The start byte is 0x0b (ASCII vertical tab character). The stop bytes are 0x1c (ASCII Field Separator Character) and 0x0d (ASCII Carriage Return), transmitted in sequence.

Table 1: Basic Message Structure

<VT>		<FS>	<CR>
(hex 0x0b)	HL7 message payload goes here	(hex 0x1c)	(hex 0x0d)

1.1.2 Security

HL7v2 in itself does not define any security measures, but in compliance to the IHE *Audit Trail and Node Authentication* (ATNA) Integration Profile HL7v2 communication must be secured. This is done by encrypting messages using the TLS protocol; mutual authentication of both sender (TLS client authentication) and receiver is also a mandatory part of this process. Encryption can be enabled in the HL7 connector configuration and requires a valid digital certificate to be provided in a Java Keystore File (*.jks). Administrators are strongly encouraged to disable unencrypted communication in productive systems, as HL7v2

messages in most cases contain personally identifiable information.

1.1.3 Message Encoding

HL7v2 messages are encoded according to the standard ER7 ("Encoding Rules 7") rules, which describe data segments, fields, components and subcomponents of variable length that are separated by special delimiter characters. ER7 defines the following default delimiter characters:

- Field Separator: |
- Component Separator: ^
- Subcomponent Separator: &
- Field Repetition Separator: ~
- Escape Character: \

Messages may specify custom delimiter characters in the MSH segment, though this is highly discouraged for interoperability reasons. The character immediately following the literal String "MSH" specifies the field separator. The rest of the delimiter characters are defined in MSH-2: component separator, repetition separator, escape character and subcomponent separator, in that respective order. The character encoding itself may be specified in MSH-18. This approach to specifying the character encoding is obviously problematic, as the MSH segment needs to be parsed on a best-effort basis to read MSH-18, and then re-parsed using the character encoding found in MSH-18. For this reason, eHealth Solutions ignores MSH-18 and uses a static character encoding defined in the configuration.

Note
It is highly recommended to use UTF-8 to ensure the correct processing of messages. eHealth Solutions can be configured to honor MSH-18 if a statically configured character encoding cannot be used due to restrictions in the domain (e.g. multiple sending systems that each use a different character encoding). As outlined above, this approach is strongly discouraged.

1.1.4 Data Types

This section provides an overview of the most commonly used HL7v2 data types in eHealth Solutions. HL7 versions before 2.4 define very limiting restrictions on the maximum allowed length of many fields/components. As an example, the combined length of all patient idenfifiers (PID-3) must not exceed 20 characters, which makes it virtually impossible to use real-world identifiers. For this reason, eHealth Solutions is much more lenient when it comes to the maximum allowed length of components and subcomponents. This is true regardless of which HL7 version is used by the sending system. The following paragraphs always state the maximum allowed length of all components. Messages that exceed this maximum length will result in an error response.

- CWE – Coded with Exceptions
- CX – Extended Composite ID with Check Digit
- HD – Hierarchic Designator
- XAD – Extended Address
- XCN – Extended Composite ID Number And Name
- XPN – Extended Person Name
- XTN – Extended Telecommunication Number

1.1.4.1 CWE – Coded with Exceptions

All components of this type are optional and can hold up to and including 255 characters. CWE values without CWE-1 usually do not make sense, sending systems should thus avoid sending such values. Only the following CWE components are processed, all other components are ignored:

- CWE-1: Identifier/Code, e.g. "F".
- CWE-2: Text, e.g. "Female".
- CWE-3: Name of Coding System, e.g. "Gender".

Example 1: CWE – Language Code

```
en^English^ISO 639
```

1.1.4.2 CX – Extended Composite ID with Check Digit

The only required component of the CX type is CX-1. Feed messages additionally require a valid CX-4 component, e.g. for patient identifiers transmitted in PID-3. Only the following CX components are processed, all other components are ignored:

- CX-1: ID Number. This component can hold up to and including 255 characters.
- CX-4: Assigning Authority. This component is of the type HD (see below).
- CX-5: Identifier Type Code. Only values from HL7 table *0203 – Identifier Type* are allowed. Source patient identifiers must use "PI" as the identifier type code.

Example 2: CX – Source Patient Identifier

```
patientId3978^^^My Local Clinic&1.2.123.27.1974&ISO^PI
```

1.1.4.3 HD – Hierarchic Designator

In the HL7 standard, all components are optional, but eHealth Solutions requires a value for HD-2. All HD components can be processed:

- HD-1: Namespace ID. This component can hold up to and including 255 characters.
- HD-2: Universal ID. eHealth Solutions can only process universal IDs in the ISO OID format, other universal ID types are not supported. This component can hold up to and including 255 characters.
- HD-3: Universal ID Type. The only supported value is "ISO" (for ISO OIDs). Sending systems may leave this empty, in which case "ISO" will be assumed by the eHealth Solutions infrastructure.

Example 3: HD – Patient Assigning Authority

```
My Local Clinic&1.2.123.27.1974&ISO
```

1.1.4.4 XAD – Extended Address

All components of this type are optional and can hold up to and including 255 characters. Only the following XAD components are processed, all other components are ignored:

- XAD-1.1: Street or Mailing Address. This field should only be used if sending systems cannot transmit the street name and dwelling number in separate fields. The value in this field is thus used as a fallback if both XAD-1.2 and XAD-1.3 are empty.
- XAD-1.2: Street Name. This field should be preferred if sending systems can transmit street names and dwelling numbers in separate fields.
- XAD-1.3: Dwelling Number. This field should be preferred if sending systems can transmit street names and dwelling numbers in separate fields.
- XAD-3: City
- XAD-4: State or Province.
- XAD-5: Zip or Postal Code.
- XAD-6: Country.
- XAD-7: Address Type. Only values from HL7 table *0190 – Address Type* are allowed. The address type *L (Legal Address)* has special meaning in eHealth Solutions: It denotes the main address of a person. A person may have only one main address.

Example 4: XAD – Structured Patient Address

```
&Main Street&17^^London^Greater London^SW1P 2LD^GB^L
```

Example 5: XAD – Unstructured Patient Address

```
Main Street 17^^London^Greater London^SW1P 2LD^GB^L
```

1.1.4.5 XCN – Extended Composite ID Number And Name

In the HL7 standard, all components are optional, but eHealth Solutions requires a value for both XCN-1 and XCN-9, otherwise the field value will be ignored. All components of this type can hold up to and including 255 characters. Only the following XCN components are processed, all other components are ignored:

- XCN-1: ID Number. This component must have a value, otherwise the entire XCN value will be ignored by eHealth Solutions.
- XCN-2-1: Surname.
- XCN-3: Given Name.
- XCN-4: Second and further given names.
- XCN-5: Suffix, e.g. “Jr”.
- XCN-6: Prefix, e.g. “Mr”.
- XCN-9: Assigning Authority. This component must have a valid HD value, otherwise the entire XCN value will be ignored by eHealth Solutions.
- XCN-10: Name Type Code. Only values from HL7 table *0200 – Name Type* are allowed. The only exception of this role is the “PN” name type, which is ignored by eHealth Solutions (the MPI generates its own phonetic names internally). The name type *L (Legal Name)* has special meaning in eHealth Solutions: It denotes the main name of a person (the name that is displayed in the user interface). A person may have only one main name.

- XCN-13: Identifier Type Code. Only values from HL7 table *0203 – Identifier Type* are allowed.
- XCN-21: Professional Suffix, e.g. “MD”, “PhD”.

Example 6: XCN – Physician Identifier And Name

```
1234^Watson^John^H.^Jr.^Dr.^^^My Local Clinic&1.2.123.27.1974&ISO^L^^^DN^^^^^^^^MD
```

1.1.4.6 XPN – Extended Person Name

All components of this type are optional and can hold up to and including 255 characters. Only the following XPN components are processed, all other components are ignored:

- XPN-1.1: Surname.
- XPN-2: Given Name.
- XPN-3: Second and further given names.
- XPN-4: Suffix, e.g. “Jr”.
- XPN-5: Prefix, e.g. “Mr”.
- XPN-7: Name Type Code. Only values from HL7 table *0200 – Name Type* are allowed. The only exception of this role is the “PN” name type, which is ignored by eHealth Solutions (the MPI generates its own phonetic names internally). The name type *L (Legal Name)* has special meaning in eHealth Solutions: It denotes the main name of a person (the name that is displayed in the user interface). A person may have only one main name.
- XPN-14: Professional Suffix, e.g. “MD”, “PhD”.

Example 7: XPN – Physician Name

```
Watson^John^H.^Jr.^Dr.^^L^^^^^^^MD
```

1.1.4.7 XTN – Extended Telecommunication Number

Despite the name, this data type is used to represent various kinds of telecommunication addresses (e.g. email address, beeper number etc.). All components of this type are optional and can hold up to and including 255 characters, unless stated otherwise. Only the following XTN components are processed, all other components are ignored:

- XTN-1: Telephone Number. This component is deprecated and should not be used unless absolutely necessary. See the description of the fallback mechanism below.
- XTN-2: Telecommunication Use Code. eHealth Solutions restricts the allowed values to the following set, all other values are ignored: **ASN** (Answering Service), **WPN** (Business/Work), **EMR** (Emergency Contact), **PRN** (Primary Residence), **ORN** (Other Residence) and **VHN** (Vacation Home).
- XTN-3: Telecommunication Equipment Type. eHealth Solutions restricts the allowed values to the following set, all other values are ignored: **BP** (Beeper), **Internet** (Email Address), **FX** (Fax), **CP** (Mobile Phone) and **PH** (Phone). The value **PH** will be used if no value is specified by the sending system.
- XTN-4: Email Address. This field is only used if XTN-3 has the value **Internet**, it is ignored in all other cases.

- XTN-5: Country Code, e.g. “43”. Only used if XTN-12 is empty, see the description of the fallback mechanism below.
- XTN-6: Area/City Code, e.g. “512”. Only used if XTN-12 is empty, see the description of the fallback mechanism below.
- XTN-7: Local Number, e.g. “1234567”. Only used if XTN-12 is empty, see the description of the fallback mechanism below.
- XTN-8: Extension, e.g. “410”. Only used if XTN-12 is empty, see the description of the fallback mechanism below.
- XTN-9: Any Text, e.g. “only during office hours”. Only used if XTN-12 is empty, see the description of the fallback mechanism below.
- XTN-12: Unformatted Telephone Number. This is the preferred way of transmitting a telecommunication address, with the exception of email addresses that must be transmitted in XTN-4.

In the case of telephone numbers, eHealth Solutions uses the following fallback mechanism to parse received numbers:

- If present, use the unformatted telephone number from XTN-12. The internal telephone number representation used in eHealth Solutions is always in this unstructured format.
- Else use the structured telephone number from XTN-5, XTN-6, XTN-7, XTN-8 and XTN-9 – if any of those components has a value.
- Else use the deprecated unstructured telephone number from XTN-1.

Example 8: XTN – Landline Phone Number

```
^PRN^PH^^^^^^^^^^+43 512 1234567
```

Example 9: XTN – Email Address

```
^WPN^Internet^john.watson@mycompany.com
```

1.1.5 Common Segments

This section provides a detailed description of the HL7 segments that are supported by eHealth Solutions. Some segments are used in every HL7 message (e.g. MSH), whereas others are only used in specific contexts (e.g. TXA in document administration). The fields that are required in a given segment heavily depend on the transaction that is to be executed. Some segments, however, have static requirements that are the same for all transactions. This requirements are stated in the following sections:

- MSH Segment
- EVN Segment
- PID Segment
- PV1 Segment
- MRG Segment
- IN1 Segment

Please note that these listings will not be repeated in the detailed transaction desciptions due to brevity considerations. A reference to this chapter will be provided instead.

1.1.5.1 MSH Segment

Every HL7v2 message requires the MSH segment to be the first segment of the message. Additional segments may be required for individual messages, this is determined by the message type and trigger event defined in MSH-9.

Table 2 shows a detailed field description of the MSH (Message Header) segment for all transactions.

Example 10 shows the correct message header of an HL7v2 message.

Example 10: HL7v2 Message Header

```
MSH|^~\&|Sending Application^1.1.2.1.1^ISO|Sending Facility^1.1.2^ISO|Receiving
Application^1.1.1.1.1^ISO|Receiving Facility^1.1.1^ISO|20141001233656||ADT^A01
|1412199415701|P|2.5|||AL
```

Ensure that all required fields and components are specified.

Example 11 shows an incorrect HL7v2 message header with a missing `sendingFacility` field.

Example 11: Incorrect HL7v2 Message Header

```
MSH|^~\&|Sending Application^1.1.2.1.1^ISO||Receiving Application^1.1.1.1.1^ISO|
Receiving Facility^1.1.1^ISO|20141001233656||ADT^A01|1412199415701|P|2.5|||AL
```

Example 12 shows an incorrect HL7v2 message header with missing identifier and ISO OID in the fields `sendingApplication`, `sendingFacility`, `receivingApplication` and `receivingFacility`.

Example 12: Incorrect HL7v2 Message Header

```
MSH|^~\&|Sending Application|Sending Facility|Receiving Application|Receiving Facility
|20141001233656||ADT^A01|1412199415701|P|2.5|||AL
```

Incorrect messages with missing segments or elements cannot be processed and lead to an error, see Section 1.1.6.

MSH-1 – Field Separator

This field specifies the delimiter character that should be used to demarcate individual fields in the HL7 message. The field separator is the first single character that follows the literal string "MSH" at the very beginning of the message. The default and thus recommended field separator is the "|" (pipe) character.

MSH-2 – Encoding Characters

This field contains the following four delimiter characters in the given order: the component separator, repetition separator, escape character, and subcomponent separator. The default and thus recommended delimiter characters are: " ^&~\"

MSH-3 – Sending Application

This is a required field. This field uniquely identifies the sending application among all other applications within the Affinity Domain. eHealth Solutions mandates that MSH-3-2 (Universal ID) contains a valid ISO OID. This implies that MSH-3-3 always must contain the value "ISO", which is the HL7 code for the ISO OID Universal ID Type.

MSH-4 – Sending Facility

This is a required field. This field uniquely identifies the sending facility within the Affinity Domain. In most use cases this field will contain the identifier of the organization that hosts the sending application (e.g. hospital, primary care center etc.). eHealth Solutions mandates that MSH-4-2 (Universal ID) contains a valid ISO OID. This implies that MSH-4-3 always must contain the value "ISO", which is the HL7 code for the ISO OID Universal ID Type.

MSH-5 – Receiving Application

This is a required field. This field uniquely identifies the receiving application among all other applications within the Affinity Domain. eHealth Solutions mandates that MSH-5-2 (Universal ID) contains a valid ISO OID. This implies that MSH-5-3 always must contain the value "ISO", which is the HL7 code for the ISO OID Universal ID Type.

MSH-6 – Receiving Facility

This is a required field. This field uniquely identifies the receiving facility within the Affinity Domain. In most use cases this field will contain the identifier of the organization that hosts the receiving application (e.g. the central hospital in the Affinity Domain). eHealth Solutions mandates that MSH-6-2 (Universal ID) contains a valid ISO OID. This implies that MSH-6-3 always must contain the value "ISO", which is the HL7 code for the ISO OID Universal ID Type.

MSH-7 – Date/Time Of Message

This field contains the date/time that the sending system created the message. eHealth Solutions ignores this field, but it is required by the HL7 standard.

MSH-9 – Message Type

This field contains the message code (MSH-9-1), trigger event (MSH-9-2) and in some cases the message structure (MSH-9-3) of the message.

MSH-10 – Message Control ID

The unique ID of the message. This ID is used in the MSA segment of response messages to correlate the request with the response message.

MSH-11 – Processing ID

This field contains the processing mode of the message. eHealth Solutions ignores this field, but it is required by the HL7 standard. Sending systems should always use the value "P" (for "Production").

MSH-12 – Version ID

Defines the version of the HL7 standard that is used by this message. Among other things, this field has strong impact on the format of response messages. If unsure, sending systems should use version 2.5, as this gives access to the more modern error handling approach introduced in HL7 version 2.5.

MSH-18 – Character Set

Defines the character encoding of the message. This field is usually ignored, as specified in the "Message Encoding" section. If eHealth Solutions is configured to honor this field, only the first repetition will be evaluated.

Table 2: MSH Segment Structure

HL7 Path	Data Type	Repeatable	Presence
MSH-1 – Field Separator	ST	No	Required
MSH-2 – Encoding Characters	ST	No	Required
MSH-3 – Sending Application	HD	No	Required
MSH-4 – Sending Facility	HD	No	Required

Table 2: MSH Segment Structure

Table 2: MSH Segment Structure

HL7 Path	Data Type	Repeatable	Presence
MSH-5 – Receiving Application	HD	No	Required
MSH-6 – Receiving Facility	HD	No	Required
MSH-7 – Date/Time Of Message	TS	No	Not processed
MSH-9 – Message Type	MSG	No	Required
MSH-10 – Message Control ID	ST	No	Required
MSH-11 – Processing ID	PT	No	Required
MSH-12 – Version ID	VID	No	Required
MSH-18 – Character Set	ID	Yes	Optional

1.1.5.2 EVN Segment

Table 3 shows a detailed field description of the EVN (Event Type) segment for all transactions. This segment contains additional information about the real-world event that triggered a HL7 message. Entries in fields which are not listed in the table will be ignored.

- EVN-2 – Recorded Date/Time
  The date/time that the real-world event was recorded. eHealth Solutions ignores this field, but it is required by the HL7 standard.
- EVN-5 – Operator ID
  The person that triggered the message. The value of this field is used in audit logs, it is thus recommended to always provide a meaningful value here. HL7 allows repetitions of this field, but eHealth Solutions only evaluates the first repetition.
- EVN-7 – Event Facility
  The organization/facility where the real-world event occurred. This field can only be used if the message uses HL7 version 2.4 or newer. The field is only evaluated for patient and encounter feed messages. It provides a fallback value in case PID-34 does not specify a value.

Table 3: EVN Segment Structure

HL7 Path	Data Type	Repeatable	Presence
EVN-2 – Recorded Date/Time	TS	No	Not processed
EVN-5 – Operator ID	XNC	No	Optional
EVN-7 – Event Facility	HD	No	Optional; required in ELGA

Note
If the EVN-5-1 segment (User ID) is empty, the concatinated value of EVN-5-3 (First Name) and EVN-5-2-1 (Last Name) is used as a fallback user ID. Note that this behavior is not covered in the HL7 Standard.

1.1.5.3 PID Segment

Table 4 shows a detailed field description of the PID (Patient Identification) segment for all patient- and encounter-related transactions. For feed messages, eHealth Solutions imposes the following restrictions

on the patient identifiers transmitted in PID-3:

- One of the identifiers must uniquely identify the patient within the entire Affinity Domain. eHealth Solutions uses the term *Source Patient Identifier* for this type of identifier. It is possible that multiple source patient identifiers are listed in PID-3, but this is not recommended. A single source patient identifier suffices.
- Additional identifiers may be listed, e.g. social security number, driver license number, national person identifier etc. In the real world, these identifiers also uniquely identify a patient. But from the perspective of the eHealth Solutions MPI, these identifiers do not qualify as source patient identifiers. For example, a patient may visit multiple healthcare providers in an Affinity Domain. The social security number will be the same for all providers, so it cannot be used to uniquely identify a patient that is transferred by a healthcare provider.

PID-3 – Patient Identifier List

The identifiers of the patient, e.g. source patient identifier, social security number, driver license number. At least one patient identifier must be present in this field for every HL7 message that contains a PID segment.

PID-5 – Patient Name List

The names of the patient. At least one patient name must be present in this field for every HL7 message that contains a PID segment.

PID-6 – Mother's Maiden Name

The maiden name of the patient's mother. The HL7 standard allows repetitions of this field, but eHealth Solutions only evaluates the first repetition. Only subcomponent PID-6-1-1 (Last Name) is processed, all other components are ignored.

PID-7 – Date/Time of Birth

The birth date of the patient. It is usually sufficient to specify the birth date without the time components (hours, minutes etc.). If time components are transmitted, please make sure that they correspond to the local time of the sending system and not to UTC. Otherwise, eHealth Solutions's `PIXPDQ` will transform the value to the local time valid for the region in which the `PIXPDQ` is operated an the birth date will in some cases differ from the one sent.

PID-8 – Administrative Sex

The sex of the patient. Allowed values are defined in HL7 table *0001 – Administrative Sex*: **M** (Male), **F** (Female), **O** (Other), **U** (Unknown), **A** (Ambiguous), **N** (Not Applicable). eHealth Solutions will use **U** as a fallback if the sending system does not specify a value for this field or if the value is not recognized.

PID-11 – Patient Address List

The addresses of the patient, e.g. living address, work address etc.

PID-13 – Home Phone Number List

Despite the name, this field is not only used to specify telephone numbers, but can really be used to define all kinds of personal telecommunication addresses (e.g. cell phone number, email address etc.) for the patient. The transmission of email addresses requires special attention; please consult the XTN section in this document for further information. The telecommunication use code **PRN** is used as a fallback for all repetitions that do not specify a value in XTN-2.

PID-14 – Business Phone Number List

Despite the name, this field is not only used to specify telephone numbers, but can really be used to define all kinds of business-related telecommunication addresses (e.g. cell phone number, email address etc.) for the patient. The transmission of email addresses requires special attention, please consult the XTN section in this document for further information. The telecommunication use code **WPN** is used as a fallback for all repetitions that do not specify a value in XTN-2.

PID-15 – Primary Language

The native language of the patient. To ensure interoperability with other vendors it is recommended to use ISO table 639 codes as values of this field.

PID-16 – Marital Status

The marital status of the patient. Allowed values are defined in HL7 table *0002 – Marital Status*.

PID-17 – Religion

The religious affiliation of the patient. Allowed values are defined in HL7 table *0006 – Religion*.

PID-18 – Patient Account Number

The patient account number of the patient. This field does not represent a patient identifier, it should not be confused with PID-3. Depending on the message type, this field can have several functions in eHealth Solutions: if the message is not an encounter message this field will be ignored; else if PV1-19 is empty the field will be used as the encounter identifier; else (PV1-19 has a value) the field will be used to group multiple patient encounters under one patient account. The "Move Patient Account" transaction can be used to move this encounter groups between patients. An encounter message is rejected if both PID-18 and PV1-19 are empty.

PID-24 – Multiple Birth Indicator

Indicates whether the patient is part of a multiple birth. Allowed values are **N** and **Y**. eHealth Solutions uses **N** if no value is specified in this field. This field will be ignored if PID-25 contains a value: **Y** is assumed in this case.

PID-25 – Birth Order

The birth order of the patient, if it was part of a multiple birth. Only positive natural numbers are allowed in this field.

PID-26 – Citizenships

The citizenships of the patient. The eHealth Solutions MPI interprets the first repetition as the *nationality* of the patient, this repetition thus has greater importance then the rest. To ensure interoperability with other vendors, it is recommended to use ISO table 3166 codes as values for this field.

PID-29 – Patient Death Date/Time

The death date of the patient. It is usually sufficient to specify the death date without the time components (hours, minutes etc.). When a value is given here, it will be validated against the birth date (PID-7) that necessarily has to contain an earlier date.

PID-30 – Patient Death Indicator

Indicates whether the patient has already died. Allowed values are **N** and **Y**. eHealth Solutions uses **N** if no value is specified in this field. This field will be ignored if PID-29 contains a value: **Y** is assumed in this case.

PID-31 – Identity Unknown Indicator

Indicates whether the patient's identity has been established sufficiently. A frequent use case for this field is a medical emergency where no identity document of the patient is at hand. Such patients are usually assigned temporary identifiers and dummy names. Possible values are **N** and **Y**. **N** is used as a default when the field is left empty.

PID-34 – Last Update Facility

This field is only evaluated for patient and encounter feeds: It represents the organization/facility that is sending the feed. It is recommended to use the same value that is used for the assigning authority of the source patient identifier (PID-3.4). This field is not mandatory, but eHealth Solutions requires a last update facility for patient feeds. EVN-7 and MSH-4 will be used as fallbacks if no value is specified here. Note that the PID-34 element has a special meaning when clients execute a Source Patient query, see Section 2.8.

Table 4: PID Segment Structure

HL7 Path	Data Type	Repeatable	Presence
PID-3 – Patient Identifier List	CX	Yes	Required
PID-5 – Patient Name List	XPN	Yes	Required
PID-6 – Mother's Maiden Name	XPN	No	Optional
PID-7 – Date/Time of Birth	TS	No	Optional
PID-8 – Administrative Sex	IS	No	Optional
PID-11 – Patient Address List	XAD	Yes	Optional
PID-13 – Home Phone Number List	XTN	Yes	Optional
PID-14 – Business Phone Number List	XTN	Yes	Optional
PID-15 – Primary Language	CE	No	Optional
PID-16 – Marital Status	CE	No	Optional
PID-17 – Religion	CE	No	Optional
PID-18 – Patient Account Number	CX	No	Conditionally Required
PID-24 – Multiple Birth Indicator	ID	No	Optional
PID-25 – Birth Order	NM	No	Optional
PID-26 – Citizenships	CE	Yes	Optional
PID-29 – Patient Death Date/ Time	TS	No	Optional
PID-30 – Patient Death Indicator	ID	No	Optional
PID-31 – Identity Unknown Indicator	ID	No	Optional
PID-34 – Last Update Facility	HD	No	Optional

1.1.5.4 PV1 Segment

Table 5 shows a detailed field description of the PV1 (Patient Visit) segment. This segment contains information about a patient's visit in a healthcare facility. eHealth Solutions commonly uses *patient encounter* as an alternative term for visits.

PV1-2 – Patient Class

The class/type of the patient in the context of the encounter. This field is required in the HL7 standard, so it is recommended to always provide a value here. eHealth Solutions treats the field as optional though, as the patient class can be determined by the message trigger event. The following patient classes are supported, all other values are ignored: **E** (Emergency), **I** (Inpatient), **N** (Not Applicable), **B** (Obstetrics), **O** (Outpatient), **P** (Pre-Admission), **R** (Recurring Patient) and **U** (Unknown).

PV1-3 – Assigned Patient Location

The location of the patient in the context of the encounter. eHealth Solutions only processes PV1-3-4 (Facility), all other components are ignored. This field is optional for most transactions.

PV1-6 – Prior Patient Location

The location of the patient prior to the current encounter event. This field is mandated by some IHE patient encounter transactions, but eHealth Solutions does not process it.

PV1-7 – Attending Doctor

The doctor that treats the patient in the context of the encounter. The HL7 standard allows repetitions

of this field, but eHealth Solutions only processes the first repetition.

PV1-8 – Referring Doctor

The doctor that referred the patient to the current healthcare facility (see PV1-3). The HL7 standard allows repetitions of this field, but eHealth Solutions only processes the first repetition.

PV1-15 – Ambulatory Status

The ambulatory status and special requirements (e.g. wheelchair accessibility) of the patient. Allowed values are defined in HL7 table *0009 – Ambulatory Status*.

PV1-19 – Visit Number

The unique identifier of the patient encounter. If no value is present, PID-18 will be used as a fallback encounter identifier. It is strongly recommended to use PV1-19 as the encounter identifier, and use PID-18 only to group encounters under a common patient encounter (if desired). It should be noted that this field is not intended to identify a specific encounter event (e.g. inpatient admission), but the patient encounter (a sequence of individual encounter events) as a whole.

PV1-44 – Admit Date/Time

The timestamp of the inpatient admission or registration at the healthcare facility (for ambulatory encounters). This timestamp is mandatory for each HL7 message that starts a new patient encounter, but is ignored in all subsequent messages that pertain to the same encounter. It is thus not possible to change the encounter start timestamp at a later point in time.

PV1-45 – Discharge Date/Time

The timestamp of the patient discharge. This timestamp is mandatory for each HL7 message that ends/finalizes a patient encounter, but is ignored in all other messages that pertain to the same encounter.

Table 5: PV1 Segment Structure

HL7 Path	Data Type	Repeatable	Presence
PV1-2 – Patient Class	IS	No	Optional
PV1-3 – Assigned Patient Location	PL	No	Conditionally Required
PV1-6 – Prior Patient Location	PL	No	Optional
PV1-7 – Attending Doctor	XCN	No	Conditionally Required
PV1-8 – Referring Doctor	XCN	No	Optional
PV1-15 – Ambulatory Status	IS	Yes	Optional
PV1-19 – Visit Number	CX	No	Conditionally Required
PV1-44 – Admit Date/Time	TS	No	Conditionally Required
PV1-45 – Discharge Date/Time	TS	No	Conditionally Required

1.1.5.5 MRG Segment

Table 6 shows a detailed field description of the MRG (Merge Patient Information) segment for all transactions that require it. This segment contains information about an obsolete/prior patient record. eHealth Solutions uses the term *recessive patient* for this patient record.

MRG-1 – Prior Patient Identifier List

The patient identifiers of the obsolete/prior patient. This field is the functional equivalent of PID-3, but for the obsolete instead of the active patient. It is highly recommended to only list the single source patient identifier of the obsolete patient here, all other identifiers (e.g. social security number etc.) should be left out.

MRG-3 – Prior Patient Account Number

The patient account number of the obsolete/prior patient.

MRG-7 – Prior Patient Name List

The names of the obsolete/prior patient. eHealth Solutions uses this field for logging purposes only, it may be left out completely.

Table 6: MRG Segment Structure

HL7 Path	Data Type	Repeatable	Presence
MRG-1 – Prior Patient Identifier List	CX	Yes	Required
MRG-3 – Prior Patient Account Number	CX	No	Optional
MRG-7 – Prior Patient Name List	XPN	Yes	Optional

1.1.5.6 IN1 Segment

Table 7 shows a detailed field description of the IN1 (Insurance Segment) segment for all patient and encounter-related transactions. This segment contains information about the patient's insurance policies, it is always optional.

IN1-1 – Set ID

The unique ID of this segment. Multiple IN1 segments may be specified per message, each segment is assigned a unique set ID. Set IDs are consecutive integers, the first occurence of the IN1 segment has set ID "1".

IN1-2 – Insurance Plan ID

The unique identifier of the insurance plan. eHealth Solutions only processes IN1-2-1 (ID number), all other components are ignored. The insurance plan identifier can hold up to and including 255 characters.

IN1-3 – Insurance Company ID

The unique identifier of the company that issued the insurance plan. The HL7 standard allows repetitions of this field, but eHealth Solutions only processes the first repetition.

IN1-4 – Insurance Company Name

The name of the company that issued the insurance plan. eHealth Solutions only processes IN1-4-1 (Organization Name), all other components are ignored. The insurance company name can hold up to and including 255 characters. The HL7 standard allows repetitions of this field, but eHealth Solutions only processes the first repetition.

Table 7: IN1 Segment Structure

HL7 Path	Data Type	Repeatable	Presence
IN1-1 – Set ID	SI	No	Required
IN1-2 – Insurance Plan ID	CE	No	Required
IN1-3 – Insurance Company ID	CX	No	Required
IN1-4 – Insurance Company Name	XON	No	Optional

1.1.6 Responses

The HL7 standard uses the term *Acknowledgement* for response messages. Each request message is acknowledged by a corresponding response message. Response messages usually only contain a success indicator and, in the case of error responses, additional error information. The sole exception to this rule of thumb are query responses, which additionally contain the results of the query. HL7 versions up to and including 2.4 only provide very limited error reporting: It is not possible to return custom, application-specific error codes to the sending system. This severely limits a sender's capability to automatically react to predefined, recognized error cases. It is thus recommended that sending systems use HL7 version 2.5 or higher, which enables them to receive and process eHealth Solutions application error codes. The following example illustrates both a success and error acknowledgement for legacy HL7v2 versions (2.4 and older):

Example 13: Success Acknowledgement – Version 2.4 and older

```
MSH|^~\&|ITH MPI^1.1.1.1.1^ISO|ITH Community^1.1.1^ISO|My Sending Application^1.1.2.1.1^ISO|
    My Local Clinic^1.1.2^ISO|20180626112015.613+0200||ACK^A01^ACK|7a0a01fe-5d3c-4cfc
    -9855-186139f40b4e|P|2.3.1||||||UNICODE UTF-8
MSA|AA|fdfe7eeb-a8da-4d31-9e7f-407b4922c24d||||0
```

Example 14: Error Acknowledgement – Version 2.4 and older

```
MSH|^~\&|ITH MPI^1.1.1.1.1^ISO|ITH Community^1.1.1^ISO|My Sending Application^1.1.2.1.1^ISO|
    My Local Clinic^1.1.2^ISO|20180626112015.613+0200||ACK^A01^ACK|7a0a01fe-5d3c-4cfc
    -9855-186139f40b4e|P|2.3.1||||||UNICODE UTF-8
MSA|AE|52de5e91-a118-4f9c-be8f-56270171dbd6|A patient was expected, but no patient is
    defined in the request!||||207
ERR|^^^207
```

In the above examples, MSA-1 contains the acknowledgement code that indicates overall success or failure of the request. eHealth Solutions only supports the original acknowledgement mode, which implies that only the following acknowledgement codes will be returned:

- AA: Application Accept. This code indicates that the request succeeded.
- AE: Application Error. This code indicates a request that failed due to the receiving system detecting or causing an error. The vast majority of error situations result in this acknowledgement code.
- AR: Application Reject. This code indicates a message that has been rejected. This acknowledgment code is usually returned for errors in the underlying messaging infrastructure (timeout, unsupported message type etc.).

MSA-2 mirrors the message control ID of the request message that is being acknowledged; this field thus directly relates to MSH-10 of the request message. As shown in the example, MSH-3 contains the human-readable error message. The ERR segment is very limited and only contains the HL7 error code, in the case of the example "207" (Application Internal Error). This situation changes in case HL7v2.5 or newer is used, as shown in the following examples:

Example 15: Success Acknowledgement – Version 2.5 and newer

```
MSH|^~\&|ITH MPI^1.1.1.1.1^ISO|ITH Community^1.1.1^ISO|My Sending Application^1.1.2.1.1^ISO|
    My Local Clinic^1.1.2^ISO|20180626112015.613+0200||ACK^A01^ACK|7a0a01fe-5d3c-4cfc
    -9855-186139f40b4e|P|2.5||||||UNICODE UTF-8
MSA|AA|fdfe7eeb-a8da-4d31-9e7f-407b4922c24d||||0
```

Example 16: Error Acknowledgement – Version 2.5 and newer

```
MSH|^~\&|ITH MPI^1.1.1.1.1^ISO|ITH Community^1.1.1^ISO|My Sending Application^1.1.2.1.1^ISO|
    My Local Clinic^1.1.2^ISO|20180626112015.613+0200||ACK^A01^ACK|7a0a01fe-5d3c-4cfc
    -9855-186139f40b4e|P|2.5|||||UNICODE UTF-8
MSA|AE|4b87d88f-dd97-42f3-9df3-725cf73114df
ERR|||207|E|F-M-MPI-31004^^HL70533|||An invalid social security number was detected in the
    request!
ERR|||207|E|F-M-MPI-30001^^HL70533|||The validation of inbound request data failed due to
    missing required information.
```

The only field that changes for success acknowledgements is the HL7 version ID, MSH-12. On the other hand, substantial structural changes exist for error acknowledgements:

- the MSA segment does not contain the HL7 error code and the error message anymore.
- multiple ERR segments can be present in the response. Each ERR segment represents a distinct error or warning that has been generated by eHealth Solutions.
- ERR-3 now contains the HL7 error code, in the example above "207" (Application Internal Error).
- ERR-4 contains the problem severity. eHealth Solutions only uses the **W** (Warning) and **E** (Error) severity values.
- ERR-5 contains the application error code. This codes conform to a proprietary format defined by eHealth Solutions, their form and purpose is explained in detail in the accompanying *Error Codes* documentation.
- ERR-8 contains the human-readable error message.

1.2 HL7v3

1.2.1 Required Elements

eHealth Solutions adheres strictly to the HL7 Standard. **The order of elements in HL7v3 is critical.**

Example 17: 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:hl7-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. hl7v3:id
2. hl7v3:creationTime
3. hl7v3:interactionId
4. hl7v3:processingCode
5. hl7v3:processingModeCode
6. hl7v3:acceptAckCode
7. hl7v3:receiver
8. hl7v3:receiver.device
9. hl7v3:receiver.device.id
10. hl7v3:sender
11. hl7v3:sender.device

Example 18: 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.

Example 19 shows the required elements and attributes in the message header of an HL7v3 message with `1.3.6.1.4.1.21367.13.10.218` being an example OID.

Example 19: HL7v3 Message Header - Required Elements and Attributes

```
  <ns1:sender typeCode="SND">
  <ns1:device classCode="DEV" determinerCode="INSTANCE">
  <ns1:id xmlns:xsi="http://www.w3.org/2001/-XMLSchemainstance" xsi:type="ns1:II" root
  ="1.3.6.1.4.1.21367.13.10.218"/>
  </ns1:device>
  </ns1:sender>
```

Ensure that all required elements and attributes are specified.

Example 20 shows an incorrect HL7v3 message header where no information about `device` or `id` is provided.

Example 20: Incorrect HL7v3 Message Header

```
  <ns1:sender typeCode="SND">
  </ns1:sender>
```

Example 21 shows an incorrect HL7v3 message header with missing `typeCode` of the sender.

Example 21: Incorrect HL7v3 Message Header

```
    <ns1:sender>
    <ns1:device classCode="DEV" determinerCode="INSTANCE">
    <ns1:id xmlns:xsi="http://www.w3.org/2001/-XMLSchemainstance" xsi:type="ns1:II" root
    ="1.3.6.1.4.1.21367.13.10.218"/>
    </ns1:device>
    </ns1:sender>
```

Incorrect messages with missing segments or elements cannot be processed and lead to an error, see Section 1.2.2.

1.2.2 General Responses

eHealth Solutions 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 22: 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>
```

Example 23: Acknowledgement Response Message “Commit Error”

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

```
  <?xml version="1.0"?>
  <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="1586154786483.1019"/>
    <ns1:creationTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:TS
    " value="20200406083306"/>
    <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
    ="1.2.142780932110"/>
        <ns1:asAgent classCode="AGNT">
          <ns1:representedOrganization 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:representedOrganization>
        </ns1:asAgent>
      </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
    ="1.2.106696345355"/>
        <ns1:asAgent classCode="AGNT">
          <ns1:representedOrganization 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:representedOrganization>
        </ns1:asAgent>
      </ns1:device>
    </ns1:sender>
    <ns1:acknowledgement>
      <ns1:typeCode code="CE"/>
      <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="2075a4fb-969b-42b6-b495-11c68e24584d"/>
      </ns1:targetMessage>
      <ns1:acknowledgementDetail typeCode="E">
        <ns1:code code="F-M-MPI-31002"/>
        <ns1:text xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:ED">No
     source patient identifiers were specified for the patient! At least one source patient
    identifier is required for the patient feed.</ns1:text>
      </ns1:acknowledgementDetail>
    </ns1:acknowledgement>
  </ns1:MCCI_IN000002UV01>
```

This line `<ns1:code code="F-M-MPI-31002"/>` indicates the error code. See the manual ErrorCodes for further details.

1.2.3 Notable XML Elements

RegistrationEvent.Custodian.assignedEntity.id
This XML element fulfills the same function as the PID-34 segment in HL7v2: It provides information on the last facility that performed an update of a given patient. This facility may or may not be the same facility that issued the Source Patient identifiers of said patient. If clients do not specify a Last Update Facility, the sending device OID (`sender.device.asAgent.representedOrganization.id.root`) is used as a fall-back. These elements have a special meaning when clients execute a Source Patient query, see Section 2.8.

1.3 HL7 FHIR

eHealth Solutions is now also compliant with the HL7 FHIR standard in its current version STU3. In FHIR, data formats and elements are referred to as "resources", of which the following are supported by eHealth Solutions:

Appointment
Describes a scheduled meeting such as surgeries or conferences on a specific medical case.

Composition
Describes a document containing a coherent set of healthcare-related information.

Contract
Describes an agreement between two or more parties (**read-only**).

Device
Describes a (medical or non-medical) item used for healthcare provision (**read-only**).

Endpoint
Describes the technical details of a location used for the connection to electronic services (**read-only**).

ImagingStudy
Describes the content of a DICOM study (**read-only**).

Observation
Describes measurement values or simple assertions relevant for medical diagnoses.

OperationDefinition
Describes a formal computable definition of an operation or a named query.

PlanDefinition
Describes an amount of measures that shall be taken under certain conditions.

Practitioner
Describes a person engaged in the provisioning of healthcare (**read-only**).

QuestionnaireResponse
Describes a list of questions and corresponding answers (**read-only**).

StructureDefinition
Describes a set of data element definitions and the conditions for their usage (**read-only**).

Furthermore, up to eHealth Solutions VA35B the following resources still use the versions DSTU1 and DSTU2:

DocumentManifests
Describes a set of DocumentReference resources in one package.

DocumentReference
Describes a document used in a healthcare system.

Patient
Describes a set of (e. g. demographical) information on a patient.

ValueSets
Describes a code set (**read-only**).

For resources marked with **read-only**, eHealth Solutions allows only the retrieval of the information concerned, while updating or storing is not possible.

For a more detailed description of the mentioned resources, please refer to the official FHIR documentation at https://www.hl7.org/fhir/STU3/resourcelist.html.

1.3.1 Parameters and Details

The individual parameters and functionalities are indicated in the manifest of the HL7 FHIR endpoint set up in your installation under:
https://<host>:<port>/DataGateway/fhir/dstu3/metadata?_pretty=true&_format=application/json+fhir.

Currently, the parameters are specified as follows:


```
{
  "resourceType": "CapabilityStatement",
  "status": "active",
  "date": "2018-10-23T16:48:18+02:00",
  "publisher": "Not provided",
  "kind": "instance",
  "software": {
    "name": "HAPI FHIR Server",
    "version": "2.4"
  },
  "fhirVersion": "3.0.1",
  "acceptUnknown": "extensions",
  "format": [
    "application/fhir+xml",
    "application/fhir+json"
  ],
  "rest": [
    {
      "mode": "server",
      "resource": [
        {
          "type": "Appointment",
          "profile": {
            "reference": "http://hl7.org/fhir/Appointment.html"
          },
          "interaction": [
            {
              "code": "search-type"
            }
          ],
          "searchParam": [
            {
              "name": "identifier",
              "type": "reference",
              "documentation": "An Identifier of the Appointment"
            },
            {
              "name": "subject",
              "type": "reference"
            }
          ]
        },
        {
```

```
        "type": "AuditEvent",
        "profile": {
          "reference": "http://hl7.org/fhir/AuditEvent.html"
        },
        "interaction": [
          {
            "code": "search-type"
          }
        ],
        "searchParam": [
          {
            "name": "patient",
            "type": "token",
            "documentation": "Direct reference to resource"
          },
          {
            "name": "date",
            "type": "date",
            "documentation": "Time when the event occurred on source"
          }
        ]
      },
      {
        "type": "Binary",
        "profile": {
          "reference": "http://hl7.org/fhir/Binary.html"
        },
        "interaction": [
          {
            "code": "read"
          }
        ]
      },
      {
        "type": "Composition",
        "profile": {
          "reference": "http://hl7.org/fhir/Composition.html"
        },
        "interaction": [
          {
            "code": "update"
          },
          {
            "code": "search-type"
          }
        ],
        "searchParam": [
          {
            "name": "identifier",
            "type": "reference",
            "documentation": "Logical identifier of composition (version-independent)"
          },
          {
            "name": "subject",
            "type": "reference",
            "documentation": "Who and/or what the composition is about"
          },
          {
            "name": "subject",
            "type": "reference",
            "documentation": "Who and/or what the composition is about"
          },
          {
            "name": "attester",
            "type": "reference",
```

```
            "documentation": "Who attested the composition"
          },
          {
            "name": "caseUser",
            "type": "reference"
          },
          {
            "name": "limit",
            "type": "number"
          },
          {
            "name": "patient",
            "type": "reference",
            "documentation": "Who and/or what the composition is about"
          },
          {
            "name": "period",
            "type": "date",
            "documentation": "The period covered by the documentation"
          }
        ]
      },
      {
        "type": "Contract",
        "profile": {
          "reference": "http://hl7.org/fhir/Contract.html"
        },
        "interaction": [
          {
            "code": "update"
          },
          {
            "code": "delete"
          },
          {
            "code": "create"
          },
          {
            "code": "search-type"
          }
        ],
        "searchParam": [
          {
            "name": "subject",
            "type": "token",
            "documentation": "The identity of the subject of the contract"
          },
          {
            "name": "authority",
            "type": "token",
            "documentation": "The authority of the contract"
          },
          {
            "name": "consentType",
            "type": "string"
          }
        ]
      },
      {
        "type": "Device",
        "profile": {
          "reference": "http://hl7.org/fhir/Device.html"
        },
        "interaction": [
          {
```

```
            "code": "read"
          },
          {
            "code": "update"
          },
          {
            "code": "delete"
          },
          {
            "code": "create"
          },
          {
            "code": "search-type"
          }
        ],
        "searchParam": [
          {
            "name": "patient",
            "type": "token",
            "documentation": "Patient information, if the resource is affixed to a person"
          }
        ]
      },
      {
        "type": "DocumentManifest",
        "profile": {
          "reference": "http://hl7.org/fhir/DocumentManifest.html"
        },
        "interaction": [
          {
            "code": "read"
          },
          {
            "code": "search-type"
          }
        ],
        "searchParam": [
          {
            "name": "_include",
            "type": "string"
          },
          {
            "name": "author",
            "type": "string",
            "documentation": "Who and/or what authored the manifest"
          },
          {
            "name": "author",
            "type": "string",
            "documentation": "Who and/or what authored the manifest"
          },
          {
            "name": "created",
            "type": "date",
            "documentation": "When this document manifest created"
          },
          {
            "name": "identifier",
            "type": "token",
            "documentation": "Unique Identifier for the set of documents"
          },
          {
            "name": "patient",
            "type": "reference",
            "documentation": "The subject of the set of documents"
```

```
          },
          {
            "name": "patient",
            "type": "token",
            "documentation": "The subject of the set of documents"
          },
          {
            "name": "status",
            "type": "token",
            "documentation": "current | superseded | entered-in-error"
          },
          {
            "name": "type",
            "type": "token",
            "documentation": "Kind of document set"
          }
        ]
      },
      {
        "type": "DocumentReference",
        "profile": {
          "reference": "http://hl7.org/fhir/DocumentReference.html"
        },
        "interaction": [
          {
            "code": "read"
          },
          {
            "code": "delete"
          },
          {
            "code": "search-type"
          }
        ],
        "conditionalDelete": "single",
        "searchParam": [
          {
            "name": "author",
            "type": "string",
            "documentation": "Who and/or what authored the document"
          },
          {
            "name": "author",
            "type": "string",
            "documentation": "Who and/or what authored the document"
          },
          {
            "name": "class",
            "type": "token",
            "documentation": "Categorization of document"
          },
          {
            "name": "created",
            "type": "date",
            "documentation": "Document creation time"
          },
          {
            "name": "event",
            "type": "token",
            "documentation": "Main clinical acts documented"
          },
          {
            "name": "facility",
            "type": "token",
            "documentation": "Kind of facility where patient was seen"
```

```
          },
          {
            "name": "format",
            "type": "token",
            "documentation": "Format/content rules for the document"
          },
          {
            "name": "identifier",
            "type": "token",
            "documentation": "Master Version Specific Identifier"
          },
          {
            "name": "indexed",
            "type": "date",
            "documentation": "When this document reference was created"
          },
          {
            "name": "patient",
            "type": "reference",
            "documentation": "Who/what is the subject of the document"
          },
          {
            "name": "patient",
            "type": "token",
            "documentation": "Who/what is the subject of the document"
          },
          {
            "name": "period",
            "type": "date",
            "documentation": "Time of service that is being documented"
          },
          {
            "name": "related-id",
            "type": "token",
            "documentation": "Identifier of related objects or events"
          },
          {
            "name": "securitylabel",
            "type": "token",
            "documentation": "Document security-tags"
          },
          {
            "name": "setting",
            "type": "token",
            "documentation": "Additional details about where the content was created (e.g.
clinical specialty)"
          },
          {
            "name": "status",
            "type": "token",
            "documentation": "current | superseded | entered-in-error"
          },
          {
            "name": "subject",
            "type": "reference",
            "documentation": "Who/what is the subject of the document"
          },
          {
            "name": "subject",
            "type": "token",
            "documentation": "Who/what is the subject of the document"
          },
          {
            "name": "type",
            "type": "token",
```

```
            "documentation": "Kind of document (LOINC if possible)"
          },
          {
            "name": "manifest",
            "type": "token"
          },
          {
            "name": "patient",
            "type": "token",
            "documentation": "Who/what is the subject of the document"
          }
        ]
      },
      {
        "type": "Endpoint",
        "profile": {
          "reference": "http://hl7.org/fhir/Endpoint.html"
        },
        "interaction": [
          {
            "code": "read"
          },
          {
            "code": "update"
          },
          {
            "code": "delete"
          },
          {
            "code": "create"
          },
          {
            "code": "search-type"
          }
        ],
        "searchParam": [
          {
            "name": "catConfig",
            "type": "token"
          },
          {
            "name": "organization",
            "type": "reference",
            "documentation": "The organization that is managing the endpoint"
          },
          {
            "name": "status",
            "type": "token",
            "documentation": "The current status of the Endpoint (usually expected to be
active)"
          },
          {
            "name": "useProxy",
            "type": "string"
          }
        ]
      },
      {
        "type": "ImagingStudy",
        "profile": {
          "reference": "http://hl7.org/fhir/ImagingStudy.html"
        },
        "interaction": [
          {
            "code": "read"
```

```
          },
          {
            "code": "search-type"
          }
        ],
        "searchParam": [
          {
            "name": "_tag",
            "type": "token"
          },
          {
            "name": "_tag",
            "type": "token"
          }
        ]
      },
      {
        "type": "Instance",
        "interaction": [
          {
            "code": "search-type"
          }
        ],
        "searchParam": [
          {
            "name": "_tag",
            "type": "token"
          },
          {
            "name": "seriesUID",
            "type": "string"
          },
          {
            "name": "studyUID",
            "type": "string"
          }
        ]
      },
      {
        "type": "Observation",
        "profile": {
          "reference": "http://hl7.org/fhir/Observation.html"
        },
        "interaction": [
          {
            "code": "read"
          },
          {
            "code": "update"
          },
          {
            "code": "delete"
          },
          {
            "code": "create"
          },
          {
            "code": "search-type"
          }
        ],
        "searchParam": [
          {
            "name": "subject",
            "type": "token",
            "documentation": "The subject that the observation is about"
```

```
          },
          {
            "name": "category",
            "type": "token",
            "documentation": "The classification of the type of observation"
          },
          {
            "name": "code",
            "type": "token",
            "documentation": "The code of the observation type"
          },
          {
            "name": "date",
            "type": "date",
            "documentation": "Obtained date/time. If the obtained element is a period, a
date that falls in the period"
          },
          {
            "name": "device",
            "type": "reference",
            "documentation": "The Device that generated the observation data."
          },
          {
            "name": "code",
            "type": "token",
            "documentation": "The code of the observation type"
          },
          {
            "name": "subject",
            "type": "token",
            "documentation": "The subject that the observation is about"
          },
          {
            "name": "sources",
            "type": "string"
          }
        ]
      },
      {
        "type": "OperationDefinition",
        "profile": {
          "reference": "http://hl7.org/fhir/OperationDefinition.html"
        },
        "interaction": [
          {
            "code": "read"
          }
        ]
      },
      {
        "type": "Patient",
        "profile": {
          "reference": "http://hl7.org/fhir/Patient.html"
        },
        "interaction": [
          {
            "code": "read"
          },
          {
            "code": "update"
          },
          {
            "code": "delete"
          },
          {
```

```
            "code": "create"
          },
          {
            "code": "search-type"
          }
        ],
        "searchParam": [
          {
            "name": "address",
            "type": "string",
            "documentation": "A server defined search that may match any of the string
fields in the Address, including line, city, state, country, postalCode, and/or text"
          },
          {
            "name": "birthdate",
            "type": "date",
            "documentation": "The patient's date of birth"
          },
          {
            "name": "family",
            "type": "string",
            "documentation": "A portion of the family name of the patient"
          },
          {
            "name": "gender",
            "type": "string",
            "documentation": "Gender of the patient"
          },
          {
            "name": "given",
            "type": "string",
            "documentation": "A portion of the given name of the patient"
          },
          {
            "name": "identifier",
            "type": "token",
            "documentation": "A patient identifier"
          }
        ]
      },
      {
        "type": "PlanDefinition",
        "profile": {
          "reference": "http://hl7.org/fhir/PlanDefinition.html"
        },
        "interaction": [
          {
            "code": "read"
          },
          {
            "code": "update"
          },
          {
            "code": "delete"
          },
          {
            "code": "create"
          },
          {
            "code": "search-type"
          }
        ],
        "searchParam": [
          {
            "name": "ignoreExtFailure",
```

```
            "type": "token"
          },
          {
            "name": "publisher",
            "type": "string",
            "documentation": "Name of the publisher of the plan definition"
          },
          {
            "name": "attendee",
            "type": "reference"
          },
          {
            "name": "subject",
            "type": "reference"
          },
          {
            "name": "attester",
            "type": "reference"
          },
          {
            "name": "caseUser",
            "type": "reference"
          },
          {
            "name": "limit",
            "type": "number"
          },
          {
            "name": "patient",
            "type": "reference"
          },
          {
            "name": "period",
            "type": "date"
          }
        ]
      },
      {
        "type": "Practitioner",
        "profile": {
          "reference": "http://hl7.org/fhir/Practitioner.html"
        },
        "interaction": [
          {
            "code": "read"
          },
          {
            "code": "search-type"
          }
        ],
        "searchParam": [
          {
            "name": "email",
            "type": "token",
            "documentation": "A value in an email contact"
          },
          {
            "name": "family",
            "type": "string",
            "documentation": "A portion of the family name"
          },
          {
            "name": "given",
            "type": "string",
            "documentation": "A portion of the given name"
```

```
          },
          {
            "name": "specialty",
            "type": "string"
          }
        ]
      },
      {
        "type": "QuestionnaireResponse",
        "profile": {
          "reference": "http://hl7.org/fhir/QuestionnaireResponse.html"
        },
        "interaction": [
          {
            "code": "read"
          },
          {
            "code": "create"
          }
        ]
      },
      {
        "type": "SeriesResource",
        "interaction": [
          {
            "code": "search-type"
          }
        ],
        "searchParam": [
          {
            "name": "_tag",
            "type": "token"
          },
          {
            "name": "studyUID",
            "type": "string"
          }
        ]
      },
      {
        "type": "StructureDefinition",
        "profile": {
          "reference": "http://hl7.org/fhir/StructureDefinition.html"
        },
        "interaction": [
          {
            "code": "read"
          },
          {
            "code": "search-type"
          }
        ]
      },
      {
        "type": "ValueSet",
        "profile": {
          "reference": "http://hl7.org/fhir/ValueSet.html"
        },
        "interaction": [
          {
            "code": "read"
          },
          {
            "code": "search-type"
          }
```

```
        ],
        "searchParam": [
          {
            "name": "name",
            "type": "string",
            "documentation": "Computationally friendly name of the value set"
          }
        ]
      }
    ],
    "interaction": [
      {
        "code": "transaction"
      }
    ],
    "operation": [
      {
        "name": "change-state",
        "definition": {
          "reference": "OperationDefinition/Composition-i-change-state"
        }
      },
      {
        "name": "add-documents",
        "definition": {
          "reference": "OperationDefinition/Composition-i-add-documents"
        }
      },
      {
        "name": "add-participant",
        "definition": {
          "reference": "OperationDefinition/Composition-i-add-participant"
        }
      },
      {
        "name": "add-case",
        "definition": {
          "reference": "OperationDefinition/Composition-i-add-case"
        }
      },
      {
        "name": "change-case-roles",
        "definition": {
          "reference": "OperationDefinition/Composition-i-change-case-roles"
        }
      },
      {
        "name": "finalize-composition",
        "definition": {
          "reference": "OperationDefinition/Composition-i-finalize-composition"
        }
      },
      {
        "name": "remove-case",
        "definition": {
          "reference": "OperationDefinition/Composition-i-remove-case"
        }
      },
      {
        "name": "transfer-case",
        "definition": {
          "reference": "OperationDefinition/Composition-i-transfer-case"
        }
      },
      {
```

```
          "name": "make-note",
          "definition": {
            "reference": "OperationDefinition/Composition-i-make-note"
          }
        },
        {
          "name": "change-forminstance",
          "definition": {
            "reference": "OperationDefinition/Composition-i-change-forminstance"
          }
        },
        {
          "name": "change-participants",
          "definition": {
            "reference": "OperationDefinition/Composition-i-change-participants"
          }
        },
        {
          "name": "change-present-participants",
          "definition": {
            "reference": "OperationDefinition/Composition-i-change-present-participants"
          }
        },
        {
          "name": "remove-participant",
          "definition": {
            "reference": "OperationDefinition/Composition-i-remove-participant"
          }
        },
        {
          "name": "remove-documents",
          "definition": {
            "reference": "OperationDefinition/Composition-i-remove-documents"
          }
        },
        {
          "name": "add-participants",
          "definition": {
            "reference": "OperationDefinition/Composition-i-add-participants"
          }
        },
        {
          "name": "remove-participants",
          "definition": {
            "reference": "OperationDefinition/Composition-i-remove-participants"
          }
        },
        {
          "name": "ihe-pix",
          "definition": {
            "reference": "OperationDefinition/Patient--ihe-pix"
          }
        }
      ]
    }
  ]
}
}
```

2 Patient Administration

Patient Administration messages are used to exchange patient information as defined by the IHE PAM (*Patient Administrtaion*) profile. It allows for the creation and updating of patients using the following transactions:

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 `MPI` 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 eHealth Solutions's proprietary transactions.

Currently, the following patient operations are supported in eHealth Solutions:

- Create Patient
- Update Patient
- Merge Patients
- Link Patients
- Unlink Patients
- Master Patient Change
- Query Patient IDs
- Query Patients

Detailed descriptions are given in the sections below.

The processing of the following HL7 fields/segments concerning patient properties can be en- or disabled by configuration:

Table 8: Available HL7 Fields/Segments Concerning Patient Properties

HL7 fields/segments	HL7 v2	HL7 v3
the patient insurance information	IN1 segment	-
the patient telecommunication addresses	PID-13 and PID-14 fields	controlActProcess.subject.registration Event.subject1.patient.patientPerson.telecom

2.1 Create Patient

2.1.1 Create Patient -- HL7v2

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

- ADT-A01
- ADT-A04
- ADT-A05
- ADT-A08

- ADT-A28
- ADT-A31

Note
Despite the different trigger events (admit, update etc.) the eHealth Solutions 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.

2.1.1.1 Message Structure

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

Table 9: List of Segments – Create Patient.

Segment	Description
MSH	Message Header
MSH-9-1	The message type must be **ADT**
MSH-9-2	The trigger event must be **A01**, **A04**, **A05**, **A08**, **A28** or **A31**
CON	Consent Information
EVN	Event Information
IN1	Patient Insurance Information
PID	Patient Information
PV1	Patient Visit Information
PV1-2	The Patient Class should be **N**.

MSH Segment
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.

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

IN1 Segment
The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.

PID Segment
The PID segment contains the relevant patient data.

PV1 Segment
The PV1 segment is used by Registration/ADT applications to communicate information on a visit-specific basis. For the Merge Patients transaction, it is sufficient to fill the PV1-2 field.

CON Segment
The CON segment contains information on patient declarations, such as consents or opt-outs.

2.1.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2, those for the PID segment are listed in Table 4. These are the relevant fields of the other segments:

- CON-1
  Set ID: Identifies the segment instance within the message.
- CON-2
  Consent Type: Describes the service the subject has consented to.
- CON-3
  Consent Form ID and Version: Identifies the template and version used for the declaration. Possible values are **SUBMIT_ONLY**, **QUERY_ONLY**, **QUERY_SUBMIT** and custom values as defined in the configuration. The field is required if `CON-11` has the value **A**, otherwise it is obsolete.
- CON-11
  Consent Status: Indicates whether the subject consents or does not consent to the service. Possible values are **A** for "active" (mandatory in "create"-type messages) and **R** for "refused" (only possible in "update"-type messages).
- CON-15
  Consent End Date/Time: Indicates when the declaration becomes or has become ineffective. The field is required if `CON-11` has the value **A**, otherwise it is obsolete.
- CON-24
  Consenter ID: ID of the individual concerned by the declaration. Currently not processed by eHealth Solutions but required by the standard.
- CON-25
  Relationship to Subject: Relationship of the consenter to the subject. Currently not processed by eHealth Solutions but required by the standard.
- EVN-2
  Recorded Date/Time: Time at which the notification has been recorded in the system.
- EVN-5
  Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.
- EVN-7
  Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.
- IN1-1
  Set ID: The sequential number of this segment.
- IN1-2
  Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.
- IN1-3
  Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.
- IN1-4
  Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.

PV1-2

Patient Class: Determines the type of patient visit. The field should have the value **N** for "not applicable".

Table 10: Fields Relevant for the Create Patient Transaction.

HL7-Path	Name	Repeatable	Presence
CON-1	Set ID	No	Required
CON-2	Consent Type	No	Required
CON-3	Consent Form ID and Version	No	Conditionally required
CON-11	Consent Status	No	Required
CON-15	Consent End Date/Time	No	Conditionally required
CON-24	Consenter ID	Yes	Required
CON-25	Relationship to Subject	Yes	Required
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional
PV1-2	Patient Class	No	Required

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 24: 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^ISO|20141001233656||ADT^A01|1412199415701|P|2.3.1|||AL
EVN||20141001233656|||^unknown
PID|||1412199415782^^^&1.1.1.1.3&ISO^PI~66127483762232^
    ^^NATIONAL SOCIAL SECURITY ASSOCIATION&1.3.6.1.4.1.9784.999200.2.1&ISO^SS||Robinson^Asa
    ||19030930233655|M
PV1||N
CON|1||QUERY_ONLY||||||||A|||19981004010159+0100|20281004010159+0100||||||||Gredler^Andreas
    |123^Some Identifier
```

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
   |20141001233657||ACK^A01|1412199417491285|P|2.3.1
MSA|AA|1412199415701
```

2.1.2 Create Patient -- HL7v3

Example 25: HL7v3 Create Patient Root Element

interactionId's extension field: `PRPA_IN201301UV02`

```
<ns1:PRPA_IN201301UV02 xmlns:ns1="urn:hl7-org:v3" ITSVersion="XML_1.0">
  INSERT MESSAGE HEADER
  INSERT PAYLOAD
</ns1:PRPA_IN201301UV02>
```

2.1.2.1 Inbound Message Structure

The following elements are required in this specific order:

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

Example 26: 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:authorOrPerformer typeCode="AUT">
      <ns1:assignedPerson classCode="ASSIGNED">
         <ns1:assignedPerson classCode="PSN" determinerCode="INSTANCE">
            <ns1:name xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:EN
    ">
               <ns1:prefix>Dr.</ns1:prefix>
               <ns1:given>Vorname</ns1:given>
               <ns1:family>Nachname</ns1:family>
               <ns1:suffix>Jr.</ns1:suffix>
```

```
            </ns1:name>
         </ns1:assignedPerson>
      </ns1:assignedPerson>
   </ns1:authorOrPerformer>
   <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="1.3.6.1.4.1.21367.13.20.262"
                       extension="williamWaltersIcoserve655278204663014"
                       assigningAuthorityName="EHR_ITH icoserve_2019"/>
               <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>WILLIAM</ns1:given>
                     <ns1:family>WALTERS</ns1:family>
                  </ns1:name>
                   <ns1:administrativeGenderCode code="M"/>
                  <ns1:birthTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:
   type="ns1:TS"
                                  value="19550505"/>
                  <ns1:deceasedInd xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi
   :type="ns1:BL"
                                    value="false"/>
                  <ns1:addr xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
   ns1:AD">
                     <ns1:city>ST. LOUIS</ns1:city>
                     <ns1:state>MO</ns1:state>
                     <ns1:postalCode>63110</ns1:postalCode>
                     <ns1:streetName>3900 FLORA PL</ns1:streetName>
                  </ns1:addr>
               </ns1:patientPerson>
               <ns1:providerOrganization classCode="ORG" determinerCode="INSTANCE">
                  <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
   ns1:II"
                          root="1.3.6.1.4.1.21367.13.20.262"/>
                  <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="1.3.6.1.4.1.21367.13.50.300222"/>
               <ns1:assignedOrganization classCode="ORG" determinerCode="INSTANCE">
                  <ns1:name xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
   ns1:EN">
                     <ns1:delimiter>1.3.6.1.4.1.21367.13.50.300222</ns1:delimiter>
                  </ns1:name>
               </ns1:assignedOrganization>
            </ns1:assignedEntity>
         </ns1:custodian>
      </ns1:registrationEvent>
```

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

2.1.2.2 Outbound Message Structure

See Section 1.2.2.

2.2 Update Patient

2.2.1 Update Patient -- HL7v2

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

- ADT-A01
- ADT-A04
- ADT-A05
- ADT-A08
- ADT-A28
- ADT-A31

Note
Despite the different trigger events (admit, update etc.) eHealth Solutions 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.

2.2.1.1 Message Structure

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

Table 11: List of Segments – Update Patient.

Segment	Description
MSH	Message Header
MSH-9-1	The message type must be **ADT**
MSH-9-2	The trigger event must be **A01**, **A04**, **A05**, **A08**, **A28** or **A31**
CON	Consent Information
EVN	Event Information
IN1	Patient Insurance Information
PID	Patient Information
PV1	Patient Visit Information
PV1-2	The Patient Class should be **N**.

MSH Segment

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.

- EVN Segment
  The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message.
- IN1 Segment
  The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.
- PID Segment
  The PID segment contains the relevant patient data.
- PV1 Segment
  The PV1 segment is used by Registration/ADT applications to communicate information on a visit-specific basis. For the Merge Patients transaction, it is sufficient to fill the PV1-2 field.
- CON Segment
  The CON segment contains information on patient declarations, such as consents or opt-outs.

2.2.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2, those for the PID segment are listed in Table 4. These are the relevant fields of the other segments:

- CON-1
  Set ID: Identifies the segment instance within the message.
- CON-2
  Consent Type: Describes the service the subject has consented to.
- CON-3
  Consent Form ID and Version: Identifies the template and version used for the declaration. Possible values are **SUBMIT_ONLY**, **QUERY_ONLY**, **QUERY_SUBMIT** and custom values as defined in the configuration. The field is required if `CON-11` has the value **A**, otherwise it is obsolete.
- CON-11
  Consent Status: Indicates whether the subject consents or does not consent to the service. Possible values are **A** for "active" (mandatory in "create"-type messages) and **R** for "refused" (only possible in "update"-type messages).
- CON-15
  Consent End Date/Time: Indicates when the declaration becomes or has become ineffective. The field is required if `CON-11` has the value **A**, otherwise it is obsolete.
- CON-24
  Consenter ID: ID of the individual concerned by the declaration. Currently not processed by eHealth Solutions but required by the standard.
- CON-25
  Relationship to Subject: Relationship of the consenter to the subject. Currently not processed by eHealth Solutions but required by the standard.
- EVN-2
  Recorded Date/Time: Time at which the notification has been recorded in the system.
- EVN-5
  Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes).

In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.

- EVN-7

  Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.

- PV1-2

  Patient Class: Determines the type of patient visit. The field should have the value **N** for "not applicable".

- IN1-1

  Set ID: The sequential number of this segment.

- IN1-2

  Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.

- IN1-3

  Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.

- IN1-4

  Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.

Table 12: Fields Relevant for the Update Patient Transaction.

HL7-Path	Name	Repeatable	Presence
CON-1	Set ID	No	Required
CON-2	Consent Type	No	Required
CON-3	Consent Form ID and Version	No	Conditionally required
CON-11	Consent Status	No	Required
CON-15	Consent End Date/Time	No	Conditionally required
CON-24	Consenter ID	Yes	Required
CON-25	Relationship to Subject	Yes	Required
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
PV1-2	Patient Class	No	Required
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional

Example 27: 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^^^NATIONAL
    SOCIAL SECURITY ASSOCIATION&1.3.6.1.4.1.9784.999200.2.1&ISO^SS||NOLL^Levi
    ||19370310234454|U
PV1||N
CON|1||QUERY_ONLY||||||||A|||19981004010159+0100|20281004010159+0100||||||||Gredler^Andreas
    |123^Some Identifier
```

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|20141001234455||
    ACK^A08|1412199895764279|P|2.3.1
MSA|AA|1412199893935
```

Update Patient -- HL7v3

Example 28: HL7v3 Update Patient Root Element

interactionId's extension field=PRPA_IN201302UV02

```
<ns1:PRPA_IN201302UV02 xmlns:ns1="urn:hl7-org:v3" ITSVersion="XML_1.0">
  INSERT MESSAGE HEADER
  INSERT PAYLOAD
</ns1:PRPA_IN201302UV02>
```

2.2.2.1 Inbound Message Structure

The following elements are required in this specific order:

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

Example 29: 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:authorOrPerformer typeCode="AUT">
    <ns1:assignedPerson classCode="ASSIGNED">
       <ns1:assignedPerson classCode="PSN" determinerCode="INSTANCE">
          <ns1:name xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
EN">
             <ns1:prefix>Dr.</ns1:prefix>
             <ns1:given>Vorname</ns1:given>
             <ns1:family>Nachname</ns1:family>
             <ns1:suffix>Jr.</ns1:suffix>
          </ns1:name>
       </ns1:assignedPerson>
    </ns1:assignedPerson>
 </ns1:authorOrPerformer>
 <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="1.3.6.1.4.1.21367.13.20.262"
                     extension="alyssaIcoserve12345671"
                     assigningAuthorityName="EHR_ITH icoserve_2019"/>
                     <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>ALICE</ns1:given>
                   <ns1:family>EHR_ITH icoserve_2019</ns1:family>
                </ns1:name>
                <ns1:administrativeGenderCode code="F"/>
                <ns1:birthTime xsi:type="ns1:TS" value="19710701"/>
                <ns1:deceasedInd xsi:type="ns1:BL" value="false"/>
                <ns1:addr xsi:type="ns1:AD">
                   <ns1:country>AT</ns1:country>
                   <ns1:city>Innsbruck</ns1:city>
                   <ns1:state>Tirol</ns1:state>
                   <ns1:postalCode>6020</ns1:postalCode>
                   <ns1:streetName>Innrain 98</ns1:streetName>
                </ns1:addr>
             </ns1:patientPerson>
             <ns1:providerOrganization classCode="ORG" determinerCode="INSTANCE">
                <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:II"
                        root="1.3.6.1.4.1.21367.13.20.262"/>
                <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="1.3.6.1.4.1.21367.13.50.300222"/>
                <ns1:assignedOrganization classCode="ORG" determinerCode="INSTANCE">
                   <ns1:name xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type
  ="ns1:EN">
                      <ns1:delimiter>1.3.6.1.4.1.21367.13.50.300222</ns1:delimiter>
                   </ns1:name>
                </ns1:assignedOrganization>
             </ns1:assignedEntity>
          </ns1:custodian>
       </ns1:registrationEvent>
    </ns1:subject>
 </ns1:controlActProcess>
```

2.2.2.2 Outbound Message Structure

See Section 1.2.2.

2.3 Merge Patients

2.3.1 Merge Patients -- HL7v2

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

- ADT A34
- ADT A39
- ADT A40
- ADT A41
- ADT A42
- ADT A43
- ADT A47

The `MPI` 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 `MPI` 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. The dominant patient is then updated in eHealth Solutions, it is thus highly recommended to transmit the full patient data in the PID segment.

The following scenarios can occur when merging patients:

- If both the dominant and recessive patient is not known to the MPI, it will not take action. A success response is returned.
- If only the recessive patient is not known to the MPI, it will not take action. A success response is returned
- If only the dominant patient ID is not known to the MPI, the Merge Patient transaction is ignored; the MPI performs a Replace Identifier transaction instead. This results in the recessive patient ID being swapped with the dominant patient ID, and is not an error.
- If both the dominant and recessive patients are known to the MPI, the merge is performed as intended.

Note
In order to avoid an unwanted Replace Identifier transaction, it is highly recommended to register and/or update the relevant patients beforehand.

2.3.1.1 Message Structure

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

Table 13: 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 **A34**, **A39**, **A40**, **A41**, **A42**, **A43** or **A47**
EVN	Event Information
IN1	Patient Insurance Information
MRG	Merge Patient Information
PID	Patient Information
PV1	Patient Visit Information
PV1-2	The Patient Class should be **N**.

MSH Segment
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.

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

IN1 Segment
The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.

PID Segment
The PID segment contains the relevant patient data.

MRG Segment
The MRG segment is used to specify the patient dataset to be merged.

PV1 Segment
The PV1 segment is used by Registration/ADT applications to communicate information on a visit-specific basis. For the Merge Patients transaction, it is sufficient to fill the PV1-2 field.

2.3.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2, those for the PID segment are listed in Table 4. These are the relevant fields of the other segments:

EVN-2

Recorded Date/Time: Time at which the notification has been recorded in the system.

EVN-5

Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.

EVN-7

Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.

IN1-1

Set ID: The sequential number of this segment.

IN1-2

Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.

IN1-3

Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.

IN1-4

Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.

PV1-2

Patient Class: Determines the type of patient visit. The field should have the value **N** for "not applicable".

MRG-1

Prior Patient Identifier List: List of all Patient IDs of the recessive patient. The structure of this field corresponds to that of PID-3 (*Patient Identifier List)*. For a valid transaction it is sufficient to provide one Source Patient Identifier. Regional identifiers such as social security numbers should not be used since they will be ignored by eHealth Solutions.

MRG-3

Prior Patient Account Number: Account Number of the recessive patient. The structure of this field corresponds to that of PID-18 (*Patient Account Number)*.

MRG-7

Prior Patient Name List: Name of the recessive patient. Values given in this field are used for logging purposes.

Table 14: Fields Relevant for the Merge Patients Transaction.

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional
PV1-2	Patient Class	No	Required

Table 14: Fields Relevant for the Merge Patients Transaction.

Table 14: Fields Relevant for the Merge Patients Transaction.

HL7-Path	Name	Repeatable	Presence
MRG-1	Patient Identifier List	Yes	Required
MRG-3	Prior Patient Account Number	No	Optional
MRG-7	Prior Patient Name List	Yes	Optional

Example 30:

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^^^NATIONAL 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^^^NATIONAL 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
```

2.3.2 Merge Patients -- HL7v3

Example 31: HL7v3 Merge Patient Root Element

interactionId's extension field: `PRPA_IN201304UV02`

```
<ns1:PRPA_IN201304UV02 xmlns:ns1="urn:hl7-org:v3" ITSVersion="XML_1.0">
  INSERT MESSAGE HEADER
  INSERT PAYLOAD
</ns1:PRPA_IN201304UV02>
```

2.3.2.1 Inbound Message Structure

The following elements are required in this specific order:

1. controlActProcess
2. controlActProcess.code
3. controlActProcess.authorOrPerformer
4. controlActProcess.authorOrPerformer.assignedPerson
5. controlActProcess.authorOrPerformer.assignedPerson.assignedPerson
6. controlActProcess.authorOrPerformer.assignedPerson.assignedPerson.name
7. controlActProcess.subject
8. controlActProcess.subject.registrationEvent
9. controlActProcess.subject.registrationEvent.id
10. controlActProcess.subject.registrationEvent.statusCode
11. controlActProcess.subject.registrationEvent.subject1
12. controlActProcess.subject.registrationEvent.subject1.patient
13. controlActProcess.subject.registrationEvent.subject1.patient.id
14. controlActProcess.subject.registrationEvent.subject1.patient.statusCode
15. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson

16. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson.name
17. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson.name.given
18. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson.name.family
19. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson.administrativeGenderCode
20. controlActProcess.subject.registrationEvent.subject1.patient.patientPerson.deceasedInd
21. controlActProcess.subject.registrationEvent.subject1.patient.providerOrganization
22. controlActProcess.subject.registrationEvent.subject1.patient.providerOrganization.id
23. controlActProcess.subject.registrationEvent.subject1.patient.providerOrganization.contactParty
24. controlActProcess.subject.registrationEvent.custodian
25. controlActProcess.subject.registrationEvent.custodian.assignedEntity
26. controlActProcess.subject.registrationEvent.custodian.id
27. controlActProcess.subject.registrationEvent.custodian.assignedOrganization
28. controlActProcess.subject.registrationEvent.custodian.assignedOrganization.name
29. controlActProcess.subject.registrationEvent.custodian.assignedOrganization.delimiter

Example 32: HL7v3 Merge 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_TE201304UV02"/>
   <ns1:authorOrPerformer typeCode="AUT">
      <ns1:assignedPerson classCode="ASSIGNED">
         <ns1:assignedPerson classCode="PSN" determinerCode="INSTANCE">
            <ns1:name xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
  EN">
               <ns1:prefix>Dr.</ns1:prefix>
               <ns1:given>Vorname</ns1:given>
               <ns1:family>Nachname</ns1:family>
               <ns1:suffix>Jr.</ns1:suffix>
            </ns1:name>
         </ns1:assignedPerson>
      </ns1:assignedPerson>
   </ns1:authorOrPerformer>
   <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="1.3.6.1.4.1.21367.13.20.262"
                       extension="alyssaIcoserve12345671"
                       assigningAuthorityName="EHR_ITH icoserve_2019"/>
               <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>ALICE</ns1:given>
                     <ns1:family>EHR_ITH icoserve_2019</ns1:family>
                  </ns1:name>
                 <ns1:administrativeGenderCode code="F"/>
                  <ns1:birthTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi
  :type="ns1:TS"
                                 value="19710701"/>
                  <ns1:deceasedInd xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:type="ns1:BL"
                                   value="false"/>
                  <ns1:addr xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type
  ="ns1:AD">
                     <ns1:country>AT</ns1:country>
                     <ns1:city>Innsbruck</ns1:city>
```

```
                      <ns1:state>Tirol</ns1:state>
                      <ns1:postalCode>6020</ns1:postalCode>
                      <ns1:streetName>Innrain 98</ns1:streetName>
                   </ns1:addr>
                </ns1:patientPerson>
                <ns1:providerOrganization classCode="ORG" determinerCode="INSTANCE">
                   <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="
ns1:II"
                           root="1.3.6.1.4.1.21367.13.20.262"/>
                   <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="1.3.6.1.4.1.21367.13.50.300222"/>
                <ns1:assignedOrganization classCode="ORG" determinerCode="INSTANCE">
                   <ns1:name xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type
="ns1:EN">
                      <ns1:delimiter>1.3.6.1.4.1.21367.13.50.300222</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="1.3.6.1.4.1.21367.13.20.262"
                              extension="aliceMaidenIcoserve12345671"
                              assigningAuthorityName="EHR_ITH icoserve_2019"/>
                   </ns1:priorRegisteredRole>
                </ns1:subject1>
             </ns1:priorRegistration>
          </ns1:replacementOf>
       </ns1:registrationEvent>
    </ns1:subject>
 </ns1:controlActProcess>
```

2.3.2.2 Outbound Message Structure

See Section 1.2.2.

2.4 Link Patients

2.4.1 Link Patients -- HL7v2

This transaction is used to link a Local Patient to a Master Patient. The following HL7 messages can be received and processed in order execute this transaction:

- ADT-A24

2.4.1.1 Message Structure

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

Table 15: Link Patient Segments

Segment	Description
MSH	Message Header
MSH-9-1	The message type must be **ADT**
MSH-9-2	The trigger event must be **A24**
EVN	Event Information
PID	Patient Information

MSH Segment
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.

EVN Segment
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 the relevant patient data.

2.4.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2, those for the PID segment are listed in Table 4. These are the relevant fields of the other segments:

EVN-2
Recorded Date/Time: Time at which the notification has been recorded in the system.

EVN-5
Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.

EVN-7
Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.

Table 16: Fields Relevant for the Link Patients Transaction.

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional

The PID Segment has to be placed twice in this message, as each occurrence refers to one patient to be linked. The first occurence is always a Source Patient, the second can be either a Source- or a Master

Patient. Links are however always established to a Master Patient.

Warning
The *Link Patients* transaction must be exclusively used for establishing links between Source and Master Patients. Do not try to update patient data in the same go, as all changes other than the linkage will be ignored.

Warning
Also, be aware that this transaction establishes a "hard link" between the data sets and does not check for matching criteria. Therefore, the transaction must be applied with caution.

Example 33:
Submission:

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180312132909.639+0100||ADT^A24^ADT_A24|c2997f5e-7027-4f57-acc8-
  f36a625b2624|P|2.5|||AL|||UNICODE UTF-8
EVN||20180312132909.639+0100|||userId5583^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974&ISO^L^^^EN
PID|||patientId4436^^^My Local Clinic&1.2.123.27.1974&ISO^PI||Doe^John^^^^^L
PID|||patientId4316^^^My Local Clinic&1.2.123.27.1974&ISO^PI||Denver^John^^^^^L
```

2.5 Unlink Patients

2.5.1 Unlink Patients -- HL7v2

This transaction is used to remove a link between a Local Patient and a Master Patient. The following HL7 messages can be received and processed in order execute this transaction:

- ADT-A37

2.5.1.1 Message Structure

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

Table 17: Link Patient Segments

Segment	Description
MSH	Message Header
MSH-9-1	The message type must be **ADT**
MSH-9-2	The trigger event must be **A37**
EVN	Event Information
PID	Patient Information

MSH Segment

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.

EVN Segment

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 the relevant patient data.

2.5.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2, those for the PID segment are listed in Table 4. These are the relevant fields of the other segments:

EVN-2

Recorded Date/Time: Time at which the notification has been recorded in the system.

EVN-5

Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.

EVN-7

Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.

Table 18: Fields Relevant for the Unlink Patients Transaction.

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional

The PID Segment has to be placed twice in this message, as each occurrence refers to one patient to be unlinked. The first occurence is always a Source Patient, the second can be either a Source- or a Master Patient and must be present to conform to the HL7 standard. The link to be removed however always points to a Master Patient.

Example 34:
Submission:

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180312133336.031+0100||ADT^A37^ADT_A37|06d50d88-7e4b-4884-a32c-259
  e0a3705e4|P|2.5|||AL|||UNICODE UTF-8
EVN||20180312133336.031+0100|||userId0241^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974&ISO^L^^^EN
PID|||patientId5795^^^My Local Clinic&1.2.123.27.1974&ISO^PI||Doe^John^^^^^L
PID|||patientId5795^^^My Local Clinic&1.2.123.27.1974&ISO^PI||Doe^John^^^^^L
```

2.6 Master Patient Change

2.6.1 XAD-PID Change Notification -- HL7v2

This transaction is used when a Local Patient is unlinked from their previous Master Patient (XAD-PID) and assigned to a new Master Patient (XAD-PID).

Trigger Event

- ADT A43

Processing

- **Inbound:** XDS Registry
- **Outbound:** MPI

2.6.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction **XAD-PID Change**.

Table 19: XAD-PID Change Segments

Segment	Description
MSH	Message Header
MSH-9-1	The message type must be **ADT**
MSH-9-2	The trigger event must be **A43**
EVN	Event Information
PID	Patient Information
MRG	Merge Patient Information

MSH Segment

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.

EVN Segment

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 the relevant patient data.

MRG Segment

The MRG segment contains information relevant for the merging of patient data.

Field Overview

PID-3

The PID-3 Segment is repeated twice in this message; the first occurrence refers to the newly linked Master Patient (XAD-PID), effective immediately, while the second occurrence refers to the Local Patient whose Master Patient ID (XAD-PID) is being changed.

MRG-1

The MRG-1 Segment contains the old, i.e. previously linked, Master Patient ID (XAD-PID).

Example 35:
Submission:

```
MSH|^~\&|Test Sending Application^1.1.2.1.1|Test Sending Facility^1.1.2|Test Receiving
  Application^1.1.1.1.1|Test Receiving Facility^1.1.1|201505051500||ADT^A43|127|P|2.3.1
EVN||201505051500|||1234^Ford^Harrison^Jonathan^Jr.^Mr.^^^^^^^^^^^^^^^PhD|201505051100
PID|||1412199415782^^^&1.1.1&ISO^PI~4564534^^^&1.1.1.3.2&ISO^PI
MRG|1412200318179^^^&1.1.2&ISO^PI
```

2.7 Query Patient IDs

The PIX/PDQ Manager provides two patient query methods: **Query Patient IDs** and **Query Patients** (Section 2.8). 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.

It is possible to search by a patient's identifier without setting the assigning authority. In this case, the search is extended to all available assigning authorities.

Warning
This option does not conform to the IHE standards and can only be used within the eHealth Solutions infrastructure.

2.7.1 Query Patient IDs -- HL7v2

2.7.1.1 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 20 are required:

Table 20: Query Patient ID Segments

Segment	Description
MSH	Message Header
MSH-9-1	The Message Type 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 21).

Table 21: Query Patient ID Responses

Segment	Description
MSH	Message Header
MSH-9-1	The Message Type 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.

2.7.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2, those for the PID segment are listed in Table 4. These are the relevant fields of the other segments:

- QPD-1
  Query Parameter Definition: This is a constant value and must be "IHE PIX Query" (defined by the IHE).

QPD-2

Query Tag: Name for the query. This value will be returned to find matching responses to queries.

QPD-3

Person Identifier: One or more Patient Identifier used to query the patient in the PIX/PDQ. Datatype: CX

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.

Table 22: Fields Relevant for the Query Patient ID Transaction.

HL7-Path	Name	Repeatable	Presence
QPD-1	Query Parameter Definition	Required	No
QPD-2	Query Tag	Required	No
QPD-3	Person Identifier	Required	No
QPD-8	What Domains Returned	Optional	Yes

Example 36:
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 NATIONAL SOCIAL SECURITY ASSOCIATION
    &1.3.6.1.4.1.9784.999200.2.1&
ISO^SS~2569605884678423^^^OTHER NATIONAL 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||~^^^^^^S
```

2.7.2 Query Patient IDs -- HL7v3

Example 37: 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>
```

2.7.2.1 Inbound Message Structure

The following elements are required in this specific order:

1. controlActProcess
2. controlActProcess.code
3. controlActProcess.authorOrPerformer
4. controlActProcess.authorOrPerformer.assignedPerson
5. controlActProcess.authorOrPerformer.assignedPerson.assignedPerson
6. controlActProcess.authorOrPerformer.assignedPerson.assignedPerson.name
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 38: 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:assignedPerson classCode="ASSIGNED">
         <ns1:assignedPerson classCode="PSN" determinerCode="INSTANCE">
            <ns1:name xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
  EN">
               <ns1:prefix>Dr.</ns1:prefix>
               <ns1:given>Vorname</ns1:given>
               <ns1:family>Nachname</ns1:family>
               <ns1:suffix>Jr.</ns1:suffix>
            </ns1:name>
         </ns1:assignedPerson>
      </ns1:assignedPerson>
   </ns1:authorOrPerformer>
   <ns1:queryByParameter>
      <ns1:queryId xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
                   root="1.3.6.1.4.1.21367.13.50.300222"
                   extension="1552661647687"/>
      <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="1.3.6.1.4.1.21367.3000.1.6"
                       extension="IHEFACILITY-998"
                       assigningAuthorityName="IHEFACILITY"/>
            <ns1:semanticsText>Patient.id</ns1:semanticsText>
         </ns1:patientIdentifier>
      </ns1:parameterList>
   </ns1:queryByParameter>
</ns1:controlActProcess>
```

Example 39: 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>
```

2.7.2.2 Outbound Message Structure

Example 40: 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="
NATIONAL 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"/>
            </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 41: 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>
```

2.8 Query Patients

It is possible to search by a patient's identifier without setting the assigning authority. In this case, the search is extended to all available assigning authorities.

Warning
This option does not conform to the IHE standards and can only be used within the eHealth Solutions infrastructure.

Source Patient Query

Both HL7v2 and HL7v3 allow the option of querying Source Patients. In this context, the HL7v2 segment `PID-34 (Last Update Facility)` and HL7v3 XML element `RegistrationEvent.Custodian.assignedEntity.id` (or, if empty, `sender.device.asAgent.representedOrganization.id.root`) take on a special meaning.

HL7v2

In query messages, the Last Update Facility is specified in the MSH-5 (Receiving Application). If the MPI does not recognize the provided Last Update Facility, it will execute a normal Master Patient Query. However, if it does recognize the Last Update Facility, the MPI will instead execute a Source Patient query.

HL7v3

The XML element for the Last Update Facility in patient feeds (`sender.device.asAgent.representedOrganization.id.root`) has the following format:

Example 42:

```
      <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="1.1.1.1.2"/>
                  <ns1:asAgent classCode="AGNT">
                     <ns1:representedOrganization classCode="ORG" determinerCode="INSTANCE
    ">
                        <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi
    :type="ns1:II"
                                root="1.1.1"/>
                     </ns1:representedOrganization>
                  </ns1:asAgent>
               </ns1:device>
            </ns1:sender>
```

In patient queries, the XML element for Last Update Facility is `receiver.device.id.root` and has the following format:

Example 43:

```
    <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="1.1.1.12"/>
               <ns1:asAgent classCode="AGNT">
                  <ns1:representedOrganization classCode="ORG" determinerCode="INSTANCE
">
                     <ns1:id xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi
:type="ns1:II"
                            root="1.1.1"/>
                  </ns1:representedOrganization>
               </ns1:asAgent>
            </ns1:device>
         </ns1:receiver>
```

Warning
Note that it is possible to unintentionally trigger Source Patient queries due to the dual use of the PID-34/RegistrationEvent.Custodian.assignedEntity.id element by the HL7 standard. In order to avoid such unintended queries, be mindful of the information written in the element when creating/registering patient data.

2.8.1 Query Patients -- HL7v2

The difference between the transactions **Query Patient IDs** (Section 2.7) 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.

2.8.1.1 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 25).

Table 23: Message Segment Overview.

Segment	Description
MSH	Message Header
MSH-9-1	The Message Type 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

Echoes 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 24):

Table 24: Patient Query Responses

Segment	Description
MSH	Message Header
MSH-9-1	The Message Type must be **RSP**
MSH-9-2	The TriggerEvent must be **K22**
MSA	Message Acknowledgement
ERR	Error
QAK	Query Acknowledgement
QPD	QPD Segment
PID	PID Segment
DSC	Continuation Pointerts

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, the only exception being HL7 batch messages.

Message Acknowledgement

Displays the success of the message.

Error

If an error occurred, this segment contains the details.

Query Acknowledgement

Repeats the Query Tag (sent by the client in the QPD-2 field) and a query status.

QPD Segment

Echoes the QPD Segment value sent in the QBP Q23 message.

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.

2.8.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2, those for the PID segment are listed in Table 4. These are the relevant fields of the other segments:

- QPD-1
  Query Parameter Definition: This is a constant value and must be “IHE PDQ Query” (defined by the IHE)
- QPD-2
  Query Tag: Name for the query. This value will be returned to find matching responses to queries.
- QPD-3
  Demographics Field: A list of Key-Value pairs defining the Query parameter.
- 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.)
- RCP-1
  Query Priority: This is a constant value and must be “I” to force an immediate response.
- RCP-2
  Quantity Limited Request: Specifies the amount of patient records returned per result page.
- DSC-1
  Continuation Pointer: To request additional increments of data, DSC-1 (Continuation Pointer) shall echo the value from RSP ^K22 DSC-1.
- DSC-2
  Continuation Style: This is a constant value and must be “I” to force the following responses to be immediate as well.

Table 25: List of data set in the QPD segment to query patients.

HL7-Path	Name	Repeatable	Presence
QPD-1	Query Parameter Definition	Required	No
QPD-2	Query Tag	Required	No
QPD-3	Demographics Field	Required	Yes
QPD-8	What Domains Returned	Optional	Yes
RCP-1	Query Priority	Required	No
RCP-2	Quantity Limited Request	Optional	No
DSC-1	Continuation Pointer	Optional	No
DSC-2	Continuation Style	Optional	No

Note
In this transaction, the RCP segment is responsible for setting the quantity of returned patients.

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

The **QPD-3**-Demographics Field 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 selected segment.
- `<component no>`
  is for fields whose data types contain multiple components and 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>`
  is for components whose data types contain multiple subcomponents and 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^^^Example Hospital&1.1.1.1.3&ISO^PI~719332451557239827^^^OTHER NATIONAL
SOCIAL SECURITY ASSOCIATION&1.3.6.1.4.1.9784.999200.2.1&ISO^SS~4d0d4212-d626-4894-984b-297
    c5ca2ac10^^^XDS
Affinity Domain 1&1.1.1&ISO^GPI||MARKLEY^Julie^^^^^L~MARKLEY^Julie^^^^^L||20120518|F
```

2.8.2 Query Patients -- HL7v3

Example 45: HL7v3 Query Patients Root Element
interactionId's extension field: `PRPA_IN201305UV02`

```
<ns1:PRPA_IN201305UV02 xmlns:ns1="urn:hl7-org:v3" ITSVersion="XML_1.0">
  INSERT MESSAGE HEADER
  INSERT PAYLOAD
</ns1:PRPA_IN201305UV02>
```

2.8.2.1 Inbound Message Structure

The following elements are required in this specific order:

1. controlActProcess
2. controlActProcess.code
3. controlActProcess.authorOrPerformer
4. controlActProcess.authorOrPerformer.assignedPerson
5. controlActProcess.authorOrPerformer.assignedPerson.assignedPerson
6. controlActProcess.authorOrPerformer.assignedPerson.assignedPerson.name
7. controlActProcess.queryByParameter
8. controlActProcess.queryByParameter.queryId
9. controlActProcess.queryByParameter.statusCode
10. controlActProcess.queryByParameter.statusCoderesponseModalityCode
11. controlActProcess.queryByParameter.responsePriorityCode
12. controlActProcess.queryByParameter.initialQuantity
13. controlActProcess.queryByParameter.initialQuantityCode
14. controlActProcess.queryByParameter.parameterList
15. controlActProcess.queryByParameter.parameterList.id
16. controlActProcess.queryByParameter.parameterList.livingSubjectAdministrativeGender
17. controlActProcess.queryByParameter.parameterList.livingSubjectName
18. controlActProcess.queryByParameter.parameterList.livingSubjectName.value
19. controlActProcess.queryByParameter.parameterList.livingSubjectName.value.given
20. controlActProcess.queryByParameter.parameterList.livingSubjectName.value.family
21. 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:authorOrPerformer typeCode="AUT">
        <ns1:assignedPerson classCode="ASSIGNED">
           <ns1:assignedPerson classCode="PSN" determinerCode="INSTANCE">
              <ns1:name xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:
   EN">
                 <ns1:prefix>Dr.</ns1:prefix>
                 <ns1:given>Vorname</ns1:given>
                 <ns1:family>Nachname</ns1:family>
                 <ns1:suffix>Jr.</ns1:suffix>
              </ns1:name>
           </ns1:assignedPerson>
        </ns1:assignedPerson>
     </ns1:authorOrPerformer>
     <ns1:queryByParameter>
        <ns1:queryId xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1:II"
                     root="1.3.6.1.4.1.21367.13.50.300222"
                     extension="1552661838861"/>
        <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="10"/>
      <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="09f8f001-1768-407e-9266-3bddf9556aa4"/>
         <ns1:livingSubjectName>
            <ns1:value xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns1
  :PN">
               <ns1:given>CHIP</ns1:given>
               <ns1:family>MOORE</ns1:family>
            </ns1:value>
            <ns1:semanticsText>LivingSubject.name</ns1:semanticsText>
         </ns1:livingSubjectName>
      </ns1:parameterList>
   </ns1:queryByParameter>
</ns1:controlActProcess>
```

2.8.2.2 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="Example Hospital"/>
        <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>Joe</ns1:given>
            <ns1:family>Shmoe</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>Example City</ns1:city>
            <ns1:state>Example State</ns1:state>
            <ns1:postalCode>00000</ns1:postalCode>
            <ns1:streetAddressLine>Street 00</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="
NATIONAL 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="1.2.3.3.3.1.3" 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>Joe</ns1:given>
            <ns1:family>Shmoe</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>Example City</ns1:city>
            <ns1:state>Example State</ns1:state>
            <ns1:postalCode>00000</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
="St. James Hospital"/>
            <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="
NATIONAL 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="Example Hospital
"/>
            <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="Example Hospital"/>
            <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>Joe</ns1:given>
                <ns1:family>Shmoe</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>Example City</ns1:city>
                <ns1:state>Example State</ns1:state>
                <ns1:postalCode>00000</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>
```

3 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 both an ID number (PV1-19.1) and an Assigning Authority (PV1-19.4). If a value is present in this field, the patient visit notification will be processed by the `MPI` 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.

Note

If the Assigning Authority is not supplied in PV1-19, the value supplied by PV1-3-4 (Patient Location – Facility) is used as a fallback. Note that this behavior is not covered in the HL7 Standard.

HL7v3

All visit-related inbound messages for HL7v3 must contain an Assigning Authority ID under:

`controlActProcess.subject.encounterEvent.id.item`

Currently, the following encounter operations are supported in eHealth Solutions:

- Admit Inpatient
- Register Outpatient
- Discharge Patient
- Cancel Admit Inpatient/Outpatient
- Cancel Discharge Patient
- Transfer Patient
- Cancel Transfer Patient
- Change Outpatient To Inpatient
- Change Inpatient To Outpatient
- Change Patient Identifier List
- Change Attending Doctor
- Cancel Change Attending Doctor
- Begin Leave of Absence
- Cancel Begin Leave of Absence
- End Leave of Absence
- Cancel End Leave Of Absence
- Move Account Information
- Update Encounter Event
- Cancel Encounter Event
- Merge Patients/Encounters

Detailed descriptions are given in the sections below.

3.1 Admit Inpatient

This transaction is used to notify the **MPI** about an inpatient visit.

3.1.1 Admit Inpatient -- HL7v2

- **ADT A01** – Admit/visit notification
- **ADT A04** – Register a patient

3.1.1.1 Message Structure

This section provides an overview and description of the message structure of the Admit Inpatient transaction.

Table 26: Segments: Admit Inpatient

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
IN1	Patient Insurance Information **(optional)**
PID	Patient Information
PV1	Patient Visit Information
ZBE	Movement Action (**optional**)
ZBE-4	The type of action must be **INSERT**
ZBE-5	The movement indicator must be **N**

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.

EVN Segment

The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message. Values provided in fields other than those listed in the Field Overview will be ignored.

IN1 Segment

The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.

PID Segment

The PID segment contains the relevant patient data.

PV1 Segment

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

ZBE Segment

The ZBE segment can be used to uniquely identify individual movements. This allows for corrections in historic information at a later point. Note that, when the ZBE segment is used, at least one patient assigning authority must be configured to support the Historic Movement Management option. As long as this configuration is active, the ZBE segment is treated as required.

3.1.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2, those for the PID segment are listed in Table 4. These are the relevant fields of the other segments:

- EVN-2
  Recorded Date/Time: Time at which the notification has been recorded in the system.
- EVN-5
  Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.
- EVN-7
  Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.
- IN1-1
  Set ID: The sequential number of this segment.
- IN1-2
  Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.
- IN1-3
  Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.
- IN1-4
  Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.
- PV1-2
  Patient Class: Determines the type of patient visit. This field is not case-sensitive; it identifies the type of 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.
- PV1-3
  Assigned Patient Location: The facility that processes the patient visit. The `MPI` only processes PV1-3.4 (Facility) and requires this component to be present.
- PV1-19
  Visit Number: The unique identifier of the patient encounter. The value is supposed to be static for all messages referring to the same encounter. If no value is present, PID-18 will be used as a fallback encounter identifier. However, it is strongly recommended to use PV1-19 as the encounter identifier, and use PID-18 only to group encounters under a common patient encounter (if desired). In any case, this field is not intended to identify a specific encounter event (e.g. inpatient admission), but the patient encounter (a sequence of individual encounter events) as a whole. Also, it should be noted that the `MPI` processes PV1-19.1, PV1-19.4 and PV1-19.5.
- PV1-44
  Admit Date/Time: The start date/time of the patient visit.
- PV1-51
  Visit Indicator: Specifies the field that is used to identify the encounter. Possible values are **A** for PID-18, **V** for PV1-19 (recommended). It is recommended by IHE to set a value for this field. In eHealth Solutions, however, values given here will not be processed.

ZBE-1

Movement ID: The unique identifier of the movement. All components are processed, ZBE-1.1 (Entity ID) and ZBE-1.3 (Universal ID; it is recommended to use the value given in the Source Patient Assigning Authority) are required.

ZBE-2

Start Movement Date/Time: The timestamp of the movement.

ZBE-4

Movement Action: For the type of movement see Table 26.

ZBE-5

Historical Movement Indicator: See Table 26.

Table 27: Fields relevant for the Begin Inpatient Visit Transaction

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional
PV1-2	Patient Class	No	Required
PV1-3	Assigned Patient Location	No	Optional
PV1-19	Visit Number	No	Recommended
PV1-44	Admit Date/Time	No	Required
PV1-51	Visit Indicator	No	Optional
ZBE-1	Movement ID	No	Required for Historic Movement Management
ZBE-2	Start Movement Date/Time	No	Required for Historic Movement Management
ZBE-4	Movement Action	No	Required for Historic Movement Management
ZBE-5	Historical Movement Indicator	No	Required for Historic Movement Management

Example 49:
Submission

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180306154052.781+0100||ADT^A01^ADT_A01|53b4e866-14b6-4cc5-995c-
  aaa0743d3dd2|P|2.5|||AL|||UNICODE UTF-8
EVN||20180306154052.781+0100|||userId9277^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974&ISO^L^^^EN|20180306154052.697+0100
PID|||patientId3225^^^My Local Clinic&1.2.123.27.1974&ISO^PI~12850234582296^^^Social
  Security Association&1.2.123.27.1974&ISO^SS||Doe^John^^^^^L||19980306|M|||&Main Street
  &17^^London^^54820^GB^L||^^^^^^^^^^^011 44 20 1234 5678||en|M|VAR|patientAccount8753^^^
  My Local Clinic&1.2.123.27.1974&ISO^AN||||||N||GB||||N
PV1||I|^^^Radiology&1.2.123.27.1974.187.15&ISO||||doctor9396^Dorian^John^^^^^^Medical
  Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M.D.|doctor7763^House^Gregory^^^^^^
  Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M.D.|||||||A0||||visitId6965^^^My
   Local Clinic&1.2.123.27.1974&ISO^VN|||||||||||||||||||||||||20180306154052.697+0100
```

Submission with Historic Movement Management

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180313135112.535+0100||ADT^A01^ADT_A01|f943bb65-c45e-4ba5-a239-976
  e2213f4bd|P|2.5|||AL|||UNICODE UTF-8
EVN||20180313135112.535+0100|||userId0103^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974.1.239&ISO^L^^^EN|20180313135112.523+0100
PID|||patientId9777^^^My Local Clinic&1.2.123.27.1974&ISO^PI~12850234586142^^^Social
  Security Association&1.2.123.27.1974&ISO^SS||Doe^John^^^^^L||19980313|M|||&Main Street
  &17^^London^^54820^GB^L||^^^^^^^^^^^011 44 20 1234 5678||en|M|VAR|patientAccount1946^^^
  My Local Clinic&1.2.123.27.1974&ISO^AN||||||N||GB||||N
PV1||I|^^^Radiology&1.2.123.27.1974.187.15&ISO||||doctor2884^Dorian^John^^^^^^Medical
  Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M.D.|doctor4412^House^Gregory^^^^^^
  Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M.D.|||||||A0||||visitId8498^^^My
   Local Clinic&1.2.123.27.1974&ISO^VN
  |||||||||||||||||||||||||20180313135112.523+0100|||||||V
ZBE|visitEvent3471^My Local Clinic^1.2.123.27.1974^ISO|20180313135112.523+0100||INSERT|N
```

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
    ^A01|124|P|2.3.1
MSA|AA|123
```

3.1.2 Admit Inpatient -- HL7v3

3.1.2.1 Message Structure

Example 50: HL7v3 Begin Inpatient Visit Root Element

interactionId's extension field: `PRPA_IN400001UV01`

```
<hl7:PRPA_IN400001UV01 ITSVersion="XML_1.0" xmlns:hl7="urn:hl7-org:v3" xmlns:xsi="http://www
    .w3.org/2001/XMLSchema-instance">
  INSERT MESSAGE HEADER
  INSERT PAYLOAD
</hl7:PRPA_IN400001UV01>
```

3.1.2.2 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 51: HL7v3 Begin In-Patient Visit Payload

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

```
<hl7:controlActProcess classCode="CACT" moodCode="EVN">
  <hl7:code code="PRPA_TE400001UV01" />
  <hl7:subject typeCode="SUBJ">
    <hl7:encounterEvent>
      <hl7:id>
        <hl7:item root="1.6.7.8.9.0" extension="12345678" />
      </hl7:id>
      <hl7:code code="IMP" />
      <hl7:statusCode code="active" />
      <hl7:effectiveTime>
        <hl7:low value="20141125155917" />
      </hl7:effectiveTime>
      <hl7:subject>
        <hl7:patient classCode="PAT">
          <hl7:id>
            <hl7:item root="1.1.1.1.1" extension="23018887746236" />
          </hl7:id>
          <hl7:patientPerson classCode="PSN" determinerCode="INSTANCE">
            <hl7:name></hl7:name>
          </hl7:patientPerson>
        </hl7:patient>
      </hl7:subject>
      <hl7:responsibleParty>
        <hl7:time>
          <hl7:low value="20141125155917" />
        </hl7:time>
        <hl7:id root="1.6.7.8.9.0" />
        <hl7:assignedOrganization classCode="ASSIGNED" />
      </hl7:responsibleParty>
      <hl7:admitter>
        <hl7:time></hl7:time>
        <hl7:assignedPerson classCode="ASSIGNED">
          <hl7:assignedPerson classCode="PSN" determinerCode="INSTANCE">
            <hl7:name>
              <hl7:item>
                <hl7:part type="FAM" value="Admitter" />
                <hl7:part type="GIV" value="Alan" />
              </hl7:item>
            </hl7:name>
          </hl7:assignedPerson>
        </hl7:assignedPerson>
      </hl7:admitter>
    </hl7:encounterEvent>
  </hl7:subject>
</hl7:controlActProcess>
```

3.1.2.3 Outbound Message Structure

See Section 1.2.2.

3.2 Register Outpatient

This transaction is used to notify the **MPI** about an outpatient visit.

3.2.1 Register Outpatient -- HL7v2

- **ADT A01** – Admit/visit notification
- **ADT A04** – Register a patient

3.2.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction Register Outpatient.

Table 28: 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
IN1	Patient Insurance Information **(optional)**
PID	Patient Information
PV1	Patient Visit Information
ZBE	Movement Action (**optional**)
ZBE-4	The type of action must be **INSERT**
ZBE-5	The movement indicator must be **N**

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.

EVN Segment

The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message. Values provided in fields other than those listed in the Field Overview will be ignored.

IN1 Segment

The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.

PID Segment

The PID segment contains the relevant patient data.

PV1 Segment

The PV1 segment is used by Registration/ADT applications to communicate information on a patient

visit-specific basis.

ZBE Segment

The ZBE segment can be used to uniquely identify individual movements. This allows for corrections in historic information at a later point. Note that, when the ZBE segment is used, at least one patient assigning authority must be configured to support the Historic Movement Management option. As long as this configuration is active, the ZBE segment is treated as required.

3.2.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2, those for the PID segment are listed in Table 4 These are the relevant fields of the other segments:

EVN-2

Recorded Date/Time: Time at which the notification has been recorded in the system.

EVN-5

Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.

EVN-7

Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.

IN1-1

Set ID: The sequential number of this segment.

IN1-2

Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.

IN1-3

Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.

IN1-4

Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.

PV1-2

Patient Class: Determines the type of patient visit. This field is not case-sensitive; it identifies the type of 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.

PV1-3

Assigned Patient Location: The facility that processes the patient visit. The `MPI` only processes PV1-3.4 (Facility) and requires this component to be present.

PV1-19

Visit Number: The unique identifier of the patient encounter. The value is supposed to be static for all messages referring to the same encounter. If no value is present, PID-18 will be used as a fallback encounter identifier. However, it is strongly recommended to use PV1-19 as the encounter identifier, and use PID-18 only to group encounters under a common patient encounter (if desired). In any case, this field is not intended to identify a specific encounter event (e.g. inpatient admission), but the patient encounter (a sequence of individual encounter events) as a whole. Also, it should be noted that the `MPI` processes PV1-19.1, PV1-19.4 and PV1-19.5.

PV1-44

Admit Date/Time: The start date/time of the patient visit.

ZBE-1

Movement ID: The unique identifier of the movement. All components are processed, ZBE-1.1 (Entity ID) and ZBE-1.3 (Universal ID; it is recommended to use the value given in the Source Patient Assigning Authority) are required.

ZBE-2

Start Movement Date/Time: The timestamp of the movement.

ZBE-4

Movement Action: For the type of movement see Table 26.

ZBE-5

Historical Movement Indicator: See Table 26.

Table 29: Fields relevant for the Begin Outpatient Visit Transaction.

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional
PV1-2	Patient Class	No	Required
PV1-3	Assigned Patient Location	No	Optional
PV1-19	Visit Number	No	Recommended
PV1-44	Admit Date/Time	No	Required
ZBE-1	Movement ID	No	Required for Historic Movement Management
ZBE-2	Start Movement Date/Time	No	Required for Historic Movement Management
ZBE-4	Movement Action	No	Required for Historic Movement Management
ZBE-5	Historical Movement Indicator	No	Required for Historic Movement Management

Example 52:
Submission

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180306155002.309+0100||ADT^A04^ADT_A01|a9263d4d-b333-4195-8e19-
  f4713beb9852|P|2.5|||AL|||UNICODE UTF-8
EVN||20180306155002.309+0100|||userId7015^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974&ISO^L^^^EN|20180306154947.185+0100
PID|||patientId9079^^^My Local Clinic&1.2.123.27.1974&ISO^PI~12850234587990^^^Social
  Security Association&1.2.123.27.1974&ISO^SS||Doe^John^^^^^L||19980306|M|||&Main Street
  &17^^London^^54820^GB^L||^^^^^^^^^^^011 44 20 1234 5678||en|M|VAR|patientAccount0572^^^
  My Local Clinic&1.2.123.27.1974&ISO^AN||||||Y|2|GB||||N
PV1||O|^^^Radiology&1.2.123.27.1974.187.15&ISO||||doctor5475^Dorian^John^^^^^^Medical
  Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M.D.|doctor7834^House^Gregory^^^^^^
  Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M.D.|||||||A0||||visitId2885^^^My
   Local Clinic&1.2.123.27.1974&ISO^VN||||||||||||||||||||||||||20180306154947.185+0100
```

Submission with Historic Movement Management

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180313135304.181+0100||ADT^A04^ADT_A01|bd990e55-4f91-4129-8e5a-
  bb58896ebb1b|P|2.5|||AL|||UNICODE UTF-8
EVN||20180313135304.181+0100|||userId5361^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974.1.239&ISO^L^^^EN|20180313135304.055+0100
PID|||patientId5255^^^My Local Clinic&1.2.123.27.1974&ISO^PI~12850234580079^^^Social
  Security Association&1.2.123.27.1974&ISO^SS||Doe^John^^^^^L||19980313|M|||&Main Street
  &17^^London^^54820^GB^L||^^^^^^^^^^^011 44 20 1234 5678||en|M|VAR|patientAccount3531^^^
  My Local Clinic&1.2.123.27.1974&ISO^AN||||||Y|2|GB||||N
PV1||O|^^^Radiology&1.2.123.27.1974.187.15&ISO||||doctor4392^Dorian^John^^^^^^Medical
  Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M.D.|doctor2948^House^Gregory^^^^^^
  Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M.D.|||||||A0||||visitId8471^^^My
   Local Clinic&1.2.123.27.1974&ISO^VN
  |||||||||||||||||||||||||20180313135304.055+0100|||||||V
ZBE|visitEvent6753^My Local Clinic^1.2.123.27.1974^ISO|20180313135304.055+0100||INSERT|N
```

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
    ^A04|126|P|2.3.1
MSA|AA|125
```

3.2.2 Register Outpatient -- HL7v3

Example 53: HL7v3 Begin Outpatient Visit Root Element

interactionId's extension field: `PRPA_IN400001UV01`

```
<hl7:PRPA_IN400001UV01 ITSVersion="XML_1.0" xmlns:hl7="urn:hl7-org:v3" xmlns:xsi="http://www
    .w3.org/2001/XMLSchema-instance">
  INSERT MESSAGE HEADER
  INSERT PAYLOAD
</hl7:PRPA_IN400001UV01>
```

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.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 54: 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 3.1.2 Admit Inpatient – HL7v3.

3.2.2.2 Outbound Message Structure

See Section 1.2.2.

3.3 Discharge Patient

This transaction is used to notify the **MPI** about the end of a patient visit (both inpatient and outpatient).

3.3.1 Discharge Patient -- HL7v2

- **ADT A03** – Discharge/end visit

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

3.3.1.1 Message Structure

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

Table 30: 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
IN1	Patient Insurance Information **(optional)**
PID	Patient Information
PV1	Patient Visit Information
ZBE	Movement Action (**optional**)

Table 30: End Patient Visit Segments

Table 30: End Patient Visit Segments

Segment	Description
ZBE-4	The type of action must be **INSERT**
ZBE-5	The movement indicator must be **N**

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.

EVN Segment

The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message. Values provided in fields other than those listed in the Field Overview will be ignored.

IN1 Segment

The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.

PID Segment

The PID segment contains the relevant patient data.

PV1 Segment

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

ZBE Segment

The ZBE segment can be used to uniquely identify individual movements. This allows for corrections in historic information at a later point. Note that, when the ZBE segment is used, at least one patient assigning authority must be configured to support the Historic Movement Management option. As long as this configuration is active, the ZBE segment is treated as required.

3.3.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2, those for the PID segment are listed in Table 4. These are the relevant fields of the other segments:

EVN-2

Recorded Date/Time: Time at which the notification has been recorded in the system.

EVN-5

Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.

EVN-7

Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.

IN1-1

Set ID: The sequential number of this segment.

IN1-2

Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field

is 255 characters.

IN1-3

Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.

IN1-4

Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.

PV1-2

Patient Class: Determines the type of patient visit. This field is not case-sensitive; it identifies the type of 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.

PV1-19

Visit Number: The unique identifier of the patient encounter. The value is supposed to be static for all messages referring to the same encounter. If no value is present, PID-18 will be used as a fallback encounter identifier. However, it is strongly recommended to use PV1-19 as the encounter identifier, and use PID-18 only to group encounters under a common patient encounter (if desired). In any case, this field is not intended to identify a specific encounter event (e.g. inpatient admission), but the patient encounter (a sequence of individual encounter events) as a whole. Also, it should be noted that the `MPI` processes PV1-19.1, PV1-19.4 and PV1-19.5.

PV1-45

Discharge Date/Time: The end date/time of the patient visit.

PV1-51

Visit Indicator: Specifies the field that is used to identify the encounter. Possible values are **A** for PID-18, **V** for PV1-19 (recommended). It is recommended by IHE to set a value for this field. In eHealth Solutions, however, values given here will not be processed.

ZBE-1

Movement ID: The unique identifier of the movement. All components are processed, ZBE-1.1 (Entity ID) and ZBE-1.3 (Universal ID; it is recommended to use the value given in the Source Patient Assigning Authority) are required.

ZBE-2

Start Movement Date/Time: The timestamp of the movement.

ZBE-4

Movement Action: For the type of movement see Table 26.

ZBE-5

Historical Movement Indicator: See Table 26.

Table 31: Fields relevant for the End Patient Visit Transaction.

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional

Table 31: Fields relevant for the End Patient Visit Transaction.

Table 31: Fields relevant for the End Patient Visit Transaction.

HL7-Path	Name	Repeatable	Presence
PV1-2	Patient Class	No	Required
PV1-19	Visit Number	No	Recommended
PV1-45	Discharge Date/Time	No	Required
PV1-51	Visit Indicator	No	Optional
ZBE-1	Movement ID	No	Required for Historic Movement Management
ZBE-2	Start Movement Date/Time	No	Required for Historic Movement Management
ZBE-4	Movement Action	No	Required for Historic Movement Management
ZBE-5	Historical Movement Indicator	No	Required for Historic Movement Management

Example 55:

Submission

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180306173133.042+0100||ADT^A03^ADT_A03|9811c620-59b1-4fc1-b90f-
  fdd02d535a7e|P|2.5|||AL|||UNICODE UTF-8
EVN||20180306173133.042+0100|||userId9480^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974&ISO^L^^^EN|20180306173132.949+0100
PID|||patientId4193^^^My Local Clinic&1.2.123.27.1974&ISO^PI~12850234584816^^^Social
  Security Association&1.2.123.27.1974&ISO^SS||Doe^John^^^^^L||19980306|M|||&Main Street
  &17^^London^^54820^GB^L||^^^^^^^^^^^011 44 20 1234 5678||en|M|VAR|patientAccount1232^^^
  My Local Clinic&1.2.123.27.1974&ISO^AN||||||N||GB||||N
PV1||I|^^^Radiology&1.2.123.27.1974.187.15&ISO||||doctor2851^Dorian^John^^^^^^Medical
  Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M.D.|doctor8830^House^Gregory^^^^^^
  Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M.D.|||||||A0||||visitId4087^^^My
   Local Clinic&1.2.123.27.1974&ISO^VN||||||||||||||||||||||||||20180306173132.949+0100
```

Submission with Historic Movement Management

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180313140434.906+0100||ADT^A03^ADT_A03|90a0924d-c3c2-4997-93e2-
  f5c8dc85baae|P|2.5|||AL|||UNICODE UTF-8
EVN||20180313140434.906+0100|||userId8867^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974.1.239&ISO^L^^^EN|20180313140434.88+0100
PID|||patientId3096^^^My Local Clinic&1.2.123.27.1974&ISO^PI~12850234587663^^^Social
  Security Association&1.2.123.27.1974&ISO^SS||Doe^John^^^^^L||19980313|M|||&Main Street
  &17^^London^^54820^GB^L||^^^^^^^^^^^011 44 20 1234 5678||en|M|VAR|patientAccount4723^^^
  My Local Clinic&1.2.123.27.1974&ISO^AN||||||Y|2|GB||||N
PV1||I|^^^Radiology&1.2.123.27.1974.187.15&ISO||||doctor4072^Dorian^John^^^^^^Medical
  Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M.D.|doctor6530^House^Gregory^^^^^^
  Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M.D.|||||||A0||||visitId2318^^^My
   Local Clinic&1.2.123.27.1974&ISO^VN
  |||||||||||||||||||||||||20180313140434.88+0100||||||V
ZBE|visitEvent7923^My Local Clinic^1.2.123.27.1974^ISO|20180313140434.880+0100||INSERT|N
```

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
    ^A03|128|P|2.3.1
MSA|AA|127
```

3.3.2 Discharge Patient -- HL7v3

Example 56: HL7v3 End Patient Visit Root Element

interactionId's extension field: `PRPA_IN400003UV01`

```
<hl7:PRPA_IN400003UV01 ITSVersion="XML_1.0" xmlns:hl7="urn:hl7-org:v3" xmlns:xsi="http://www
    .w3.org/2001/XMLSchema-instance">
  INSERT MESSAGE HEADER
  INSERT PAYLOAD
</hl7:PRPA_IN400003UV01>
```

3.3.2.1 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 57: 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="Doe" />
                <hl7:part type="GIV" value="John" />
              </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>
```

3.3.2.2 Outbound Message Structure

See Section 1.2.2.

3.4 Cancel Admit Inpatient/Outpatient

3.4.1 Cancel Admit Inpatient/Outpatient -- HL7v2

This transaction is used to notify the **MPI** about the cancellation 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.

3.4.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction Cancel Admit Inpatient/Outpatient.

Table 32: 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
IN1	Patient Insurance Information **(optional)**
PID	Patient Information
ZBE	Movement Action (**optional**)
ZBE-4	The type of action must be **CANCEL**
ZBE-5	The movement indicator must be **N**

Note
Although the PID segment is required in Cancel Transactions, patient data will not be updated when differing from those registered in the system.

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.

EVN Segment

The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message. Values provided in fields other than those listed in the Field Overview will be ignored.

IN1 Segment

The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.

PID Segment

The PID segment contains the relevant patient data.

PV1 Segment

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

ZBE Segment

The ZBE segment can be used to uniquely identify individual movements. This allows for corrections in historic information at a later point. Note that, when the ZBE segment is used, at least one patient assigning authority must be configured to support the Historic Movement Management option. As long as this configuration is active, the ZBE segment is treated as required.

3.4.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2. In cancellation messages, the PID segment is only required to contain a valid ID (PID-3) and the patient name (PID-5). The relevant fields of the other segments are:

EVN-2

Recorded Date/Time: Time at which the notification has been recorded in the system.

EVN-5

Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.

EVN-7

Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.

IN1-1

Set ID: The sequential number of this segment.

IN1-2

Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.

IN1-3

Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.

IN1-4

Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.

PV1-2

Patient Class: Determines the type of patient visit. This field is not case-sensitive; it identifies the type of 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.

PV1-19

Visit Number: The unique identifier of the patient encounter. The value is supposed to be static for all messages referring to the same encounter. If no value is present, PID-18 will be used as a fallback encounter identifier. However, it is strongly recommended to use PV1-19 as the encounter identifier, and use PID-18 only to group encounters under a common patient encounter (if desired). In any case, this field is not intended to identify a specific encounter event (e.g. inpatient admission), but the patient encounter (a sequence of individual encounter events) as a whole. Also, it should be noted that the `MPI` processes PV1-19.1, PV1-19.4 and PV1-19.5.

PV1-51

Visit Indicator: Specifies the field that is used to identify the encounter. Possible values are **A** for PID-18, **V** for PV1-19 (recommended). It is recommended by IHE to set a value for this field. In eHealth Solutions, however, values given here will not be processed.

ZBE-1

Movement ID: The unique identifier of the movement. All components are processed, ZBE-1.1 (Entity ID) and ZBE-1.3 (Universal ID; it is recommended to use the value given in the Source Patient Assigning Authority) are required.

ZBE-2

Start Movement Date/Time: The timestamp of the movement.

ZBE-4

Movement Action: For the type of movement see Table 26.

ZBE-5

Historical Movement Indicator: See Table 26.

Table 33: Fields relevant for the Cancel Patient Visit Transaction.

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional
PV1-2	Patient Class	No	Required
PV1-19	Visit Number	No	Recommended
PV1-51	Visit Indicator	No	Optional
ZBE-1	Movement ID	No	Required for Historic Movement Management
ZBE-2	Start Movement Date/Time	No	Required for Historic Movement Management
ZBE-4	Movement Action	No	Required for Historic Movement Management
ZBE-5	Historical Movement Indicator	No	Required for Historic Movement Management

Example 58:

Submission

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180306163345.831+0100||ADT^A11^ADT_A09|841a9cc5-65f6-40cd-8b8d-9
  c4847d7cc52|P|2.5|||AL|||UNICODE UTF-8
EVN||20180306163345.831+0100|||userId7879^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974&ISO^L^^^EN|20180306163345.756+0100
PID|||patientId5372^^^My Local Clinic&1.2.123.27.1974&ISO^PI||Doe^John^^^^^L
PV1||N||||||||||||||||visitId8716^^^My Local Clinic&1.2.123.27.1974&ISO^VN
```

Submission with Historic Movement Management

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180313135514.035+0100||ADT^A11^ADT_A09|5c131f74-523e-49eb-8c1b-6
  ce297610cfc|P|2.5|||AL|||UNICODE UTF-8
EVN||20180313135514.035+0100|||userId5418^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974.1.239&ISO^L^^^EN|20180313135514.028+0100
PID|||patientId0472^^^My Local Clinic&1.2.123.27.1974&ISO^PI||Doe^John^^^^^L
PV1||N||||||||||||||||visitId9980^^^My Local Clinic&1.2.123.27.1974&ISO^VN
  |||||||||||||||||||||||||||||||V
ZBE|visitEvent2551^My Local Clinic^1.2.123.27.1974^ISO|20180313135514.028+0100||CANCEL|N
```

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
    ^A11|130|P|2.3.1
MSA|AA|129
```

3.4.2 Cancel Admit Inpatient/Outpatient -- HL7v3

Example 59: HL7v3 Cancel Patient Visit Root Element

interactionId's extension field: `PRPA_IN400006UV01`

```
<hl7:PRPA_IN400006UV01 ITSVersion="XML_1.0" xmlns:hl7="urn:hl7-org:v3" xmlns:xsi="http://www
    .w3.org/2001/XMLSchema-instance">
  INSERT MESSAGE HEADER
  INSERT PAYLOAD
</hl7:PRPA_IN400006UV01>
```

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.assignedPerson
5. controlActProcess.authorOrPerformer.assignedPerson.name
6. controlActProcess.authorOrPerformer.assignedPerson.name.item
7. controlActProcess.authorOrPerformer.assignedPerson.name.item.part
8. controlActProcess.subject
9. controlActProcess.subject.encounterEvent
10. controlActProcess.subject.encounterEvent.id
11. controlActProcess.subject.encounterEvent.id.item
12. controlActProcess.subject.encounterEvent.statusCode

Example 60: HL7v3 Cancel Patient Visit Payload

```
<hl7:controlActProcess classCode="CACT" moodCode="EVN">
  <hl7:code code="PRPA_TE400999UV01" />
  <hl7:authorOrPerformer typeCode="AUT">
    <hl7:assignedPerson classCode="ASSIGNED">
      <hl7:assignedPerson classCode="PSN" determinerCode="INSTANCE">
        <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:subject typeCode="SUBJ">
    <hl7:encounterEvent>
      <hl7:id>
        <hl7:item root="1.2.6.7.8.9.0" extension="12345678" />
      </hl7:id>
      <hl7:statusCode code="nullified" />
    </hl7:encounterEvent>
  </hl7:subject>
</hl7:controlActProcess>
```

3.4.2.2 Outbound Message Structure

See Section 1.2.2.

3.5 Cancel Discharge Patient

This transaction is used to notify the **MPI** about the cancellation of a prior patient discharge event:

3.5.1 Cancel Discharge Patient -- HL7v2

- **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.

3.5.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction Cancel Discharge Patient.

Table 34: Cancel 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 **A13**
EVN	Event Information
IN1	Patient Insurance (**optional**)
PID	Patient Information
PV1	Patient Visit Information
ZBE	Movement Action (**optional**)
ZBE-4	The type of action must be **CANCEL**
ZBE-5	The movement indicator must be **N**

Note
Although the PID segment is required in Cancel Transactions, patient data will not be updated when differing from those registered in the system.

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.

EVN Segment
The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message. Values provided in fields other than those listed in the Field Overview will be ignored.

IN1 Segment
The IN1 segment is used to transmit information about the paying body of the health services received

by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.

- PID Segment
  The PID segment contains the relevant patient data.
- PV1 Segment
  The PV1 segment is used by Registration/ADT applications to communicate information on a patient visit-specific basis.
- ZBE Segment
  The ZBE segment can be used to uniquely identify individual movements. This allows for corrections in historic information at a later point. Note that, when the ZBE segment is used, at least one patient assigning authority must be configured to support the Historic Movement Management option. As long as this configuration is active, the ZBE segment is treated as required.

3.5.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2. In cancellation messages, the PID segment is only required to contain a valid ID (PID-3) and the patient name (PID-5). The relevant fields of the other segments are:

- EVN-2
  Recorded Date/Time: Time at which the notification has been recorded in the system.
- EVN-5
  Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.
- EVN-7
  Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.
- IN1-1
  Set ID: The sequential number of this segment.
- IN1-2
  Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.
- IN1-3
  Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.
- IN1-4
  Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.
- PV1-2
  Patient Class: Determines the type of patient visit. This field is not case-sensitive; it identifies the type of 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.
- PV1-19
  Visit Number: The unique identifier of the patient encounter. The value is supposed to be static for all messages referring to the same encounter. If no value is present, PID-18 will be used as a fallback

encounter identifier. However, it is strongly recommended to use PV1-19 as the encounter identifier, and use PID-18 only to group encounters under a common patient encounter (if desired). In any case, this field is not intended to identify a specific encounter event (e.g. inpatient admission), but the patient encounter (a sequence of individual encounter events) as a whole. Also, it should be noted that the `MPI` processes PV1-19.1, PV1-19.4 and PV1-19.5.

PV1-51

Visit Indicator: Specifies the field that is used to identify the encounter. Possible values are **A** for PID-18, **V** for PV1-19 (recommended). It is recommended by IHE to set a value for this field. In eHealth Solutions, however, values given here will not be processed.

ZBE-1

Movement ID: The unique identifier of the movement. All components are processed, ZBE-1.1 (Entity ID) and ZBE-1.3 (Universal ID; it is recommended to use the value given in the Source Patient Assigning Authority) are required.

ZBE-2

Start Movement Date/Time: The timestamp of the movement.

ZBE-4

Movement Action: For the type of movement see Table 26.

ZBE-5

Historical Movement Indicator: See Table 26.

Table 35: Fields relevant for the Cancel End Patient Visit Transaction.

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional
PV1-2	Patient Class	No	Required
PV1-19	Visit Number	No	Recommended
PV1-51	Visit Indicator	No	Optional
ZBE-1	Movement ID	No	Required for Historic Movement Management
ZBE-2	Start Movement Date/Time	No	Required for Historic Movement Management
ZBE-4	Movement Action	No	Required for Historic Movement Management
ZBE-5	Historical Movement Indicator	No	Required for Historic Movement Management

Example 61: Submission

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180306170804.479+0100||ADT^A13^ADT_A01|0f922693-3233-4f4c-af2d-
  d7fec1969376|P|2.5|||AL|||UNICODE UTF-8
EVN||20180306170804.479+0100|||userId1582^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974&ISO^L^^^EN|20180306170804.395+0100
PID|||patientId8162^^^My Local Clinic&1.2.123.27.1974&ISO^PI||Doe^John^^^^^L
```

```
PV1||N||||||||||||||||visitId2776^^^My Local Clinic&1.2.123.27.1974&ISO^VN
```

Submission with Historic Movement Management

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180313135820.874+0100||ADT^A13^ADT_A01|69e96337-9d78-4734-8c23-395
  c95443af0|P|2.5|||AL|||UNICODE UTF-8
EVN||20180313135820.874+0100|||userId7526^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974.1.239&ISO^L^^^EN|20180313135820.865+0100
PID|||patientId2905^^^My Local Clinic&1.2.123.27.1974&ISO^PI||Doe^John^^^^^L
PV1||N||||||||||||||||visitId2914^^^My Local Clinic&1.2.123.27.1974&ISO^VN
  ||||||||||||||||||||||||||||||V
ZBE|visitEvent1623^My Local Clinic^1.2.123.27.1974^ISO|20180313135820.865+0100||CANCEL|N
```

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
    ^A13|130|P|2.3.1
MSA|AA|129
```

3.5.2 Cancel Discharge Patient -- HL7v3

3.5.2.1 Message Structure

Example 62: HL7v3 Cancel End Patient Visit Root Element
interactionId's extension field: `PRPA_IN400007UV01`

```
<ns0:PRPA_IN400007UV01 xmlns:ns0="urn:hl7-org:v3" xmlns:xsi="http://www.w3.org/2001/
    XMLSchema-instance" ITSVersion="XML_1.0">
  INSERT MESSAGE HEADER
  INSERT PAYLOAD
</ns0:PRPA_IN400007UV01>
```

3.5.2.2 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 63: 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="John" type="GIV" />
                <ns0:part value="Doe" 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>
```

3.5.2.3 Outbound Message Structure

See Section 1.2.2.

3.6 Transfer Patient

This transaction is used to notify the **MPI** about the delegation of a patient visit to another responsible organization.

3.6.1 Transfer Patient -- HL7v2

- **ADT A02** – Transfer a patient

Note
The ADT A02 message requires that the patient visit that should be delegated is already registered with the `MPI`.

3.6.1.1 Message Structure

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

Table 36: 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
IN1	Patient Insurance Information **(optional)**
PID	Patient Information
PV1	Patient Visit Information
ZBE	Movement Action (**optional**)
ZBE-4	The type of action must be **INSERT**
ZBE-5	The movement indicator must be **N**

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.

EVN Segment
The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message. Values provided in fields other than those listed in the Field Overview will be ignored.

IN1 Segment
The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.

PID Segment
The PID segment contains the relevant patient data.

PV1 Segment
The PV1 segment is used by Registration/ADT applications to communicate information on a patient

visit-specific basis.

ZBE Segment

The ZBE segment can be used to uniquely identify individual movements. This allows for corrections in historic information at a later point. Note that, when the ZBE segment is used, at least one patient assigning authority must be configured to support the Historic Movement Management option. As long as this configuration is active, the ZBE segment is treated as required.

3.6.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2, those for the PID segment are listed in Table 4. These are the relevant fields of the other segments:

EVN-2

Recorded Date/Time: Time at which the notification has been recorded in the system.

EVN-5

Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.

EVN-7

Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.

IN1-1

Set ID: The sequential number of this segment.

IN1-2

Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.

IN1-3

Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.

IN1-4

Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.

PV1-2

Patient Class: Determines the type of patient visit. This field is not case-sensitive; it identifies the type of 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.

PV1-3

Assigned Patient Location: The facility that processes the patient visit. The `MPI` only processes PV1-3.4 (Facility) and requires this component to be present.

PV1-6

Prior Patient Location: The facility formerly responsibile for the patient visit. The `MPI` only processes PV1-6.4.2 and requires this component to be present.

PV1-19

Visit Number: The unique identifier of the patient encounter. The value is supposed to be static for all messages referring to the same encounter. If no value is present, PID-18 will be used as a fallback encounter identifier. However, it is strongly recommended to use PV1-19 as the encounter identifier,

and use PID-18 only to group encounters under a common patient encounter (if desired). In any case, this field is not intended to identify a specific encounter event (e.g. inpatient admission), but the patient encounter (a sequence of individual encounter events) as a whole. Also, it should be noted that the `MPI` processes PV1-19.1, PV1-19.4 and PV1-19.5.

PV1-44

Admit Date/Time: The start date/time of the patient visit.

PV1-51

Visit Indicator: Specifies the field that is used to identify the encounter. Possible values are **A** for PID-18, **V** for PV1-19 (recommended). It is recommended by IHE to set a value for this field. In eHealth Solutions, however, values given here will not be processed.

ZBE-1

Movement ID: The unique identifier of the movement. All components are processed, ZBE-1.1 (Entity ID) and ZBE-1.3 (Universal ID; it is recommended to use the value given in the Source Patient Assigning Authority) are required.

ZBE-2

Start Movement Date/Time: The timestamp of the movement.

ZBE-4

Movement Action: For the type of movement see Table 26.

ZBE-5

Historical Movement Indicator: See Table 26.

Table 37: Fields relevant for the Transfer Patient Transaction

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional
PV1-2	Patient Class	No	Required
PV1-3	Assigned Patient Location	No	Required
PV1-6	Prior Patient Location	No	Recommended
PV1-19	Visit Number	No	Recommended
PV1-44	Admit Date/Time	No	Required
PV1-51	Visit Indicator	No	Optional
ZBE-1	Movement ID	No	Required for Historic Movement Management
ZBE-2	Start Movement Date/Time	No	Required for Historic Movement Management
ZBE-4	Movement Action	No	Required for Historic Movement Management
ZBE-5	Historical Movement Indicator	No	Required for Historic Movement Management

Example 64:
Submission

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180306175226.599+0100||ADT^A02^ADT_A02|f354dbc3-4e4e-4983-bbab-03
  bb121e7556|P|2.5|||AL|||UNICODE UTF-8
EVN||20180306175226.599+0100|||userId4616^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974&ISO^L^^^EN|20180306175226.513+0100
PID|||patientId1911^^^My Local Clinic&1.2.123.27.1974&ISO^PI~12850234586879^^^Social
  Security Association&1.2.123.27.1974&ISO^SS||Doe^John^^^^^L||19980306|M|||&Main Street
  &17^^London^^54820^GB^L||^^^^^^^^^^^011 44 20 1234 5678||en|M|VAR|patientAccount7152^^^
  My Local Clinic&1.2.123.27.1974&ISO^AN||||||Y|1|GB||||N
PV1||I|^^^Surgical Ward&1.2.123.27.22861&ISO|||^^^Radiology&1.2.123.27.1974.187.15&ISO|
  doctor1455^Dorian^John^^^^^^Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M.D.|
  doctor9813^House^Gregory^^^^^^Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M.D
  .|||||||A0||||visitId0606^^^My Local Clinic&1.2.123.27.1974&ISO^VN
```

Submission with Historic Movement Management

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180313140649.202+0100||ADT^A02^ADT_A02|7811a967-7019-42bd-8feb-2
  bfeffb86518|P|2.5|||AL|||UNICODE UTF-8
EVN||20180313140649.202+0100|||userId9297^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974.1.239&ISO^L^^^EN|20180313140649.176+0100
PID|||patientId9674^^^My Local Clinic&1.2.123.27.1974&ISO^PI~12850234580271^^^Social
  Security Association&1.2.123.27.1974&ISO^SS||Doe^John^^^^^L||19980313|M|||&Main Street
  &17^^London^^54820^GB^L||^^^^^^^^^^^011 44 20 1234 5678||en|M|VAR|patientAccount8490^^^
  My Local Clinic&1.2.123.27.1974&ISO^AN||||||N||GB||||N
PV1||I|^^^Surgical Ward&1.2.123.27.22861&ISO|||^^^Radiology&1.2.123.27.1974.187.15&ISO|
  doctor2574^Dorian^John^^^^^^Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M.D.|
  doctor5441^House^Gregory^^^^^^Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M.D
  .|||||||A0||||visitId6671^^^My Local Clinic&1.2.123.27.1974&ISO^VN
  |||||||||||||||||||||||||||||||V
ZBE|visitEvent2791^My Local Clinic^1.2.123.27.1974^ISO|20180313140649.176+0100||INSERT|N
```

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
    ^A02|134|P|2.3.1
MSA|AA|133
```

3.6.2 Transfer Patient -- HL7v3

Example 65: HL7v3 Delegate Patient Visit Root Element
interactionId's extension field: `PRPA_IN303011UV01`

```
<hl7:PRPA_IN303011UV01 ITSVersion="XML_1.0" xmlns:hl7="urn:hl7-org:v3" xmlns:xsi="http://www
    .w3.org/2001/XMLSchema-instance">
  INSERT MESSAGE HEADER
  INSERT PAYLOAD
</hl7:PRPA_IN303011UV01>
```

3.6.2.1 Inbound Message Structure

The following elements are required in this specific order:

1. controlActProcess
2. controlActProcess.code

3. controlActProcess.authorOrPerformer
4. controlActProcess.authorOrPerformer.assignedPerson
5. controlActProcess.authorOrPerformer.assignedPerson.assignedPerson
6. controlActProcess.authorOrPerformer.assignedPerson.assignedPerson.name
7. controlActProcess.authorOrPerformer.assignedPerson.assignedPerson.name.item
8. controlActProcess.authorOrPerformer.assignedPerson.assignedPerson.name.item.part
9. controlActProcess.subject
10. controlActProcess.subject.encounterEvent
11. controlActProcess.subject.encounterEvent.id
12. controlActProcess.subject.encounterEvent.id.item
13. controlActProcess.subject.encounterEvent.responsibleParty1
14. controlActProcess.subject.encounterEvent.responsibleParty1.time
15. controlActProcess.subject.encounterEvent.responsibleParty1.time.low
16. controlActProcess.subject.encounterEvent.responsibleParty1.statusCode
17. controlActProcess.subject.encounterEvent.responsibleParty1.assignedOrganization
18. controlActProcess.subject.encounterEvent.responsibleParty1.assignedOrganization.id
19. controlActProcess.subject.encounterEvent.responsibleParty1.assignedOrganization.id.item
20. controlActProcess.subject.encounterEvent.responsibleParty2
21. controlActProcess.subject.encounterEvent.responsibleParty2.time
22. controlActProcess.subject.encounterEvent.responsibleParty2.time.high
23. controlActProcess.subject.encounterEvent.responsibleParty2.statusCode
24. controlActProcess.subject.encounterEvent.responsibleParty2.assignedOrganization
25. controlActProcess.subject.encounterEvent.responsibleParty2.assignedOrganization.id.item

Example 66: HL7v3 Delegate Patient Visit Payload

```
<hl7:controlActProcess classCode="CACT" moodCode="EVN">
  <hl7:code code="PRPA_TE303011UV01" />
  <hl7:authorOrPerformer typeCode="AUT">
    <hl7:assignedPerson classCode="ASSIGNED">
      <hl7:assignedPerson classCode="PSN" determinerCode="INSTANCE">
        <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:subject typeCode="SUBJ">
    <hl7:encounterEvent>
      <hl7:id>
        <hl7:item root="1.2.6.7.8.9.0" 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="1.2.6.7.8.9.0" />
          </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:controlActProcess>
```

3.6.2.2 Outbound Message Structure

See Section 1.2.2.

3.7 Cancel Transfer Patient

This transaction is used to notify the **MPI** about the cancellation of a patient delegation to another responsible organization.

3.7.1 Cancel Transfer Patient -- HL7v2

- **ADT A12** – Cancel Patient Transfer

Note
The ADT A02 message requires that the patient visit that should be delegated is already registered with the `MPI`.

3.7.1.1 Message Structure

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

Table 38: 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 **A12**
EVN	Event Information
IN1	Patient Insurance Information **(optional)**
PID	Patient Information
PV1	Patient Visit Information
ZBE	Movement Action (**optional**)
ZBE-4	The type of action must be **CANCEL**
ZBE-5	The movement indicator must be **N**

Note
Although the PID segment is required in Cancel Transactions, patient data will not be updated when differing from those registered in the system.

- 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.
- EVN Segment
  The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message. Values provided in fields other than those listed in the Field Overview will be ignored.
- IN1 Segment
  The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.
- PID Segment
  The PID segment contains the relevant patient data.
- PV1 Segment
  The PV1 segment is used by Registration/ADT applications to communicate information on a patient visit-specific basis.
- ZBE Segment
  The ZBE segment can be used to uniquely identify individual movements. This allows for corrections in historic information at a later point. Note that, when the ZBE segment is used, at least one patient assigning authority must be configured to support the Historic Movement Management option. As long as this configuration is active, the ZBE segment is treated as required.

3.7.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2. In cancellation messages, the PID segment is only required to contain a valid ID (PID-3) and the patient name (PID-5). The relevant fields of the other segments are:

- EVN-2
  Recorded Date/Time: Time at which the notification has been recorded in the system.
- EVN-5
  Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.
- EVN-7
  Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.
- IN1-1
  Set ID: The sequential number of this segment.

IN1-2

Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.

IN1-3

Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.

IN1-4

Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.

PV1-2

Patient Class: Determines the type of patient visit. This field is not case-sensitive; it identifies the type of 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.

PV1-3

Assigned Patient Location: The facility that processes the patient visit. The `MPI` only processes PV1-3.4 (Facility) and requires this component to be present.

PV1-19

Visit Number: The unique identifier of the patient encounter. The value is supposed to be static for all messages referring to the same encounter. If no value is present, PID-18 will be used as a fallback encounter identifier. However, it is strongly recommended to use PV1-19 as the encounter identifier, and use PID-18 only to group encounters under a common patient encounter (if desired). In any case, this field is not intended to identify a specific encounter event (e.g. inpatient admission), but the patient encounter (a sequence of individual encounter events) as a whole. Also, it should be noted that the `MPI` processes PV1-19.1, PV1-19.4 and PV1-19.5.

PV1-51

Visit Indicator: Specifies the field that is used to identify the encounter. Possible values are **A** for PID-18, **V** for PV1-19 (recommended). It is recommended by IHE to set a value for this field. In eHealth Solutions, however, values given here will not be processed.

ZBE-1

Movement ID: The unique identifier of the movement. All components are processed, ZBE-1.1 (Entity ID) and ZBE-1.3 (Universal ID; it is recommended to use the value given in the Source Patient Assigning Authority) are required.

ZBE-2

Start Movement Date/Time: The timestamp of the movement.

ZBE-4

Movement Action: For the type of movement see Table 26.

ZBE-5

Historical Movement Indicator: See Table 26.

Table 39: Fields relevant for theCancel Transfer Patient Transaction

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required

Table 39: Fields relevant for theCancel Transfer Patient Transaction

Table 39: Fields relevant for theCancel Transfer Patient Transaction

HL7-Path	Name	Repeatable	Presence
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional
PV1-2	Patient Class	No	Required
PV1-3	Assigned Patient Location	No	Required
PV1-19	Visit Number	No	Recommended
PV1-51	Visit Indicator	No	Optional
ZBE-1	Movement ID	No	Required for Historic Movement Management
ZBE-2	Start Movement Date/Time	No	Required for Historic Movement Management
ZBE-4	Movement Action	No	Required for Historic Movement Management
ZBE-5	Historical Movement Indicator	No	Required for Historic Movement Management

Example 67:
Submission

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180306190456.216+0100||ADT^A12^ADT_A12|e6a41f1b-e4b6-47b3-916c-2
  fa895dde58e|P|2.5|||AL|||UNICODE UTF-8
EVN||20180306190456.216+0100|||userId6626^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974&ISO^L^^^EN|20180306190456.136+0100
PID|||patientId3555^^^My Local Clinic&1.2.123.27.1974&ISO^PI||Doe^John^^^^^L
PV1||I|^^^Radiology&1.2.123.27.1974.187.15&ISO||||||||||||||||visitId3415^^^My Local
  Clinic&1.2.123.27.1974&ISO^VN
```

Submission with Historic Movement Management

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180313140020.883+0100||ADT^A12^ADT_A12|db4362c7-9dfa-4e8b-9066-
  e05b6c01b345|P|2.5|||AL|||UNICODE UTF-8
EVN||20180313140020.883+0100|||userId3744^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974.1.239&ISO^L^^^EN|20180313140020.874+0100
PID|||patientId1866^^^My Local Clinic&1.2.123.27.1974&ISO^PI||Doe^John^^^^^L
PV1||I|^^^Radiology&1.2.123.27.1974.187.15&ISO||||||||||||||||visitId8173^^^My Local
  Clinic&1.2.123.27.1974&ISO^VN||||||||||||||||||||||||||||||||V
ZBE|visitEvent6739^My Local Clinic^1.2.123.27.1974^ISO|20180313140020.874+0100||CANCEL|N
```

3.8 Change Outpatient To Inpatient

This transaction is used to notify the **MPI** about the change of a preexisting outpatient visit to an inpatient visit.

3.8.1 Change Outpatient To Inpatient -- HL7v2

- **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 `MPI`.

3.8.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction Change Outpatient To Inpatient.

Table 40: 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
IN1	Patient Insurance Information **(optional)**
PID	Patient Information
PV1	Patient Visit Information
ZBE	Movement Action (**optional**)
ZBE-4	The type of action must be **INSERT**
ZBE-5	The movement indicator must be **N**

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.

EVN Segment
The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message. Values provided in fields other than those listed in the Field Overview will be ignored.

IN1 Segment
The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.

PID Segment
The PID segment contains the relevant patient data.

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

ZBE Segment
The ZBE segment can be used to uniquely identify individual movements. This allows for corrections in historic information at a later point. Note that, when the ZBE segment is used, at least one patient assigning authority must be configured to support the Historic Movement Management option. As long as this configuration is active, the ZBE segment is treated as required.

3.8.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2, those for the PID segment are listed in Table 4. These are the relevant fields of the other segments:

- EVN-2
  Recorded Date/Time: Time at which the notification has been recorded in the system.
- EVN-5
  Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.
- EVN-7
  Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.
- IN1-1
  Set ID: The sequential number of this segment.
- IN1-2
  Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.
- IN1-3
  Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.
- IN1-4
  Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.
- PV1-2
  Patient Class: Determines the type of patient visit. This field is not case-sensitive; it identifies the type of 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.
- PV1-3
  Assigned Patient Location: The facility that processes the patient visit. The `MPI` only processes PV1-3.4 (Facility) and requires this component to be present.
- PV1-6
  Prior Patient Location: The facility formerly responsibile for the patient visit. The `MPI` only processes PV1-6.4.2 and requires this component to be present.
- PV1-19
  Visit Number: The unique identifier of the patient encounter. The value is supposed to be static for all messages referring to the same encounter. If no value is present, PID-18 will be used as a fallback encounter identifier. However, it is strongly recommended to use PV1-19 as the encounter identifier, and use PID-18 only to group encounters under a common patient encounter (if desired). In any case, this field is not intended to identify a specific encounter event (e.g. inpatient admission), but the patient encounter (a sequence of individual encounter events) as a whole. Also, it should be noted that the `MPI` processes PV1-19.1, PV1-19.4 and PV1-19.5.
- PV1-44
  Admit Date/Time: The start date/time of the patient visit.

PV1-51

Visit Indicator: Specifies the field that is used to identify the encounter. Possible values are **A** for PID-18, **V** for PV1-19 (recommended). It is recommended by IHE to set a value for this field. In eHealth Solutions, however, values given here will not be processed.

MRG-1

Prior Patient Identifier List: List of all Patient IDs of the recessive patient. The structure of this field corresponds to that of PID-3 (*Patient Identifier List)*. For a valid transaction it is sufficient to provide one Source Patient Identifier. Regional identifiers such as social security numbers should not be used since they will be ignored by eHealth Solutions.

MRG-3

Prior Patient Account Number: Account Number of the recessive patient. The structure of this field corresponds to that of PID-18 (*Patient Account Number)*.

MRG-7

Prior Patient Name List: Name of the recessive patient. Values given in this field are used for logging purposes.

ZBE-1

Movement ID: The unique identifier of the movement. All components are processed, ZBE-1.1 (Entity ID) and ZBE-1.3 (Universal ID; it is recommended to use the value given in the Source Patient Assigning Authority) are required.

ZBE-2

Start Movement Date/Time: The timestamp of the movement.

ZBE-4

Movement Action: For the type of movement see Table 26.

ZBE-5

Historical Movement Indicator: See Table 26.

Table 41: Fields relevant for the Change Outpatient To Inpatient Transaction.

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional
PV1-2	Patient Class	No	Required
PV1-3	Assigned Patient Location	No	Required
PV1-6	Prior Patient Location	No	Recommended
PV1-19	Visit Number	No	Recommended
PV1-44	Admit Date/Time	No	Required
PV1-51	Visit Indicator	No	Optional
MRG-1	Patient Identifier List	Yes	Required
MRG-3	Prior Patient Account Number	No	Optional
MRG-7	Prior Patient Name List	Yes	Optional
ZBE-1	Movement ID	No	Required for Historic Movement Management

Table 41: Fields relevant for the Change Outpatient To Inpatient Transaction.

Table 41: Fields relevant for the Change Outpatient To Inpatient Transaction.

HL7-Path	Name	Repeatable	Presence
ZBE-2	Start Movement Date/Time	No	Required for Historic Movement Management
ZBE-4	Movement Action	No	Required for Historic Movement Management
ZBE-5	Historical Movement Indicator	No	Required for Historic Movement Management

Note
eHealth Solutions does not process any patient information for the transaction **Change Outpatient To Inpatient**. Therefore, the PID segement can be empty.

Example 68:
Submission

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180306172741.348+0100||ADT^A06^ADT_A06|366ef1f2-06cb-4525-bd09
  -28472b5141a5|P|2.5|||AL|||UNICODE UTF-8
EVN||20180306172741.348+0100|||userId1502^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974&ISO^L^^^EN|20180306172741.255+0100
PID|||patientId7542^^^My Local Clinic&1.2.123.27.1974&ISO^PI~12850234581536^^^Social
  Security Association&1.2.123.27.1974&ISO^SS||Doe^John^^^^^L||19980306|M|||&Main Street
  &17^^London^^54820^GB^L||^^^^^^^^^^^011 44 20 1234 5678||en|M|VAR|patientAccount3869^^^
  My Local Clinic&1.2.123.27.1974&ISO^AN||||||Y|1|GB||||N
PV1||I|^^^Radiology&1.2.123.27.1974.187.15&ISO|||^^^My Outpatient Clinic&1.2.123.27.27894&
  ISO|doctor1191^Dorian^John^^^^^^Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M
  .D.|doctor0077^House^Gregory^^^^^^Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN
  ^^^^^^^^M.D.|||||||A2||||visitId5939^^^My Local Clinic&1.2.123.27.1974&ISO^VN
```

Submission with Historic Movement Management

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180313140335.883+0100||ADT^A06^ADT_A06|8cae2709-7d75-40e5-966f-
  eb12bf29a943|P|2.5|||AL|||UNICODE UTF-8
EVN||20180313140335.883+0100|||userId3804^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974.1.239&ISO^L^^^EN|20180313140335.751+0100
PID|||patientId9329^^^My Local Clinic&1.2.123.27.1974&ISO^PI~12850234583044^^^Social
  Security Association&1.2.123.27.1974&ISO^SS||Doe^John^^^^^L||19980313|M|||&Main Street
  &17^^London^^54820^GB^L||^^^^^^^^^^^011 44 20 1234 5678||en|M|VAR|patientAccount9838^^^
  My Local Clinic&1.2.123.27.1974&ISO^AN||||||Y|1|GB||||N
PV1||I|^^^Radiology&1.2.123.27.1974.187.15&ISO|||^^^My Outpatient Clinic&1.2.123.27.27894&
  ISO|doctor8800^Dorian^John^^^^^^Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M
  .D.|doctor2376^House^Gregory^^^^^^Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN
  ^^^^^^^^M.D.|||||||A2||||visitId2917^^^My Local Clinic&1.2.123.27.1974&ISO^VN
  |||||||||||||||||||||||||||||||V
ZBE|visitEvent7437^My Local Clinic^1.2.123.27.1974^ISO|20180313140335.751+0100||INSERT|N
```

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
```

3.8.2 Change Outpatient To Inpatient -- HL7v3

3.8.2.1 Message Structure

There is no separate message for this type. See Section 3.1.2 Admit Inpatient – HL7v3.

Example 69: HL7v3 Change Outpatient to Inpatient Root Element
See Section 3.1.2 Admit Inpatient – HL7v3.

Example 70: HL7v3 Change Outpatient to Inpatient Payload
Change the `encounterEvent.code` to "IMP", which refers to stationary patients (in-patients).

See Section 3.1.2 Admit Inpatient – HL7v3.

3.9 Change Inpatient To Outpatient

This transaction is used to notify the **MPI** about the change of a preexisting inpatient visit to an outpatient visit.

3.9.1 Change Inpatient To Outpatient -- HL7v2

- **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 `MPI`.

3.9.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction Change Inpatient To Outpatient.

Table 42: 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
IN1	Patient Insurance (**optional**)
PID	Patient Information
PV1	Patient Visit Information
ZBE	Movement Action (**optional**)
ZBE-4	The type of action must be **INSERT**
ZBE-5	The movement indicator must be **N**

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.

EVN Segment
The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message. Values provided in fields other than those listed in the Field Overview will be ignored.

IN1 Segment
The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.

PID Segment
The PID segment contains the relevant patient data.

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

ZBE Segment
The ZBE segment can be used to uniquely identify individual movements. This allows for corrections in historic information at a later point. Note that, when the ZBE segment is used, at least one patient assigning authority must be configured to support the Historic Movement Management option. As long as this configuration is active, the ZBE segment is treated as required.

3.9.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2, those for the PID segment are listed in Table 4. These are the relevant fields of the other segments:

EVN-2
Recorded Date/Time: Time at which the notification has been recorded in the system.

EVN-5
Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.

EVN-7
Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.

IN1-1
Set ID: The sequential number of this segment.

IN1-2
Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.

IN1-3
Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.

IN1-4
Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.

- PV1-2

  Patient Class: Determines the type of patient visit. This field is not case-sensitive; it identifies the type of 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.

- PV1-3

  Assigned Patient Location: The facility that processes the patient visit. The `MPI` only processes PV1-3.4 (Facility) and requires this component to be present.

- PV1-6

  Prior Patient Location: The facility formerly responsibile for the patient visit. The `MPI` only processes PV1-6.4.2 and requires this component to be present.

- PV1-19

  Visit Number: The unique identifier of the patient encounter. The value is supposed to be static for all messages referring to the same encounter. If no value is present, PID-18 will be used as a fallback encounter identifier. However, it is strongly recommended to use PV1-19 as the encounter identifier, and use PID-18 only to group encounters under a common patient encounter (if desired). In any case, this field is not intended to identify a specific encounter event (e.g. inpatient admission), but the patient encounter (a sequence of individual encounter events) as a whole. Also, it should be noted that the `MPI` processes PV1-19.1, PV1-19.4 and PV1-19.5.

- PV1-44

  Admit Date/Time: The start date/time of the patient visit.

- PV1-51

  Visit Indicator: Specifies the field that is used to identify the encounter. Possible values are **A** for PID-18, **V** for PV1-19 (recommended). It is recommended by IHE to set a value for this field. In eHealth Solutions, however, values given here will not be processed.

- MRG-1

  Prior Patient Identifier List: List of all Patient IDs of the recessive patient. The structure of this field corresponds to that of PID-3 (*Patient Identifier List)*. For a valid transaction it is sufficient to provide one Source Patient Identifier. Regional identifiers such as social security numbers should not be used since they will be ignored by eHealth Solutions.

- MRG-3

  Prior Patient Account Number: Account Number of the recessive patient. The structure of this field corresponds to that of PID-18 (*Patient Account Number)*.

- MRG-7

  Prior Patient Name List: Name of the recessive patient. Values given in this field are used for logging purposes.

- ZBE-1

  Movement ID: The unique identifier of the movement. All components are processed, ZBE-1.1 (Entity ID) and ZBE-1.3 (Universal ID; it is recommended to use the value given in the Source Patient Assigning Authority) are required.

- ZBE-2

  Start Movement Date/Time: The timestamp of the movement.

- ZBE-4

  Movement Action: For the type of movement see Table 26.

- ZBE-5

  Historical Movement Indicator: See Table 26.

Table 43: Fields relevant for the Change Inpatient To Outpatient Transaction.

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional
PV1-2	Patient Class	No	Required
PV1-3	Assigned Patient Location	No	Required
PV1-6	Prior Patient Location	No	Recommended
PV1-19	Visit Number	No	Recommended
PV1-44	Admit Date/Time	No	Required
PV1-51	Visit Indicator	No	Optional
MRG-1	Patient Identifier List	Yes	Required
MRG-3	Prior Patient Account Number	No	Optional
MRG-7	Prior Patient Name List	Yes	Optional
ZBE-1	Movement ID	No	Required for Historic Movement Management
ZBE-2	Start Movement Date/Time	No	Required for Historic Movement Management
ZBE-4	Movement Action	No	Required for Historic Movement Management
ZBE-5	Historical Movement Indicator	No	Required for Historic Movement Management

Example 71: Submission

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180306172412.257+0100||ADT^A07^ADT_A06|06d16e2e-bf31-4c14-8478-
  c1855e339d17|P|2.5|||AL|||UNICODE UTF-8
EVN||20180306172412.257+0100|||userId3513^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974&ISO^L^^^EN|20180306172412.163+0100
PID|||patientId2683^^^My Local Clinic&1.2.123.27.1974&ISO^PI~12850234587227^^^Social
  Security Association&1.2.123.27.1974&ISO^SS||Doe^John^^^^^L||19980306|M|||&Main Street
  &17^^London^^54820^GB^L||^^^^^^^^^^^011 44 20 1234 5678||en|M|VAR|patientAccount9059^^^
  My Local Clinic&1.2.123.27.1974&ISO^AN||||||N||GB||||N
PV1||O|^^^My Outpatient Clinic&1.2.123.27.27894&ISO|||^^^Radiology&1.2.123.27.1974.187.15&
  ISO|doctor1720^Dorian^John^^^^^^Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M
  .D.|doctor4898^House^Gregory^^^^^^Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN
  ^^^^^^^^M.D.|||||||A4||||visitId6829^^^My Local Clinic&1.2.123.27.1974&ISO^VN
```

Submission with Historic Movement Management

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180313140213.169+0100||ADT^A07^ADT_A06|499cfba4-0606-4cb6-8287-727
  a2367cde2|P|2.5|||AL|||UNICODE UTF-8
EVN||20180313140213.169+0100|||userId8903^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974.1.239&ISO^L^^^EN|20180313140213.04+0100
PID|||patientId4794^^^My Local Clinic&1.2.123.27.1974&ISO^PI~12850234585111^^^Social
  Security Association&1.2.123.27.1974&ISO^SS||Doe^John^^^^^L||19980313|M|||&Main Street
  &17^^London^^54820^GB^L||^^^^^^^^^^^011 44 20 1234 5678||en|M|VAR|patientAccount3576^^^
```

```
    My Local Clinic&1.2.123.27.1974&ISO^AN||||||Y|1|GB||||N
  PV1||O|^^^My Outpatient Clinic&1.2.123.27.27894&ISO|||^^^Radiology&1.2.123.27.1974.187.15&
    ISO|doctor8534^Dorian^John^^^^^^Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M
    .D.|doctor3422^House^Gregory^^^^^^Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN
    ^^^^^^^^M.D.|||||||A4||||visitId7153^^^My Local Clinic&1.2.123.27.1974&ISO^VN
    ||||||||||||||||||||||||||||||V
  ZBE|visitEvent6185^My Local Clinic^1.2.123.27.1974^ISO|20180313140213.040+0100||INSERT|N
```

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
```

3.9.2 Change Inpatient To Outpatient -- HL7v3

3.9.2.1 Inbound Message Structure

Example 72: HL7v3 Change Inpatient to Outpatient Root Element
See Section 3.1.2 Admit Inpatient – HL7v3.

Example 73: 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 3.1.2 Admit Inpatient – HL7v3.

3.9.2.2 Outbound Message Structure

See Section 1.2.2.

3.10 Change Patient Identifier List

This transaction is used to notify the `MPI` about an adaption of the patient identifiers.

3.10.1 Change Patient Identifier List -- HL7v2

- **ADT A47** – Change patient identifier list

3.10.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction Change Patient Identifier List.

Table 44: Change Patient Identifier List Segments

Segment	Description
MSH	Message Header
MSH-9-1	The message type must be **ADT**
MSH-9-2	The trigger event must be **A47**

Table 44: Change Patient Identifier List Segments

Table 44: Change Patient Identifier List Segments

Segment	Description
EVN	Event Information
IN1	Patient Insurance (**optional**)
PID	Patient Information
PV1	Patient Visit Information

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.

EVN Segment

The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message. Values provided in fields other than those listed in the Field Overview will be ignored.

IN1 Segment

The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.

PID Segment

The PID segment contains the relevant patient data.

PV1 Segment

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

ZBE Segment

The ZBE segment can be used to uniquely identify individual movements. This allows for corrections in historic information at a later point. Note that, when the ZBE segment is used, at least one patient assigning authority must be configured to support the Historic Movement Management option. As long as this configuration is active, the ZBE segment is treated as required.

3.10.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2, those for the PID segment are listed in Table 4. These are the relevant fields of the other segments:

EVN-2

Recorded Date/Time: Time at which the notification has been recorded in the system.

EVN-5

Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.

EVN-7

Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.

IN1-1

Set ID: The sequential number of this segment.

IN1-2

Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.

IN1-3

Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.

IN1-4

Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.

PV1-2

Patient Class: Determines the type of patient visit. This field is not case-sensitive; it identifies the type of 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.

PV1-19

Visit Number: The unique identifier of the patient encounter. The value is supposed to be static for all messages referring to the same encounter. If no value is present, PID-18 will be used as a fallback encounter identifier. However, it is strongly recommended to use PV1-19 as the encounter identifier, and use PID-18 only to group encounters under a common patient encounter (if desired). In any case, this field is not intended to identify a specific encounter event (e.g. inpatient admission), but the patient encounter (a sequence of individual encounter events) as a whole. Also, it should be noted that the `MPI` processes PV1-19.1, PV1-19.4 and PV1-19.5.

PV1-51

Visit Indicator: Specifies the field that is used to identify the encounter. Possible values are **A** for PID-18, **V** for PV1-19 (recommended). It is recommended by IHE to set a value for this field. In eHealth Solutions, however, values given here will not be processed.

Table 45: Fields relevant for the Change Patient Identifier List Transaction

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional
PV1-2	Patient Class	No	Required
PV1-19	Visit Number	No	Recommended
PV1-51	Visit Indicator	No	Optional

3.11 Change Attending Doctor

This transaction is used to notify the `MPI` about a change of the doctor attended by the patient.

3.11.1 Change Attending Doctor -- HL7v2

- **ADT A54** – Change attending doctor

3.11.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction Change Attending Doctor.

Table 46: Change Attending Doctor Segments

Segment	Description
MSH	Message Header
MSH-9-1	The message type must be **ADT**
MSH-9-2	The trigger event must be **A54**
EVN	Event Information
IN1	Patient Insurance (**optional**)
PID	Patient Information
PV1	Patient Visit Information
ZBE	Movement Action (**optional**)
ZBE-4	The type of action must be **INSERT**
ZBE-5	The movement indicator must be **N**

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.

EVN Segment

The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message. Values provided in fields other than those listed in the Field Overview will be ignored.

IN1 Segment

The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.

PID Segment

The PID segment contains the relevant patient data.

PV1 Segment

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

ZBE Segment

The ZBE segment can be used to uniquely identify individual movements. This allows for corrections in historic information at a later point. Note that, when the ZBE segment is used, at least one patient assigning authority must be configured to support the Historic Movement Management option. As long as this configuration is active, the ZBE segment is treated as required.

3.11.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2, those for the PID segment are listed in Table 4. These are the relevant fields of the other segments:

EVN-2

Recorded Date/Time: Time at which the notification has been recorded in the system.

EVN-5

Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.

EVN-7

Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.

IN1-1

Set ID: The sequential number of this segment.

IN1-2

Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.

IN1-3

Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.

IN1-4

Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.

PV1-2

Patient Class: Determines the type of patient visit. This field is not case-sensitive; it identifies the type of 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.

PV1-7

Attending Doctor: Refers to the attending physician. In eHealth Solutions, repetitions of this field cannot be processed. The components evaluated by eHealth Solutions are: PV1-7.1 (Identifier), PV1-7.2.1 (Family Name, Surname), PV1-7.3 (Given Name), PV1-7.4 (Additional Given Names), PV1-7.5 (Suffix), PV1-7.6 (Prefix), PV1-7.7 (Degree), PV1-7.9 (Assigning Authority), PV1-7.10 (Name Type Code), PV1-7.13 (Identifier Type Code), PV1-7.19 (Effective Date), PV1-7.20 (Expiration Date), PV1-7.21 (Professional Suffix). At least one identifier (either PV1-7.1 or PV1-7.9) has to be provided so the field can be stored.

PV1-19

Visit Number: The unique identifier of the patient encounter. The value is supposed to be static for all messages referring to the same encounter. If no value is present, PID-18 will be used as a fallback encounter identifier. However, it is strongly recommended to use PV1-19 as the encounter identifier, and use PID-18 only to group encounters under a common patient encounter (if desired). In any case, this field is not intended to identify a specific encounter event (e.g. inpatient admission), but the patient encounter (a sequence of individual encounter events) as a whole. Also, it should be noted that the `MPI` processes PV1-19.1, PV1-19.4 and PV1-19.5.

PV1-51

Visit Indicator: Specifies the field that is used to identify the encounter. Possible values are **A** for PID-18, **V** for PV1-19 (recommended). It is recommended by IHE to set a value for this field. In eHealth Solutions, however, values given here will not be processed.

ZBE-1

Movement ID: The unique identifier of the movement. All components are processed, ZBE-1.1 (Entity ID) and ZBE-1.3 (Universal ID; it is recommended to use the value given in the Source Patient Assigning Authority) are required.

ZBE-2

Start Movement Date/Time: The timestamp of the movement.

ZBE-4

Movement Action: For the type of movement see Table 26.

ZBE-5

Historical Movement Indicator: See Table 26.

Table 47: Fields relevant for the Change Attending Doctor Transaction

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional
PV1-2	Patient Class	No	Required
PV1-7	Attending Doctor	Yes, but without effect	Required
PV1-19	Visit Number	No	Recommended
PV1-51	Visit Indicator	No	Optional
ZBE-1	Movement ID	No	Required for Historic Movement Management
ZBE-2	Start Movement Date/Time	No	Required for Historic Movement Management
ZBE-4	Movement Action	No	Required for Historic Movement Management
ZBE-5	Historical Movement Indicator	No	Required for Historic Movement Management

Example 74:
Submission

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180306171409.784+0100||ADT^A54^ADT_A54|7ac18fbd-42b4-49be-8b8c-9
  f2601491e7e|P|2.5|||AL|||UNICODE UTF-8
EVN||20180306171409.784+0100|||userId3093^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974&ISO^L^^^EN|20180306171409.698+0100
PID|||patientId3068^^^My Local Clinic&1.2.123.27.1974&ISO^PI||Doe^John^^^^^L
PV1||N|||||doctor5555^Dorian^John^^^^^^Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN
  ^^^^^^^^M.D.||||||||||||visitId4052^^^My Local Clinic&1.2.123.27.1974&ISO^VN
```

Submission with Historic Movement Management

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180313140117.548+0100||ADT^A54^ADT_A54|247f1475-e79f-4e77-89ea-
  c3f104ff4a5a|P|2.5|||AL|||UNICODE UTF-8
EVN||20180313140117.548+0100|||userId0566^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974.1.239&ISO^L^^^EN|20180313140117.429+0100
PID|||patientId4462^^^My Local Clinic&1.2.123.27.1974&ISO^PI||Doe^John^^^^^L
  |||||||||||||||||||N||||||N
PV1||N|||||doctor1155^Dorian^John^^^^^^Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN
  ^^^^^^^^M.D.||||||||||||visitId7718^^^My Local Clinic&1.2.123.27.1974&ISO^VN
  |||||||||||||||||||||||||||||||||V
ZBE|visitEvent0797^My Local Clinic^1.2.123.27.1974^ISO|20180313140117.429+0100||INSERT|N
```

3.12 Cancel Change Attending Doctor

This transaction is used to notify the `MPI` about the cancellation of a change in the doctor attended by the patient.

3.12.1 Cancel Change Attending Doctor -- HL7v2

- **ADT A55** – Cancel change attending doctor

3.12.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction Cancel Change Attending Doctor.

Table 48: Cancel Change Attending Doctor Segments

Segment	Description
MSH	Message Header
MSH-9-1	The message type must be **ADT**
MSH-9-2	The trigger event must be **A55**
EVN	Event Information
IN1	Patient Insurance (**optional**)
PID	Patient Information
PV1	Patient Visit Information
ZBE	Movement Action (**optional**)
ZBE-4	The type of action must be **CANCEL**
ZBE-5	The movement indicator must be **N**

Note
Although the PID segment is required in Cancel Transactions, patient data will not be updated when differing from those registered in the system.

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.

EVN Segment
The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message. Values provided in fields other than those listed in the Field Overview will be ignored.

IN1 Segment
The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.

PID Segment
The PID segment contains the relevant patient data.

- PV1 Segment
  The PV1 segment is used by Registration/ADT applications to communicate information on a patient visit-specific basis.
- ZBE Segment
  The ZBE segment can be used to uniquely identify individual movements. This allows for corrections in historic information at a later point. Note that, when the ZBE segment is used, at least one patient assigning authority must be configured to support the Historic Movement Management option. As long as this configuration is active, the ZBE segment is treated as required.

3.12.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2. In cancellation messages, the PID segment is only required to contain a valid ID (PID-3) and the patient name (PID-5). The relevant fields of the other segments are:

- EVN-2
  Recorded Date/Time: Time at which the notification has been recorded in the system.
- EVN-5
  Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.
- EVN-7
  Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.
- IN1-1
  Set ID: The sequential number of this segment.
- IN1-2
  Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.
- IN1-3
  Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.
- IN1-4
  Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.
- PV1-2
  Patient Class: Determines the type of patient visit. This field is not case-sensitive; it identifies the type of 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.
- PV1-7
  Attending Doctor: Refers to the attending physician. In eHealth Solutions, repetitions of this field cannot be processed. The components evaluated by eHealth Solutions are: PV1-7.1 (Identifier), PV1-7.2.1 (Family Name, Surname), PV1-7.3 (Given Name), PV1-7.4 (Additional Given Names), PV1-7.5 (Suffix), PV1-7.6 (Prefix), PV1-7.7 (Degree), PV1-7.9 (Assigning Authority), PV1-7.10 (Name Type Code), PV1-7.13 (Identifier Type Code), PV1-7.19 (Effective Date), PV1-7.20 (Expiration Date), PV1-7.21 (Professional Suffix). At least one identifier (either PV1-7.1 or PV1-7.9) has to be provided so the field can be stored.

PV1-8

Referring doctor: In eHealth Solutions, repetitions of this field cannot be processed. The components evaluated by eHealth Solutions are: PV1-8.1 (Identifier), PV1-8.2.1 (Family Name, Surname), PV1-8.3 (Given Name), PV1-8.4 (Additional Given Names), PV1-8.5 (Suffix), PV1-8.6 (Prefix), PV1-8.7 (Degree), PV1-8.9 (Assigning Authority), PV1-8.10 (Name Type Code), PV1-8.13 (Identifier Type Code), PV1-8.19 (Effective Date), PV1-8.20 (Expiration Date), PV1-8.21 (Professional Suffix). At least one identifier (either PV1-8.1 or PV1-8.9) has to be provided so the field can be stored.

PV1-15

Ambulatory Status: Refers to special conditions of the patient such as the need of a wheelchair or a hearing impairment. Note that the selection of values is predefined by the HL7 standard.

PV1-19

Visit Number: The unique identifier of the patient encounter. The value is supposed to be static for all messages referring to the same encounter. If no value is present, PID-18 will be used as a fallback encounter identifier. However, it is strongly recommended to use PV1-19 as the encounter identifier, and use PID-18 only to group encounters under a common patient encounter (if desired). In any case, this field is not intended to identify a specific encounter event (e.g. inpatient admission), but the patient encounter (a sequence of individual encounter events) as a whole. Also, it should be noted that the `MPI` processes PV1-19.1, PV1-19.4 and PV1-19.5.

PV1-51

Visit Indicator: Specifies the field that is used to identify the encounter. Possible values are **A** for PID-18, **V** for PV1-19 (recommended). It is recommended by IHE to set a value for this field. In eHealth Solutions, however, values given here will not be processed.

ZBE-1

Movement ID: The unique identifier of the movement. All components are processed, ZBE-1.1 (Entity ID) and ZBE-1.3 (Universal ID; it is recommended to use the value given in the Source Patient Assigning Authority) are required.

ZBE-2

Start Movement Date/Time: The timestamp of the movement.

ZBE-4

Movement Action: For the type of movement see Table 26.

ZBE-5

Historical Movement Indicator: See Table 26.

Table 49: Fields relevant for the Cancel Change Attending Doctor Transaction

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional
PV1-2	Patient Class	No	Required
PV1-7	Attending Doctor	Yes, but without effect	Required
PV1-8	Referring Doctor	Yes, but without effect	Optional
PV1-15	Ambulatory Status	Yes	Optional
PV1-19	Visit Number	No	Recommended

Table 49: Fields relevant for the Cancel Change Attending Doctor Transaction

Table 49: Fields relevant for the Cancel Change Attending Doctor Transaction

HL7-Path	Name	Repeatable	Presence
PV1-51	Visit Indicator	No	Optional
ZBE-1	Movement ID	No	Required for Historic Movement Management
ZBE-2	Start Movement Date/Time	No	Required for Historic Movement Management
ZBE-4	Movement Action	No	Required for Historic Movement Management
ZBE-5	Historical Movement Indicator	No	Required for Historic Movement Management

Example 75:
Submission

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180306170409.292+0100||ADT^A55|b57b422a-9282-4d17-a717-7
  cf89acc365b|P|2.5|||AL|||UNICODE UTF-8
EVN||20180306170409.292+0100|||userId9760^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974&ISO^L^^^EN|20180306170409.209+0100
PID|||patientId2040^^^My Local Clinic&1.2.123.27.1974&ISO^PI||Doe^John^^^^^L
PV1||N|||||doctor1804^Dorian^John^^^^^^Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN
  ^^^^^^^^M.D.||||||||||||visitId9914^^^My Local Clinic&1.2.123.27.1974&ISO^VN
```

Submission with Historic Movement Management

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180313135718.16+0100||ADT^A55|171e419e-33b0-4305-ab5b-61cbbb805b39
  |P|2.5|||AL|||UNICODE UTF-8
EVN||20180313135718.16+0100|||userId8860^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974.1.239&ISO^L^^^EN|20180313135718.047+0100
PID|||patientId6762^^^My Local Clinic&1.2.123.27.1974&ISO^PI||Doe^John^^^^^L
PV1||N|||||doctor4565^Dorian^John^^^^^^Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN
  ^^^^^^^^M.D.||||||||||||visitId5690^^^My Local Clinic&1.2.123.27.1974&ISO^VN
  |||||||||||||||||||||||||||||||V
ZBE|visitEvent4553^My Local Clinic^1.2.123.27.1974^ISO|20180313135718.047+0100||CANCEL|N
```

3.13 Begin Leave of Absence

This transaction is used to notify the `MPI` that an admitted patient has left the institution temporarily.

3.13.1 Begin Leave of Absence -- HL7v2

- **ADT A21** – Patient goes on a “leave of absence”

3.13.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction Begin Leave of Absence.

Table 50: Begin Leave of Absence Segments

Segment	Description
MSH	Message Header
MSH-9-1	The message type must be **ADT**
MSH-9-2	The trigger event must be **A21**
EVN	Event Information
IN1	Patient Insurance (**optional**)
PID	Patient Information
PV1	Patient Visit Information
ZBE	Movement Action (**optional**)
ZBE-4	The type of action must be **INSERT**
ZBE-5	The movement indicator must be **N**

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.

EVN Segment

The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message. Values provided in fields other than those listed in the Field Overview will be ignored.

IN1 Segment

The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.

PID Segment

The PID segment contains the relevant patient data.

PV1 Segment

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

ZBE Segment

The ZBE segment can be used to uniquely identify individual movements. This allows for corrections in historic information at a later point. Note that, when the ZBE segment is used, at least one patient assigning authority must be configured to support the Historic Movement Management option. As long as this configuration is active, the ZBE segment is treated as required.

3.13.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2, those for the PID segment are listed in Table 4. These are the relevant fields of the other segments:

EVN-2

Recorded Date/Time: Time at which the notification has been recorded in the system.

EVN-5

Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.

EVN-7

Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.

IN1-1

Set ID: The sequential number of this segment.

IN1-2

Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.

IN1-3

Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.

IN1-4

Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.

PV1-2

Patient Class: Determines the type of patient visit. This field is not case-sensitive; it identifies the type of 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.

PV1-19

Visit Number: The unique identifier of the patient encounter. The value is supposed to be static for all messages referring to the same encounter. If no value is present, PID-18 will be used as a fallback encounter identifier. However, it is strongly recommended to use PV1-19 as the encounter identifier, and use PID-18 only to group encounters under a common patient encounter (if desired). In any case, this field is not intended to identify a specific encounter event (e.g. inpatient admission), but the patient encounter (a sequence of individual encounter events) as a whole. Also, it should be noted that the `MPI` processes PV1-19.1, PV1-19.4 and PV1-19.5.

PV1-51

Visit Indicator: Specifies the field that is used to identify the encounter. Possible values are **A** for PID-18, **V** for PV1-19 (recommended). It is recommended by IHE to set a value for this field. In eHealth Solutions, however, values given here will not be processed.

ZBE-1

Movement ID: The unique identifier of the movement. All components are processed, ZBE-1.1 (Entity ID) and ZBE-1.3 (Universal ID; it is recommended to use the value given in the Source Patient Assigning Authority) are required.

ZBE-2

Start Movement Date/Time: The timestamp of the movement.

ZBE-4

Movement Action: For the type of movement see Table 26.

ZBE-5

Historical Movement Indicator: See Table 26.

Table 51: Fields relevant for the Begin Leave of Absence Transaction

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required

Table 51: Fields relevant for the Begin Leave of Absence Transaction

Table 51: Fields relevant for the Begin Leave of Absence Transaction

HL7-Path	Name	Repeatable	Presence
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional
PV1-2	Patient Class	No	Required
PV1-19	Visit Number	No	Recommended
PV1-51	Visit Indicator	No	Optional
ZBE-1	Movement ID	No	Required for Historic Movement Management
ZBE-2	Start Movement Date/Time	No	Required for Historic Movement Management
ZBE-4	Movement Action	No	Required for Historic Movement Management
ZBE-5	Historical Movement Indicator	No	Required for Historic Movement Management

Example 76:
Submission

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180306161712.247+0100||ADT^A21^ADT_A21|510ba620-3df5-463e-941b-
  cf94e02ddaab|P|2.5|||AL|||UNICODE UTF-8
EVN||20180306161712.247+0100|||userId6762^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974&ISO^L^^^EN|20180306161712.166+0100
PID|||patientId9625^^^My Local Clinic&1.2.123.27.1974&ISO^PI~12850234587517^^^Social
  Security Association&1.2.123.27.1974&ISO^SS||Doe^John^^^^^L||19980306|M|||&Main Street
  &17^^London^^54820^GB^L||^^^^^^^^^^^011 44 20 1234 5678||en|M|VAR|patientAccount8187^^^
  My Local Clinic&1.2.123.27.1974&ISO^AN||||||Y|1|GB||||N
PV1||N||||||||||||||||visitId9284^^^My Local Clinic&1.2.123.27.1974&ISO^VN
```

Submission with Historic Movement Management

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180313135414.026+0100||ADT^A21^ADT_A21|5f85450a-67cb-4cbe-a588-
  daefd90c391f|P|2.5|||AL|||UNICODE UTF-8
EVN||20180313135414.026+0100|||userId6205^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974.1.239&ISO^L^^^EN|20180313135414.016+0100
PID|||patientId8502^^^My Local Clinic&1.2.123.27.1974&ISO^PI~12850234581763^^^Social
  Security Association&1.2.123.27.1974&ISO^SS||Doe^John^^^^^L||19980313|M|||&Main Street
  &17^^London^^54820^GB^L||^^^^^^^^^^^011 44 20 1234 5678||en|M|VAR|patientAccount9499^^^
  My Local Clinic&1.2.123.27.1974&ISO^AN||||||Y|2|GB||||N
PV1||N||||||||||||||||visitId9690^^^My Local Clinic&1.2.123.27.1974&ISO^VN
  |||||||||||||||||||||||||||||||V
ZBE|visitEvent9028^My Local Clinic^1.2.123.27.1974^ISO|20180313135414.016+0100||INSERT|N
```

3.14 Cancel Begin Leave of Absence

This transaction is used to notify the `MPI` about the cancellation of a Begin Leave of Absence event.

3.14.1 Cancel Begin Leave of Absence -- HL7v2

- **ADT A52** – Cancel leave of absence for a patient

3.14.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction Cancel Begin Leave of Absence.

Table 52: Cancel Begin Leave of Absence Segments

Segment	Description
MSH	Message Header
MSH-9-1	The message type must be **ADT**
MSH-9-2	The trigger event must be **A52**
EVN	Event Information
IN1	Patient Insurance (**optional**)
PID	Patient Information
PV1	Patient Visit Information
ZBE	Movement Action (**optional**)
ZBE-4	The type of action must be **CANCEL**
ZBE-5	The movement indicator must be **N**

Note
Although the PID segment is required in Cancel Transactions, patient data will not be updated when differing from those registered in the system.

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.

EVN Segment
The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message. Values provided in fields other than those listed in the Field Overview will be ignored.

IN1 Segment
The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.

PID Segment
The PID segment contains the relevant patient data.

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

ZBE Segment
The ZBE segment can be used to uniquely identify individual movements. This allows for corrections in historic information at a later point. Note that, when the ZBE segment is used, at least one patient

assigning authority must be configured to support the Historic Movement Management option. As long as this configuration is active, the ZBE segment is treated as required.

3.14.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2. In cancellation messages, the PID segment is only required to contain a valid ID (PID-3) and the patient name (PID-5). The relevant fields of the other segments are:

- EVN-2
  Recorded Date/Time: Time at which the notification has been recorded in the system.
- EVN-5
  Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.
- EVN-7
  Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.
- IN1-1
  Set ID: The sequential number of this segment.
- IN1-2
  Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.
- IN1-3
  Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.
- IN1-4
  Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.
- PV1-2
  Patient Class: Determines the type of patient visit. This field is not case-sensitive; it identifies the type of 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.
- PV1-19
  Visit Number: The unique identifier of the patient encounter. The value is supposed to be static for all messages referring to the same encounter. If no value is present, PID-18 will be used as a fallback encounter identifier. However, it is strongly recommended to use PV1-19 as the encounter identifier, and use PID-18 only to group encounters under a common patient encounter (if desired). In any case, this field is not intended to identify a specific encounter event (e.g. inpatient admission), but the patient encounter (a sequence of individual encounter events) as a whole. Also, it should be noted that the `MPI` processes PV1-19.1, PV1-19.4 and PV1-19.5.
- PV1-51
  Visit Indicator: Specifies the field that is used to identify the encounter. Possible values are **A** for PID-18, **V** for PV1-19 (recommended). It is recommended by IHE to set a value for this field. In eHealth Solutions, however, values given here will not be processed.
- ZBE-1
  Movement ID: The unique identifier of the movement. All components are processed, ZBE-1.1 (Entity

ID) and ZBE-1.3 (Universal ID; it is recommended to use the value given in the Source Patient Assigning Authority) are required.

- ZBE-2
  Start Movement Date/Time: The timestamp of the movement.
- ZBE-4
  Movement Action: For the type of movement see Table 26.
- ZBE-5
  Historical Movement Indicator: See Table 26.

Table 53: Fields relevant for the Cancel Begin Leave of Absence Transaction

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional
PV1-2	Patient Class	No	Required
PV1-19	Visit Number	No	Recommended
PV1-51	Visit Indicator	No	Optional
ZBE-1	Movement ID	No	Required for Historic Movement Management
ZBE-2	Start Movement Date/Time	No	Required for Historic Movement Management
ZBE-4	Movement Action	No	Required for Historic Movement Management
ZBE-5	Historical Movement Indicator	No	Required for Historic Movement Management

Example 77:
Submission

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180306164448.523+0100||ADT^A52^ADT_A52|ff27b11a-863a-4d12-96bf-28
  db4dcb2070|P|2.5|||AL|||UNICODE UTF-8
EVN||20180306164448.523+0100|||userId1565^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974&ISO^L^^^EN|20180306164448.447+0100
PID|||patientId1943^^^My Local Clinic&1.2.123.27.1974&ISO^PI||Doe^John^^^^^L
PV1||N||||||||||||||||visitId7077^^^My Local Clinic&1.2.123.27.1974&ISO^VN
```

Submission with Historic Movement Management

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180313135607.178+0100||ADT^A52^ADT_A52|2b6f9ed2-bbc6-4018-a737-2
  d2d114223fe|P|2.5|||AL|||UNICODE UTF-8
EVN||20180313135607.178+0100|||userId0184^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974.1.239&ISO^L^^^EN|20180313135607.171+0100
PID|||patientId9219^^^My Local Clinic&1.2.123.27.1974&ISO^PI||Doe^John^^^^^L
PV1||N||||||||||||||||visitId5690^^^My Local Clinic&1.2.123.27.1974&ISO^VN
  |||||||||||||||||||||||||||||||V
ZBE|visitEvent7402^My Local Clinic^1.2.123.27.1974^ISO|20180313135607.171+0100||CANCEL|N
```

3.15 End Leave of Absence

This transaction is used to notify the `MPI` that an admitted patient has returned to the institution after temporarily leaving it.

3.15.1 End Leave of Absence -- HL7v2

- **ADT A22** – Patient returns from a "leave of absence"

3.15.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction End Leave of Absence.

Table 54: End Leave of Absence Segments

Segment	Description
MSH	Message Header
MSH-9-1	The message type must be **ADT**
MSH-9-2	The trigger event must be **A22**
EVN	Event Information
IN1	Patient Insurance (**optional**)
PID	Patient Information
PV1	Patient Visit Information
ZBE	Movement Action (**optional**)
ZBE-4	The type of action must be **INSERT**
ZBE-5	The movement indicator must be **N**

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.

EVN Segment

The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message. Values provided in fields other than those listed in the Field Overview will be ignored.

IN1 Segment

The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.

PID Segment

The PID segment contains the relevant patient data.

PV1 Segment

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

ZBE Segment

The ZBE segment can be used to uniquely identify individual movements. This allows for corrections in historic information at a later point. Note that, when the ZBE segment is used, at least one patient

assigning authority must be configured to support the Historic Movement Management option. As long as this configuration is active, the ZBE segment is treated as required.

3.15.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2, those for the PID segment are listed in Table 4. These are the relevant fields of the other segments:

- EVN-2
  Recorded Date/Time: Time at which the notification has been recorded in the system.
- EVN-5
  Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.
- EVN-7
  Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.
- IN1-1
  Set ID: The sequential number of this segment.
- IN1-2
  Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.
- IN1-3
  Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.
- IN1-4
  Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.
- PV1-2
  Patient Class: Determines the type of patient visit. This field is not case-sensitive; it identifies the type of 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.
- PV1-19
  Visit Number: The unique identifier of the patient encounter. The value is supposed to be static for all messages referring to the same encounter. If no value is present, PID-18 will be used as a fallback encounter identifier. However, it is strongly recommended to use PV1-19 as the encounter identifier, and use PID-18 only to group encounters under a common patient encounter (if desired). In any case, this field is not intended to identify a specific encounter event (e.g. inpatient admission), but the patient encounter (a sequence of individual encounter events) as a whole. Also, it should be noted that the `MPI` processes PV1-19.1, PV1-19.4 and PV1-19.5.
- PV1-51
  Visit Indicator: Specifies the field that is used to identify the encounter. Possible values are **A** for PID-18, **V** for PV1-19 (recommended). It is recommended by IHE to set a value for this field. In eHealth Solutions, however, values given here will not be processed.
- ZBE-1
  Movement ID: The unique identifier of the movement. All components are processed, ZBE-1.1 (Entity

ID) and ZBE-1.3 (Universal ID; it is recommended to use the value given in the Source Patient Assigning Authority) are required.

- ZBE-2
  Start Movement Date/Time: The timestamp of the movement.
- ZBE-4
  Movement Action: For the type of movement see Table 26.
- ZBE-5
  Historical Movement Indicator: See Table 26.

Table 55: Fields relevant for the End Leave of Absence Transaction

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional
PV1-2	Patient Class	No	Required
PV1-19	Visit Number	No	Recommended
PV1-51	Visit Indicator	No	Optional
ZBE-1	Movement ID	No	Required for Historic Movement Management
ZBE-2	Start Movement Date/Time	No	Required for Historic Movement Management
ZBE-4	Movement Action	No	Required for Historic Movement Management
ZBE-5	Historical Movement Indicator	No	Required for Historic Movement Management

Example 78:
Submission

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180306173425.879+0100||ADT^A22|f04ed00a-3a7c-4026-851d-39
  ad7df6229c|P|2.5|||AL|||UNICODE UTF-8
EVN||20180306173425.879+0100|||userId4264^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974&ISO^L^^^EN|20180306173425.788+0100
PID|||patientId0222^^^My Local Clinic&1.2.123.27.1974&ISO^PI~12850234582998^^^Social
  Security Association&1.2.123.27.1974&ISO^SS||Doe^John^^^^^L||19980306|M|||&Main Street
  &17^^London^^54820^GB^L||^^^^^^^^^^^011 44 20 1234 5678||en|M|VAR|patientAccount0355^^^
  My Local Clinic&1.2.123.27.1974&ISO^AN||||||Y|1|GB||||N
PV1||N||||||||||||||||visitId7729^^^My Local Clinic&1.2.123.27.1974&ISO^VN
```

Submission with Historic Movement Management

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180313140543.34+0100||ADT^A22|f283e54a-1d87-45b8-816a-e46d80c2d963
  |P|2.5|||AL|||UNICODE UTF-8
EVN||20180313140543.34+0100|||userId6167^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974.1.239&ISO^L^^^EN|20180313140543.207+0100
PID|||patientId1107^^^My Local Clinic&1.2.123.27.1974&ISO^PI~12850234580028^^^Social
  Security Association&1.2.123.27.1974&ISO^SS||Doe^John^^^^^L||19980313|M|||&Main Street
```

```
  &17^^London^^54820^GB^L||^^^^^^^^^^^011 44 20 1234 5678||en|M|VAR|patientAccount8507^^^
  My Local Clinic&1.2.123.27.1974&ISO^AN||||||Y|1|GB||||N
PV1||N||||||||||||||||visitId0280^^^My Local Clinic&1.2.123.27.1974&ISO^VN
  ||||||||||||||||||||||||||||||V
ZBE|visitEvent4414^My Local Clinic^1.2.123.27.1974^ISO|20180313140543.207+0100||INSERT|N
```

3.16 Cancel End Leave Of Absence

This transaction is used to notify the `MPI` about the cancellation of an End Leave of Absence event.

3.16.1 Cancel End Leave Of Absence -- HL7v2

- **ADT A53** – Cancel patient returns from a leave of absence

3.16.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction Cancel End Leave Of Absence.

Table 56: Cancel End Leave Of Absence Segments

Segment	Description
MSH	Message Header
MSH-9-1	The message type must be **ADT**
MSH-9-2	The trigger event must be **A53**
EVN	Event Information
IN1	Patient Insurance (**optional**)
PID	Patient Information
PV1	Patient Visit Information

Note
Although the PID segment is required in Cancel Transactions, patient data will not be updated when differing from those registered in the system.

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.

EVN Segment
The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message. Values provided in fields other than those listed in the Field Overview will be ignored.

IN1 Segment
The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.

PID Segment
The PID segment contains the relevant patient data.

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

ZBE Segment
The ZBE segment can be used to uniquely identify individual movements. This allows for corrections in historic information at a later point. Note that, when the ZBE segment is used, at least one patient assigning authority must be configured to support the Historic Movement Management option. As long as this configuration is active, the ZBE segment is treated as required.

3.16.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2. In cancellation messages, the PID segment is only required to contain a valid ID (PID-3) and the patient name (PID-5). The relevant fields of the other segments are:

EVN-2
Recorded Date/Time: Time at which the notification has been recorded in the system.

EVN-5
Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.

EVN-7
Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.

IN1-1
Set ID: The sequential number of this segment.

IN1-2
Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.

IN1-3
Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.

IN1-4
Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.

PV1-2
Patient Class: Determines the type of patient visit. This field is not case-sensitive; it identifies the type of 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.

PV1-19
Visit Number: The unique identifier of the patient encounter. The value is supposed to be static for all messages referring to the same encounter. If no value is present, PID-18 will be used as a fallback encounter identifier. However, it is strongly recommended to use PV1-19 as the encounter identifier, and use PID-18 only to group encounters under a common patient encounter (if desired). In any case, this field is not intended to identify a specific encounter event (e.g. inpatient admission), but the

patient encounter (a sequence of individual encounter events) as a whole. Also, it should be noted that the `MPI` processes PV1-19.1, PV1-19.4 and PV1-19.5.

PV1-51

Visit Indicator: Specifies the field that is used to identify the encounter. Possible values are **A** for PID-18, **V** for PV1-19 (recommended). It is recommended by IHE to set a value for this field. In eHealth Solutions, however, values given here will not be processed.

Table 57: Fields relevant for the Cancel End Leave of Absence Transaction

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional
PV1-2	Patient Class	No	Required
PV1-19	Visit Number	No	Recommended
PV1-51	Visit Indicator	No	Optional

Example 79:
Submission

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180306171152.786+0100||ADT^A53|eb4eb86a-9cf9-48a5-b0b5-01745136
  d698|P|2.5|||AL|||UNICODE UTF-8
EVN||20180306171152.786+0100|||userId9231^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974&ISO^L^^^EN|20180306171152.701+0100
PID|||patientId0902^^^My Local Clinic&1.2.123.27.1974&ISO^PI||Doe^John^^^^^L
PV1||N||||||||||||||||visitId3830^^^My Local Clinic&1.2.123.27.1974&ISO^VN
```

Submission with Historic Movement Management

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180313135921.01+0100||ADT^A53|c7c54ec2-2dcd-4a9f-93d8-db0fe791f007
  |P|2.5|||AL|||UNICODE UTF-8
EVN||20180313135921.01+0100|||userId3648^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974.1.239&ISO^L^^^EN|20180313135920.997+0100
PID|||patientId1751^^^My Local Clinic&1.2.123.27.1974&ISO^PI||Doe^John^^^^^L
PV1||N||||||||||||||||visitId2780^^^My Local Clinic&1.2.123.27.1974&ISO^VN
  |||||||||||||||||||||||||||||||V
ZBE|visitEvent8186^My Local Clinic^1.2.123.27.1974^ISO|20180313135920.997+0100||CANCEL|N
```

3.17 Move Account Information

3.17.1 Move Account Information -- HL7v2

- **ADT A44** – Move account information – patient account number

3.17.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction Move Account Information.

Table 58: Move Account Information Segments

Segment	Description
MSH	Message Header
MSH-9-1	The message type must be **ADT**
MSH-9-2	The trigger event must be **A44**
EVN	Event Information
IN1	Patient Insurance (**optional**)
PID	Patient Information
PV1	Patient Visit Information

- 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.
- EVN Segment
  The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message. Values provided in fields other than those listed in the Field Overview will be ignored.
- IN1 Segment
  The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.
- PID Segment
  The PID segment contains the relevant patient data.
- PV1 Segment
  The PV1 segment is used by Registration/ADT applications to communicate information on a patient visit-specific basis.
- ZBE Segment
  The ZBE segment can be used to uniquely identify individual movements. This allows for corrections in historic information at a later point. Note that, when the ZBE segment is used, at least one patient assigning authority must be configured to support the Historic Movement Management option. As long as this configuration is active, the ZBE segment is treated as required.

3.17.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2, those for the PID segment are listed in Table 4. These are the relevant fields of the other segments:

- EVN-2
  Recorded Date/Time: Time at which the notification has been recorded in the system.
- EVN-5
  Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes).

In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.

EVN-7

Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.

IN1-1

Set ID: The sequential number of this segment.

IN1-2

Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.

IN1-3

Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.

IN1-4

Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.

PV1-2

Patient Class: Determines the type of patient visit. This field is not case-sensitive; it identifies the type of 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.

PV1-19

Visit Number: The unique identifier of the patient encounter. The value is supposed to be static for all messages referring to the same encounter. If no value is present, PID-18 will be used as a fallback encounter identifier. However, it is strongly recommended to use PV1-19 as the encounter identifier, and use PID-18 only to group encounters under a common patient encounter (if desired). In any case, this field is not intended to identify a specific encounter event (e.g. inpatient admission), but the patient encounter (a sequence of individual encounter events) as a whole. Also, it should be noted that the `MPI` processes PV1-19.1, PV1-19.4 and PV1-19.5.

PV1-51

Visit Indicator: Specifies the field that is used to identify the encounter. Possible values are **A** for PID-18, **V** for PV1-19 (recommended). It is recommended by IHE to set a value for this field. In eHealth Solutions, however, values given here will not be processed.

MRG-1

Prior Patient Identifier List: List of all Patient IDs of the recessive patient. The structure of this field corresponds to that of PID-3 (*Patient Identifier List)*. For a valid transaction it is sufficient to provide one Source Patient Identifier. Regional identifiers such as social security numbers should not be used since they will be ignored by eHealth Solutions.

MRG-3

Prior Patient Account Number: Account Number of the recessive patient. The structure of this field corresponds to that of PID-18 (*Patient Account Number)*.

MRG-7

Prior Patient Name List: Name of the recessive patient. Values given in this field are used for logging purposes.

Table 59: Fields relevant for the Move Account Information Transaction

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional
PV1-2	Patient Class	No	Required
PV1-19	Visit Number	No	Recommended
PV1-51	Visit Indicator	No	Optional
MRG-1	Patient Identifier List	Yes	Required
MRG-3	Prior Patient Account Number	No	Optional
MRG-7	Prior Patient Name List	Yes	Optional

Example 80:
Submission

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180306174815.292+0100||ADT^A44^ADT_A43|73aba801-c195-4adb-89c6-5
  d9098bc57b8|P|2.5|||AL|||UNICODE UTF-8
EVN||20180306174815.292+0100|||userId9885^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974&ISO^L^^^EN
PID|||patientId3526^^^My Local Clinic&1.2.123.27.1974&ISO^PI~12850234581018^^^Social
  Security Association&1.2.123.27.1974&ISO^SS||Doe^John^^^^^L||19980306|M|||&Main Street
  &17^^London^^54820^GB^L||^^^^^^^^^^^011 44 20 1234 5678||en|M|VAR|||||||Y|2|GB||||N
MRG|previousPatientId1234^^^My Local Clinic&1.2.123.27.1974&ISO^PI||patientAccount5844^^^
  My Local Clinic&1.2.123.27.1974&ISO^AN
```

3.18 Update Encounter Event

3.18.1 Update Encounter Event -- HL7v2

- **ADT Z99** – Historic Movement

3.18.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction Update Encounter Event.

Table 60: Update Encounter Event Segments

Segment	Description
MSH	Message Header
MSH-9-1	The message type must be **ADT**
MSH-9-2	The trigger event must be **Z99**

Table 60: Update Encounter Event Segments

Table 60: Update Encounter Event Segments

Segment	Description
EVN	Event Information
IN1	Patient Insurance (**optional**)
PID	Patient Information
PV1	Patient Visit Information
ZBE	Movement Action (**optional**)
ZBE-4	The type of action must be **UPDATE**
ZBE-5	The movement indicator must be **Y**

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.

EVN Segment

The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message. Values provided in fields other than those listed in the Field Overview will be ignored.

IN1 Segment

The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.

PID Segment

The PID segment contains the relevant patient data.

PV1 Segment

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

ZBE Segment

The ZBE segment can be used to uniquely identify individual movements. This allows for corrections in historic information at a later point. Note that, when the ZBE segment is used, at least one patient assigning authority must be configured to support the Historic Movement Management option. As long as this configuration is active, the ZBE segment is treated as required.

3.18.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2, those for the PID segment are listed in Table 4. These are the relevant fields of the other segments:

EVN-2

Recorded Date/Time: Time at which the notification has been recorded in the system.

EVN-5

Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.

EVN-7

Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.

IN1-1

Set ID: The sequential number of this segment.

IN1-2

Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.

IN1-3

Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.

IN1-4

Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.

PV1-2

Patient Class: Determines the type of patient visit. This field is not case-sensitive; it identifies the type of 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.

PV1-19

Visit Number: The unique identifier of the patient encounter. The value is supposed to be static for all messages referring to the same encounter. If no value is present, PID-18 will be used as a fallback encounter identifier. However, it is strongly recommended to use PV1-19 as the encounter identifier, and use PID-18 only to group encounters under a common patient encounter (if desired). In any case, this field is not intended to identify a specific encounter event (e.g. inpatient admission), but the patient encounter (a sequence of individual encounter events) as a whole. Also, it should be noted that the `MPI` processes PV1-19.1, PV1-19.4 and PV1-19.5.

PV1-51

Visit Indicator: Specifies the field that is used to identify the encounter. Possible values are **A** for PID-18, **V** for PV1-19 (recommended). It is recommended by IHE to set a value for this field. In eHealth Solutions, however, values given here will not be processed.

ZBE-1

Movement ID: The unique identifier of the movement. All components are processed, ZBE-1.1 (Entity ID) and ZBE-1.3 (Universal ID; it is recommended to use the value given in the Source Patient Assigning Authority) are required.

ZBE-2

Start Movement Date/Time: The timestamp of the movement.

ZBE-4

Movement Action: For the type of movement see Table 26.

ZBE-5

Historical Movement Indicator: See Table 26.

Table 61: Fields relevant for the Update Encounter Event Transaction

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required

Table 61: Fields relevant for the Update Encounter Event Transaction

Table 61: Fields relevant for the Update Encounter Event Transaction

HL7-Path	Name	Repeatable	Presence
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional
PV1-2	Patient Class	No	Required
PV1-19	Visit Number	No	Recommended
PV1-51	Visit Indicator	No	Optional
ZBE-1	Movement ID	No	Required for Historic Movement Management
ZBE-2	Start Movement Date/Time	No	Required for Historic Movement Management
ZBE-4	Movement Action	No	Required for Historic Movement Management
ZBE-5	Historical Movement Indicator	No	Required for Historic Movement Management

Example 81:
Submission

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180313125647.897+0100||ADT^Z99|d5d31bd2-edf5-4615-b11e-1087
  d0df4dca|P|2.5||||||UNICODE UTF-8
EVN||20180313125647.897+0100|||userId6136^Warren^Karen^^^^^^My Local Clinic
  &1.2.123.27.1974.1.239&ISO^L^^^EN|20180313125647.814+0100
PID|||patientId9538^^^My Local Clinic&1.2.123.27.1974&ISO^PI||Doe^John^^^^^L||||||||||||
  patientAccount3391^^^My Local Clinic&1.2.123.27.1974&ISO^AN||||||N||||||N
PV1||I|^^^Radiology&1.2.123.27.1974.187.15&ISO||||doctor0876^Dorian^John^^^^^^Medical
  Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M.D.|doctor7659^House^Gregory^^^^^^
  Medical Staff&1.2.123.27.1974.185.23&ISO^L^^^DN^^^^^^^^M.D.||||||||||visitId0278^^^My
  Local Clinic&1.2.123.27.1974&ISO^VN|||||||||||||||||||||||||||||||V
ZBE|visitEvent4692^My Local Clinic^1.2.123.27.1974^ISO|20180313125647.814+0100||UPDATE|Y
```

3.19 Cancel Encounter Event

3.19.1 Cancel Encounter Event -- HL7v2

- **ADT Z99** – Historic Movement

3.19.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction Cancel Encounter Event.

Table 62: Cancel Encounter Event Segments

Segment	Description
MSH	Message Header
MSH-9-1	The message type must be **ADT**
MSH-9-2	The trigger event must be **Z99**
EVN	Event Information

Table 62: Cancel Encounter Event Segments

Table 62: Cancel Encounter Event Segments

Segment	Description
IN1	Patient Insurance (**optional**)
PID	Patient Information
PV1	Patient Visit Information
ZBE	Movement Action (**optional**)
ZBE-4	The type of action must be **CANCEL**
ZBE-5	The movement indicator must be **N**

Note
Although the PID segment is required in Cancel Transactions, patient data will not be updated when differing from those registered in the system.

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.

EVN Segment
The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message. Values provided in fields other than those listed in the Field Overview will be ignored.

IN1 Segment
The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.

PID Segment
The PID segment contains the relevant patient data.

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

ZBE Segment
The ZBE segment can be used to uniquely identify individual movements. This allows for corrections in historic information at a later point. Note that, when the ZBE segment is used, at least one patient assigning authority must be configured to support the Historic Movement Management option. As long as this configuration is active, the ZBE segment is treated as required.

3.19.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2. In cancellation messages, the PID segment is only required to contain a valid ID (PID-3) and the patient name (PID-5). The relevant fields of the other segments are:

EVN-2
Recorded Date/Time: Time at which the notification has been recorded in the system.

EVN-5

Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.

EVN-7

Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.

IN1-1

Set ID: The sequential number of this segment.

IN1-2

Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.

IN1-3

Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.

IN1-4

Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.

PV1-2

Patient Class: Determines the type of patient visit. This field is not case-sensitive; it identifies the type of 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.

PV1-19

Visit Number: The unique identifier of the patient encounter. The value is supposed to be static for all messages referring to the same encounter. If no value is present, PID-18 will be used as a fallback encounter identifier. However, it is strongly recommended to use PV1-19 as the encounter identifier, and use PID-18 only to group encounters under a common patient encounter (if desired). In any case, this field is not intended to identify a specific encounter event (e.g. inpatient admission), but the patient encounter (a sequence of individual encounter events) as a whole. Also, it should be noted that the `MPI` processes PV1-19.1, PV1-19.4 and PV1-19.5.

PV1-51

Visit Indicator: Specifies the field that is used to identify the encounter. Possible values are **A** for PID-18, **V** for PV1-19 (recommended). It is recommended by IHE to set a value for this field. In eHealth Solutions, however, values given here will not be processed.

ZBE-1

Movement ID: The unique identifier of the movement. All components are processed, ZBE-1.1 (Entity ID) and ZBE-1.3 (Universal ID; it is recommended to use the value given in the Source Patient Assigning Authority) are required.

ZBE-2

Start Movement Date/Time: The timestamp of the movement.

ZBE-4

Movement Action: For the type of movement see Table 26.

ZBE-5

Historical Movement Indicator: See Table 26.

Table 63: Fields relevant for the Cancel Encounter Event Transaction

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional
PV1-2	Patient Class	No	Required
PV1-19	Visit Number	No	Recommended
PV1-51	Visit Indicator	No	Optional
ZBE-1	Movement ID	No	Required for Historic Movement Management
ZBE-2	Start Movement Date/Time	No	Required for Historic Movement Management
ZBE-4	Movement Action	No	Required for Historic Movement Management
ZBE-5	Historical Movement Indicator	No	Required for Historic Movement Management

3.20 Merge Patients/Encounters

3.20.1 Merge Patients/Encounters -- HL7v2

- **ADT A34** – Merge Patient Information – Patient ID Only

or

- **ADT A40** – Merge Patient – Patient Identifier List
- **ADT A39** – Merge Person – Patient ID

3.20.1.1 Message Structure

This section provides an overview and description of the message structure of the transaction Merge Patients/Encounters.

Table 64: Merge Patients/Encounters Segments

Segment	Description
MSH	Message Header
MSH-9-1	The message type must be **ADT**
MSH-9-2	The trigger event must be **A40** and **A39** or **A34**
EVN	Event Information
IN1	Patient Insurance (**optional**)
MRG	Merge Patient Information
PID	Patient Information
PV1	Patient Visit Information

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.

- EVN Segment
  The EVN segment is used to communicate necessary trigger event information to receiving applications and specifies the type of event contained within the message. Values provided in fields other than those listed in the Field Overview will be ignored.

- IN1 Segment
  The IN1 segment is used to transmit information about the paying body of the health services received by the patient. This could be an insurance or the patient himself. The segment is optional. However, once it is used, the fields marked with *Conditionally Required* are mandatory.

- PID Segment
  The PID segment contains the relevant patient data.

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

- ZBE Segment
  The ZBE segment can be used to uniquely identify individual movements. This allows for corrections in historic information at a later point. Note that, when the ZBE segment is used, at least one patient assigning authority must be configured to support the Historic Movement Management option. As long as this configuration is active, the ZBE segment is treated as required.

- MRG Segment
  The MRG segment is used to specify the patient dataset to be merged.

3.20.1.2 Field Overview

The data required for the MSH segment can be seen in Table 2, those for the PID segment are listed in Table 4. These are the relevant fields of the other segments:

- EVN-2
  Recorded Date/Time: Time at which the notification has been recorded in the system.

- EVN-5
  Operator ID: Identifies the individual that triggered the visit notification (used for logging purposes). In patient admissions, the treating physician should be entered here. Note that the field is mandatory in an ELGA environment (Austria only). Repetitions cannot be processed by eHealth Solutions.

- EVN-7
  Event Facility (only supported for Version 2.4 and higher): This field is only processed when PID-34 is empty.

- IN1-1
  Set ID: The sequential number of this segment.

- IN1-2
  Insurance Plan ID: The unique ID for the Insurance Plan. The maximum length for values in this field is 255 characters.

- IN1-3
  Insurance Company ID: The identifier of the insurance company that has issued the Insurance Plan. Repetitions of this field are ignored by eHealth Solutions.

IN1-4

Insurance Company Name: Repetitions of this field are ignored by eHealth Solutions. Furthermore, only IN1-4.1 *Organization Name* is processed.

MRG-1

Prior Patient Identifier List: List of all Patient IDs of the recessive patient. The structure of this field corresponds to that of PID-3 (*Patient Identifier List)*. For a valid transaction it is sufficient to provide one Source Patient Identifier. Regional identifiers such as social security numbers should not be used since they will be ignored by eHealth Solutions.

MRG-3

Prior Patient Account Number: Account Number of the recessive patient. The structure of this field corresponds to that of PID-18 (*Patient Account Number)*.

MRG-7

Prior Patient Name List: Name of the recessive patient. Values given in this field are used for logging purposes.

PV1-2

Patient Class: Determines the type of patient visit. This field is not case-sensitive; it identifies the type of 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.

PV1-19

Visit Number: The unique identifier of the patient encounter. The value is supposed to be static for all messages referring to the same encounter. If no value is present, PID-18 will be used as a fallback encounter identifier. However, it is strongly recommended to use PV1-19 as the encounter identifier, and use PID-18 only to group encounters under a common patient encounter (if desired). In any case, this field is not intended to identify a specific encounter event (e.g. inpatient admission), but the patient encounter (a sequence of individual encounter events) as a whole. Also, it should be noted that the `MPI` processes PV1-19.1, PV1-19.4 and PV1-19.5.

PV1-51

Visit Indicator: Specifies the field that is used to identify the encounter. Possible values are **A** for PID-18, **V** for PV1-19 (recommended). It is recommended by IHE to set a value for this field. In eHealth Solutions, however, values given here will not be processed.

Table 65: Fields relevant for the Merge Patients/Encounters Transaction

HL7-Path	Name	Repeatable	Presence
EVN-2	Recorded Date/Time	No	Not processed
EVN-5	Operator ID	Yes, but without effect	Conditionally Required
EVN-7	Event Facility	No	Optional
IN1-1	Set ID	No	Conditionally Required
IN1-2	Insurance Plan ID	No	Conditionally Required
IN1-3	Insurance Company ID	Yes, but without effect	Conditionally Required
IN1-4	Insurance Company Name	Yes, but without effect	Optional
MRG-1	Patient Identifier List	Yes	Required
MRG-3	Prior Patient Account Number	No	Optional
MRG-7	Prior Patient Name List	Yes	Optional
PV1-2	Patient Class	No	Required
PV1-19	Visit Number	No	Recommended
PV1-51	Visit Indicator	No	Optional

Example 82:
Submission

```
MSH|^~\&|My Clinic ADT System^1.2.123.27.1974.165.12^ISO|My Local Clinic^1.2.123.27.1974^
  ISO|eHealth Solutions MPI^1.1.234.1245.2^ISO|eHealth Solutions Affinity Domain
  ^1.1.234.1245^ISO|20180312153358.894+0100||ADT^A40^ADT_A39|419e1774—2fc6—4890—838e—
  a0305d9d0713|P|2.3.1|||AL|||UNICODE UTF—8
EVN||20180312153358.894+0100|||userId8374^Karen Warren ^^^^^^^My Local Clinic
  &1.2.123.27.1974.1.239&ISO
PID|||patientId3978^^^My Local Clinic&1.2.123.27.1974&ISO^PI~12850234581551^^^Social
  Security Association&1.2.123.27.1974&ISO^SS||Doe^John^^^^^L||19980312|M|||&Main Street
  &17^^London^^54820^GB^L||^^^^^^^^^^^011 44 20 1234 5678||en|M|VAR||||||||2|GB||||N
MRG|patientId4377^^^My Local Clinic&1.2.123.27.1974&ISO^PI||||||Doe^John^^^^^L
PV1||N
```

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. eHealth Solutions 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 66 shows all supported transactions for administrating documents.

The **Medical Records** application supports the importing of documents to a local system, e.g. an archive, using HL7 MDM. 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 an 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 66: Document Administration Supported Transactions.

Message Type	Description
MDM ^T02	Submit new Document.
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.

Note
Note that in all MDM messages, eHealth Solutions uses **MSH-4-2** to set the submissionSetUniqueID from the Source. This value is generated according to the pattern: MSH-4-2 + . + currentMillis + . + Thread-ID.

The following optional segments may be placed in inbound as well as outbound MDM messages:

NTE Segment

The Notes and Comments (NTE) segment allows for the transmission of notes or comments on the sent document(s) in human-readable format. It must follow directly after the OBR segment and is repeatable (max. length per segment: 64 KB). NTE content is appended to a single text comment for the XDS document.

UAC Segment

The User Authentication Credential (UAC) segment is used to transport the SAML assertion used in access control and audit trails. It is optional and non-repeating. In the message hierarchy, the UAC segment occurs immediately after SFT segment (software version ID), or, if this segment is not present, immediately after the MSH segment. eHealth Solutions processes UAC-1 and UAC-2.5. For UAC-1, "SAML" is expected (if "SAML" is not present, the segment will not be processed further). For UAC-2.5, the base64-encoded SAML assertion is expected.

Example 83:

```
UAC|SAML|^text^^Base64^PHNhbWwyOkFzc2VydGlvbj5ibGFibGE8L3NhbWwyOkFzc2VydGlvbj4=
```

ZRI Segment

The ZRI segment is used in HL7 MDM T02 messages to transmit grouping-relevant Reference IDs saved in the ReferenceIDList (e.g. AccessionNumber). It follows after the OBR segment and is repeatable. The ZRI segment has the format **ZRI|SetID|CX|CWE**.

- **Set-ID:** Unique numerical ID of the segment (mandatory)
- **CX:** ReferenceID with the Assigning Authority (mandatory)
- **CWE:** Identifier Type Code of the Reference ID (mandatory). Identifier values should follow the **urn:** syntax and preferably be taken from the table provided in Section 6.1.1.

Example 84: ZRI Segments

```
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}
```

ZSC Segment

The ZSC segment is used in HL7 MDM T02 messages to transmit a comment pertaining to the HL7 message itself, with a maximum length of 256 characters. It is non-repeating. Its position in the HL7 message structure is at the very end, after the ZRI segment.

Note
HL7 provides only one field for both the `Type Code` and the `Class Code`. eHealth Solutions recommends to use the `Type Code`, as it is more specific and can therefore unambiguously mapped to the respective `Class Code`.

4.1 Submit Document

4.1.1 Submit Document -- HL7v2

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

- **MDM T02** – Submit Document.

This message type is used to register documents. Additonally, the HL7 message **Submit Document** updates documents if the unique ID of the document is already known. If a recipient is specified in the **TXA-23** field, the document is transmitted to the recipient in the same go and appears in their **Document Transfer** application.

The **MDM T02** message can also be used to send transferral forms. In this case, the file concerned is treated as a form to be provided in the **Transferrals** application instead. To trigger this behavior, the values provided in the **TXA-23** and **OBR-31** fields must correspond to the values set in the configuration as `TransferralItem` (communityNode > TransferralService). For details, see Section 4.1.1.2.

4.1.1.1 Message Structure

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

Table 67: Message Structure Segments

Segment	Description
MSH	Message Header
MSH-9-1	The Message Type 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
ZAI	Additional Information Segment
ZAI-1	Document Type Code: the Data Type must be **CWE**
ZRI	Document Reference ID List

4.1.1.2 Field Overview

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

- Sessioninfo
  Containing information about the current Session (Table 68).
- SubmissionInfo
  Containing information about the current submission (Table 69).
- DocumentMetadata
  Metadata describing the document (Table 70).
- Document
  The document itself (Table 71).

- MSH-3-1
  sendingApplication.name: Name of the sending application.
- MSH-3-2
  sendingApplication.oid: OID of the sending application.
- MSH-4-1
  sendingFacility.name: Name of the sending facility.
- MSH-4-2
  sendingFacility.oid: OID of the sending facility.
- EVN-5
  Contains the userID and userName of the user who triggered the submission. UserID is filled by EVN-5-1 to EVN-5-9; userName is supplied by the XCN components (see Section 1.1.4.5).
- EVN-5-1 – EVN-5-9
  userID: ID of the user who triggered the submission. The ID number can be prefixed with any of the recognized **urn:** prefixes. It forms the first part of the EVN-5 segment.
- MSH-10
  sessionID: Unique identifier of this session.

Table 68: Mapping from HL7 MDM message to XDS Data – SessionInfo.

HL7-Path	Name	Presence	Repeatable
MSH-3-1	sendingApplication.name	Required	-
MSH-3-2	sendingApplication.oid	Required	-
MSH-4-1	sendingFacility.name	Required	-
MSH-4-2	sendingFacility.oid	Required	-
EVN-5	userName, userID	Required	-
EVN-5-1 – EVN-5-9	userID	Required	-
MSH-10	sessionID	Required	-

PV1-3-4-1
: institution.name: Name of the institution where the document originates from.

PV1-3-4-2
: institution.oid: OID of the institution where the document originates from.

OBR-31-1
: contentTypeCode.value: Content Type of the Submission: Value.

OBR-31-2
: contentTypeCode.displayName: Content Type of the Submission: human-readable display name.

OBR-31-3
: contentTypeCode.codingScheme: Content Type of the Submission: Coding Scheme.

TXA-9-2
: author.lastName: Given name of the author of the submission. This is the same as the author of the document.

TXA-9-3
: author.firstName: Family name of the author of the submission. This is the same as the author of the document.

TXA-16
: title: Title of the submission. This is the title of the document.

Table 69: Mapping from HL7 MDM message to XDS Data – SubmissionInfo.

HL7-Path	Name	Presence	Repeatable
PV1-3-4-1	institution.name	Required	-
PV1-3-4-2	institution.oid	Required	-
OBR-31-1	contentTypeCode.value	Required	-
OBR-31-2	contentTypeCode.displayName	Required	-
OBR-31-3	contentTypeCode.codingScher	Required	-
TXA-9-2	author.lastName	Required	-
TXA-9-3	author.firstName	Required	-
TXA-16	title	Required	-

MSH-6-2
: homeCommunityID: OID of the affinity domain where the document will be stored.

MSH-19

languageCode: Specifies the human language of the document. Format according RFC-3066.

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.

PID-3

patientInfo.sourcePatientID: Patient identifier of the local CIS/RIS/PACS/etc. Note that the Patient Identifier is identified within the list of patient identifiers (PID-3) by the identifier type code PI.

PID-5-1

patientInfo.familyName: Family name of the patient.

PID-5-2

patientInfo.givenName: Given name of the patient.

PID-5-3

patientInfo.secondAndFurtherNames[0]: Second and further names of the patient

PID-5-4

patientInfo.suffix: Name suffix of the patient.

PID-5-5

patientInfo.prefix: Name prefix of the patient.

PID-7

patientInfo.birthdate: Birth date of the patient, who has the document assigned.

PID-8

patientInfo.gender: Gender of the patient.

PID-11-1

patientInfo.address.street: Address of the patient: streetline with dwelling number.

PID-11-3

patientInfo.address.city: Address of the patient: city.

PID-11-5

patientInfo.address.postalCode: Address of the patient: postal code.

PID-11-6

patientInfo.address.country: Address of the patient: country.

PV1-2-1

eventCodes[0].value: Event Codes contain additional information to the document. Part 1: Observation Type. (inpatient, outpatient, etc.): typecode.

PV1-2-2

eventCodes[0].displayName: Event Codes contain additional information to the document. Part 1: Observation Type. (inpatient, outpatient, etc.): display name.

PV1-2-3

eventCodes[0].codingScheme: Event Codes contain additional information to the document. Part 1: Observation Type. (inpatient, outpatient, etc.): coding scheme.

PV1-3-4-1

institution.name: Name of the institution from where the document originates.

PV1-3-4-2

institution.oid

PV1-3-4-2 + TXA-12-1

sourceDocumentID: Globally unique identifier of the document. To achieve global uniqueness, the OID of the institution (PV1-3-4-2) is concatenated with the local document identifier (TXA-12-1).

PV1-3-7-2

department: Name of the Department from where the document originates.

PV1-3-7-3

subDepartment: Name of the Sub-department from where the document originates.

PV1-3-10-1

practiceSettingCode.value: Specifies the speciality of the department from where the document originates: value.

PV1-3-10-2

practiceSettingCode.displayName: Specifies the speciality of the department from where the document originates: human-readable display name.

PV1-3-10-3

practiceSettingCode.codingScheme: Specifies the speciality of the department from where the document originates: coding scheme.

PV1-10-1

healthcareFacilityTypeCode.value: Specifies the type of the facility from where the document originates: value.

PV1-10-2

healthcareFacilityTypeCode.displayName: Specifies the type of the facility from where the document originates: human-readable display name.

PV1-10-3

healthcareFacilityTypeCode.codingScheme: Specifies the type of the facility from where the document originates: coding scheme.

OBR-4

Universal Service Identifier

OBR-7

serviceStartTime: Start time of the medical service.

OBR-8

serviceStopTime: End time of the medical service.

OBR-31

eventCodes: Additional EventCodes: listed values are possible. When submitting a transferral form, the content of this field must correspond to the value configured as `TransferralItem`.

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.

TXA-2-2

typeCode.displayName.value: Code specifying the particular type of document: Human-readable display name.

TXA-2-2

classCode.displayName: Code specifying the particular type of the document: Human-readable display name.

TXA-2-3

classCode.codingScheme: Code specifying the particular type of the document: Coding scheme.

TXA-2-3
typeCode.codingScheme: Code specifying the particular type of the document: Coding scheme.

TXA-3-1
mimeType: Mime type of the document.

TXA-3-2
formatCode.value: This code identifies the format of the document (e.g. “ScanPDF/IHE 1.0”): Value.

TXA-3-3
formatCode.displayName: This code identifies the format of the document (e.g. “ScanPDF/IHE 1.0”): Human-readable display name.

TXA-3-4
formatCode.codingScheme: This code identifies the format of the document (e.g. “ScanPDF/IHE 1.0”): Coding scheme.

TXA-6
creationTime: Time when the Author created the document.

TXA-9-2
author.lastName: Family Name of the author.

TXA-9-3
author.firstName: Given Name of the author.

TXA-10-2
legalAuthenticator.lastName: Family name of the authenticator of the document.

TXA-10-3
legalAuthenticator.firstName: Given name of the authenticator of the document.

TXA-16
title: Title of the document.

TXA-18-1
confidentialityCodes[0].value: This code is used to specify the level of confidentiality: value.

TXA-18-2
confidentialityCodes[0].displayname: This code is used to specify the level of confidentiality: displayname.

TXA-18-3
confidentialityCodes[0].codingScheme: This code is used to specify the level of confidentiality: coding scheme.

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.

TXA-23
intendedRecipient: This could be individual or organizational providers. The TXA-23-1 component must contain the provider ID as defined in the Healthcare Provider Directory, including the ID type and the assigning authority. The content of TXA-23-13 (Identifier Type) must either be **DN** for individuals or **XX** for organizations. If an individual in a specific organization is to be addressed, the first occurrence of the TXA-23 field is reserved for the individual provider, while the second must refer to the respective organization. In this case, the organization must be marked with **EN** as identifier type. When submitting a transferral form, the content of this field must correspond to the value configured as `TransferralItem`.

ZAI-1-1

documentTypeCode.value: Code specifying the particular type of the document: value. (conditionally required field).

ZAI-1-2

documentTypeCode.displayName: Code specifying the particular type of the document: Human-readable display name. (optional field).

ZAI-1-3

documentTypeCode.codingScheme: Code specifying the particular type of the document: Coding scheme. (optional field).

ZRI-1

set-id.uniqueId: Unique numeric HL7 Segment ID (required field).

ZRI-2

cx.referenceId: The Reference ID with Assigning Authority (required field).

ZRI-3

cwe.identifierTypeCode: The Identifier Type Code of the Reference ID (required field)
e.g. for a case visit ID, see urn:sense:2015:caseId

Table 70: Mapping from HL7 MDM message to XDS Data – DocumentMetadata.

HL7-Path	Name	Presence	Repeatable
MSH-6-2	homeCommunityID	Required	-
MSH-19	languageCode	Required	-
PID-3	patientInfo.socialSecurityNuml	Required	-
PID-3	patientInfo.sourcePatientID	Required	-
PID-5-1	patientInfo.familyName	Required	-
PID-5-2	patientInfo.givenName	Required	-
PID-5-3	patientInfo.secondAndFurtherl	Optional	-
PID-5-4	patientInfo.suffix	Optional	-
PID-5-5	patientInfo.prefix	Optional	-
PID-7	patientInfo.birthdate	Required	-
PID-8	patientInfo.gender	Required	-
PID-11-1	patientInfo.address.street	R*	-
PID-11-3	patientInfo.address.city	R*	-
PID-11-5	patientInfo.address.postalCode	R*	-
PID-11-6	patientInfo.address.country	R*	-
PV1-2-1	eventCodes[0].value	Required	-
PV1-2-2	eventCodes[0].displayName	Required	-
PV1-2-3	eventCodes[0].codingScheme	Required	-
PV1-3-4-1	institution.name	Required	-
PV1-3-4-2	institution.oid: OID of the institution where the document originates.	Required	-
PV1-3-4-2 + TXA-12-1	sourceDocumentID	Required	-
PV1-3-7-2	department	Optional	-
PV1-3-7-3	subDepartment	Optional	-
PV1-3-10-1	practiceSettingCode.value	Required	-
PV1-3-10-2	practiceSettingCode.displayNa	Required	-
PV1-3-10-3	practiceSettingCode.codingSch	Required	-
PV1-10-1	healthcareFacilityTypeCode.va	Required	-

Table 70: Mapping from HL7 MDM message to XDS Data – DocumentMetadata.

Table 70: Mapping from HL7 MDM message to XDS Data – DocumentMetadata.

HL7-Path	Name	Presence	Repeatable
PV1-10-2	healthcareFacilityTypeCode.dis	Required	-
PV1-10-3	healthcareFacilityTypeCode.co	Required	-
OBR-4	Universal Service Identifier	Required by HL7 but not processed in eHealth	No
OBR-7	serviceStartTime	Required by eHealth Solutions	-
OBR-8	serviceStopTime	Required by eHealth Solutions	-
OBR-31	eventCodes	Optional	-
TXA-2-1	typeCode.value	Required	-
TXA-2-2	typeCode.displayName.value	Required	-
TXA-2-2	classCode.displayName	Required	-
TXA-2-3	classCode.codingScheme	Required	-
TXA-2-3	typeCode.codingScheme	Required	-
TXA-3-1	mimeType	Required	-
TXA-3-2	formatCode.value	Required	-
TXA-3-3	formatCode.displayName	Required	-
TXA-3-4	formatCode.codingScheme	Required	-
TXA-6	creationTime	Required	-
TXA-9-2	author.lastName	Required	-
TXA-9-3	author.firstName	Required	-
TXA-10-2	legalAuthenticator.lastName	Required	-
TXA-10-3	legalAuthenticator.firstName	Required	-
TXA-16	title	Required	-
TXA-18-1	confidentialityCodes[0].value	Required	-
TXA-18-2	confidentialityCodes[0].display	Required	-
TXA-18-3	confidentialityCodes[0].coding	Required	-
TXA-19	availabilityStatus	Required	-
TXA-23	intendedRecipient	Required	Y
ZAI-1-1	documentTypeCode.value	Conditionally Required	-
ZAI-1-2	documentTypeCode.displayNa	Optional	-
ZAI-1-3	documentTypeCode.codingSch	Optional	-
ZRI-1	set-id.uniqueId	Optional	-
ZRI-2	cx.referenceId	Optional	-
ZRI-3	cwe.identifierTypeCode	Presence	-

Table Legend: R* = Required only in MDM messages.

OBX-2

Document submission type: This represents how the document is submitted. In this case the value must be set to ED (Encapsulated Data) to signal that the binary content can be found in OBX-5.

OBX-5

Binary Content: The binary content Base64 encoded. Documents may be splitted into docblocks with 64kB.

Table 71: Mapping from HL7 MDM message to XDS Data – Document.

HL7-Path	Name	Presence	Repeatable
OBX-2	Document submission type	Required	-
OBX-5	Binary Content	Required	-

4.1.1.3 Hl7v2 Inbound Message Structure

Example 85: Submitting Documents (Inbound)

```
MSH|^~\&|SendingApplicationName^1.2.3.4.5^ISO|SendingFacilityName^1.1.1.2.98^ISO||^1.1.1.1^
    ISO|||MDM^T02|||||||||
EVN|||||^UserFamilyName^UserGivenName
PID|||1231451^^^NATIONAL SOCIAL SECURITY ASSOCIATION&2.1.414.1.4.14&ISO^SS~pat1125^^^
    LocalAssigningAuthority&1.2.3.4.6&ISO||PatientFamilyName^PatientGivenName
    ||20110706094842|M|||Address^^City^^Postal Code
PV1|||^^^SendingFacilityName&1.2.3.4.6&ISO^^^&Department&SubDepartment^^^419192003&Internal
    Medicine&SNOMED_CT|||||||ETU^Trauma Unit^2.16.840.1.113883.5.11
OBR|||||||20110706094842|20110706094842||||||||||||||||||||||ABC1^DEF^1.3.4.2|Counseling^
    Konsil^eHealth_contentTypeCodes|ABC3^DEF^1.3.4.2
TXA||11490—0^Discharge Letter^LOINC|application/pdf^ScanPDF/IHE 1.x^ScanPDF/IHE 1.x^
    eHealth_formatCodes|||20110706094842|||^AuthorFamilyName^AuthorGivenName|^
    LegalAuthenticatorFamilyName^LegalAuthenticatorGivenName||docID1309938522620||||HL7v2
    TestDocument||N^Normal^2.16.840.1.113883.5.25|F
OBX|1|ED|||
    JVBERi0xLjQKJcOkw7zDtsOfCjIgMCBvYmoKPDwvTGVuZ3RoIDMgMCBSL0ZpbHRlci9GbGF0ZURlY29kZT4+
    CnN0cmVhbQp4nOUby4okufHeX5HnAdcqpJSUCYuhqqvL+Nj2gD9g7V1jpm1mL/v7ljJDocgIRVX32GYNyzAzSKl
    ....i0kluI|||||||
OBX|2|ED|||bpJEw+Mfu5XSQYsU7VByhF1eDUmARDRBklJkGlwuDNla9nY7pDTpxIKmGMHg31bSacSM7fJg6K+//
    u0xmHT+bw5ol+h4Kds2Q8RK2VYPe+lyp3MsyS+JrhdWRfuFXkVAr4hjonREzBEdbz3CREdJZ2niLu5UMv/
    dKKRViLZSOBK....+A75Tv|||||||
OBX|3|ED|||tE/hm2CElItbsmHJySWssAQvaQn6atqrN1Qz1fcvJid+YEyZI/
    t6HDmHfNH7SeIVUToQKCykidLaiNCOD3OoS1mY979lavhhZjtlWwmmOZEoE+wi35r8VmJVyDl5B3WaM/
    ncLI7WApXIO5h/wzf3iizLzjX1nP/KDP/CX5/qnsX....VPRgo=|||||||
ZAI|11490—0^Zusammenfassung bei Entlassung (Arzt)^LOINC
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
```

In HL7v2 inbound MDM messages eHealth Solutions supports the transmission of the Document Type Code either in the TXA-2 field or in the ZAI-1 field. Depending on the transmission, eHealth Solutions decodes the Document Type Code and the Document Class Code as follows:

- If you only transmit the ZAI-1 field, eHealth Solutions decodes the Document Type Code from the ZAI-1 field and resolves the Document Class Code from the Document Type Code.
- If you transmit the ZAI-1 and the TXA-2 fields, eHealth Solutions decodes the Document Type Code from the ZAI-1 field and the Document Class Code from the TXA-2 field.
- If you only transmit the TXA-2 field, eHealth Solutions decodes the Document Type Code from the TXA-2 field and resolves the Document Class Code from the Document Type Code.

4.1.1.4 HL7v2 Outbound Message Structure

The following segments take on a special meaning in outbound Submit Document messages:

EVN-5 – Operator ID

The HPD UID of the individual provider. Since the MSH segment always lists eHealth Solutions in

outgoing messages, the EVN-5 segment is used to indicate the person who originally submitted the document to eHealth Solutions. The value of this field is used in audit logs, it is thus recommended to always provide a meaningful value here.

EVN-7 – Event Facility

The HPD UID of the organizational provider. Since the MSH segment always lists eHealth Solutions in outgong messages, the EVN-7 segment is used to indicate the organization/facility which originally submitted the document.

ZAI-1 – Document Type Code

The Document Type Code. In HL7v2 outbound MDM messages, the ZAI-1 field is used to send the Document Type Code. The data type of this field is CWE (Coded with Exceptions). See Section 1.1.4 for further information about data types.

Example 86: Submitting Documents (Outbound)

```
MSH|^~\&|^1.1.1.2.37|^1.1.1|^1.1.1:K706|^1.1.1:K706|20191028095351.502+0100||MDM^T02^MDM_T02
    |c4d4534b-2eca-4320-9a21-4a039cfe7a5b|P|2.3.1|||AL|||UNICODE UTF-8|de-AT
EVN||20191028095351.502+0100|||urn:hpd:1.1.1:1572252626718||^urn:hpd:1.1.1:K706
PID|||2af053b8-554d-430a-b47f-59a0b2a15808^^^&2.2.2.9.9&ISO||Dinzel^Franz^^Msc.^Dr.^^A~
    Dinzel^Franz^Test_ELGA_FurtherName^Msc.^Dr.^^L||19801221|M|||Amraser Straße 1a^^
    Innsbruck^Tirol^6020^AT^L~Amraser Straße 1a^^Innsbruck^^6020^AT^M||||||||||||||0|||||N
PV1|||^^^Landeskrankenhaus Innsbruck&1.1.1.2.2.1^^^^^^419192003&Innere Medizin&SNOMED_CT
    |||||||PC^Allgemeine Ambulanz^2.16.840.1.113883.5.11
OBR|||||||20130821000000.796+0200|20200919010000.796+0200||||||||||||||||||||||||
    ContentTypeCode^Content Type Code^sense_contentTypeCodes
NTE|||Used to test submission and retrieval for ELGA documents: CDA Level 3
TXA||11490-0^Zusammenfassung bei Entlassung (Arzt)^LOINC|text/xml^urn:elga:dissum:2013:
    EIS_FullSupport^ELGA Entlassungsbrief EIS_FullSupport
    ^1.2.40.0.34.5.37|||20130821130000+0200|||^Mustermann^Max^Arthur^^^Dr.^^^^^^^^^^^^^^Dr
    .|||f76ce0b1-f7d5-4127-9bc8-5c5190d72b86||||Zusammenfassung bei Entlassung EIS
    FullSupport||MPQ^MPQ^2.16.840.1.113883.5.25|||||urn:hpd:1.1.1:K706^^^^^^^^^^^^XX
OBX||ED|||PD94bWwgdmVyc2lvbj0iMS4wIiBlbmNvZGluZz0idXRmLTgiIHN0YW5kYWxvbmU9InllcyI/
    Pgo8P3htbC1zdHls...
ZAI|11490-0^Zusammenfassung bei Entlassung (Arzt)^LOINC
ZRI|1|1.2.7.8.1.1^^^&1.2.7.3.2&ISO|urn:ihe:iti:xds:2013:accession
```

4.2 Append Document

4.2.1 Append Document -- HL7v2

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 link between an existing document and the addendum document. The append relationship leaves the original document with its availabilityStatus unchanged (Approved).

Note
An appended document can 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 72: Append Document Segments

Segment	Description
MSH	Message Header
MSH-9-1	The Message Type 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 generally does not differ from the syntax of submitting a document (see Table 68, Table 69, Table 70, Table 71). However, there is one exception: Within the document metadata, the document ID of the initial document (which receives the addendum) must be set as shown in Table 73.

TXA-13

document.parentDocumentID: Document ID of the Parent document.

Table 73: Mapping from HL7 MDM message to XDS Data for Document Addendum.

HL7-Path	Name	Presence	Repeatable
TXA-13	document.parentDocumentID	Required	-

Example 87:

```
MSH|^~\&|SendingApplicationName^1.2.3.4.5^ISO|SendingFacilityName^1.1.1.2.98^ISO||^1.1.1.1^
    ISO|||MDM^T06||||||||||
EVN|||||^UserFamilyName^UserGivenName
PID|||1231451^^^NATIONAL SOCIAL SECURITY ASSOCIATION&2.1.414.1.4.14&ISO^SS~pat1125^^^
    LocalAssigningAuthority&1.2.3.4.6&ISO||PatientFamilyName^PatientGivenName
    ||20110706094842|M|||Address^^City^^Postal Code
PV1|||^^^SendingFacilityName&1.2.3.4.6&ISO^^^&Department&SubDepartment^^^419192003&Internal
    Medicine&SNOMED_CT|||||||ETU^Trauma Unit^2.16.840.1.113883.5.11
OBR|||||||20110706094842|20110706094842||||||||||||||||||||||ABC1^DEF^1.3.4.2|Counseling^
    Konsil^eHealth_contentTypeCodes|ABC3^DEF^1.3.4.2
TXA||11490—0^Discharge Letter^LOINC|application/pdf^ScanPDF/IHE 1.x^ScanPDF/IHE 1.x^
    eHealth_formatCodes|||20110706094842|||^AuthorFamilyName^AuthorGivenName|^
    LegalAuthenticatorFamilyName^LegalAuthenticatorGivenName||docID1309938522620|
    parentDocID1309938522620|||HL7v2 TestDocument||N^Normal^2.16.840.1.113883.5.25|F
OBX|1|ED|||
    JVBERi0xLjQKJcOkw7zDtsOfCjIgMCBvYmoKPDwvTGVuZ3RoIDMgMCBSL0ZpbHRlci9GbGF0ZURlY29kZT4+
    CnN0cmVhbQp4nOUby4okufHeX5HnAdcqpJSUCYuhqqvL+Nj2gD9g7V1jpm1mL/v7ljJDocgIRVX32GYNyzAzSKl
    ....i0kluI|||||||
OBX|2|ED|||bpJEw+Mfu5XSQYsU7VByhF1eDUmARDRBklJkGlwuDNla9nY7pDTpxIKmGMHg31bSacSM7fJg6K+//
    u0xmHT+bw5ol+h4Kds2Q8RK2VYPe+lyp3MsyS+JrhdWRfuFXkVAr4hjonREzBEdbz3CREdJZ2niLu5UMv/
    dKKRViLZSOBK....+A75Tv|||||||
```

```
OBX|3|ED|||tE/hm2CElItbsmHJySWssAQvaQn6atqrN1Qz1fcvJid+YEyZI/
    t6HDmHfNH7SeIVUToQKCykidLaiNCOD3OoS1mY979lavhhZjtlWwmmOZEoE+wi35r8VmJVyDl5B3WaM/
    ncLI7WApXIO5h/wzf3iizLzjX1nP/KDP/CX5/qnsX....VPRgo=|||||||
```

4.3 Transform Document

4.3.1 Transform Document -- HL7v2

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 link between an existing document and the transformation document. The transform relationship leaves the original document with its availabilityStatus 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 74: Transform Document Segments

Segment	Description
MSH	Message Header
MSH-9-1	The Message Type 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 generally does not differ from the syntax of submitting a document (see Table 68, Table 69, Table 70, Table 71). However, there is one exception: The document ID of the initial document (which gets the transformation) must be set as shown in Table 75.

TXA-13
document.parentDocumentID: Document ID of the Parent document.

Table 75: Mapping from HL7 MDM message to XDS Data for Document Transform.

HL7-Path	Name	Presence	Repeatable
TXA-13	document.parentDocumentID	Required	-

Example 88:

```
MSH|^~\&|SendingApplicationName^1.2.3.4.5^ISO|SendingFacilityName^1.1.1.2.98^ISO||^1.1.1.1^
    ISO|||MDM^T08|||||||||
EVN|||||^UserFamilyName^UserGivenName
PID|||1231451^^^NATIONAL SOCIAL SECURITY ASSOCIATION&2.1.414.1.4.14&ISO^SS~pat1125^^^
    LocalAssigningAuthority&1.2.3.4.6&ISO||PatientFamilyName^PatientGivenName
    ||20110706094842|M|||Address^^City^^Postal Code
PV1|||^^^SendingFacilityName&1.2.3.4.6&ISO^^^&Department&SubDepartment^^^419192003&Internal
    Medicine&SNOMED_CT|||||||ETU^Trauma Unit^2.16.840.1.113883.5.11
OBR|||||||20110706094842|20110706094842||||||||||||||||||||||ABC1^DEF^1.3.4.2|Counseling^
    Konsil^eHealth_contentTypeCodes|ABC3^DEF^1.3.4.2
TXA||11490—0^Discharge Letter^LOINC|application/pdf^ScanPDF/IHE 1.x^ScanPDF/IHE 1.x^
    eHealth_formatCodes|||20110706094842|||^AuthorFamilyName^AuthorGivenName|^
    LegalAuthenticatorFamilyName^LegalAuthenticatorGivenName||docID1309938522620|
    parentDocID1309938522620|||HL7v2 TestDocument||N^Normal^2.16.840.1.113883.5.25|F
OBX|1|ED|||
    JVBERi0xLjQKJcOkw7zDtsOfCjIgMCBvYmoKPDwvTGVuZ3RoIDMgMCBSL0ZpbHRlci9GbGF0ZURlY29kZT4+
    CnN0cmVhbQp4nOUby4okufHeX5HnAdcqpJSUCYuhqqvL+Nj2gD9g7V1jpm1mL/v7ljJDocgIRVX32GYNyzAzSKl
    ....i0kluI|||||||
OBX|2|ED|||bpJEw+Mfu5XSQYsU7VByhF1eDUmARDRBklJkGlwuDNla9nY7pDTpxIKmGMHg31bSacSM7fJg6K+//
    u0xmHT+bw5ol+h4Kds2Q8RK2VYPe+lyp3MsyS+JrhdWRfuFXkVAr4hjonREzBEdbz3CREdJZ2niLu5UMv/
    dKKRViLZSOBK....+A75Tv|||||||
OBX|3|ED|||tE/hm2CElItbsmHJySWssAQvaQn6atqrN1Qz1fcvJid+YEyZI/
    t6HDmHfNH7SeIVUToQKCykidLaiNCOD3OoS1mY979lavhhZjtlWwmmOZEoE+wi35r8VmJVyDl5B3WaM/
    ncLI7WApXIO5h/wzf3iizLzjX1nP/KDP/CX5/qnsX....VPRgo=|||||||
```

4.4 Replace Document

4.4.1 Replace Document -- HL7v2

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 link between an existing document and the replacement document. The availabilityStatus of the initial document is 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 76: Replace Document Segments

Segment	Description
MSH	Message Header

Table 76: Replace Document Segments

Table 76: Replace Document Segments

Segment	Description
MSH-9-1	The Message Type 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 generally does not differ from the syntax of submitting a document (see Table 68, Table 69, Table 70, Table 71). However, there is one exception: The document ID of the initial document (which gets the replacement) must be set as shown in Table 77.

TXA-13

document.parentDocumentID: Document ID of the Parent document.

Table 77: Mapping from HL7 MDM message to XDS Data for Document Replacement.

HL7-Path	Name	Presence	Repeatable
TXA-13	document.parentDocumentID	Required	-

Example 89:

```
MSH|^~\&|SendingApplicationName^1.2.3.4.5^ISO|SendingFacilityName^1.1.1.2.98^ISO||^1.1.1.1^
    ISO|||MDM^T10||||||||||
EVN|||||^UserFamilyName^UserGivenName
PID|||1231451^^^NATIONAL SOCIAL SECURITY ASSOCIATION&2.1.414.1.4.14&ISO^SS~pat1125^^^
    LocalAssigningAuthority&1.2.3.4.6&ISO||PatientFamilyName^PatientGivenName
    ||20110706094842|M|||Address^^City^^Postal Code
PV1|||^^^SendingFacilityName&1.2.3.4.6&ISO^^^&Department&SubDepartment^^^419192003&Internal
    Medicine&SNOMED_CT|||||||ETU^Trauma Unit^2.16.840.1.113883.5.11
OBR|||||||20110706094842|20110706094842||||||||||||||||||||||ABC1^DEF^1.3.4.2|Counseling^
    Konsil^eHealth_contentTypeCodes|ABC3^DEF^1.3.4.2
TXA||11490—0^Discharge Letter^LOINC|application/pdf^ScanPDF/IHE 1.x^ScanPDF/IHE 1.x^
    eHealth_formatCodes|||20110706094842|||^AuthorFamilyName^AuthorGivenName|^
    LegalAuthenticatorFamilyName^LegalAuthenticatorGivenName||docID1309938522620|
    parentDocID1309938522620|||HL7v2 TestDocument||N^Normal^2.16.840.1.113883.5.25|F
OBX|1|ED|||
    JVBERi0xLjQKJcOkw7zDtsOfCjIgMCBvYmoKPDwvTGVuZ3RoIDMgMCBSL0ZpbHRlci9GbGF0ZURlY29kZT4+
    CnN0cmVhbQp4nOUby4okufHeX5HnAdcqpJSUCYuhqqvL+Nj2gD9g7V1jpm1mL/v7ljJDocgIRVX32GYNyzAzSKl
    ....i0kluI|||||||
OBX|2|ED|||bpJEw+Mfu5XSQYsU7VByhF1eDUmARDRBklJkGlwuDNla9nY7pDTpxIKmGMHg31bSacSM7fJg6K+//
    u0xmHT+bw5ol+h4Kds2Q8RK2VYPe+lyp3MsyS+JrhdWRfuFXkVAr4hjonREzBEdbz3CREdJZ2niLu5UMv/
    dKKRViLZSOBK....+A75Tv|||||||
OBX|3|ED|||tE/hm2CElItbsmHJySWssAQvaQn6atqrN1Qz1fcvJid+YEyZI/
    t6HDmHfNH7SeIVUToQKCykidLaiNCOD3OoS1mY979lavhhZjtlWwmmOZEoE+wi35r8VmJVyDl5B3WaM/
    ncLI7WApXIO5h/wzf3iizLzjX1nP/KDP/CX5/qnsX....VPRgo=|||||||
```

4.5 Deprecate Document

4.5.1 Deprecate Document -- HL7v2

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 its document status is set from **approved** to **deprecated**.

Note
When a document's status has been set to "deprecated", it is still displayed in the default results set. Nevertheless, the document is clearly recognizable as "deprecated" since it is crossed out in the **Medical Records** application.

4.5.1.1 Message Structure

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

Table 78: Deprecate Document Segments

Segment	Description
MSH	Message Header
MSH-9-1	The Message Type 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 from the syntax of submitting a document (see Table 68, Table 69, Table 70) in only one regard: It entirely misses the binary document itself (the OBX segment is missing).

Example 90:

```
MSH|^~\&|SendingApplicationName^1.2.3.4.5^ISO|SendingFacilityName^1.1.1.2.98^ISO||^1.1.1.1^
    ISO|||MDM^T11|||||||||
EVN|||||^UserFamilyName^UserGivenName
PID|||1231451^^^NATIONAL SOCIAL SECURITY ASSOCIATION&2.1.414.1.4.14&ISO^SS~pat1125^^^
    LocalAssigningAuthority&1.2.3.4.6&ISO||PatientFamilyName^PatientGivenName
    ||20110706094842|M|||Address^^City^^Postal Code
PV1|||^^^SendingFacilityName&1.2.3.4.6&ISO^^^&Department&SubDepartment^^^419192003&Internal
    Medicine&SNOMED_CT|||||||ETU^Trauma Unit^2.16.840.1.113883.5.11
OBR|||||||20110706094842|20110706094842||||||||||||||||||||||ABC1^DEF^1.3.4.2|Counseling^
    Konsil^eHealth_contentTypeCodes|ABC3^DEF^1.3.4.2
TXA||11490—0^Discharge Letter^LOINC|application/pdf^ScanPDF/IHE 1.x^ScanPDF/IHE 1.x^
    eHealth_formatCodes|||20110706094842|||^AuthorFamilyName^AuthorGivenName|^
    LegalAuthenticatorFamilyName^LegalAuthenticatorGivenName||docID1309938522620||||HL7v2
    TestDocument||N^Normal^2.16.840.1.113883.5.25|F
```

5 Observations

eHealth Solutions offers an interface for the transmission of `ORU` messages on its `DocumentProcessor`. `ORU` messages are used to submit medical observations, in particular laboratory findings.

5.1 Unsolicited Transmission of an Observation Message

5.1.1 HL7v2 Unsolicited Transmission of an Observation Message

5.1.1.1 Message Structure

The segments relevant for **ORU R01** messages are the following:

Table 79: ORU Message Segments Overview

Segment	Description
MSH	Message Header
PID	Patient Information
PV1	Patient Visit Information
OBR	Observation Request
OBX	Observations
NTE	Comments

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.

PID Segment
: The PID segment contains the relevant patient data.

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

OBR Segment
: The OBR segment contains information on the examination context.

OBX Segment
: The OBX segment includes the observation data. It can be present multiple times as each occurence represents one single finding.

NTE Segment
: The NTE segment serves as a space for comments. When placed directly after the **OBR** segment, the textual description is relevant for all results of the message. NTE segments after an **OBX** segment only refer to the preceding OBX segment.

5.1.1.2 Field Overview

OBR-4
: Universal Service Identifier:

OBR-7
Observation Date: This is the time when the observation has taken place.

OBR-14
Specimen Received Date/Time: This is the time when the sample has arrived in the laboratory.

OBR-32
Principal Result Interpreter: This is the person responsible for the interpretation of the finding.

OBX-2
Value Type: Indicates the data type transmitted in the segment, for instance a group header for further OBX segments (**FT**) or the actual values of a finding (**CL**)

OBX-3
Observation Identifier: This is a code containing the IDs of the laboratory and the measured value, followed by a textual description of the value.

OBX-5
Binary Content: The binary content Base64 encoded. Documents may be splitted into docblocks with 64kB.

OBX-6
Units: Indicates the unit of the measured value

OBX-7
References Range

OBX-8
Abnormal Flags

OBX-11
Observation Result Status: Indicates the status of the observation.

Table 80: Processable Observation Information in an ORU R01 Message.

HL7-Path	Name	Presence	Repeatable
OBR-4	Universal Service Identifier	Required	No
OBR-7	Observation Date	Optional	No
OBR-14	Specimen Received Date/ Time	Optional	No
OBR-32	Principal Result Interpreter	Optional	No
OBX-2	Value Type	Required	No
OBX-3	Observation Identifier	Required	No
OBX-5	Binary Content	Required	-
OBX-6	Units	Optional	No
OBX-7	References Range	Optional	No
OBX-8	Abnormal Flags	Optional	Yes
OBX-11	Observation Result Status	Required	No

Example 91:

```
MSH|^~\&|PG—MLS|ZLAB|CLOVER|COMM|20180108081000|XRC|ORU^R01|Test1|P|2.2
PID|||2011810074||Einstein^Albert||19050910|M
PV1|||||||012302|||||||||||3007421698|||||||||||||||||||LK
OBR||99741|08154711|1380137013012830||||20180108080500||||||20180108080400||||||||||F
  |||012302||||LAB_ZL_R|||Peter Willi
OBX|1|FT|0|1|Harnanalytik
OBX|2|FT|0|2|HARNSTATUS (Harnstix, semiquantitativ)
```

```
OBX|3|CE|ZIMCL10205^Leukozyten(-esterase)^ZLAB^LEUKO_U|1|25|Zahl/ul|0-10|H~8||N|F
OBX|4|CE|ZIMCL10081^Nitrit^ZLAB^NIT|1|negativ|||N|||F
OBX|5|CE|ZIMCL10106^pH^ZLAB^PH_U|1|6||5-7|~5||N|F
OBX|6|CE|ZIMCL10209^Protein^ZLAB^PROT_U|1|250|mg/l|0-120|H~8||N|F
OBX|7|CE|ZIMCL10210^Glukose^ZLAB^GLU_U|1|normal|mg/dl|6-20|N||N|F
OBX|8|CE|ZIMCL10207^Ketonkörper^ZLAB^KET|1|negativ|mg/dl|0-2|N||N|F
OBX|9|CE|ZIMCL10213^Urobilinogen^ZLAB^UBG|1|normal|mg/dl|0-1|N||N|F
OBX|10|CE|ZIMCL10212^Bilirubin^ZLAB^BILI_U|1|negativ|mg/dl|0-0|N||N|F
OBX|11|CE|ZIMCL10206^Erythrozyten/Hb^ZLAB^ERY_U|1|50|Zahl/ul|0-5|H~8||N|F
OBX|12|CE|ZIMCL10211^Relative Dichte^ZLAB^SPEZ_G|1|1.015||1.005-1.030|~5||N|F
NTE||L|Die Ergebnisse des Harnstreifentests sind semi-quantitativ und entsprechen
NTE||L|überlappenden Wertebereichen. Ergebnisse, die im Referenzbereich liegen,
NTE||L|werden zu 100% als "normal" oder "negativ" identifiziert. Ergebnisse, die
NTE||L|zwischen dem oberen Referenzwert und der analytischen Sensitivität für den
NTE||L|jeweiligen Analyten liegen, werden entweder im negativen (NEG, NORM) oder im
NTE||L|untersten positiven Wertebereich detektiert. Das bedeutet, dass in diesem
NTE||L|Graubereich in einem sehr geringen Ausmaß falsch negative Werte auftreten
NTE||L|können. Oberhalb der analytischen Sensitivität liegende Ergebnisse werden zu
NTE||L|> 90% als positiv identifiziert. Weitere Details, analytische Sensitivitäten
NTE||L|sowie Störfaktoren des Streifentests entnehmen Sie bitte unserer Homepage
NTE||L|unter http://zimcl.tirol-kliniken.at. Zur Umrechnung von uL-->
NTE||L|HPF bzw. LPF empfehlen
NTE||L|wir die folgenden Näherungsformeln: Zahl pro µl/5.555 = Zahl pro HPF; Zahl
NTE||L|pro µl x 2.9 = Zahl pro LPF
```

6 User-defined Tables

6.1 MDM Tables

6.1.1 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 81: Reference ID type codes in MDM tables

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