RADIOLOGY WORKFLOW SOLUTIONS

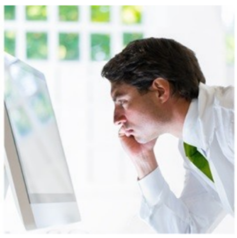
HL7 Interface Specification for Connecting an External System to medavis RIS

Version 4.21, 2025-01-13

RADIOLOGY WORKFLOW MANAGEMENT

OPTIMISED WORKFLOW

MAXIMUM EFFICIENCY



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1. Introduction

Revision History

Version	Date	Reason	Editor
1.0	01.07.2009	Creation	Carsten Rambow
2.0	04.04.2016	Latest messages and segments added. New format	Marco Kuballa, Thomas Freier
2.11	03.05.2016	Format errors corrected, Message Type in Header	Thomas Freier
2.12	06.05.2016	Format errors corrected. Released.	Thomas Freier
3.0	11.05.2017	Latest messages and segments added. New Format.	Marco Kuballa, Martin Krogmann, Steffen Eitelmann
3.1	29.11.2017	Added description for CDA export via MDM^T02	Martin Krogmann
3.1.1	22.01.2018	Added description for CDA export via ORU^R01	Marco Kuballa
3.2	03.05.2018	Added outbound MDM^T10 messages.	Martin Krogmann
4.0	13.08.2018	Updated Software Version and corrected some texts.	Patrick Waldschmitt
4.1	04.03.2020	Added outbound MDM^T02 variant with multiple formats. Added inbound DFT^P03 with transaction type CD. Added support of some values in in STF segment. Added example message for newly supported laboratory report messages and extended description.	Martin Krogmann, Steffen Eitelmann
4.2	01.04.2020	Added ZED segment.	Tania Lüty
4.3	08.05.2020	Added outbound ADT^A45.	Steffen Eitelmann
4.4	04.11.2020	Added reference pointer option for outbound MDM^T02.	Martin Krogmann
4.5	05.07.2021	Correct for bold certain ORC and OBR fields.	Yu Li
4.6	18.08.2021	Add inbound OBR-28	Marco Kuballa
4.7	12.08.2022	SIU inbound & outbound sample messages updated. SIU^S26 message removed.	Carsten Rambow
4.8	29.08.2022	ORM^O01 outbound chapter updated (exposure justification)	Martin Krogmann
4.9	18.01.2023	SIU^S12 inbound: use specific NTE comments for appointment text	Steffen Eitelmann

Version	Date	Reason	Editor
4.10	14.02.2023	Modified or rescheduled appointments created in medavis RIS by an external SIU source.	Tania Lüty
4.11	27.03.2023	Appointment-Type for inbound SIU^S12/S13	Martin Krogmann
4.12	01.06.2023	Added ORU^R01 plaintext (ANSI) import	Marco Kuballa
4.13	06.06.2023	Updated FT1 segment for outbound messages.	Tania Lüty
4.14	18.08.2023	Added required OBR-25 result status to ANSI report import section	Steffen Eitelmann
4.15	11.09.2023	Added ZBE segment	Steffen Eitelmann
4.16	27.09.2023	Updated ORU^R01 plaintext (ANSI) import	Marco Kuballa
4.17	16.11.2023	Updated ZWL segment for "Chefarztwahl" and corresponding ADT messages.	Tania Lüty
4.18	20.11.2023	Updated cancel order restrictions	Sebastian Merker
4.19	12.02.2024	Added ARV segment description. Updated legend for segment table.	Sebastian Merker
4.20	20.02.2024	Update incoming ORU message.	Tania Lüty
4.21	20.04.2024	Added AI results ORU	Steffen Eitelmann, Tania Lüty

Audience

This document is written for the people that need to understand how the medavis HL7 interface will integrate into their healthcare facility. This document contains some basic HL7 definitions so that any reader may understand how this product implements HL7 features. For further information about the HL7 terminology please have a look at the HL7 standard itself.

Remarks

HL7 by itself, does not guarantee interoperability. However, the Conformance Statement facilitates a first-level validation for interoperability between different applications supporting the same HL7 functionality. This Conformance Statement is not intended to replace validation with other HL7 equipment to ensure proper exchange of information intended.

Definitions, Terms and Abbreviations

ACK Acknowledgement
ADT Admission, Discharge, and Transfer message
AL1 Patient Allergy Information segment
CDA HL7 Version 3 Clinical Document Architecture
DFT Detail financial transactions
DSP Display data segment
EVN Event Type segment
HL7 Health Level 7
IHE Integrating the Healthcare Enterprise

MDM Medical document management
MFN Master files notification
MRG Merge Patient Information segment
MSA Message acknowledgement segment
MSH Message Header segment
NTE Notes and comments segment
OBR Observation Request segment
OBX Observation/Result segment
OMG General clinical order message
ORC Common Order segment ORM Order Request message
ORU Observation Results - Unsolicited message
PACS Picture Archiving and Communication System
PID Patient ID segment
PV1 Patient Visit segment
QAK Query acknowledgement
QRD Query Definition segment
RGS Resource Group Segment
RIS Radiology Information System
SIU Scheduling Information Unsolicited
UDM Unsolicited display update message
ZDS Study Instance UID segment

References

HL7 Standard, www.hl7.org

2. General Information

The Health Level Seven (HL7) protocol in the German version 2.2, 2.3, 2.3.1, 2.4, 2.5, 2.5.1 and 2.6 are used as the basis for the RIS/HIS communication. The processes described in this document refer to the medavis HL7 version 4.0 software release.

2.1. Actor Definitions

Actors are information systems or components of information systems that produce, manage, or act on information associated with operational activities in the enterprise. The following actors are referred to throughout the rest of this document.

- ADT System

  A system responsible for adding and/or updating patient demographic and encounter information. In particular, it registers a new patient with the Order Placer and Department System.

- Charge Processor

  Receives the posted charges and serves as a component of the financial system.

- Order Filler/Department System Scheduler

  A department-based information system (medavis RIS) that provides functions related to the management of orders received from external systems or through the department system's user interface. Upon a defined workflow action, makes procedures available of charge posting. The action/event that actually causes charges to post is defined by the actor.

- Enterprise Report Repository

  A system that receives Structured Report Export Transaction from the Report Manager and stores them.

- Image Manager

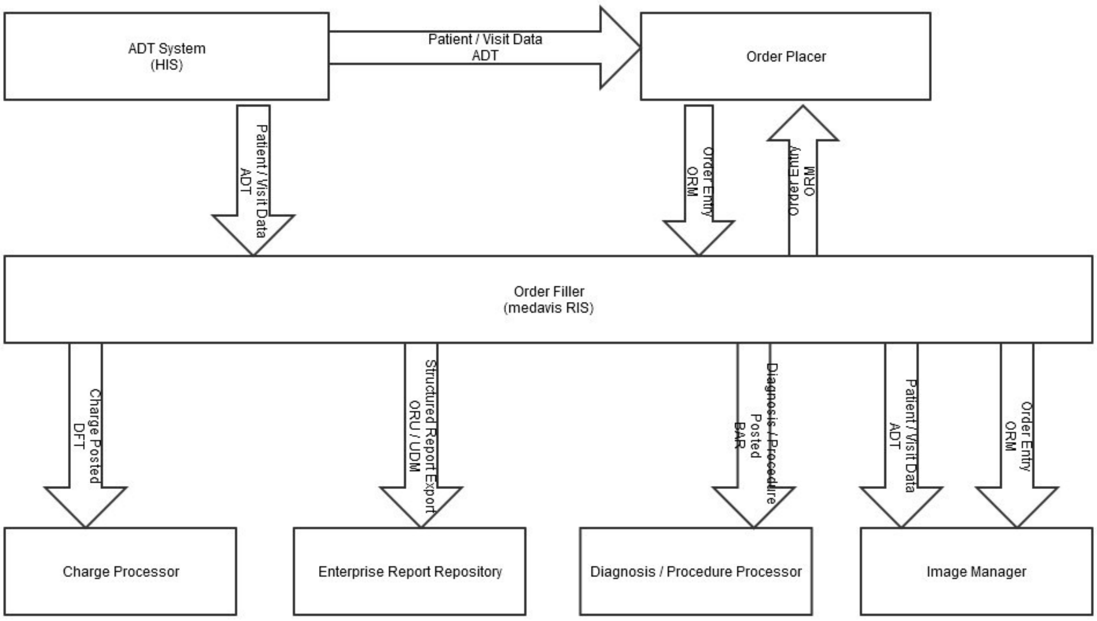
  A system that provides functions related to safe storage and management of evidence objects. It supplies availability information for those objects to the Department System Scheduler.

- Order Placer

  A hospital or enterprise-wide system that generates orders for various departments and distributes those orders to the correct department.

2.2. Typical Framework

This diagram shows a typical interaction between actors:


ADT System
(HIS)
Patient / Visit Data
ADT
Order Placer
Patient / Visit Data
ADT
Order Entry
ORM
Order Entry
ORM
Order Filler
(medavis RIS)
Charge Posted
DFT
Structured Report Export
ORU / UDM
Diagnosis / Procedure
Posted
BAR
Patient / Visit Data
ADT
Order Entry
ORM
Charge Processor
Enterprise Report Repository
Diagnosis / Procedure Processor
Image Manager

3. HL7 Messages

medavis RIS supports the HL7 protocol's most important messages:

Messages from external systems to medavis RIS

ADT^A01 – Admit a patient (outpatient visit)
ADT^A02 – Transfer a patient
ADT^A03 – Discharge a patient
ADT^A04 – Register a patient (inpatient visit)
ADT^A05 – Pre-admit a patient
ADT^A06 – Change an outpatient to an inpatient
ADT^A07 – Change an inpatient to an outpatient
ADT^A08 – Update patient information
ADT^A11 – Cancel admit/visit notification
ADT^A12 – Cancel transfer
ADT^A13 – Cancel discharge
ADT^A23 – Delete a patient record
ADT^A31 – Update person information
ADT^A34 – Merge patient information – patient identifier only
ADT^A38 – Cancel pre-admit
ADT^A42 – Merge visit
ADT^A45 – Move visit information
ADT^A46 – Change patient identifier
ADT^A47 – Change patient identifier list

ORM^O01 – Request/cancel examination
ORR^O02 – Order response
OMG^O19 – General clinical order

QBP^Q22 – Patient Demographics Query Find Candidates
QBP^ZV1 – Patient Demographics and Visit Query
QRY^A19 – Patient query
ORU^R01 – Report import

BAR^P01 – Add patient account
BAR^P05 – Update account
BAR^P06 – End account
DFT^P03 – Post detail financial transaction

SIU^S12 – Notification of new appointment booking
SIU^S13 – Notification of appointment rescheduling
SIU^S14 – Notification of appointment modification
SIU^S15 – Notification of appointment cancellation
SIU^S26 – Notification that patient did not show up for schedule appointment

MFN^M02 – Master file - staff practitioner
MFN^M09 – Test/observation (categorical) master file

MDM^T02 – Original document notification and content
MDM^T11 – Document cancel notification

Messages from medavis RIS to external systems

ADT^A01 - Admit a patient
ADT^A08 - Update patient information
ADT^A34 - Merge patient information – patient identifier only
ADT^A40 - Merge patient – identifier list
ADT^A45 – Move visit information
ADT^A47 - Change patient identifier list

QBP^Q23 - Patient Demograhpics Query Get Corresponding Identifiers

ORM^O01 – General order message supporting the following events:
ORM^O01 - Acknowledge an examination request/transfer an examination status
ORM^O01 - Create, modify, update and cancel examinations
ORM^O01 – Request/cancel examination
OMG^O19 – General clinical order
OMI^O23 – Imaging Order

ORU^R01 - Report export
UDM^Q05 - Report export

BAR^P01 - Diagnoses/procedures ("Snapshot" mode)
DFT^P03 - Post detailed financial transaction
BAR^P12 - Update Diagnosis/procedures ("Action code/unique identifier" mode)

MFN^M02 – Master file - staff practitioner
MFN^M09 – Test/observation (categorical) master file

SIU^S12 – Notification of new appointment booking
SIU^S13 – Notification of appointment rescheduling
SIU^S14 – Notification of appointment modification
SIU^S15 – Notification of appointment cancellation

MDM^T02 – Original document notification and content
MDM^T04 – Document Status Change Notification and Content
MDM^T11 – Document cancel notification

Further HL7 messages are in preparation.

Syntax in this Document

The HL7 messages are explained in the following chapters in a BNF representation. Each segment is listed in the order it could appear in a message.

Curly brackets, { ... }, define a segment block which must occur at least once. Of course, a group can also consist of a segment. Square brackets [...] define an optional segment block which can occur. An optional, repetitive segment block is therefore identified by curly and square brackets, { [...] }. The declarations [{...}] and {[...]} are identical.

The segments marked in the tables in **bold** type are evaluated by the interface.

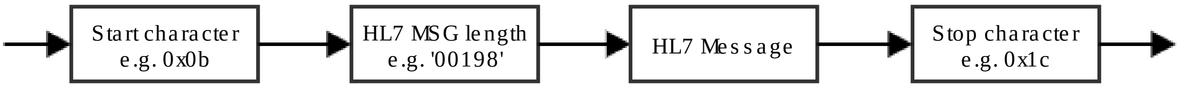
4. Data Transport Between medavis RIS and an External System

The link between medavis RIS and an external system can be implemented using a TCP/IP socket connection or a file transfer method. For the file transfer method, you can choose between the NFS, Samba and FTP protocols. To minimise the protocol overheads, a link using TCP/IP sockets is preferable.

4.1. TCP/IP Socket - Lower Level Protocol (LLP)

The set-up of a socket stream is modelled on the proposal made by the ‘HL7 Implementation Support Guide App C.4’. A HL7 message is provided with a start and a stop character. The start and stop characters can be freely defined.

In addition, an extended LLP (Lower Level Protocol) can be selected which is extended by the parameter ‘message length’. This parameter has a freely definable length and is transferred right justified in ASCII format. Blank positions are filled with zeros. If possible this protocol should not be used, as it is not a HL7 standard.



Optionally, medavis RIS supports TCP/IP with TLS for the encrypted transport of HL7 communication. Certificates for the sending and receiving systems need to be exchanged for this purpose.

4.2. File Transfer Method

HL7 messages are transferred in keeping with the semaphore concept.

Conflicts may occur when transferring data between the systems. One possible conflict is that, when writing an HL7 file, the receiving system reads this file quicker than it is being written. The semaphore concept prevents simultaneous reading and writing of the same HL7 file.

4.2.1. Multi File Mode

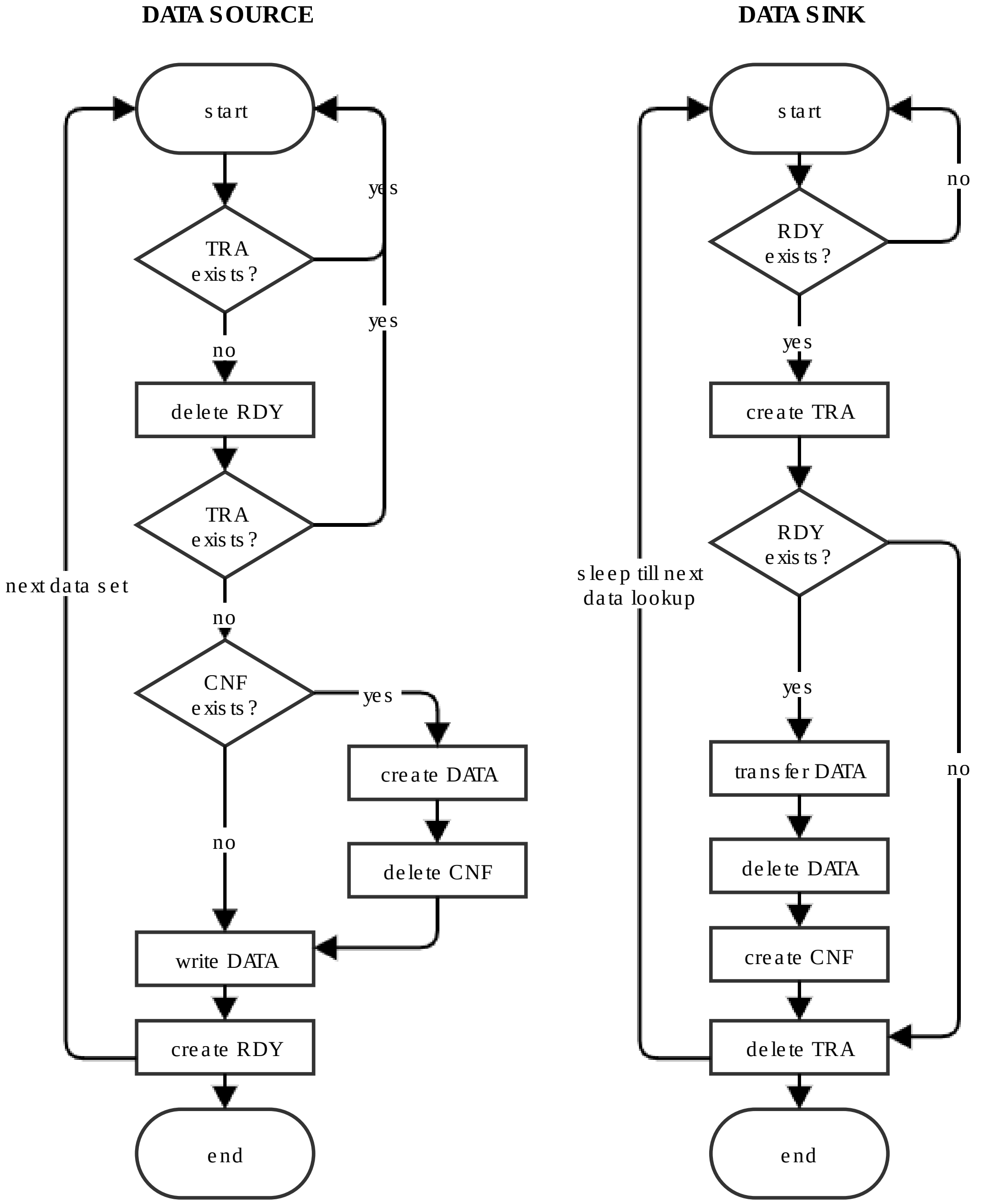
A semaphore file is created for every HL7 file which signalises that the HL7 file may be read. The semaphore file can only be created once the HL7 file has been saved. The HL7 file and the semaphore file are deleted after processing by the receiving system.

Each HL7 file may only contain one HL7 message. The file name of the HL7 and the semaphore file must be made up of alphanumeric characters which are chronological to the HL7 message. The file suffix of the HL7 file is ".HL7" and the suffix for the semaphore file is ".SEM".

The HL7 message is saved in the file without a frame.

4.2.2. Single File Mode

All HL7 messages are written to a file with start and stop frames. The transfer procedure is similar to the Multi File Mode and is described in the next figure.



DATA = DATA PACKAGE CONTAINING MESSAGES

RDY = DATA PACKAGE READY FOR TRANSFER

CNF = CONFIRMATION LAST DATAPACKAGE RECEIVED

TRA = TRANSFER OF DATA IN PROGRESS

4.3. Message Receipt and Acknowledgement

If a TCP/IP basis is used for linking, the following features must be noted for the acknowledgement. medavis RIS processes received HL7 messages immediately and instantly sends a positive acknowledgement, or a negative acknowledgement if they contain syntax errors. Each message sent through medavis RIS must be answered by an acknowledgement message. Delayed responses are not permitted.

Medavis RIS currently does not support enhanced acknowledgement.

5. Messages to medavis RIS

The following describes all HL7 messages used which can be processed by the medavis interface.

5.1. Registering an (Outpatient) Visit – ADT^A01

An ADT^A01 message causes medavis RIS to record new patient information. This message is usually sent by an ADT system. An ADT^A01 message is composed of the following segments:

ADT	ADT Message
MSH	**Message Header**
EVN	**Event Type**
[PID	**Patient Identification**
[PD1]	Additional Identification
[{ NK1 }]	Next of Kin / Associated Parties
PV1	**Patient Visit**
[PV2]	Patient Visit - Additional Information
[{ DB1 }]	Disability Information
[{ OBX }]	**Observation / Result**
[{ AL1 }]	Allergy Information
[{ DG1 }]	**Diagnosis Information**
[DRG]	Diagnosis Related Group
[{ PR1	Procedures
[{ ROL }]	Role
}]	
[{ IN1	**Insurance**
[IN2]	**Insurance Additional Information**
[IN3]	Insurance Additional Information - Cert.
}]	
[ACC]	Accident Information
[UB1]	Universal Bill Information
[UB2]	Universal Bill 92 Information
[ZBE]	Movements
[{ ZWL }]	Non-Medical Optional Services
[ARV]	Access Restriction

The following segments are currently evaluated: MSH, PID, PV1, OBX, DG1, IN1 and IN2. The ZBE and ZWL segments are supported as well, if configured.

Example

```
MSH|^~\|ADTSys||MEDAVIS||20010402053241||ADT^A01|7756|P|2.5|||AL|NE
EVN|A01|20010402053241
PID|||43222^^^ASSAUT|102092893|Doe^John||19500214|M|||Bakerstreet 50^^New
 York^^12345^US|||555-3245|german|VH|EV||||||||D
PV1||I|INN1^^^IM|||||||||||||||11209393^^^ASSAUT||K|||||||||||||||||806|||||20010
 402073000||||||1120939
DG1|1||K92.2^Gastrointestinal haemorrhage, unspecified^I10
 ||20010402073500|AD||||||||1.1|0004711
IN1|1|43798|6201379^^^^NII|Insurance Name||||1|Ins.Group||||20050431||M|||||||||||||20010420
 ||||||6201379^^0405^1000^1^|||||||||||||43798|
ZBE|123^externalSystem1~456^externalSystem2|20010402053200||INSERT
ZWL|||CHEF||||20010401|20010104
ZWL|||CHEF||||20010402|20230720
```

5.2. Transferring a Patient – ADT^A02

medavis RIS is informed of the transfer of a patient via an ADT^A02 message. This message is usually sent by ADT system. medavis RIS identifies the patient information using the external patient ID (PID-3). An ADT^A02 message is therefore composed of the following segments:

ADT	ADT Message
MSH	**Message Header**
EVN	**Event Type**
[PID	**Patient Identification**
[PD1]	Additional Identification
PV1	**Patient Visit**
[PV2]	Patient Visit - Additional Information
[{ DB1 }]	Disability Information
[{ OBX }]	Observation / Result

The following segments are currently evaluated: MSH, EVN,PID and PV1.

Example

```
MSH|^~\&|KIS|KIS|MEDAVIS||201108180804||ADT^A02|1|P|2.5
EVN|A02|20110818080300|||||KIS
PID|1||4711^^^DOMAIN-A||Deckenhauer^Franzl^^^Dr.||19501101|M|||Tollestr.10^^
 Musterhausen^^12345^D|42|294386^^^^^^^^^^^294386||D|O|AGN|43||||||||D||D
PV1|1|I|ST1^Raum1^Bett1^Chirurgie|R||^^^^^^andereChirurgie^^||DocIdRef2^TheReferrer|
 DocId1^Musterdoc|||||||||784654^^^KIS||K|||||||||||||||||ABC|||||
 20110818080300|||||||A
```

5.3. Discharging a Patient – ADT^A03

medavis RIS is informed of the discharge of a patient via an ADT^A03 message. This message is usually sent by an ADT system. The patient data is removed from the RIS database if there is no case or examination data for this patient and there are no requests. RIS identifies the patient data using the external patient ID (PID-3). An ADT^A03 message is therefore composed of the following segments:

ADT	**ADT Message**
MSH	**Message Header**
EVN	Event Type
[PID	**Patient Identification**
[PD1]	Additional Identification
PV1	**Patient Visit**
[PV2]	Patient Visit - Additional Information
[{ DB1 }]	Disability Information
[{ DG1 }]	Diagnosis Information
[DRG]	Diagnosis Related Group
[{ PR1	Procedures
[{ ROL }]	Role
}]	
[{ OBX }]	Observation / Result

The following segments are currently evaluated: MSH, PID and PV1.

5.4. Outpatient Visit – ADT^A04

An ADT^A04 message causes medavis RIS to register a new patient visit. This message is usually sent by an ADT system. An ADT^A04 message is treated the same as an ADT^A01 message. The PV1-2 field is evaluated to differentiate between the type of admission/visit.

An ADT^A04 message is therefore composed of the following segments:

ADT	**ADT Message**
MSH	**Message Header**
EVN	**Event Type**
[PID	**Patient Identification**
[PD1]	Additional Identification
[{ NK1 }]	Next of Kin / Associated Parties
PV1	**Patient Visit**
[PV2]	Patient Visit - Additional Information
[{ DB1 }]	Disability Information
[{ OBX }]	**Observation / Result**
[{ AL1 }]	Allergy Information
[{ DG1 }]	**Diagnosis Information**
[DRG]	Diagnosis Related Group
[{ PR1	Procedures
[{ ROL }]	Role
}]	
[{ GT1 }]	Guarantor
[{ IN1	**Insurance**

ADT	ADT Message
[IN2]	**Insurance Additional Information**
[IN3]	Insurance Additional Information - Cert.
}]	
[ACC]	Accident Information
[UB1]	Universal Bill Information
[UB2]	Universal Bill 92 Information
[ZBE]	Movements
[{ ZWL }]	Non-Medical Optional Services
[ARV]	Access Restriction

The following segments are currently evaluated: MSH, PID, PV1, OBX, DG1, IN1 and IN2. The ZBE and ZWL segments are supported as well, if configured.

5.5. Pre-admitting a Patient – ADT^A05

An ADT^A05 message causes medavis RIS to register a new patient visit's pre-admit data. This message is usually sent by an ADT system. An ADT^A05 message is treated like an ADT^A01 message. The PV1-2 field is evaluated to differentiate between the type of admission/visit.

An ADT^A05 message is therefore composed of the following segments:

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

ADT	ADT Message
[UB2]	Universal Bill 92 Information
[ZBE]	Movements
[{ ZWL }]	Non-Medical Optional Services
[ARV]	Access Restriction

The following segments are currently evaluated: MSH, PID, PV1, DG1, IN1 and IN2. The ZBE and ZWL segments are supported as well, if configured.

5.6. Changing from Outpatient to Inpatient – ADT^A06

An ADT^A06 message causes medavis RIS to change the type of patient visit from outpatient to inpatient. This message is usually sent by an ADT system. The PV1-2 field (contract code) is evaluated for the new type of visit.

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

The following segments are currently evaluated: MSH, PID, PV1.

Example

```
MSH|^~\&|KIS|KIS|MEDAVIS||201108180804||ADT^A06|1|P|2.5
EVN|A06|20110818080300||||KIS
PID|1||5000^^^KISs||Deckenhauer^Franzl^^^Dr.||19501101|M|||Tollestr.10^^
 Musterhausen^^12345^D|42|294386^^^^^^^^^^^294386||D|O|AGN|43|||||||D||D
PV1|1|I| ST1^Raum1^Bett1^Chirurgie|R||^^^^^^andereChirurgie^^||DocIdRef2^TheReferrer|Doc
 Id1^Musterdoc|MED||||||||784654^^^KIS||K|||||||||||||||||ABC|||||20110818080300 |||||||A
```

5.7. Changing from Inpatient to Outpatient – ADT^A07

An ADT^A07 message causes medavis RIS to modify the type of patient visit from inpatient to outpatient. This message is usually sent by an ADT system. The contact code from field PV1-2 is evaluated for the new type of visit. An ADT^A07 message is processed by the interface like an ADT^A06 message.

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

The following segments are currently evaluated: MSH, PID, PV1.

5.8. Updating Patient Information – ADT^A08

medavis RIS is informed of the modification of patient data in the external system by an ADT^A08 message. This message is usually sent by an ADT system. medavis RIS identifies the patient data using the external patient ID (PID-3). An ADT^A08 message is therefore composed of the following segments:

ADT	ADT Message
MSH	**Message Header**
EVN	**Event Type**
[PID	**Patient Identification**
[PD1]	Additional Identification
[{ NK1 }]	Next of Kin / Associated Parties
PV1	**Patient Visit**
[PV2]	Patient Visit - Additional Information
[{ DB1 }]	Disability Information
[{ OBX }]	**Observation / Result**
[{ AL1 }]	Allergy Information
[{ DG1 }]	**Diagnosis Information**
[DRG]	Diagnosis Related Group
[{ PR1	Procedures
[{ ROL }]	Role
}]	
[{ GT1 }]	Guarantor
[{ IN1	**Insurance**
[IN2]	**Insurance Additional Information**
[IN3]	Insurance Additional Information - Cert.
}]	
[ACC]	Accident Information
[UB1]	Universal Bill Information
[UB2]	Universal Bill 92 Information
[ZBE]	Movements
[{ ZWL }]	Non-Medical Optional Services
[ARV]	Access Restriction

The following segments are currently evaluated: MSH, PID, PV1, OBX, DG1 IN1, and IN2. The ZBE and ZWL segments are supported as well, if configured.

Example

```
MSH|^~\&|KIS|KIS|MEDAVIS||201108180804||ADT^A08|1|P|2.5
EVN|A08|20110818080300|||||KIS
PID|1||4711^^^DOMAIN-A||Deckenhauer^Franzl^^^Dr.||19501101|M|||Tollestr.10^^
 Musterhausen^^12345^D|42|294386^^^^^^^^^^^294386||D|O|AGN|43||||||||D||D
PV1|1|I|ST1^Raum1^Bett1^Chirurgie|R||^^^^^^andereChirurgie^^|||DocId1^Musterdoc|||||
 |||||44||K||||||||||||||||||ABC|||||20110818080300|||||||A
ZBE|123^externalSystem1~456^externalSystem2|20010402053200||UPDATE
ZWL|||CHEF||||20010401|20010104
ZWL|||CHEF||||20010402|20230720
```

5.9. Cancelling a Patient Visit – ADT^A11

An ADT^A11 message causes medavis RIS to cancel a patient visit. This message is usually sent by an ADT system.

An ADT^A11 message is therefore composed of the following segments:

ADT	ADT Message
MSH	**Message Header**
EVN	**Event Type**
[PID	**Patient Identification**
[PD1]	Additional Identification
[{ NK1 }]	Next of Kin / Associated Parties
PV1	**Patient Visit**
[PV2]	Patient Visit - Additional Information
[{ DB1 }]	Disability Information
[{ OBX }]	Observation / Result
[{ AL1 }]	Allergy Information
[{ DG1 }]	Diagnosis Information
[DRG]	Diagnosis Related Group
[{ PR1	Procedures
[{ ROL }]	Role
}]	
[{ GT1 }]	Guarantor
[{ IN1	Insurance
[IN2]	Insurance Additional Information
[IN3]	Insurance Additional Information - Cert.
}]	
[ACC]	Accident Information
[UB1]	Universal Bill Information
[UB2]	Universal Bill 92 Information
[ZBE]	Movements
[{ ZWL }]	Non-Medical Optional Services

The following segments are currently evaluated: MSH, PID and PV1. The ZBE and ZWL segments are supported as well, if configured.

Example

```
MSH|^~\&|KIS|KIS|MEDAVIS||201108180804||ADT^A11|1|P|2.5
EVN|A11|20110818080300|||||KIS
PID|1||5000^^^KISs||Deckenhauer^Franzl^^^Dr.||19501101|M|||Tollestr.10^^
 Musterhausen^^12345^D|42|294386^^^^^^^^^^^294386||D|O|AGN|43||||||||D||D
PV1|1|I|ST1^Raum1^Bett1^Chirurgie|R||^^^^^^andereChirurgie^^||DocIdRef2^TheReferrer|
 DocId1^Musterdoc||||||||||44^^^KIS||K|||||||||||||||||ABC|||||20110818080300|||||||A
```

5.10. Cancelling a Patient Transfer – ADT^A12

A patient transfer (ADT^A02) can be cancelled by an ADT^A12 message. This message is usually sent by an ADT system. medavis RIS does not track the patient stay, but only saves the patient's current and previous locations. Therefore, it is only possible to cancel the last transfer.

An ADT^A12 message is therefore composed of the following segments:

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

The following segments are currently evaluated: MSH, PID and PV1.

Example

```
MSH|^~\&|KIS|KIS|MEDAVIS||201108180804||ADT^A12|1|P|2.5
EVN|A12|20110818080300|||||KIS
PID|1||4711^^^DOMAIN-A||Deckenhauer^Franzl^^^Dr.||19501101|M|||Tollestr.10^^
 Musterhausen^^12345^D|42|294386^^^^^^^^^^^294386||D|O|AGN|43||||||||D||D
PV1|1|I| ST1^Raum1^Bett1^Chirurgie|R||^^^^^^andereChirurgie^^||DocIdRef2^TheReferrer|
 DocId1^Musterdoc||||||||||784654^^^KIS||K||||||||||||||||||ABC|||||20110818080300|||||||A
```

5.11. Cancelling a Patient Discharge – ADT^A13

A patient discharge (ADT^A03) can be cancelled by an ADT^A13 message. This message is usually sent by an ADT system. medavis RIS resets the discharge to an undefined time.

An ADT^A13 message is therefore composed of the following segments:

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

The following segments are currently evaluated: MSH, PID and PV1.

5.12. Deleting Patient Records – ADT^A23

Patient records can be deleted from medavis RIS with an ADT^A23 message. This message is usually sent by an ADT system. medavis RIS only deletes patient information if it contains no case or examination data. Open examination requests are also deleted. The patient information is identified by the external patient ID (PID-3). An ADT^A23 message is therefore composed of the following segments:

ADT	ADT Message
MSH	**Message Header**
EVN	Event Type

ADT	ADT Message
[PID	**Patient Identification**
[PD1]	Additional Identification
[{ NK1 }]	Next of Kin / Associated Parties
PV1	**Patient Visit**
[PV2]	Patient Visit - Additional Information
[{ DB1 }]	Disability Information
[{ OBX }]	Observation / Result
[{ AL1 }]	Allergy Information
[{ DG1 }]	Diagnosis Information
[DRG]	Diagnosis Related Group
[{ PR1	Procedures
[{ ROL }]	Role
}]	
[{ GT1 }]	Guarantor
[{ IN1	Insurance
[IN2]	Insurance Additional Information
[IN3]	Insurance Additional Information - Cert.
}]	
[ACC]	Accident Information
[UB1]	Universal Bill Information
[UB2]	Universal Bill 92 Information

The following segments are currently evaluated: MSH, PID and PV1.

Example

```
MSH|^~\&|KIS|KIS|MEDAVIS||201108180804||ADT^A23|1|P|2.5
EVN|A01|20110818080300|||||KIS
PID|||4712^^^DOMAIN-A||Doe^John~DoeAlt^Johnny^^^^^A||19400220|M|||Bannwaldallee60^^
 ^^Karlsruhe^^76185^DE|42|294386home^^^^^^^^^^^294386homeunformatted~12345mobile^^CP
 ^^^^^^^^^12345mobileunformatted|294386business^^^^^^^^^^^294386businessunformatted|
 D|O|AGN|43||||||||D||D
PV1|1|I|ST1^Raum1^Bett1^Chirurgie|R||^^^^^^andereChirurgie^^||DocIdRef2^TheReferrer|
 DocId1^Musterdoc||||||||||45||K|||||||||||||||||ABC|||||20110818080300|||||||A
```

5.13. Update Patient Information – ADT^A31

medavis RIS is informed of the modification of patient data in the external system by an ADT^A31 message. Usually, this message is used to update patient information on an MPI. It is similar to an A08 message. An ADT^A31 message is treated the same as an ADT^A08 message.

ADT	ADT Message
MSH	**Message Header**
EVN	**Event Type**
[PID	**Patient Identification**

ADT	ADT Message
[PD1]	Additional Identification
[{ NK1 }]	Next of Kin / Associated Parties
PV1	Patient Visit
[PV2]	Patient Visit - Additional Information
[{ DB1 }]	Disability Information
[{ OBX }]	Observation / Result
[{ AL1 }]	Allergy Information
[{ DG1 }]	Diagnosis Information
[DRG]	Diagnosis Related Group
[{ PR1	Procedures
[{ ROL }]	Role
}]	
[{ GT1 }]	Guarantor
[{ IN1	Insurance
[IN2]	Insurance Additional Information
[IN3]	Insurance Additional Information - Cert.
}]	
[ACC]	Accident Information
[UB1]	Universal Bill Information
[UB2]	Universal Bill 92 Information
[ZBE]	Movements
[{ ZWL }]	Non-Medical Optional Services
[ARV]	Access Restriction

Example

```
MSH|^~\&|MPI|FAC1|MEDAVIS||201108180804||ADT^A31|1|P|2
EVN|A31|20110818080300|||||KIS
PID|1||GummiMayer^^^DOMAIN-0110|M|||Tollestr1^^Musterhausen^^12345^D|42|
 294386^^^^^^^^^^^294386||D|O|AGN|43||||||||D||
PV1|1|I|ST1^Raum1^Bett1^Chirurgie|R||^^^^^^andereChirurgie^^|||DocId1^Musterdoc||||
 ||||||44||K|||||||||||||||||ABC|||||20110818080300|||||||A
```

5.14. Merging Patient IDs – ADT^A34

Retained for version 2.3.1 only. Use ADT^A40 instead.

Patient IDs can be merged using an ADT^A34. This message issually sent by an ADT system. Patient data is identified using the PID-3 and MRG-1 fields. A new allocation of the same patient ID (MRG-1) is not permitted.

Remaining Patient = PID, Released Patient = MRG

1. Remaining Patient known, Released Patient known: merge patient id’s
2. Remaining Patient known, Released Patient unknown: no operation
3. Remaining Patient unknown, Released Patient known: rename and keep existing patient id
4. Remaining Patient unknown, Released Patient unknown:

a. PID complete: create patient from PID
b. PID incomplete: reject message

An ADT^A34 message is therefore composed of the following segments:

ADT	ADT Message
MSH	**Message Header**
EVN	Event Type
PID	**Patient Identification**
[PD1]	Additional Identification
MRG	**Merge Information**

The following segments are currently evaluated: MSH, PID and MRG.

Example

```
MSH|^~\&|KIS|KIS|MEDAVIS||201108180804||ADT^A34|1|P|2.5
EVN|A34|20110818080300||||KIS
PID|1||5000a^^^KISs||Deckenhauer^Franzl^^remaining^Dr.||19501101|M|||Tollestr1^^Mus
 terhausen^^12345^D|42|294386^^^^^^^^^^294386||D|O|AGN|43|||||||D||D
MRG|4000a^^^KISs|||||
```

5.15. Cancelling a Pre-admit – ADT^A38

An ADT^A38 message causes medavis RIS to cancel a pre-admit. This message is usually sent by an ADT system. An ADT^A38 message is treated as an ADT^A11 message. An ADT^A38 message is therefore composed of the following segments:

ADT	ADT Message
MSH	**Message Header**
EVN	Event Type
[PID	**Patient Identification**
[PD1]	Additional Identification
[{ NK1 }]	Next of Kin / Associated Parties
PV1	**Patient Visit**
[PV2]	Patient Visit - Additional Information
[{ DB1 }]	Disability Information
[{ OBX }]	Observation / Result
[{ AL1 }]	Allergy Information
[{ DG1 }]	Diagnosis Information
[DRG]	Diagnosis Related Group
[ZBE]	Movements
[{ ZWL }]	Non-Medical Optional Services

The following segments are currently evaluated: MSH, PID and PV1. The ZBE and ZWL segments are supported as well, if configured.

5.16. Merging Patient IDs – ADT^A40

Patient IDs can be merged using an ADT^A40. This message usually sent by an ADT system. Patient data is identified using the PID-3 and MRG-1 fields. A new allocation of the same patient ID (MRG-1) is not permitted. A40 is processed equally to A34.

An ADT^A40 message is therefore composed of the following segments:

ADT	ADT Message
MSH	**Message Header**
EVN	Event Type
{ PID	**Patient Identification**
[PD1]	Additional Identification
MRG	**Merge Information**
[PV1]}	**Patient Visit**

The following segments are currently evaluated: MSH, PID and MRG.

5.17. Case Merge - ADT^A42

Patient episodes can be merged using an ADT^A42. This message is usually sent by an ADT system. The episodes are identified using the PV1.19 and the MRG.1 fields. All the available data for the episode which will not remain, will now belong to the remaining episode e.g. order, examination, etc.

An ADT^A42 message is therefore composed of the following segments:

ADT	ADT Message
MSH	**Message Header**
EVN	**Event Type**
{ PID	Patient Identification
[PD1]	Additional Identification
MRG	**Merge Information**
[PV1]}	**Patient Visit**

The following segments are currently evaluated: MSH, MRG and PV1.

Example

```
MSH|^~\&|KIS|KIS|MEDAVIS||201108180804||ADT^A42|1|P|2.5
EVN|A34|20110818080300|||||KIS PV1||||||||||||||||||784654^^^KIS
MRG|||||784655^^^KIS
PV1|||||||||||||||||||784654^^^KIS
```

5.18. Move visit information - ADT^A45 (customer specific)

Important Note

ADT^A45 is currently implemented specifically for one customer. The implementation may interfere with other interpretations of the IHE or HL7 Standard.

An ADT^A45 message causes medavis RIS to move the visit record identified by PV1-19 or MRG-5 (if PV1-19 is not present). MRG-1 indicates the prior patient id.

An ADT^A45 message is therefore composed of the following segments:

ADT	ADT Message
MSH	**Message Header**
[{ SFT }]	Software Segment
EVN	Event Type
PID	**Patient Identification**
[PD1]	Additional Demographics
MRG	**Merge Information**
PV1	**Visit Information**

Example

```
MSH|^~\&|KIS|KIS|MEDAVIS||201108180804||ADT^A45|1|P|2.5
EVN|A01|20110818080300|||||KIS
PID|1||4711^^^DOMAIN-A||Deckenhauer2^Franzl2||19400220|M|||Strasse 4^^Karlsruhe^^5079^DE^H^^^^^
 201602180000||012 345 67 10^PRN^PH~098 765 43 21^ORN^PH|077 222 88 66^WPN^PH|UNB|VER|RK||
 756.9545.3299.75||||Karlsruhe AG|001|1|DE|Kaufm. Angestellte|DE||||||||UNB
MRG|13370^^^DOMAIN-A
PV1|1|STAT|NOTF^^^5110^^^^^DEI|NF|||105210^Schmidt^Ulli^^^Herr Dr.|235456^Maier^Mike^^^HR DR||||
 UNF||SEL||Nein||ERW|33700|ALLG|UVG||||||||20160218000000||||||||DEI|AKU|||ZUH|20160218080000|||||
 370|V|1
ZWL|||TEL|AN
```

5.19. Change Patient ID - ADT^A46

Patient identifiers can be updated using ADT^A46 and ADT^A47 messages. ADT^A46 support is retained for backwards compatibility. With ADT^A46 messages, PID-2 is used to specify the new patient id. In contrast, ADT^A47 messages read the patient identifier list in PID-3 instead.

An ADT^A46 message is therefore composed of the following segments:

ADT	ADT Message
MSH	**Message Header**
[{ SFT }]	Software Segment
EVN	Event Type
PID	**Patient Identification**
[PD1]	Additional Demographics

ADT	ADT Message
MRG	**Merge Information**

5.20. Change Patient Identifier List - ADT^A47

Patient identifiers can be updated using ADT^A46 and ADT^A47 messages. ADT^A46 support is retained for backwards compatibility. With ADT^A46 messages, PID-2 is used to specify the new patient id. In contrast, ADT^A47 messages read the patient identifier list in PID-3 instead.

An ADT^A47 message is therefore composed of the following segments:

ADT	ADT Message
MSH	**Message Header**
[{ SFT }]	Software Segment
EVN	Event Type
PID	**Patient Identification**
[PD1]	Additional Demographics
MRG	**Merge Information**

Example

```
MSH|^~\&|KIS|KIS|MEDAVIS||201108180804||ADT^A47|201111161634473|P|2.4
EVN|A47|20110818080300||||KIS
PID|1||6000^^^DOMAIN||Deckenhauer^Franzl^^remaining^Dr.||19501101|M|||Goethestr.10 Mus
 terhausen^^12345^D|42|294386^^^^^^^^^^^294386||D|O|AGN|43||||||||D||D
MRG|2000^^^KISs||||||
```

5.21. External Service Request - ORM^O01

A service request is made via an ORM^O01 message. This message is usually sent by an Order Placer. The concept of ORM is to use order control codes instead of different message triggers.

The order control codes (ORC-1) accepted by medavis RIS are defined by the following subset of table 0119 where P=Order Placer F=Order Filler:

Value	Description	Originator
NW	New Order	P
CA	Cancel Order Request	P
OC	Order Cancelled	F
DC	Discontinue Order Request	F
XO	Change Order Request	P
NA	Number Assigned	P
SC	Status changed	F,P

All order positions in a message are grouped to one order. This order can consist of several order positions/ examinations.

The subsequent modification of an order, where one of the examinations has already begun, is not possible (configurable).

The complete deletion of an order is possible by sending the placer group number, without any placer order number under the following conditions:

- Order has not been edited
- Order not yet acknowledged by RIS
- None of the examinations has begun yet

In these cases the deletion request message is responded with a negative acknowledgement. Cancelling orders with started examinations can be allowed in the configuration of the order placer.

The medavis RIS request catalogue must be compared to the requesting system before the interface communication is started. All examinations are made available to the external system. An automatic comparison of the request catalogue is not currently possible!

When an ORM^O01 message is received, it is only checked for its syntax. The order positions, however, are not yet scheduled. An order confirmation takes place, in the reverse direction, with the same O01 messages.

The message transfer is carried out in this way because it is assumed that an order in medavis RIS, with regard to the examinations and appointment preferences, is still to be modified.

In the further development of the HL7 standard, the ORM^O01 message type has, among other things, been extended.

For transferring a diagnosis and other order details, please refer to the table below.

Order Detail	POS.	TABLE	Description / Example
Other risk factors	OBR-12		Free text
Clinical relevant Information	OBR-13		Free text
Type of transport	OBR-30	0124	
Reason for Study	OBR-31		Free text
Diagnosis	DG1		DG1|1||K92.2^Gastrointestinal haemorrhage,unspecified^I10||19981123152300|AD||||||||1.1|0004711
Status of pregnancy	OBX	0532	OBX|1|CE|^PREGNANCY STATUS^LN||Y
Week of pregnancy	OBX	0532	OBX|1|CE|^PREGNANCY STATUS^LN|25|Y
Status of diabetes	OBX	0532	OBX|1|CE|^DIABETES STATUS^LN||N
Metformingabe	OBX	0532	OBX|1|CE|^METFORMINGABE^LN|Y|Y
Pace maker	OBX	0532	OBX|1|CE|^PACE MAKER^LN||Y

Order Detail	POS.	TABLE	Description / Example
MRSA	OBX	0532	OBX|1|CE|^MRSA^LN||Y
Hepatitis	OBX	0532	OBX|1|CE|^HEPATITIS^LN||Y
Norovirus	OBX	0532	OBX|1|CE|^NOROVIRUS^LN||Y
Meningitis	OBX	0532	OBX|1|CE|^MENINGITIS^LN||Y
ESBL	OBX	0532	OBX|1|CE|^ESBL^LN||Y
METAL IMPLANT	OBX	0532	OBX|1|CE|^METAL IMPLANT^LN||Y
Anamnesis	OBX		Free text OBX|1|TX|^HISTORY OF PRESENT ILLNESS^LN|| Unknown anamnesis
Reason for Study	OBX		Free text OBX|1|TX|^MEDQUEST^LN||Unknown reason
Fachkunde-nachweis	OBX	0532	OBX|1|CE|^FACHKUNDENACHWEIS^LN||
Creatinine value	OBX		OBX|1|NM|^CREATININE^LN||0.600000
HIV risk	OBX	0532	OBX|1|CE|^HIV^LN||N
Hb	OBX	0532	OBX|1|NM|^HB^LN||9.5
INR	OBX	0532	OBX|1|NM|^INR^LN||11
Weight (kg)	OBX	0532	OBX|1|NM|^GEWICHT^LN||66
Size	OBX	0532	OBX|1|NM|^GROESSE^LN||166
Quick	OBX		OBX|1|NM|^QUICK^LN||104.000000
PTT	OBX		OBX|1|NM|^PTT^LN||29.000000
Thrombo	OBX		OBX|1|NM|^THROMBOZYTEN^LN||184000.000000
TSH	OBX		OBX|1|NM|^TSH^LN||0.590000
T3	OBX		OBX|1|NM|^T3^LN||0
T4	OBX		OBX|1|NM|^T4^LN||0
Thyroid hyper function	OBX	0532	OBX|1|CE|^THYROID HYPER FUNCTION^LN||N
Restricted renal function	OBX	0532	OBX|1|CE|^RESTRICTED RENAL FUNCTION^LN||N
Contrast agent allergy	OBX	0532	OBX|1|CE|^CONTRAST MEDIA ALLERGY^LN||N
Taking AE-inhibitors medication	OBX	0532	OBX|1|CE|^TAKING AE INHIBITORS^LN||N
Taking thyroid medication	OBX	0532	OBX|1|CE|^TAKING THYROID MEDICATION^LN||N
Comment			OBR / NTE pair

ORM	**General Order Message**
MSH	**Message Header**
[{NTE }]	Notes and Comments (for Header)
[PID	**Patient Identification**
[PD1]	Additional Identification
[{ NTE }]	Notes and Comments (for Patient ID)
[PV1	**Patient Visit**

```
ORM                          General Order Message
      [ PV2 ]                Patient Visit - Additional Information
     ]
     [ { IN1                 Insurance
      [ IN2 ]                Insurance Additional Information
      [ IN3 ]                Insurance Additional Information - Cert.
     }]
     [ GT1 ]                 Guarantor
     [{ AL1 }]               Allergy Information
]
{ ORC                        Common Order
      [ OBR                  Order Detail Segment
       [ { NTE } ]           Notes and Comments (for Detail)
       [ ZDS ]               Study Instance UID (non-standard)
       [ { OBX               Observation / Result
       [ { NTE } ]           Notes and Comments (for Results)
       } ]
      ]
      {[ CTI ]}              Clinical Trial Information
      [ BLG ]                Billing Segment
}
[ZF1]                        Main Financial Data (non-standard)
```

The following segments are currently evaluated: MSH, PID, PV1, IN1, IN2, ORC, OBR, NTE, OBX, DG1, ZDS and ZF1.

Example

```
MSH|^~\&|extSys||medavis RIS||20081124184044||ORM^O01|242|P|2.5|||AL|NE
PID|||432353|5423523^^^ASSAUT|Doe^John||19400316|M|||Bakerstreet 15^^NewYork
 ^^12345^US|09182119|555-1234|||NV|RK|||||New York|||US
PV1||I|3^024^2^IN5|N|||||||||||||44821^^^ASSAUT|||||||||||||||||||931004|||||199
 81120102600||||||44821
ORC|NW|110228^SYS||15405044^SYS|10||^^^^20081125183500^R||20081124183517|UNIUSER||9
 99^uni-user
OBR|1|110228^SYS||ctknee^CT Knee^KAT-MEDAVIS|110228||||||Warning|Comment||^^^^
 LEFT|||ap|||||||||||CART|Reason of study|
ORC|NW|110229^SYS||15405044^SYS|10||^^^^20081125183500^R||20081124183517|UNIUSER||9
 99^uni-user
OBR|2|110229^SYS||ctleg^CT Leg^KAT-MEDAVIS|110229||||||Warning|Comment||^^^^
 LEFT|||ap|||||||||||CART|Reason of study|
OBX|1|NM|^CREATININE^LN||0.600000||||||R
OBX|2|NM|^TSH^LN||0.590000|||||R DG1|1||K92.2^Gastrointestinal haemorrhage,
 unspecified^I10 ||19981123152300|AD|||||||||1.1|0004711
```

5.22. Order Response - ORR^O02

medavis RIS can receive order response messages with the order control code "NA" (Number assigned) in order to assign a placer order number (ORC-2) to an order previously only identified via a filler order number.

```
ORR              ORR Message
MSH              Message Header
MSA              Message Acknowledgement
[ { ERR } ]      Error
[ { NTE } ]      Notes and Comments (for Header)
[                --- RESPONSE begin
[                --- PATIENT begin
PID              Patient Identification
[ { NTE } ]      Notes and Comments (for Patient ID)
]                --- PATIENT end
{                --- ORDER begin
ORC              Common Order
< OBR |          [Order Detail Segment] OBR, etc.
RQD |
RQ1 |
RXO |
ODS |
ODT >
[ { NTE } ]      Notes and Comments (for Detail)
[ { CTI } ]      Clinical Trial Identification
}                --- ORDER end
]                --- RESPONSE end
```

The following segments are currently evaluated: MSH and ORC.

5.23. Report Import - ORU^R01

A report may be imported via an ORU^O01 message. This message can be sent by any system. The report will be linked to an existing order or examination. medavis RIS can import laboratory test reports and report documents.

5.23.1. Report document import

Report documents can be contained directly in OBX segments, or be specified as CDA documents contained in OBX segments. medavis RIS expects report data to be sent in the ED (Encapsulated Data) data structure with encoding (ED-4) "Base64" or "A" (no encoding).

5.23.2. Laboratory test report import

Laboratory test reports refer to the laboratory test master data in RIS. This catalogue needs to be known to sending systems prior to the communication. There are two implementations of laboratory report import, referred to as "legacy" and "new" in the following.

Legacy Integration

For laboratory test reports, the observation identifier in OBX-3 is compared to medavis RIS master data. OBX-3.1 refers to a code specified in this master data. The information displayed in medavis RIS includes the following: Observation value (OBX-5), unit (OBX-6), reference range (OBX-7), date/time (OBX-14) and description (OBX-3.2). Notes and comments in NTE segments are *not supported*.

New Integration

The observation identifier in OBX-3 must be coded according to a value set imported by medavis RIS ahead of time. Codes not present in that value set are discarded and thus not visible to RIS users. The information displayed in medavis RIS includes the following: Observation identifier (OBX-3), value (OBX-5), unit (OBX-6), reference range (OBX-7), result status (OBX-11) and date/time (OBX-14). There can be any number of NTE segments containing notes (in NTE-3) for each OBX segment.

5.23.3. Plaintext (ANSI) report import

Report documents can be imported as plaintext (ANSI) into the medavis RIS solution. These documents are linked to the according order automatically and are read-only. If no order exists, the reports are linked to the according examination. In this case, OBR-3 is evaluated - which must be the same as in the outgoing ORM message (e.g. 'E2435^MEDAVIS'). The reporting physician can be configured. To be displayed correctly in medavis RIS, the following information is required: Result Status (OBR-25): 'P', 'F' or 'C', Report Release Date (OBR-32.3), Reporting Physician (OBR-32.1.1/OBR-32.1.9 or configured dummy physician), OBX-3.1: 'SR Text', OBX-3.3: 'medavisObservationIdentifiers', OBX-5.2: 'TEXT', OBX-5.4: 'A', Report Data (OBX-5.5).

5.23.4. AI report

The RIS solution can process reports of an AI analysis and import the results. The results are transmitted as an observation in OBX, the assignment takes place on study level. A study is identified preferably by the StudyInstanceUID (ZDS-1) or alternatively the AccessionNumber (OBR-18, cave: an AccessionNumber is not necessarily unique, unlike the StudyInstanceUID), one of both are required. The OBX contains the observation code of the analysis in OBX-3 (required, preferably a code in OBX-3.1 and system in OBX-3.3, or at least a text in OBX-3.2). A finding is indicated within OBX-5 (finding/no finding/doubt/not available). An alert can be indicated with OBX-8, supported values are N (normal) and A (abnormal). OBX-9 can be used for the probability of the result being true and must be between 0 and 1. Further, required fields are: OBX-11 (supported result status are 'I', 'F' and 'X'), OBX-14 date time of the observation, OBX-15.2 the AI application name (and version), OBX-23 the AI application manufacturer/vendor. The AI application can request a priority using TQ1-9 with 'S' (highest), 'A', and 'R' (lowest). The overall status is indicated with OBR-25. OBX can have accompanying notes as NTE.

An ORU^R01 message is composed of the following segments:

ORU	**Observation Results (Unsolicited)**
MSH	**Message Header**
[{ SFT }]	Software Segment
{ PID	**Patient Identification**
[PD1]	Additional Identification
[{ NTE }]	Notes and Comments (for Patient ID)

```
ORU                       Observation Results (Unsolicited)
    [PV1                  Patient Visit
     [ PV2 ]              Patient Visit - Additional Information
    ]
    {[ ORC ]              Common Order
     OBR                  Order Detail Segment
      [ { NTE } ]         Notes and Comments (for Detail)
      [ { OBX             Observation / Result
       [ { NTE } ]        Notes and Comments (for Results)
      } ]
      {[ CTI ]}           Clinical Trial Information
    }
}
[ DSC ]                   Continuation Pointer
```

The following segments are currently evaluated: MSH, PID, PV1, ORC, OBR and multiple OBX.

Example

```
MSH|^~\&|ERR_SYS||medavis RIS||20081124101844||ORU^R01|4|P|2.5|||AL|NE|
PID|||5414354^^^ASSAUT^PI||Doe^John^^^||19701025|M|
 ||Bakerstreet 34^^New York^^12345^US||555-1234||german
PV1||I|P1^22^4^CHI2|||||6^RefPhys^Mr.||||||||||3424222^^^ASSAUT^VN|||||||||||||||
 |||||||||20081123101200|20081124101000|||||V
ORC|SC|49629^extSys|40764^MEDAVIS|15404276^extSys|IP||1^once^^20081124110725^200811
 24111725^R|||132^Assistant medical technician^Mrs.^^^^^^^^^PN||||555-1234
OBR|1|49629^extSys|40764^MEDAVIS|ctknee^CTKnee^MEDAVIS|||20081124110725|200811241117
 25|||||||^^^^LEFT|||ap|CT1|||||CT|F||1^once^^20081124110725^20081124111725^R|||WALK
 |Reason of Study|13&Physician&Clara&&&Dr. med.|12&First Physician&John&&&Dr. med|
 Technician,Mrs.||20081124110000||||||N|^^^^CT1|ctknee^CT Knee^MEDAVIS|||ctknee^CT
 Knee^MEDAVIS
OBX|1|HD|DOC-ID^external Doc ID||3409||||||F
OBX|2|HD|^Study Instance UID|1|1.2.276.0.37.1.3.199907.123||||||F
OBX|3|TX|^ST Text||Radiological Drs. med. Joe and Smith\X0D\\X0A\Group Practice71
 Main St., 76133 Karlstown\X0D\\X0A\KarlstownPhone:
 0123/456789\X0D\\X0A\\X0D\\X0A\EmergencyOutpatient\X0D\\X0A\Surgery\X0D\\X0A\In-
 house\X0D\\X0A\\X0D\\X0A\ Karlstown,24.11.2008 / cr\X0D\\X0A\\X0D\\X0A\Thank you
 for referring your patient to us\X0D\\X0A\\X0D\\X0A\Doe, John\X0D\\X0A\Date of
 Birth 25.10.1970\X0D\\X0A\Resident in: 76133 Karlstown\X0D\\X0A\\X0D\\X0A\Clinical
 details:\X0D\\X0A\\X0D\\X0A\Trauma\X0D\\X0A\\X0D\\X0A\Computerthomography of
 knee\X0D\\X0A\\X0D\\X0A\No evidence of fracture\X0D\\X0A\\X0D\\X0A\Yours
 sincerely\X0D\\X0A\X0D\\X0A\Dr. med. John Doe||||||F
```

Example laboratory report (legacy)

```
MSH|^~\&|LAB|LAB|medavis RIS|MEDAVIS|20170522141438||ORU^R01|1123|P|2.3.1|||AL|NE||8859/1
PID|1||334455753^^^MEDAVIS^PI||TEST^Labor||19700101|M|||Bannwaldallee 60^^^^^D||||||||||||||||||N
PV1|1|I|ST1^Raum1^Bett1^Chirurgie|R||^^^^^^andereChirurgie^^|||DocId1^Musterdoc|||||||||44|
 |K|||||||||||||||||ABC|||||20110818080300|||||||A
OBR|1|27407572||tsh^freies T3|||20170517160200|20170517160224|||||20170517160204||||||||||P
OBX|1|ST|tsh^freies T3||14,97|ng/ml|>bis 78,0 ng/ml (negativ)|||||||20140311082517||||20140311082517
OBR|2|27407572||cal^freies T4|||20170517160200|20170517160224|||||20170517160204||||||||||P
OBX|2|ST|cal^freies T3||103,00|%|>70 -130 %|||||||20140311082526||||20140311082526
```

Example laboratory report (new)

```
MSH|^~\&|LAB||medavis RIS||20180411002036||ORU^R01|b5674148.000022|P|2.5.1|||AL|NE
PID|||5414354^^^ASSAUT^PI||Doe^John^^^|
 |19701025|M|||Bakerstreet 34^^New York^^12345^US||555-1234||german
PV1||I|P1^22^4^CHI2|||||6^RefPhys^Mr.||||||||||3424222^^^ASSAUT^VN|||||||||||||||
 |||||||||20081123101200|20081124101000||||||V
ORC|RE|201850650052^LAB|50650052^MEDAVIS
OBR|1|201850650052^LAB|50650052^MEDAVIS|zRBC^Erythrozyten^SWL|||20180410151300|||||||||||||||||F
OBX|1|RP|zRBC^Erythrozyten^SWL||3.60|T/L|3,85 - 5,20|L|||P|||20180410152300
OBX|2|RP|zHB^Hämoglobin^SWL||10.1|g/dL|11,8 - 15,8|L|||R|||20180410152300
NTE|1||Anämie normochrom, normozytär
OBX|3|RP|zHK^Hämatokrit^SWL||31.8|%|35 - 45,5|L|||C|||20180410152300
OBX|4|RP|zMCV^MCV (mittleres Zellvolumen)^SWL||88.3|fL|80 - 101||||F|||20180410152300
OBX|5|RP|zMCH^MCH (mittleres zelluläres Hämoglobin)^SWL||28.1|pg|27 - 34||||P|||20180410152300
OBX|6|RP|zMCHC^MCHC (mittlere zelluläre Hb-Konzentration)^SWL|
 |31.8|g/dL|31,5 - 36||||P|||20180410152300
OBX|7|RP|zRDWREL^RDW (Erythrozytenverteilungsbreite) -CV^SWL||15.9|%|11,5 - 15|H|||P|||20180410152300
OBX|8|RP|zPLT^Thrombozyten^SWL||174|G/L|160 - 370||||P|||20180410152300
OBX|9|RP|zMPV^MPV (Mittleres Thrombozytenvolumen)^SWL||12.0|fL|9,4 - 12,5||||P|||20180410152300
OBX|10|RP|zWBC^Leukozyten^SWL||7.48|G/L|3,60 - 10,50||||P|||20180410152300
```

Example CDA Report

```
MSH|^~\&|syngo.via|syngo|medavis|MEDAVIS|201507210930||ORU^R01|3|P|2.3.1||||||UNICODE UTF-8
PID|1||1^^^DOMAIN-A||SD_AS+_CarotidNeuroDSA^Australia||19280619|F
ORC|RE
OBR|1|||1.3.12.2.1107.5.99.2.9596.30000008081600404262500014328^&Head Angio,
 ^StudyInstanceUID^65d459be-7e1b-48d0-89d0-4f42423e196d^^ReportUID|
 ||20080702155037||||||||||||1|||20150721093054||CT|P
OBX|1|CE|&IMP|1|||||||P
OBX|2|FT|&BODY^txt|2|---\.br\Diagnostic Imaging Report\.br\---abbreviated---||||||P
OBX|3|FT|&BODY|3|||||||P
OBX|4|ED|18748-4^Diagnostic Imaging Report^LN|1|
 ^application^hl7-v3+xml^A^<?xml version="1.0" encoding="UTF-8"?>
 <ClinicalDocument xmlns="urn:hl7-org:v3" xmlns:voc="urn:hl7-org:v3/voc"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <!--abbreviated-->
 </ClinicalDocument>||||||P
```

CDA Import: The study instance UID is used by medavis RIS to link the report to an examination. The OBX with the CDA is marked with a LOINC code in OBX-3 (observation id) "18748-4^Diagnostic Imaging Report^LN".

Plaintext (ANSI) import

```
MSH|^~\&|DocSource|DocSource|medavis|MEDAVIS|202306010930||ORU^R01|3|P|2.3.1||||||UNICODE UTF-8
PID||443387|248118^^^extSystem^^extSystem|133523|Abram^Gavyn|Amani|19901028|M||2028-9|Beerstrasse 76
    ^^Berlin^^ZXLEF^DE|||0049-3096711552||M|||TF2O0TALETW3PK6O
ORC|RE
OBR|1|58996^extSys|221132^MEDAVIS|CT-FULLBODY^CT-FullBody^medavis-RIS|||20080702155037||||||
    Hypersensitive to mayonnaise|||||||||20150721093054||CT|P|||||||
    2&Schmitt&Georg&&&Dr.&&&MEDAVIS^^20230525135909
OBX|1|ED|SR Text^^medavisObservationIdentifiers||
    ^TEXT^^A^\X0D\\X0A\ xx\X0D\\X0A\\X0D\\X0A\ \T\#xa0;\X0D\\X0A\\X0D\\X0A\ zz
```

Example AI report

```
MSH|^~\&|AI|AI|medavis RIS|MEDAVIS|20240226180000||ORU^R01|1234|P|2.5|||||ISO8859-1
PID|||5414354^^^extSys^PI||Doe^John^^^||19701025|M|||Bannwaldallee 60^^Karlsruhe^^76185^DE
PV1||I|P1^22^4^CHI2|||||6^RefPhys^Mr.||||||||||3424222^^^ASSAUT^VN|||||||||||||||
 ||||||||20081123101200|20081124101000|||||V
OBR|1|58996^extSys|221132^MEDAVIS|CT-FULLBODY^CT-FullBody^medavis-RIS|||20240226180000|
 ||||||||||||||||F
TQ1|||||||||R
OBX|1|ST|125605004^Fracture of bone^SCT||finding|||A|0.94354565468||F|||20240226180000|
 ^AI software 1.0.2||||20240226180000||||AI vendor
NTE|1|author|some comment
NTE|2|author|another comment
ZDS|1.2.276.0.37.1.3.202402.123
```

5.24. Patient Demographics Query – QBP^Q22

A Patient Demographics Query is run using a QBP^Q22 message. This message can be sent by any system which holds ADT-information.

In the RCP segment, it is possible to query the following fields: PID.3, PID.5, PID.7, PID.8, PID.11, PID.18 (and any possible combinations), and to set the number of datasets to be submitted per continuation. The DSC segment allows a continuation pointer to be submitted. It is only of interest from the first continuation on.

A QBP^Q22 message is therefore composed of the following segments:

QBP^Q22^QBP Q21	Query By Parameter
MSH	**Message Header**
[{SFT}]	Software Segment
[UAC]	User Authentication Credentials
QPD	**Query Parameter Definition Segment**
RCP	**Response Control Parameters**
[DSC]	**Continuation Pointer**

The following segments are currently evaluated: MSH, QPD, RCP and DSC.

Example

```
MSH|^~\&|IMPORTER|IMPORTER|MEDAVIS|RIS|20090730173450||QBP^Q22|1248968090280|P|2.5||
 |AL|NE||8859/1
QPD|RY_PDQ_1001^Query By Name^MEDAVIS|MEDAVIS PDQ Query|@PID.5.1.1^Doe RCP|I
```

Possible Reply

```
MSH|^~\&|MEDAVIS|RIS|IMPORTER|IMPORTER|20090730173450||RSP^K22|1248968090280|P|2.5||
 |AL|NE||8859/1
MSA|AA|1248968090280
QAK|@PID.5.1.1^test|OK
QPD|RY_PDQ_1001^Query By Name^MEDDAVIS|MEDAVIS PDQ Query|@PID.5.1.1^test
PID|||1001362||Doe^John||19810101|U|||^^^^^DE
PID|||1001368||Doe^Catherine||19810921|M|||^^^^^DE
```

5.25. Patient Demographics and Visit Query – QBP^ZV1

In addition to the Patient Demographics Query, this message type submits a query for a combination of patient and episode.

In the RCP segment it is possible to query the following fields (in addition to the aforementioned PID-fields): PV1.2, PV1.3, PV1.7, PV1.8, PV1.9, PV1.10, PV1.17, PV1.19 (and any possible combinations), and to set the number of datasets to be submitted per continuation. The DSC segment enables a continuation pointer to be submitted. It is only of interest from the first continuation on.

Warning: This message type is not a part of the official HL7 standard. It is an IHE (Integrating the Healthcare Enterprises) extension.

A QBP^ZV1 message is therefore composed of the following segments:

QBP^ZV1^QBP ZV1	Query By Parameter
MSH	Message Header
QPD	Query Parameter Definition Segment
RCP	Response Control Parameters
[DSC]	Continuation Pointer

The following segments are currently evaluated: MSH, QPD, RCP and DSC.

Example

```
MSH|^~\&|VHIS|VHIS|MEDAVIS RIS|MEDAVIS|20160112134341||
QBP^ZV1|1248968090280|P|2.5|||AL|NE||8859/1
QPD|RY_PDQ_1001^Query By Name^MEDAVIS|MEDAVIS PDQ Query|@PV1.8.2^Musterarzt
RCP|I
```

Possible Reply

```
MSH|^~\&|MEDAVIS
 RIS|MEDAVIS|VHIS|VHIS|20160112134342||ACK|1248968090281|P|2.5|||AL|NE||8859/1
MSA|AA|1248968090281
QAK|@PV1.8.2^Musterarzt|OK
QPD|RY_PDQ_1001^Query By Name^MEDAVIS|MEDAVIS PDQ Query|@PV1.8.2^Musterarzt
PID|||4||Josef^Cortez||19840214|M|||Borobudur 73^^Jakarta^^2YKR0A^ID
PV1||R|T|||||2^Musterarzt^Peter^^^Dr. med.|||||||||||KIS17362^^^^VN
PID|||962||Bradley^Jorden||19360105|M|||Eiffel Tower 5^^Paris^^I9PR^FR
PV1||O|E|||||2^Musterarzt^Peter^^^Dr. med.|||||||||2^Musterarzt^Peter^^^Dr.
 med.||KIS02952^^^^VN
PID|||967||Jan^Derick||19840130|M|||Dirgantara 2^^Malang^^2C5EAJ^ID
PV1||R|E|||||2^Musterarzt^Peter^^^Dr. med.|||||||||||KIS68625^^^^VN
```

5.26. Patient Query - QRY^A19

Patient query messages QRY^A19 can be used to query patient related information. Additionally, report documents can be retrieved. The medavis RIS implementation of this message is order-centric. This means that information can only be identified via the medavis RIS filler id for orders (QRF-1 or, for reports, QRF-5).

The Who Subject Filter (QRD-8) should specify a patient id. Wildcards in the Who Subject Filter are not supported.

The What Subject Filter (QRD-9) supports the following values:

Value	Description
APN	Patient Name Lookup
RES	Result
DEM	Demographics

A QRY^A19 message is therefore composed of the following segments:

QRY	QRY Message
MSH	**Message Header**
[{ SFT }]	Software Segment
[UAC]	User Authentication Credentials
QPD	**Query Parameter Definition Segment**
[QRF]	**Query Filter**

The following segments are currently evaluated: MSH, QRD and QRF.

Example

```
MSH|^~\&|KIS|KIS|MEDAVIS||201108180804||QRY^A19|1|P|2.5
QRD|200811111016|R|I|Q1004|||1^RD|10000437363|DEM||
QRF|EKG||200801010000
```

Possible Reply

```
MSH|^~\&|MEDAVIS||KIS|KIS|20150914132123||DSR^A19|1|P|2.5
MSA|AA|1
QRD|200811111016|R|I|Q1004|||1^RD|10000437363|DEM
PID|1|4712^^^MEDAVIS^PI|4712^^^MEDAVIS^PI||Deckenhauer^Franzl^^^Dr.||19501101|M||
 |Goethestr.^^Musterstadt^^12345^D||294386~343434^^CP|294386~343434^^CP||||||||||
 |||||N10
IN1|1||0000^^^^NII~00000^^^^NIIP||||||||||||||||||||||||||||||||||^TP
```

5.27. Add Patient Accounts - BAR^P01

Patient accounting ids can be added by accounting or financial systems using BAR^P01 messages. medavis RIS can hold diagnosis, guarantor and insurance data for accounts. A BAR^P01 is composed of the following segments:

QRY	QRY Message
MSH	**Message Header**
[{ SFT }]	Software Segment
PID	**Patient Identification**
[PD1]	Additional Identification

QRY	QRY Message
[{ ROL }]	Role
{	VISIT begin
[PV1]	Patient Visit
[PV2]	Patient Visit - Additional Information
[{ ROL }]	Role
[{ DB1 }]	Disability Information
[{ OBX }]	Observation / Result
[{ AL1 }]	Allergy Information
[{ DG1 }]	**Diagnosis Information**
[DRG]	Diagnosis Related Group
[{	PROCEDURE begin
PR1	Procedures
[{ ROL }]	Role
}]	PROCEDURE end
[{ GT1 }]	**Guarantor**
[{ NK1 }]	Next of Kin/Associated Parties
[{	INSURANCE begin
IN1	**Insurance**
[IN2]	Insurance Additional Information
[IN3]	Insurance Additional Information - Cert.
[ROL]	Role
}]	INSURANCE end
[ACC]	Accident Information
[UB1]	Universal Bill Information
[UB2]	Universal Bill 92 Information
}	VISIT end

The following segments are currently evaluated: MSH, PID, DG1, GT1 and IN1.

5.28. Update Patient Account - BAR^P05

The P05 event is received when an existing account is being updated. medavis RIS can update diagnosis, guarantor and insurance data for accounts. A BAR^P05 is composed of the following segments:

BAR	Message
MSH	**Message Header**
[{ SFT }]	Software Segment
EVN	Event Type
PID	**Patient Identification**
[PD1]	Additional Identification
[{ ROL }]	Role
{	--- VISIT begin
[PV1]	Patient Visit
[PV2]	Patient Visit - Additional Information

BAR	Message
[{ ROL }]	Role
[{ DB1 }]	Disability Information
[{ OBX }]	Observation / Result
[{ AL1 }]	Allergy Information
[{ DG1 }]	**Diagnosis Information**
[DRG]	Diagnosis Related Group
[{	--- PROCEDURE begin
PR1	Procedures
[{ ROL }]	Role
}]	--- PROCEDURE end
[{ GT1 }]	**Guarantor**
[{ NK1 }]	Next of Kin/Associated Parties
[{	--- INSURANCE begin
IN1	**Insurance**
[IN2]	Insurance Additional Information
[{ IN3 }]	Insurance Additional Information - Cert.
[{ ROL }]	Role
}]	--- INSURANCE end
[ACC]	Accident Information
[UB1]	Universal Bill Information
[UB2]	Universal Bill 92 Information
[ABS]	Abstract
[{ BLC }]	Blood Code
[RMI]	Risk Management Incident
}	--- VISIT end

The following segments are currently evaluated: MSH, PID, DG1, GT1 and IN1.

5.29. End Patient Account - BAR^P06

BAR^P06 messages can be used to end accounts previously created. A BAR^P06 is composed of the following segments:

BAR	Message
MSH	**Message Header**
[{ SFT }]	Software Segment
[UAC]	User Authentication Credential
EVN	Event Type
{	--- PATIENT begin
PID	**Patient Identification**
[PV1]	Patient Visit
}	--- PATIENT end

The following segments are currently evaluated: MSH and PID.

5.30. Post Detail Financial Transaction - DFT^P03

Typically, medavis RIS does not receive charge messages. However, information about predefined laboratory tests or therapy services identified by FT1-7 can be referenced. The medavis RIS laboratory test (or examination substep) catalogue must be exchanged with the sending system before the interface communication is started.

The transaction ID for a charged service (transaction type FT1-6 = "CG") can be specified in FT1-2. Given a transaction ID, medavis RIS also supports canceling of charged transactions using the transaction type (FT1-6) "CD".

A DFT^P03 is composed of the following segments:

BAR	Message
MSH	**Message Header**
[{ SFT }]	Software Segment
[UAC]	User Authentication Credential
EVN	**Event Type**
PID	**Patient Identification**
[PD1]	Additional Identification
[{ ROL }]	Role
[PV1]	**Patient Visit**
[PV2]	Patient Visit - Additional Information
[{ ROL }]	Role
[{ DB1 }]	Disability Information
[{	--- COMMON ORDER begin
[ORC]	Common Order (across all FT1s)
[{	--- TIMING QUANTITY begin
TQ1	Timing/Quantity
TQ2	Timing/Quantity Order Sequence
}]	--- TIMING QUANTITY end
[	--- ORDER begin
OBR	Order Detail Segment
[{ NTE }]	Notes and Comments (on Order Detail)
]	--- ORDER end
[	--- OBSERVATION begin
[{ OBX }]	Observation / Result
[{ NTE }]	Notes and Comments (on Result)
[	--- OBSERVATION end
}]	--- COMMON ORDER end
{	--- FINANCIAL begin
FT1	**Financial Transaction**
[{ NTE }]	Notes and Comments (on line item - FT1 - above)
[{	--- FINANCIAL PROCEDURE begin
PR1	Procedure
[{ ROL }]	Role
}]	--- FINANCIAL PROCEDURE end
[{	--- FINANCIAL COMMON ORDER begin

BAR	Message
[ORC]	Common Order (specific to above FT1)
[{	--- FINANCIAL TIMING QUANTITY begin
TQ1	Timing/Quantity
[{ TQ2 }]	Timing/Quantity Order Sequence
]}	--- FINANCIAL TIMING QUANTITY end
[	--- FINANCIAL ORDER begin
OBR	Order Detail Segment
[{ NTE }]	Notes and Comments (on Order Detail)
]	--- FINANCIAL ORDER end
[{	--- FINANCIAL OBSERVATION begin
OBX	Observations / Result
[{ NTE }]	Notes and Comments (on Result)
}]	--- FINANCIAL OBSERVATION end
}]	--- FINANCIAL COMMON ORDER end
}	--- FINANCIAL end
[{ DG1 }]	Diagnosis Information (global across all FT1s)
[DRG]	Diagnosis Related Group
[GT1]	Diagnosis Related Group (global across all FT1s)
[{	--- INSURANCE begin
IN1	Insurance (global across all FT1s)
[IN2]	Insurance Additional Information
[{ IN3 }]	Insurance Additional Information - Cert.
[{ ROL }]	Role
}]	--- INSURANCE end
[ACC]	Accident Information

Example of a "Charge" transaction

```
MSH|^~\&|LAB|LAB|medavis|medavis|201008160739||DFT^P03|20100816073949799250|P|2.4|||
|||8859/1
EVN|P03|20100816073946
PID|1||4711^^^DOMAIN-A||Schuhmacher^Petra||19550629|F|||Sesamweg Weg 1 ^^Hamburg^^
 12345^D||0721929100
PV1||O|||||40^Bauermeister^M.||||||||||5000544
FT1|1|62991||201008160752||CG|RTHBOES>2|Bestrahlung mit mehr als 2 Feldern
 EBM||1|0,00|0,00||||^Your center- RO||O|C50.50 |^Marx^Heinz||0,00
DG1|1|I9|C50.5 00|Breast, lower-outer quadrant
```

Example of a "Credit" transaction

```
MSH|^~\&|LAB|LAB|medavis|medavis|201008160739||DFT^P03|20100817073949799250|P|2.4|||
|||8859/1
EVN|P03|20100816073946
PID|1||4711^^^DOMAIN-A||Schuhmacher^Petra||19550629|F|||Sesamweg Weg 1 ^^Hamburg^^
 12345^D||0721929100
PV1||O|||||40^Bauermeister^M.||||||||||5000544
FT1|1|62991||201008160752||CD|RTHBOES>2|Bestrahlung mit mehr als 2 Feldern
 EBM||1|0,00|0,00||||^Your center- RO||O|C50.50 |^Marx^Heinz||0,00
DG1|1|I9|C50.5 00|Breast, lower-outer quadrant
```

The following segments are currently evaluated: MSH, PID and FT1.

5.31. Original Document Notification and Content - MDM^T02

Multimedia documents can be imported to medavis RIS using MDM^T02 messages. The document data is expected by reference, in OBX segments with observation value type "RP". The mimetype of documents needs to be specified (OBX-5.3/OBX-5.4).

A MDM^T02 message is composed of the following segments:

MDM	Message
MSH	**Message Header**
[{ SFT }]	Software Segment
[UAC]	User Authentication Credential
EVN	Event Type
PID	**Patient Identification**
PV1	Patient Visit
[{	--- COMMON_ORDER begin
[ORC]	**Common Order segment**
[{	--- TIMING begin
TQ1	Timing/Quantity
[{ TQ2 }]	Timing/Quantity Order Sequence
}]	--- TIMING end
OBR	Observation Request
[{ NTE }]	Notes and Comments (on Observation Request)
}]	--- COMMON_ORDER end
TXA	Document Notification
{	
OBX	**Observation/Result (one or more required)**
[{NTE}]	Notes and comments about the observation (OBX)
}	

Example

```
MSH|^~\&|KIS|KIS|medavis|MEDAVIS|20111025140328.9526+0200||MDM^T02^MDM_T02|1c3a4497-
 24a5-2676-a|P|2.5|||||8859/ 1 PID|1||4711^^^DOMAIN-A||Deckenhauer^Franzl^^^
 Dr.||19501101|M|||Goethestr.10 ^^^^12345^D|42|294386^^^^^^^^^^^294386||D|O|
 AGN|43|||||||D||D
PV1|1|I|ST1^Raum1^Bett1^Chirurgie|R||^^^^^^andereChirurgie^^|||DocId1^Musterdoc||||
 |||||44||K|||||||||||||||||ABC|||||20110818080300|||||||A
ORC||84653684^P60||1140|CM||1^once^^^20120229163700^R|||2^medavis^GmbH^Dr.^^^^^^^^^PN
OBR|1|84653684^P60||5103^^medavis-RIS^chea^CT Head|||20120229160700|20120229163700
 ||||||||||U-ID241|CT|||20120229164500||CT|C||1^o nce^^^20120229163700^R|||WALK||
 4&Middle&Steve&&Dr.|4&Middle&Steve&&Dr.|GmbH medavis Dr.||20120229160625
||||||N|^^^^CT||||chea^^medavis-RIS
TXA|1|other||||20130828151700||||||1235^DOC-
 SOURCE||demo1500624^PLACER|780^PLACERGRP|Deckenbauer.png|LA
OBX|1|RP|^Document Reference Pointer||/files/image.png^&http://localhost:8080&URI^
 image^png
OBX|2|ST|^Document Description|1|What a funny image||||||||||4^Middle^Steve^Dr.^^^^^^^^^PN
```

The following segments are currently evaluated: MSH, PID, ORC, TXA and multiple OBX.

5.32. Document Cancel Notification - MDM^T11

Non-medical multimedia documents added using MDM^T02 messages can be cancelled using MDM^T11 messages. If the document can be identified, it will be deleted from the medavis RIS multimedia repository.

A MDM^T11 message is composed of the following segments:

MDM	Message
MSH	**Message Header**
[{ SFT }]	Software Segment
[UAC]	User Authentication Credential
EVN	Event Type
PID	Patient Identification
PV1	Patient Visit
[{	--- COMMON_ORDER begin
[ORC]	Common Order segment
[{	--- TIMING begin
TQ1	Timing/Quantity
[{ TQ2 }]	Timing/Quantity Order Sequence
}]	--- TIMING end
OBR	Observation Request
[{ NTE }]	Notes and Comments (on Observation Request)
}]	--- COMMON_ORDER end
TXA	Document Notification

Example

```
MSH|^~\&|KIS|KIS|medavis|MEDAVIS|20111025140328.9526+0200||MDM^T11^MDM_T11|
 1c3a449724 a5-2676-a|P|2.5||||||8859/
EVN|T11|20111025140328.9526+0200|||||KIS
TXA|1|other||||20130828151700||||||123^KIS|
```

5.33. Master File - Staff/Practitioner Message - MFN^M02

Messages of type MFN^M02 can be used to import and update referrer and user master data. The type of master file is identified using STF-39 (see User Table 0771). A "Referrer" type can be further specified as "internal" or "external".

Allowed STF-39
User
Referrer
internal
external

Only the File Level Event Code (STF-3) "UPD" (Update) is supported.

A MFN^M02 message is composed of the following segments:

MFN	Message
MSH	**Message Header**
[{ SFT }]	Software Segment
[UAC]	User Authentication Credential
MFI	**Master File Identification**
{	--- MF_STAFF begin
MFE	**Master File Entry**
STF	**Staff Identification**
[{ PRA }]	**Practitioner Detail**
[{ ORG }]	Practitioner Organization Unit Segment
[{ AFF }]	Professional Affiliation
[{ LAN }]	Language Detail
[{ EDU }]	Educational Detail
[{ CER }]	Certificate Detail
[{ NTE }]	Notes and Comments for the STF
}	--- MF_STAFF end

Example

```
MSH|^~\&|KIS|KIS|MEDAVIS||201412240804||MFN^M02|1|P|2.5
MFI|STF||UPD|||NE
MFE|MAD|||123^^MasterDataDomain|CWE||
STF|123^^MasterDataDomain|123^^^MasterDataDomain~99999^^^MEDAVIS_LANR~12345^^^MEDAVIS_BSNR~1111^^^MEDAVIS_NBSN
 Muster^^^^^A||||^Hausarztpraxis~^Dr. Max Musterarzt||0721543210^^PH~0721543211^^
PH~0721543219^^FX~em@ai.la^^Test|Rainbow Road 2 ^^Karlsruhe^BW^76131^DE
|||||||||||||||||||||||||Referrer~external
```

5.34. Test/Observation (Categorical) Master File - MFN^M09

MFN^M09 messages can be used to import/update examination master data in medavis RIS.

Only the File Level Event Code (STF-3) "UPD" (Update) is supported.

A MFN^M09 message is composed of the following segments:

MFN	Message
MSH	**Message Header**
[{ SFT }]	Software Segment
[UAC]	User Authentication Credential
MFI	**Master File Identification**
{	--- MF_TEST_CATEGORICAL begin
MFE	**Master File Entry**
OM1	**General Segment (Fields That Apply to Most Observations)**
[	--- MF_TEST_CAT_DETAIL begin
OM3	Categorical Service/Test/Observation Segment
[{ OM4 }]	Observations that Require Specimen
ZM1	**Additional examination master data**
[	--- MF_TEST_CAT_DETAIL end
}	--- MF_TEST_CATEGORICAL end

Example

```
MSH|^~\&|KIS|KIS|MEDAVIS||201412240804||MFN^M09|1|P|2.5
MFI|OMB||UPD|||NE
MFE|MAD|||mrabeckbein^MRA Becken Bein^MEDAVIS|CWE||
OM1|1|mrabeckbein^MRA Becken Bein^MEDAVIS|||||mrabeckbein|||MRA Becken Bein|MRT-
 Angiographie des Abdomens, Beckens, der Beine und
 Füsse|Y||Becken|||||||||30||||||||||||Vorher ruhig stellen||||||||Kopf|MR
ZM1|examKind|Label|3|l|n
```

5.35. Notification of New Appointment Booking - SIU^S12

A SIU^S12 message can be used to schedule a new quick appointment (not obligatory) in medavis RIS. When the patient arrives later on, the RIS user can replace the quick appointment with the actual appointment.

The patient must be created first by an ADT message. Inbound SIU messages are forwarded to outbound SIU actors.

Information about the patient's insurance coverage for the appointment (preliminary) can be received in an OBX segment. The segment must specify the Observation Identifier OBX-3.1 "APPOINTMENT-TYPE" of code system OBX-3.3 "medavisObservationIdentifiers" and Value Type OBX 2 `CWE`. The value is received in OBX-5.

```
OBX|1|CWE|APPOINTMENT-TYPE^^medavisObservationIdentifiers||PKV^^medavisAppointmentCoverageTypes
```

Identifier (OBX-5.1)	Name of Coding System (OBX-5.3)	Meaning
PKV	medavisAppointmentCoverageTypes	Private health insurance
GKV	medavisAppointmentCoverageTypes	Public health insurance

A SIU^S12 message is composed of the following segments:

SIU	Message
MSH	**Message Header**
SCH	**Schedule Activity Information**
[{ TQ1 }]	**Timing/Quantity**
[{ NTE }]	Notes and Comments for the SCH
[{	--- PATIENT begin
PID	**Patient Identification**
[PD1]	Additional Demographics
[PV1]	Patient Visit
[PV2]	Patient Visit - Additional Information
[{ OBX }]	**Observation / Result**
[{ DG1 }]	Diagnosis Information
}]	--- PATIENT end
{	--- RESOURCES begin
RGS	Resource Group Segment
[{	--- SERVICE begin
AIS	**Appointment Information - Service**
[{ NTE }]	**Notes and Comments for the AIS**
]}	--- SERVICE end
[{	--- GENERAL_RESOURCE begin
AIG	Appointment Information - General Resource
[{ NTE }]	Notes and Comments for the AIG
]}	--- GENERAL_RESOURCE end
[{	--- LOCATION_RESOURCE begin
AIL	**Appointment Information - Location Resource**
[{ NTE }]	Notes and Comments for the AIL
]}	--- LOCATION_RESOURCE end
[{	--- PERSONNEL_RESOURCE begin
AIP	Appointment Information - Personnel Resource
[{ NTE }]	Notes and Comments for the AIP
]}	--- PERSONNEL_RESOURCE end

SIU	Message
}	--- RESOURCES end

Example

```
MSH|^~\&|QUICK|QUICK|medavis|MEDAVIS|20111025140328||SIU^S12||P|2.5|1234567890||||8859/1
SCH|identifier21^namespaceId
TQ1|1||||||20220218101001|20220218104001
NTE|1||CT Thorax|EXAM-DESCRIPTION
NTE|2||Some additional description of the appointment.|BOOKING-DETAILS
PID|1||334455743^^^MEDAVIS
OBX|1|CWE|APPOINTMENT-TYPE^Terminart^medavisObservationIdentifiers||PKV^^medavisAppointmentCoverageTypes
AIS|1||chea^^MEDAVIS
AIL|1||^12
```

5.36. Notification of Appointment Rescheduling - SIU^S13

Existing appointments can be rescheduled using SIU^S13 messages. Appointments created by medavis RIS can be rescheduled by an external SIU source, if SCH-1 contains 'MEDAVIS' domain and corresponding ID.

A SIU^S13 message is composed of the following segments:

SIU	Message
MSH	**Message Header**
SCH	**Schedule Activity Information**
[{ TQ1 }]	**Timing/Quantity**
[{ NTE }]	Notes and Comments for the SCH
[{	--- PATIENT begin
PID	Patient Identification
[PD1]	Additional Demographics
[PV1]	Patient Visit
[PV2]	Patient Visit - Additional Information
[{ OBX }]	Observation / Result
[{ DG1 }]	Diagnosis Information
}]	--- PATIENT end
{	--- RESOURCES begin
RGS	Resource Group Segment
[{	--- SERVICE begin
AIS	**Appointment Information - Service**
[{ NTE }]	Notes and Comments for the AIS
]}	--- SERVICE end
[{	--- GENERAL_RESOURCE begin
AIG	Appointment Information - General Resource
[{ NTE }]	Notes and Comments for the AIG
]}	--- GENERAL_RESOURCE end
[{	--- LOCATION_RESOURCE begin
AIL	**Appointment Information - Location Resource**

SIU	Message
[{ NTE }]	Notes and Comments for the AIL
]}	--- LOCATION_RESOURCE end
[{	--- PERSONNEL_RESOURCE begin
AIP	Appointment Information - Personnel Resource
[{ NTE }]	Notes and Comments for the AIP
]}	--- PERSONNEL_RESOURCE end
}	--- RESOURCES end

Example - reschedule one day ahead

```
MSH|^~\&|QUICK|QUICK|medavis|MEDAVIS|20111025140328||SIU^S13||P|2.5|1234567890||||8859/1
SCH|identifier21^namespaceId
TQ1|1||||||20220219101001|20220219104001
PID|1||334455743^^^MEDAVIS
AIS|1||chea^^MEDAVIS
AIL|1||^12
```

5.37. Notification of Appointment Modification - SIU^S14

An existing appointment can be modified by SIU^S14 messages. Only an update of appointments and examinations is supported. Transactions like "add" or "remove" participant are not supported by this message. Empty fields are not processed, so the S14 may contain just as much as it needs to update specific data. Appointments created in medavis RIS can be modified by an external SIU source, if SCH-1 contains 'MEDAVIS' domain and corresponding ID.

A SIU^S14 message is composed of the following segments:

SIU	Message
MSH	**Message Header**
SCH	**Schedule Activity Information**
[{ TQ1 }]	**Timing/Quantity**
[{ NTE }]	Notes and Comments for the SCH
[{	--- PATIENT begin
PID	Patient Identification
[PD1]	Additional Demographics
[PV1]	**Patient Visit**
[PV2]	Patient Visit - Additional Information
[{ OBX }]	**Observation / Result**
[{ DG1 }]	Diagnosis Information
}]	--- PATIENT end
{	--- RESOURCES begin
RGS	Resource Group Segment
[{	--- SERVICE begin
AIS	**Appointment Information - Service**
[{ NTE }]	**Notes and Comments for the AIS**

SIU	Message
]}	--- SERVICE end
[{	--- GENERAL_RESOURCE begin
AIG	Appointment Information - General Resource
[{ NTE }]	Notes and Comments for the AIG
]}	--- GENERAL_RESOURCE end
[{	--- LOCATION_RESOURCE begin
AIL	**Appointment Information - Location Resource**
[{ NTE }]	Notes and Comments for the AIL
]}	--- LOCATION_RESOURCE end
[{	--- PERSONNEL_RESOURCE begin
AIP	**Appointment Information - Personnel Resource**
[{ NTE }]	Notes and Comments for the AIP
]}	--- PERSONNEL_RESOURCE end
}	--- RESOURCES end

Example - change room

```
MSH|^~\&|QUICK|QUICK|medavis|MEDAVIS|20111025140328||SIU^S14^SIU_S12||P|2.5|1234567890||||8859/1
SCH|identifier21^namespaceId
TQ1|1||||||20220219101001|20220219104001
PID|1||334455743^^^MEDAVIS
OBX|1|CWE|APPOINTMENT-TYPE^Terminart^medavisObservationIdentifiers||GKV^^medavisAppointmentCoverageTypes
AIS|1||chea^^MEDAVIS
AIL|1||^60
```

5.38. Notification of Appointment Cancellation - SIU^S15

The medavis RIS interface supports canceling of examinations by receiving "SIU^S15" messages.

In case the examination is already on the waiting list or started, then messages will be rejected with a negative acknowledge by default.

Appointments created in medavis RIS can be canceled by an external SIU source, if SCH-1 contains 'MEDAVIS' domain and corresponding ID.

A SIU^S15 message is composed of the following segments:

SIU	Message
MSH	**Message Header**
SCH	**Schedule Activity Information**
[{ TQ1 }]	Timing/Quantity
[{ NTE }]	**Notes and Comments for the SCH**
[{	--- PATIENT begin
PID	Patient Identification
[PD1]	Additional Demographics
[PV1]	Patient Visit

SIU	Message
[PV2]	Patient Visit - Additional Information
[{ OBX }]	Observation / Result
[{ DG1 }]	Diagnosis Information
}]	--- PATIENT end
{	--- RESOURCES begin
RGS	Resource Group Segment
[{	--- SERVICE begin
AIS	Appointment Information - Service
[{ NTE }]	Notes and Comments for the AIS
]}	--- SERVICE end
[{	--- GENERAL_RESOURCE begin
AIG	Appointment Information - General Resource
[{ NTE }]	Notes and Comments for the AIG
]}	--- GENERAL_RESOURCE end
[{	--- LOCATION_RESOURCE begin
AIL	Appointment Information - Location Resource
[{ NTE }]	Notes and Comments for the AIL
]}	--- LOCATION_RESOURCE end
[{	--- PERSONNEL_RESOURCE begin
AIP	Appointment Information - Personnel Resource
[{ NTE }]	Notes and Comments for the AIP
]}	--- PERSONNEL_RESOURCE end
}	--- RESOURCES end

Example

```
MSH|^~\&|QUICK|QUICK|medavis|MEDAVIS|20111025140328||SIU^S15||P|2.5|1234567890||||8859/1
SCH|identifier21^namespaceId
TQ1|1||||||20220219101001|20220219104001{}
PID|1||334455743^^^MEDAVIS
AIS|1||chea^^MEDAVIS
AIL|1||^12
```

6. Messages from medavis RIS to an external system

The following describes all messages which can be sent by medavis RIS.

6.1. Acknowledgement of an External Service Request/Examination Status Transfer ORM^O01

The scheduled service request or the transfer of an examination status is carried out by RIS with an ORM^O01 message. This message is usually sent to an Order Placer or to an Image Manager. Only one order examination is transferred per message.

Depending on the installation, a ZDS segment can be added to the message in addition to the HL7 standard. The ZDS segment contains data on the studies saved in the PACS (StudyInstanceUID), if a PACS connection to medavis RIS exists.

Depending on the installation, exposure justification can be sent by medavis RIS. In that case changes to exposure justification are sent in additional ORM^O01 messages. Information about the exposure justification is sent in an OBX segment. The OBX segment carries the observation identifier "RI" (code system "medavisObservationIdentifiers"). The state of the exposure justification is sent in OBX-11. If the exposure was justified, the status "F" is sent. If the exposure is not justified, the status "D" is sent. If no decision was recorded, the status "X" is sent. Additionally, observation remarks/text (OBX-5), date/time (OBX-14) and the responsible observer (OBX-16) are sent in this segment.

An ORM^O01 message is therefore composed of the following segments:

ORM	**General Order Message**
MSH	**Message Header**
[{ SFT }]	**Software Segment (HL7 version 2.5 or higher)**
[{ NTE }]	Notes and Comments (for Header)
[	**--- PATIENT begin**
PID	**Patient Identification**
[PD1]	Additional Demographics
[{ NTE }]	Notes and Comments (for Patient ID)
[	**--- PATIENT VISIT begin**
PV1	**Patient Visit**
[PV2]	Patient Visit - Additional Information
]	**--- PATIENT VISIT end**
[{ IN1	**Insurance**
[IN2]	Insurance Additional Information
[IN3]	Insurance Additional Information - Cert.
}]	
[GT1]	Guarantor
[{ AL1 }]	Allergy Information
]	--- PATIENT end
{ ORC	**Common Order**
[OBR	**Order Detail Segment**

ORM	General Order Message
[{ NTE }]	Notes and Comments (for Detail)
[{ CTD }]	Contact Data
[{ DG1 }]	**Diagnosis**
[ZED]	**Optional exam identifier**
[{ OBX	**Observation / Result**
[{ NTE }]	Notes and Comments (for Results)
}]	
{ [FT1] }	Financial Transaction
{ [CTI] }	Clinical Trial Information
[BLG]	Billing Segment
}	
[ZDS]	**Additional identification information (Study Inst. UID)**

Example

```
MSH|^~\&|medavis RIS||extSys||20211124110728||ORM^O01|18|P|2.5|||AL|NE
PID||101435^^^MEDAVIS^PT|14301421^^^ASSAUT^PI|22999|Doe^John^^^||19560406|M|||Baker
 street 14 ^^New York^^12345^US||||german
PV1||I|CH^22^2^CH|||||2^RefPhys|||||||||||22999^^^ASSAUT^VN||||||||||||||||||||||||
 |20211124100901|||||||V
ORC|SC|49629^extSys|40764^MEDAVIS|15404276^extSys|SC||1^once^^20211124110725^202111
 24111725^R|||132^Assistant medical technician^Mrs.^^^^^^^^^PN||||555-1234
OBR|1|49629^extSys|40764^MEDAVIS|ctknee^CT Knee^MEDAVIS|||20211124110725|
20211124111725|||||||^^^^LEFT|||ap|CT1|||||CT|O||1^on ce^^20211124110725^
20211124111725^R|||WALK|Reason of Study|13&Physician&Clara&&&Dr. med.|12&First
 Physician&John&&&Dr. med|Technician, Mrs.||20211124110000||||||N|^^^^CT1|ctknee^CT
  Knee^MEDAVIS|||ctknee^CT Knee^MEDAVIS
OBX|1|ST|RI^Rechtfertigende Indikation^medavisObservationIdentifiers||||||||F|||
  20211124103708||417^Lewis^Allyson^^^dr^^^STAFF^^^^PN
ZDS|1.2.276.0.37.1.3.199907^^Application^Dicom
```

6.2. General clinical order message - OMG^O19

OMG	Message
MSH	**Message Header**
[{ SFT }]	**Software Segment (HL7 version 2.5 or higher)**
[{ NTE }]	Notes and Comments (for Header)
[PID	**Patient Identification**
[PD1]	Additional Demographics
[{ NTE }]	Notes and Comments (for Patient ID)
[PV1	**Patient Visit**
[PV2]	Patient Visit - Additional Information
]	
[{ IN1	Insurance
[IN2]	Insurance Additional Information
[IN3]	Insurance Additional Information - Cert.

OMG	Message
}]	
[GT1]	Guarantor
[{ AL1 }]	Allergy Information
]	
{ ORC	**Common Order**
[OBR	**Order Detail Segment**
[{ NTE }]	Notes and Comments (for Detail)
[{ CTD }]	Contact Data
[{ DG1 }]	Diagnosis
[{ OBX	Observation / Result
[{ NTE }]	Notes and Comments (for Results)
}]	
{ [FT1] }	Financial Transaction
{ [CTI] }	Clinical Trial Information
[BLG]	Billing Segment
}	

6.3. Imaging Order - OMI^O23

OMI	Message
MSH	**Message Header**
[{ SFT }]	**Software Segment (HL7 version 2.5 or higher)**
[{ NTE }]	Notes and Comments (for Header)
[PID	**Patient Identification**
[PD1]	Additional Demographics
[{ NTE }]	Notes and Comments (for Patient ID)
[PV1	**Patient Visit**
[PV2]	Patient Visit - Additional Information
]	
[{ IN1	**Insurance**
[IN2]	Insurance Additional Information
[IN3]	Insurance Additional Information - Cert.
}]	
[GT1]	Guarantor
[{ AL1 }]	Allergy Information
]	
{ ORC	**Common Order**
[{ TQ1	**Timing/Quantity**
[{ TQ2 }]	**Timing/Quantity Order Sequence**
}]	
OBR	Observation
[{ NTE }]	Notes and Comments (for Detail)
[CTD]	Contact Data

OMI	Message
[{ DG1 }]	**Diagnosis**
[{ OBX	Observation / Result
[{ NTE }]	Notes and Comments (for Results)
}]	
{ [IPC] }	**Imagin Procedure Control**
}	Order End

Example

```
MSH|^~\&|medavis RIS|medavis|MPI|FAC1|20160107145900||OMI^O23^OMI_O23||P|2.6|||AL|NE||8859/1
PID|1|17739^^^MEDAVIS^PI||444|Deck^Franz^^^Dr.||19521101|M|||Tollestr. 10
 ^^Musterstadt^^12345^D||294386~343434^^CP|294386~343434^^CP|||||||||||||||N
PV1|1|I|001003^001101^001201^^^^000901||||229^List^Friedrich^^^Prof.|228^Mozart^Wolf
 gang^^^Prof.|||||||||227^Schubert^Franz^^^Prof.||444^^^^VN||||||||||||||||||ABC|||
  ||20110818080300||||||V
ORC|NW|demo1500624|783^MEDAVIS|demo1500624^placer domain|SC||||^^^^^^^^^^^^PN
TQ1|1||||||20110603160000|20110603163000|R
OBR|1|demo1500624|783^MEDAVIS|7^Zwerge^^clas^CT
A^MEDAVIS|||||||^ServiceTypeCd\T\INNE|||||UID-142|||||CT|I|||||WALK||4&Doom&&&&Dr
 .&&&MEDAVIS|3&Doom2&&&&Dr.&&&MEDAVIS|4&Doom&&&&Dr.&&&MEDAVIS||20110603160000||||||N
 |||||7^Zwerge ROL||UC|CP^CONSULTING_PROVIDER^443|DocId1^Beethoven^Ludwig^^^Prof.
ROL||UC|AD^ADMITTING^443|227^Schubert^Franz^^^Prof.
ROL||UC|RP^REFERRING_PROVIDER^443|228^Mozart^Wolfgang^^^Prof.
ROL||UC|AT^ATTENDING^443|229^List^Friedrich^^^Prof.
IPC|UID-142^medavis|5104|1.2.3.4.5.6.7.8^medavis|clas|CT|clas^CT A^MEDAVIS
```

6.4. Admitting Patients – ADT^A01

The subsystem can be informed of a new patient case recorded in medavis RIS by an ADT^A01 message. This message is usually sent to an Image Manager.

An ADT^A01 message is therefore composed of the following segments:

ADT	ADT Message
MSH	**Message Header**
[{ SFT }]	**Software Segment (HL7 version 2.5 or higher)**
EVN	**Event Type**
PID	**Patient Identification**
[PD1]	Additional Identification
[{ NK1 }]	Next of Kin / Associated Parties
PV1	**Patient Visit**
[PV2]	Patient Visit - Additional Information
[{ DB1 }]	Disability Information
[{ OBX }]	**Observation / Result**
[{ AL1 }]	Allergy Information
[{ DG1 }]	**Diagnosis Information**
[DRG]	Diagnosis Related Group

ADT	ADT Message
[{ PR1	Procedures
[{ ROL }]	Role
}]	
[{ GT1 }]	Guarantor
[{ IN1	**Insurance**
[IN2]	**Insurance Additional Information**
[IN3]	Insurance Additional Information - Cert.
}]	
[ACC]	Accident Information
[UB1]	Universal Bill Information
[UB2]	Universal Bill 92 Information
[PDA]	Patient Death and Autopsy

Example

```
MSH|^~\&|medavis
RIS|MEDAVIS|MPI|FAC1|20150910135406||ADT^A01|377|P|2.5|||AL|NE||8859/1
SFT|medavis
EVN|A01|20150910135406
PID|1|4714^^^MEDAVIS^PI|4714^^^medavis^PI~SSN12675^^^ABC^U||Dilbert^Hans||19661101|M
 |||Tollestr. 10^^Musterstadt^^12345^D||294386~343434^^CP~^NET^Internet^Franzl.
Deckenhauer@web.de|294386~343434 ^^CP~^NET^Internet^Franzl.Deckenhauer@web.de||
|||SSN12675||||||GER||||N
NTE|1||4 13.05.2011|CASE-DESCRIPTION
NTE|2||Vers.(KIS): Privat\X0D\\X0A\Terminwunsch: 13.05.2011 15:22:00\X0
 D\\X0A\Aufenthalt: 001003 \S\001101\S\001201\S\\S\\S\\S\000901\X0D\\X0A\Verant.:
  223\S\\S\Referrer Atlanta\X0D\\X0A\Kis Überweiser: 0|CASE-REMARK
PV1|1||||||^^^^^^^^MEDAVIS||||||||||777^^^MEDAVIS^VN|T2||||S
IN1|1||123456-123456789^^^^NII~00002^^^^NIIP|ASCHEBESCHER|Holunderstr.^^Erlangen^^45324^GER|||||
 ||||3|Schubert^Franz||||||||||||||||||155011|5501^TP|||||||||||V 123456^^^^
 PN~1266A55^^^^HC^^^31110812
IN2|||||I
```

6.5. Update Patient Information – ADT^A08

An ADT^A08 message informs of patient data and and patient case data which has been edited in medavis RIS. This message is usually sent to an Image Manager. An ADT^A08 message is therefore composed of the following segments:

ADT	ADT Message
MSH	**Message Header**
[{ SFT }]	**Software Segment (HL7 version 2.5 or higher)**
EVN	**Event Type**
PID	**Patient Identification**
[PD1]	Additional Identification
[{ NK1 }]	Next of Kin / Associated Parties
PV1	**Patient Visit**

ADT	ADT Message
[PV2]	Patient Visit - Additional Information
[{ OBX }]	**Observation / Result**
[{ AL1 }]	Allergy Information
[{ DG1 }]	**Diagnosis Information**
[DRG]	Diagnosis Related Group
[{ PR1	Procedures
[{ ROL }]	Role
}]	
[{ GT1 }]	Guarantor
[{ IN1	**Insurance**
[IN2]	**Insurance Additional Information**
[IN3]	Insurance Additional Information - Cert.
}]	
[ACC]	Accident Information
[UB1]	Universal Bill Information
[UB2]	Universal Bill 92 Information
[PDA]	Patient Death and Autopsy

Example

```
MSH|^~\&|medavis
RIS|MEDAVIS|MPI|FAC1|20150910135741||ADT^A08|376|P|2.5|||AL|NE||8859/1
SFT|medavis
EVN|A08|20150910135741
PID|1|4712^^^MEDAVIS^PI|4712^^^medavis^PI~derdo^^^diepalz^PT||Deckenhauer^Franzl^^^D
 r.||19501101|M|||Tollestr. 10^^Musterstadt^^12345^D||294386~343434^^CP~^NET^
 Internet^Franzl.Deckenhauer@web.de|294386~343434^^CP~^NET^Internet^Franzl.Deckenhau
 er@web.de||||SSN12675||||||GER||||N
PV1|1
IN1
IN2|||||O
```

6.6. Delete a Patient Record – ADT^A23

An ADT^A23 message informs of patient data which has been deleted from medavis RIS. This message is usually sent to an Image Manager. An ADT^A23 message is therefore composed of the following segments:

ADT	ADT Message
MSH	Message Header
[{ SFT }]	Software Segment (HL7 version 2.5 or higher)
EVN	Event Type
PID	Patient Identification
[PD1]	Additional Identification
PV1	Patient Visit
[PV2]	Patient Visit - Additional Information

ADT	ADT Message
[{ DB1}]	Disability Information
[{ OBX }]	Observation / Result

6.7. Merging Patient IDs – ADT^A34

An ADT^A34 message informs of patient data which has been merged in medavis RIS. This message is usually sent to an Image Manager. Only the medavis RIS patient IDs which have been merged are important here.

An ADT^A34 message is therefore composed of the following segments:

ADT	ADT Message
MSH	**Message Header**
[{ SFT }]	**Software Segment (HL7 version 2.5 or higher)**
EVN	**Event Type**
PID	**Patient Identification**
[PD1]	Additional Identification
MRG	**Merge Information**

Example

```
MSH|^~\&|medavis
RIS|MEDAVIS|MPI|FAC1|20150910135617||ADT^A34|375|P|2.5|||AL|NE||8859/1
SFT|medavis
EVN|A34|20150910135617
PID|1|4712^^^MEDAVIS^PI|4712^^^medavis^PI~derdo^^^diepalz^PT||Deckenhauer^Franzl^^^D
 r.||19501101|M|||Tollestr.
 10^^Musterstadt^^12345^D||294386~343434^^CP~^NET^Internet^Franzl.Deckenhauer@web.de
 |294386~343434^^CP~^NET^Internet^Franzl.Deckenhauer@web.de||||SSN12675||||||GER||||N
MRG|65432^^^MEDAVIS^PT|||4711EXT^^^KIS^PI|||Doe^John
```

6.8. Move Visit Information – ADT^45

An ADT^A45 message informs of a correction of a wrong visit number assignment regarding the patient ID. This message is usually sent to an Image Manager.

ADT	ADT Message
MSH	**Message Header**
[{ SFT }]	**Software Segment (HL7 version 2.5 or higher)**
EVN	**Event Type**
PID	**Patient Identification**
MRG	**Merge Information**
PV1	**Patient Visit**

Example

```
MSH|^~\&|medavis|medavis RIS|external system|image manager|202001010000||ADT^A45|1|P|2.5
SFT|medavis
EVN|A45|202001010000||||201912312359
PID|1|123^^^MEDAVIS^PI|4712^^^KIS^PT||Doe^John^^^Dr.||19501101|M|||Tollestr. 10^^Musterstadt^^12345^D
 ||294386~343434^^CP~^NET^Internet^john.doe@web.de|294386~343434^^CP~^NET^Internet^john.doe@web.de
MRG|4711^^^KIS^PT
PV1|1||||||||||||||||||1234567890^^^KIS
```

6.9. Change Patient Identifier List - ADT^A47

ADT	ADT Message
MSH	**Message Header**
[{ SFT }]	**Software Segment (HL7 version 2.5 or higher)**
EVN	**Event Type**
PID	**Patient Identification**
[PD1]	Additional Identification
MRG	**Merge Information**

Example

```
MSH|^~\&|medavis
RIS|MEDAVIS|MPI|FAC1|20150910135828||ADT^A47|380|P|2.5|||AL|NE||8859/1
SFT|medavis
EVN|A47|20150910135828
PID|1|SSN12345.MPIPAT12345^^PT^ID1234^PT|SSN12345.MPIPAT12345^^PT^ID1234^PT||Doe^
 John^^^Dr.||19501101|M|||Tollestr. 10^^Musterstadt^^12345^D||294386~343434^^
CP~^NET^Internet^john.doe@web.de|294386~343434^^CP~^NET^Internet^john.doe@web.de
 |||||SSN12345|||||||GER||||N
MRG|SSN12345.MEDAVIS4713^^^ID1234^PT|||SSN12345.MEDAVIS4713^^^ID1234^PI
```

6.10. Patient Demographics Query - Get Corresponding Identifiers - QBP^Q23

medavis RIS can query patient identifiers as described by the IHE transaction for PIX Query [ITI-9]. In the XDS.b scenario this means that patient identifiers of the affinity domain are queried for use in a document submission to an XDS.b repository.

medavis RIS sends the local patient identifierss in QPD-3. The domains for which identifiers are queried are specified in QPD-4. The receiver shall respond to the query by sending the RSP^K23 response message.

RCP-1 - Query Priority always contains **I**, signifying that the response to the query is to be returned in Immediate mode.

A QBP^Q23 message is therefore composed of the following segments:

ADT	ADT Message
MSH	**Message Header**

ADT	ADT Message
[{ SFT }]	Software Segment
QPD	**Query Parameter Definition**
RCP	**Response Control Parameter**
[DSC]	Continuation Pointer

Example

```
MSH|^~\&|medavis
 RIS|MEDAVIS|NIST_RCVR_7|NIST|20170131152650||QBP^Q23^QBP_Q21|1042|P|2.5|||AL|NE||UNICODE UTF-8
QPD|IHE PIX Query|
 5b808elfckgti-4hdp2g4p3vh2p|PIXL1^^^NIST2010^PT|^^^NIST2010-3
RCP|I
```

Possible Reply

```
MSH|^~\&|NIST_RCVR_7|NIST|medavis
 RIS|MEDAVIS|20170131092650||RSP^K23^RSP_K23|NIST-170131092650720|P|2.5
MSA|AR|1042
QAK|5b808elfckgti-4hdp2g4p3vh2p|AR
QPD|IHE PIX Query|5b808elfckgti-4hdp2g4p3vh2p|PIXL1^^^NIST2010^PT|^^^NIST2010-3
```

6.10.1. ATNA Audit Message for PIX Query [ITI-9]

The PIX query audit message is sent every time medavis RIS queries a patient ID from the PIX Manager.

The Message structure is implemented according to IHE Standard (See ITI TF-2a: 3.9.5.1.1 Patient Identifier Cross-reference Consumer audit message)

Example Logging


```
<85>1 2017-02-03T13:57:51.700+01:00 WIN-J98NKK05IP7/10.0.2.15 - - IHE+RFC-3881 - <?xml
 version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage>
    <EventIdentification EventActionCode="E" EventDateTime="2017-02-03T13:57:51.694+01:00"
    EventOutcomeIndicator="0">
        <EventID csd-code="110112" codeSystemName="DCM" displayName="Query" originalText=""/>
        <EventTypeCode csd-code="ITI-9" codeSystemName="IHE Transactions"
         displayName="PIX Query" originalText=""/>
    </EventIdentification>
    <ActiveParticipant UserID="MEDAVIS|MEDAVIS" AlternativeUserID="3904@WIN-J98NKK05IP7"
     UserIsRequestor="true" NetworkAccessPointID="10.0.1.12" NetworkAccessPointTypeCode="2">
        <RoleIDCode csd-code="110153" codeSystemName="DCM" displayName="Source" originalText=""/>
    </ActiveParticipant>
    <ActiveParticipant UserID="PIX|PIX" AlternativeUserID="3904@WIN-J98NKK05IP7"
     UserIsRequestor="false" NetworkAccessPointID="11.0.1.12" NetworkAccessPointTypeCode="2">
        <RoleIDCode csd-code="110152" codeSystemName="DCM" displayName="Destination"
         originalText=""/>
    </ActiveParticipant>
    <AuditSourceIdentification AuditSourceID="1.2.4.5.36.47.7">
        <AuditSourceTypeCode code="4" codeSystemName="RFC-3881"
         displayName="Application server process tier in a multi-tier system"/>
    </AuditSourceIdentification>
    <ParticipantObjectIdentification ParticipantObjectID="317041^^^affinityDomain"
     ParticipantObjectTypeCode="1" ParticipantObjectTypeCodeRole="1">
        <ParticipantObjectIDTypeCode csd-code="2" codeSystemName="RFC-3881"
         displayName="Patient Number" originalText=""/>
        <ParticipantObjectName>Patient^Name</ParticipantObjectName>
    </ParticipantObjectIdentification>
    <ParticipantObjectIdentification ParticipantObjectID="497" ParticipantObjectTypeCode="2"
     ParticipantObjectTypeCodeRole="24">
        <ParticipantObjectIDTypeCode csd-code="ITI-9" codeSystemName="IHE Transactions"
         displayName="PIX Query" originalText=""/>
<ParticipantObjectQuery>TVNIfF5+XCZ8TUVEQVZJU3xNRURBVklTfFBJWHxQSVh8MjAxNzAyMDMxMzU3NTF8fFFCUF5RMjNe
UUJQX1EyMXw0OTd8UHwyLjMuMXx8fEFMfE5FfHw4ODU5LzENUVBEfElIRSBQSVggUXVlcnl8MzRzMm1yYjNucWlpZC00bXM2ajBv
c2owbmk3fDVeXl5NRURBVklTXlBJfF5eXmFmZmluaXR5RG9tYWluDVJDUHxJDQ==</ParticipantObjectQuery>
        <ParticipantObjectDetail type="MSH-10" value="NDk3"/>
    </ParticipantObjectIdentification>
</AuditMessage>
```


6.11. Transferring Financial Data/Material Use – DFT^P03

The DFT^P03 message transfers financial data. This message is usually sent to a Charge Processor. A DFT^P03 message is therefore composed of the following segments:

The message is sent when a service is recorded, a material is charged or a booking is posted. Similarly, a message is sent for the reverse actions: when a booking is canceled or a material deleted the relevant transaction is cancelled.

DFT	Detail Financial Transaction
MSH	Message Header
[{ SFT }]	Software Segment (HL7 version 2.5 or higher)

DFT	Detail Financial Transaction
EVN	**Event Type**
PID	**Patient Identification**
[PD1]	Additional Identification
PV1	**Patient Visit**
[PV2]	Patient Visit - Additional Information
[{ DB1 }]	Disability Information
[{ OBX }]	Observation / Result
{ **FT1**	**Financial Transaction**
[{ **PR1**	**Procedure**
[{ ROL }]	Role
}]	
[ORC]	**Common Order (specific to above FT1) (v2.4 and later)**
[OBR]	**Order Detail Segment (v2.4 and later)**
[{ NTE }]	**Notes and Comments (on Order Detail)**
}	
[{ DG1 }]	**Diagnosis**
[DRG]	Diagnosis Related Group
[{ GT1 }]	Diagnosis Related Group
[{ IN1	**Insurance**
[IN2]	Insurance Additional Information
[{ IN3 }]	Insurance Additional Information - Cert.
[{ ROL }]	Role
}]	
[ACC]	Accident Information

Example Rad. service

```
MSH|^~\&|medavis RIS||extSys||20081124111210||DFT^P03|30|P|2.5|||AL|NE
EVN|P03|19981124111210
PID||52345^^^MEDAVIS^PT|5414354^^^ASSAUT^PI||Doe^John^^^||19701025|M|||Bakerstreet
 34^^New York^^12345^US||555-1234||german
PV1||I|P1^22^4^CHI2|||||6^RefPhys^Mr.||||||||||3424222^^^ASSAUT^VN||||||||||||||
 ||||||||||20081123101200|20081124101000||||||V
FT1|1|341||20081123185428||2|5010^^GOAE|||180||20.52|||||||4323|3223||300864
```

Example Tech. service

```
MSH|^~\&|medavis RIS||extSys||19981124111210||DFT^P03|30|P|2.2|||AL|NE
EVN|P03|19981124111210
PID||52345^^^MEDAVIS^PT|5414354^^^ASSAUT^PI||Doe^John^^^||19701025|M|||Bakerstreet
 34^^New York^^12345^US||555-1234||german
PV1||I|P1^22^4^CHI2|||||6^RefPhys^Mr.||||||||||3424222^^^ASSAUT^VN||||||||||||||
 ||||||||||20081123101200|20081124101000||||||V
FT1|1|342||20081123173728||2|kon100^Contrast 100^med-mat|||100||ml|||||||
 4323|3223||300864
```

6.12. Transferring Diagnoses/Procedures – BAR^P01/BAR^P12

The BAR^P01 or BAR^P12 message transfers diagnoses and procedures. This message is usually sent to a system which will process this data.

6.12.1. Message type BAR^P01 "Snapshot" mode

All diagnoses and procedures belonging to a hospital visit are transferred to the external system. The same message updates the diagnoses and procedures. Old diagnoses and procedures positions become invalid.

A BAR^P01 message is composed of at least the following segments:

```
BAR                   Add Billing Account
MSH                   Message Header
[ { SFT } ]           Software Segment (HL7 version 2.5 or higher)
EVN                   Event Type
PID                   Patient Identification
[ PD1 ]               Additional Identification
{ PV1                 Patient Visit
  [ PV2 ]             Patient Visit - Additional Information
  [ { DB1 } ]         Disability Information
  [ { OBX } ]         Observation / Result
  [ { AL1 } ]         Allergy Information
  [ { DG1 } ]         Diagnosis
  [ DRG ]             Diagnosis Related Group
  [ { PR1             Procedure
    [ { ROL } ]       Role
    [ ORC ]           Common Order (Customisable by medavis)
    [ OBR ]           Order Detail Segment (Customisable by medavis)
  }
  [ { GT1 } ]         Diagnosis Related Group
  [ { NK1 } ]         Next of Kin / Associated Parties
  [ { IN1             Insurance
    [ IN2 ]           Insurance Additional Information
    [ { IN3 } ]       Insurance Additional Information - Cert.
  } ]
  [ ACC ]             Accident Information
  [ UB1 ]             Universal Bill Information
  [ UB2 ]             Universal Bill 92 Information
}
```

Example

```
MSH|^~\&|medavis RIS||BillSys||20081124111210||BAR^P01|30|P|2.5|||AL|NE
EVN|P01|19981124111210
PID||52345^^^MEDAVIS^PT|5414354^^^ASSAUT^PI||Doe^John^^^||19701025|M|||Bakerstreet
 34^^New York^^12345^US||555-1234||german
PV1||I|P1^22^4^CHI2|||||6^RefPhys^Mr.||||||||||3424222^^^ASSAUT^VN|||||||||||||||
 |||||||||20081123101200|20081124101000||||||V
DG1|1||S90.1V^Contusion of toe(s) without damage to nail^I10||19981123140000|
BD|||||||||1^Saubermann^Susi^^^Dr. PR1|332^17|2008|3-209^Computertomography (CT),
 contrast: other contrast Computertomography^2008||20081123140000||20|||||
 1^Doctor^Jim^^^Dr.^^^^^^PN
```

6.12.2. Message type BAR^P12 "action code/unique identifier" mode:

Only the book/cancel transaction of a diagnosis or procedure is transferred to the external system.

BAR	Add Billing Account
MSH	Message Header
[{ SFT }]	Software Segment (HL7 version 2.5 or higher)
EVN	Event Type
PID	Patient Identification
PV1	Patient Visit
[ORC]	Common Order (Customisable by medavis)
[OBR]	Order Detail Segment (Customisable by medavis)
[{ DG1 }]	Diagnosis
[DRG]	Diagnosis Related Group
[{ PR1	Procedure
[{ ROL }]	Role
}]	

Example

```
MSH|^~\&|medavis RIS||BillSys||200811241209210||BAR^P12|30|P|2.5|||AL|NE
EVN|P12|19981124120910
PID||52345^^^MEDAVIS^PT|5414354^^^ASSAUT^PI||Doe^John^^^||19701025|M|||Bakerstreet
 34^^New York^^12345^US||555-1234||german
PV1||I|P1^22^4^CHI2|||||6^RefPhys^Mr.||||||||||3424222^^^ASSAUT^VN|||||||||||||||
|||||||||20081123101200|20081124101000||||||V
PR1|332^17|2008|3-209^Computertomography (CT), contrast: other contrast
 Computertomography^2008||20081123140000||20|||||1^Doctor^Jim^^^Dr.^^^^^^PN||||||46
 3^unt_an2diag|A
```

6.13. Staff/Practitioner Master File Message - MFN^M02

MFN	Message
MSH	Message Header

MFN	Message
[{ SFT }]	**Software Segment (HL7 version 2.5 or higher**
MFI	**Master File Identification**
{ MFE	**Master File Entry**
STF	**Staff Identification**
[{ PRA }]	Practitioner Detail
[{ ORG }]	Practitioner Organization Unit Segment
[{ AFF }]	Professional Affiliation
[{ LAN }]	Language Detail
[{ EDU }]	Educational Detail
[{ CER }]	Certificate Detail
[{ NTE }]	Notes and Comments for the STF
}	

Example

```
MSH|^~\&|||REC_APP|REC_FAC|20150909163112||MFN^M02|1401|P|2.3.1|||AL|NE||8859/1
MFI|STF||UPD
MFE|MAD|||20^^MEDAVIS|CWE
STF|20^^MEDAVIS||Musterarzt^Peter^^^^Dr. med.^L~Muster^Musterarzt/Karlsruhe^^^^^A
 |||||~^Hausarztpraxis~^Dr. Peter Musterarzt~^Arzt für Allgemeinmedizin||0721-
 929100^^PH~^^CP~0721-9291099^^FX~^^Internet|Musterstrasse 1^^
 Karlsruhe^^76185^D|||||||||||||||||||||||||Referrer
```

6.14. Master File Notification - MFN^M09

medavis RIS supports sending of examination master data in MFN M09 messages. The master data is communicated in the case that it is linked to an order code (=external identifer).

Supported events (MFE-1):

- MAD - Examination master data is created or linked to an order code.
- MUP - Master data was updated or an order code link was added/removed.
- MAC - An examination was activated, i.e. it's status changed from disabled to enabled.
- MDC - An examination was deactivated, i.e. it's status changed from enabled to disabled.

Individual master data records are identified via the Primary Key Value (MFE-4). Identifiers (MFE-4.1) are unique only for their respective coding system (MFE-4.3).

MFN	Message
MSH	**Message Header**
[{ SFT }]	**Software Segment (HL7 version 2.5 or higher**
MFI	**Master File Identification**
{ MFE	**Master File Entry**
OM1	**General Segment**
[OM3	Categorical Service/Test/Observation Segment

MFN	Message
[{ OM4 }]	Observations that Require Specimen
] }	

Example

```
MSH|^~\&|||CSC_APP|CSC_FAC|20150909162357||MFN^M09|1401|P|2.3.1|||AL|NE||8859/1
MFI|OMB||UPD|||NE
MFE|MAD|||cpanc^CT Pancreas^designator|CWE
OM1||cpanc^CT Pancreas^designator|||||||CT Pancreas|Computertomographie des
 Pancreas|Y|||||||||||20||||||||||||vorbereiten||||||||Abdomen|CT
```

6.15. Notification of New Appointment Booking - SIU^S12

SIU	Message
MSH	**Message Header**
SCH	**Schedule Activity Information**
[{ TQ1 }]	**Timing/Quantity**
[{ NTE }]	**Notes and Comments for the SCH**
[{	
PID	**Patient Identification**
[PD1]	Additional Demographics
[PV1]	**Patient Visit**
[PV2]	Patient Visit - Additional Information
[{ OBX }]	Observation / Result
[{ DG1 }]	**Diagnosis Information**
}]	
{ RGS	**Resource Group Segment**
[{ AIS	**Appointment Information - Service**
[{ NTE }]	>Notes and Comments for the AIS
}]	
[{ AIG	**Appointment Information - General Resource**
[{ NTE }]	Notes and Comments for the AIG
}]	
[{ AIL	**Appointment Information - Location Resource**
[{ NTE }]	Notes and Comments for the AIL
}]	
[{ AIP	**Appointment Information - Personnel Resource**
[{ NTE }]	Notes and Comments for the AIP
}]	

Example for obligatory appointment

```
MSH|^~\&|medavis RIS|MEDAVIS|Appointment|SIU|20220610103317||SIU^S12^SIU_S12|35309192|P|2.5.1|||AL
 |NE||UNICODE UTF-8
SCH||801679^MEDAVIS||C50203792^MEDAVIS||^APT||||1|||||2^medavis^GmbH^^^^^^^^^^PN||||||||
 |E160234651^MEDAVIS|E160234651^MEDAVIS
TQ1|1|||||20220610114000|20220610234000|R
NTE|1||Dr. Test, medavis(*01.01.2000 ): CT Angio Becken-Bein KM.;***Clementinenhaus Chirurgie ZPA
 ***\X0D\\X0A\Diagnose: Verdachtsdiagnose\X0D\\X0A\Auftrag: Auftrag|APPOINTMENT_DESCRIPTION
NTE|2||10.06.2022|CASE-DESCRIPTION
NTE|3||Fallanmerkung|CASE-REMARK
PID|1|10001635^^^MEDAVIS^PI|10001635^^^MEDAVIS^PI||Test^medavis^^^Dr.||20000101|F||
 |Test 123A^^Hannover^^30159^D||0123-5566574^^CP|0123-5566574^^CP||||||||||DEU||||N
RGS|1|A
AIS|1|A|^^^ctangbb1km^CT Angio Becken-Bein KM^MEDAVIS|20220610114000
AIG|1||64^CT1^MEDAVIS|DEVICE^Device^MEDAVIS
AIL|1||^60
```

Example for quick appointment

Quick appointments might not have a relation to a patient, an examination or a device. There will always be a relation to the room with the Room ID in AIL-3.2.

```
MSH|^~\&|medavis RIS|MEDAVIS|Appointment|SIU|20190711132120||SIU^S12^SIU_S12|18205|P|2.5|||AL|NE|
 |8859/1
SCH||26710^MEDAVIS||||^APT||||1|||||2^medavis^GmbH^Dr.^^^^^^^^^PN
TQ1|1|||||20190711153000|20190711160000|R
NTE|1||: CT Untere Extremitäten|APPOINTMENT_DESCRIPTION
RGS|1|A
AIL|1||^2
```

6.16. Notification of appointment rescheduling - SIU^S13

The structure of this message is basically the same as in SIU^S12.

Example

```
MSH|^~\&|medavis RIS|MEDAVIS|Appointment|SIU|20220610103317||SIU^S13^SIU_S12|35309193|P|2.5.1|||AL
 |NE||UNICODE UTF-8
SCH||801679^MEDAVIS||C50203792^MEDAVIS||^APT||||1|||||2^medavis^GmbH^^^^^^^^^^PN||||||||
 |E160234651^MEDAVIS|E160234651^MEDAVIS
TQ1|1|||||20220610114000|20220610224000|R
NTE|1||Dr. Test, medavis(*01.01.2000 ): CT Angio Becken-Bein KM.;***Clementinenhaus Chirurgie ZPA
 ***\X0D\\X0A\Diagnose: Verdachtsdiagnose\X0D\\X0A\Auftrag: Auftrag|APPOINTMENT_DESCRIPTION
NTE|2||10.06.2022|CASE-DESCRIPTION
NTE|3||Fallanmerkung|CASE-REMARK
PID|1|10001635^^^MEDAVIS^PI|10001635^^^MEDAVIS^PI||Test^medavis^^^Dr.||20000101|F||
 |Test 123A^^Hannover^^30159^D||0123-5566574^^CP|0123-5566574^^CP||||||||||DEU||||N
RGS|1|A
AIS|1|A|^^^ctangbb1km^CT Angio Becken-Bein KM^MEDAVIS|20220610114000
AIG|1||64^CT1^MEDAVIS|DEVICE^Device^MEDAVIS
AIL|1||^60
```

6.17. Notification of appointment modification - SIU^S14

The structure of this message is basically the same as in SIU^S12.

Example

```
MSH|^~\&|medavis RIS|MEDAVIS|Appointment|SIU|20220610103317||SIU^S14^SIU_S12|35309194|P|2.5.1|||AL
 |NE||UNICODE UTF-8
SCH||801679^MEDAVIS||C50203792^MEDAVIS||^APT||||1|||||2^medavis^GmbH^^^^^^^^^^PN||||||||
 |E160234651^MEDAVIS|E160234651^MEDAVIS
TQ1|1||||||20220610114000|20220610224000|R
NTE|1||Dr. Test, medavis(*01.01.2000 ): CT Angio Becken-Bein KM.;***Clementinenhaus Chirurgie ZPA
 ***\X0D\\X0A\Diagnose: Verdachtsdiagnose\X0D\\X0A\Auftrag: Auftrag|APPOINTMENT_DESCRIPTION
NTE|2||10.06.2022|CASE-DESCRIPTION
NTE|3||Fallanmerkung|CASE-REMARK
PID|1|10001635^^^MEDAVIS^PI|10001635^^^MEDAVIS^PI||Test^medavis^^^Dr.||20000101|F||
 |Test 123A^^Hannover^^30159^D||0123-5566574^^CP|0123-5566574^^CP|||||||||||DEU||||N
RGS|1|A
AIS|1|A|^^^ctangbb1km^CT Angio Becken-Bein KM^MEDAVIS|20220610114000
AIG|1||64^CT1^MEDAVIS|DEVICE^Device^MEDAVIS
AIL|1||^60
```

6.18. Notification of appointment cancellation - SIU^S15

The structure of this message is basically the same as in SIU^S12.

Example

```
MSH|^~\&|medavis RIS|MEDAVIS|Appointment|SIU|20220610103317||SIU^S15^SIU_S12|35309195|P|2.5.1|||AL
 |NE||UNICODE UTF-8
SCH||801679^MEDAVIS||C50203792^MEDAVIS||^APT||||1|||||2^medavis^GmbH^^^^^^^^^^PN||||||||
 |E160234651^MEDAVIS|E160234651^MEDAVIS
TQ1|1||||||20220610114000|20220610224000|R
NTE|1||Dr. Test, medavis(*01.01.2000 ): CT Angio Becken-Bein KM.;***Clementinenhaus Chirurgie ZPA
 ***\X0D\\X0A\Diagnose: Verdachtsdiagnose\X0D\\X0A\Auftrag: Auftrag|APPOINTMENT_DESCRIPTION
NTE|2||10.06.2022|CASE-DESCRIPTION
NTE|3||Fallanmerkung|CASE-REMARK
PID|1|10001635^^^MEDAVIS^PI|10001635^^^MEDAVIS^PI||Test^medavis^^^Dr.||20000101|F||
 |Test 123A^^Hannover^^30159^D||0123-5566574^^CP|0123-5566574^^CP|||||||||||DEU||||N
RGS|1|A
AIS|1|A|^^^ctangbb1km^CT Angio Becken-Bein KM^MEDAVIS|20220610114000
AIG|1||64^CT1^MEDAVIS|DEVICE^Device^MEDAVIS
AIL|1||^60
```

6.19. Original Document Notification and Content - MDM^T02

Depending of the HL7 interface configuration this message will be created in the event that the RIS attached a document like a multimedia file to an order, an examination, a case or patient. The document content can either be sent embedded in the OBX segment (usually type ED) or by reference in the OBX segment as type RP.

6.19.1. Embedded document content

The document content can be embedded directly into the HL7 message. This is achieved by using an OBX segment with value type (OBX-2) 'ED' (encapsulated data). Depending on the format of the document, the content is BASE64 encoded first. If that is the case, OBX-5.4 (Encoding) will be valued "Base64" and OBX-5.5 will contain the BASE64 data.

- The text format is provided with value type (OBX-2) TX.
- The RTF format is provided with value type (OBX-2) FT.
- All other formats are provided BASE64 encoded in value type (OBX-2) ED.

See Example 6.30, “MDM^T02 (embedded document)”.

6.19.2. Referenced document content

Documents can be sent as a reference where the document is first uploaded as a file to a share. Then the location of that file is sent using an OBX segment of value type (OBX-2) RP (reference pointer) in the HL7 message. The combination of Application Id (OBX-5.2) and Pointer (OBX-5.1) forms a URL that can be used to receive the document. For multimedia documents, the original filename (when known) is sent in TXA-16.

Important: When using Document Reference Pointer MDM messages, medavis RIS expects the receiving system to handle the files on the share. This means that medavis RIS will *not* deal with the files once created (i.e. store for long term use or delete) regardless of whether they have been picked up by the receiving system or not.

See Example 6.31, “MDM^T02 (reference to document)”.

6.19.3. Report Documents

Additionally MDM messages can also be sent for report documents. The formats available are PDF and CDA (see also Section 6.23, “Transferring Reports – UDM^Q05/ORU^R01/MDM^T02”). The CDA format is only available for structured reports. The CDA document is BASE64 encoded when embedded in the message.

As another supported message option - when specifically arranged for a project - multiple report formats can be included in the same MDM message. In this scenario, an OBX segment is sent for each configured format. The observation sub-id (OBX-4) is used to differentiate between the OBX segments that contain the documents. OBX-4 is valued with n for the n-th format in the message.

Segments ORC and OBR be can be absent in case when there is no relation to an order.

MDM	Message
MSH	Message Header
[{ SFT }]	Software Segment
EVN	Event Type
PID	Patient Identification
PV1	Patient Visit

MDM	Message
[{ ORC	**Common Order segment**
[{ TQ1	Timing/Quantity
[{ TQ2 }]	Timing/Quantity Order Sequence
OBR	**Observation Request**
[{ NTE }]	Notes and Comments (on Observation Request)
}]	
[ZED]	**Optional Examination Identifier**
}]	
TXA	Document Notification
{ OBX	**Observation/Result**
[{NTE}]	Notes and comments about the observation (OBX)
}	

Example

```
MSH|^~\&|medavis
 RIS|MEDAVIS|KIS|KIS|20150910102149||MDM^T02|375|P|2.3.1|||AL|NE||8859/2
EVN|T02|20150910102149|||4^Middle^Steve^Dr.^^^^^^^^^PN|20110513181548
 PID|1|4712^^^MEDAVIS^PI||44|Deckenhauer^Franzl^^^Dr.||19501101|M|||Tollestr.10
 ^^Musterstadt^^12345^D||294386~343434^^CP|294386~343434^^CP|||||||||||||||N
PV1|1|I|001003^001101^001201^^^^000901|||||||||||||||44^^^^VN|||||||||||||||||
 ||ABC|||||20110818080300|||||||V
ORC||demo1500624^PLACER|780^MEDAVIS|1140^PLACERGROUP|IP||1^once^^20110603123300^2011
 0603123300 ^R|||4^Middle^Steve^Dr.^^^^^^^^^PN
OBR|1|demo1500624^PLACER|780^MEDAVIS|^^^cpanc^CT Pancreas^MEDAVIS|||20110603123300|
 20110603123300||||^ServiceTypeCd\T\INNE||||||U-ID136
 ||||20110513114000||CT|I||1^once^^20110603123300^20110603123300^0|||WALK||4&Middle&
 Steve&&&Dr.&&&MEDAVIS||4&Middle&Steve&&&Dr.&&&MEDAVIS||20100101010000||||||N
TXA|1|other||||20110513180500||||||1238^MEDAVIS||demo1500624^PLACER|780^MEDAVIS||DO
OBX|1|CE|^Examination ID|1|136^^MEDAVIS
OBX|2|EI|^Document
 Identifier||1238^MEDAVIS~1.2.276.0.37.1.3.199907.99999.1234.88.105^OID
OBX|3|ED|364^cpanc|1238\S\MEDAVIS|PDF^multipart^Octet-Stream^Base64^content
```

For more examples, see Section 6.23.5, “Message type: MDM^T02”.

6.20. Document Status Change Notification and Content - MDM^T04

MDM	Message
MSH	**Message Header**
[{ SFT }]	**Software Segment**
EVN	**Event Type**
PID	**Patient Identification**
PV1	**Patient Visit**
[{ ORC	**Common Order segment**
[{ TQ1	Timing/Quantity
[{ TQ2 }]	Timing/Quantity Order Sequence

MDM	Message
OBR	**Observation Request**
[{ NTE }]	Notes and Comments (on Observation Request)
}]	
[ZED]	**Optional Examination Identifier**
}]	
TXA	Document Notification
{ OBX	**Observation/Result (one or more required)**
[{NTE}]	Notes and comments about the observation (OBX)
}	

Example

```
MSH|^~\&|medavis RIS|MEDAVIS|KIS|KIS|20150910101236||MDM^T04|376|P|2.3.1|||AL|NE|
|8859/2
EVN|T04|20150910101236|||4^Middle^Steve^Dr.^^^^^^^^^PN|20110513181548
PID|1|4712^^^MEDAVIS^PI||44|Deckenhauer^Franzl^^^Dr.||19501101|M|||Tollestr.10
 ^^Musterstadt^^12345^D||294386~343434^^CP|294386~343434^^CP||||||||||||||N
PV1|1|I|001003^001101^001201^^^^000901|||||||||||||||44^^^^VN||||||||||||||||||
 ABC|||||20110818080300||||||V
ORC||demo1500624^PLACER|780^MEDAVIS|1140^PLACERGROUP|IP||1^once^^20110603123300^
 20110603123300^R|||4^Middle^Steve^Dr.^^^^^^^^^PN
OBR|1|demo1500624^PLACER|780^MEDAVIS|^^^cpanc^CTPancreas^MEDAVIS|||20110603123300|
 20110603123300||||^ServiceTypeCd\T\INNE|||||U-ID136 ||||20110513114000||CT|I||
1^once^^20110603123300^20110603123300^0|||WALK||4&Middle&Steve&&&Dr.&&&MEDAVIS||4&
 Middle&Steve&&&Dr.&&&MEDAVIS||20100101010000||||||N
TXA|1|other||||20110513180500||||||1238^MEDAVIS||demo1500624^PLACER|780^MEDAVIS||DO
OBX|1|CE|^Examination ID|1|136^^MEDAVIS
OBX|2|EI|^Document Identifier||1238^MEDAVIS
OBX|3|ED|364^cpanc|1238\S\MEDAVIS|PDF^multipart^Octet-Stream^Base64^content...
```

6.21. Document Replacement Notification and Content - MDM^T10

When the original version of a report document has been replaced by a new version of the same document, a replacement notification MDM^T10 can be sent. The message references the document to be replaced in TXA-13 ("Parent Document Number").

This event type is currently not supported for multimedia attachments. With this exception, the documentation of Section 6.19, “Original Document Notification and Content - MDM^T02” and Section 6.23, “Transferring Reports – UDM^Q05/ORU^R01/MDM^T02” applies.

MDM	Message
MSH	**Message Header**
[{ SFT }]	Software Segment
EVN	**Event Type**
PID	**Patient Identification**
PV1	**Patient Visit**
[{ ORC	**Common Order segment**
[{ TQ1	Timing/Quantity

MDM	Message
[{ TQ2 }]	Timing/Quantity Order Sequence
}]	
OBR	**Observation Request**
[{ NTE }]	Notes and Comments (on Observation Request)
[ZED]	**Optional Examination Identifier**
}]	
TXA	Document Notification
{ OBX	**Observation/Result (one or more required)**
[{NTE}]	Notes and comments about the observation (OBX)
}	

Example

```
MSH|^~\&|medavis RIS|medavis|ERR|ERR|20180502164201||MDM^T10|57|P|2.5|||AL|NE||UNICODE UTF-8
EVN|T10|20180502164201||||20180502164200
PID|1|61^^^MEDAVIS^PI|4712^^^DOMAIN-A^PT||Smith^John||19800101|U||
 |Bannwaldallee 60^^Karlsruhe^^76185^DE|
 |0049721456789~00176987654^^CP~^NET^Internet^john.doe@company.com
 |0049721456789~00176987654^^CP~^NET^Internet^john.doe@company.com|||||||||||||||N
PV1|1|||||||||||||||||61^^^MEDAVIS^VN
ORC|RE||61^MEDAVIS||CM||1^once|||^^^^^^^^^^^^PN
OBR|1||61^MEDAVIS|CTTHO^CT Thorax^MEDAVIS^CTTHO^CT Thorax^MEDAVIS|||||||||||||
 |U-ID61||||||CT|C||1^once^^^^R|||WALK||||||||||||N
TXA|1|other||||20180502164200||||||134F990^^1.2.40.0.34.99.111.1.1^ISO
 |134F989^^1.2.40.0.34.99.111.1.1^ISO||||DO
OBX|1|CE|^Examination ID|1|61^^MEDAVIS|||N
OBX|2|EI|^Document Identifier||134F990^^1.2.40.0.34.99.111.1.1^ISO
OBX|3|ED|29^CTTHO|134F990\S\1.2.40.0.34.99.111.1.1
 |^application^hl7-v3+xml^Base64^PD94bWwgdmVyc2lvbj0iMS4wIiBl..remaining chars skipped
OBX|4|HD|^Study Instance UID||1.2.276.0.37.1.1.20160361||||||||||^^^^^^^^^^^^PN
```

6.22. Document Cancel Notification - MDM^T11

This message will be created when multi media documents or examination reports from orders, examinations, cases or patients were removed.

Segments ORC and OBR be can be absent in case when there is no relation to an order.

MDM	Message
MSH	**Message Header**
[{ SFT }]	**Software Segment**
EVN	**Event Type**
PID	**Patient Identification**
PV1	**Patient Visit**
[{ ORC	**Common Order segment**
[{ TQ1	Timing/Quantity
[{ TQ2 }]	Timing/Quantity Order Sequence

MDM	Message
OBR	**Observation Request**
[{ NTE }]	Notes and Comments (on Observation Request)
}]	
[ZED]	**Optional Examination Identifier**
}]	
TXA	Document Notification

Example

```
MSH|^~\&|medavis RIS|MEDAVIS|KIS|KIS|20150910102255||MDM^T11|374|P|2.3.1|||AL|NE||8859/2
EVN|T11|20150910102255||||20110513181548
PID|1|4712^^^MEDAVIS^PI||44|Deckenhauer^Franzl^^^Dr.||19501101|M|||Tollestr.
 10^^Musterstadt^^12345^D||294386~343434^^CP|294386~343434^^CP|||||||||||||||N
PV1|1|I|001003^001101^001201^^^^000901|||||||||||||||44^^^^VN||||||||||||||||||AB
 C|||||20110818080300|||||||V
ORC||demo1500624^PLACER|780^MEDAVIS|1140^PLACERGROUP|IP||1^once^^20110603123300^
 20110603123300^R|||^^^^^^^^^^^^PN
OBR|1|demo1500624^PLACER|780^MEDAVIS|^^^^^MEDAVIS|||20110603123300|20110603123300||||
 ^ServiceTypeCd\T\INNE||||||U-ID135|||||||I||1^once^^20110603123300^
 20110603123300^0 |||WALK||4&Middle&Steve&&&Dr.&&&MEDAVIS||4&Middle&Steve&&&Dr.&&&
 MEDAVIS||20100101010000||||||N
TXA|1|other||||||||||1^MEDAVIS||demo1500624^PLACER|780^MEDAVIS||CA
```

6.23. Transferring Reports – UDM^Q05/ORU^R01/MDM^T02

Reports can be transferred in four different message formats:

- ORU^R01: Section 6.23.2, “Message type: ORU^R01 (unstructured report)”
- ORU^R01 (IHE definitions): Section 6.23.3, “Message type: ORU^R01 (structured report)”
- ORU^R01 (CDA): Section 6.23.4, “Message type: ORU^R01 (structured report, CDA)”
- UDM^Q05 (deprecated): Section 6.23.1, “Message type: UDM^Q05 *(discontinued)*:”
- MDM^T02: Section 6.23.5, “Message type: MDM^T02”

Additionally, XDS.b (not described in this document because it is not based on HL7) can be used. medavis RIS implements a document source that can send reports to a document repository.

Both preliminary and final reports are transferred. Usually this message is sent to an Enterprise Report Repository. Subsequent changes to a report are noted and transferred. The report text is converted customised in the following formats ANSI, OEM, RTF, HTML, PDF or WORD. The formats HTML, PDF and WORD are transmitted in BASE64 encoding. Structured reports can also be exported in the CDA format which is also transmitted in BASE64 encoding.

6.23.1. Message type: UDM^Q05 *(discontinued)*:

UDM	Message
MSH	**Message Header**

UDM	Message
[{ SFT }]	Software Segment
URD	Results/Update Definition
[URS]	Results/Update Selection Criteria
{ DSP }	Display Data
[DSC]	Continuation Pointer

Example

```
MSH|^~\&|medavis RIS||extSys||19981124110723||UDM^Q05|17|P|2.2|||AL|NE
 URD|19981124075600|R|6800999||100598-1^100764^109629||T
URS|NOT CH||19981124110723|rhws|Report 'Thoracic spine' of 24.11.1998||REP
DSP|1||Radiological Drs. med. X and Y
DSP|2||Group Practice 71 Main St., 76133 Karlstown
DSP|3||Karlstown Phone: 0123 / 456789
DSP|4||
DSP|5||
DSP|6||Emergency Outpatient *U0987654321*
DSP|7||Surgery
DSP|8||In-house
DSP|9||
DSP|10||
DSP|11||Karlstown, 22.11.1998 / cr
DSP|12||
DSP|13||
DSP|14||
DSP|15||Thank you for referring your patient to us.
DSP|16||
DSP|17||Doe, John
DSP|18||Date of Birth: 12.05.1930
DSP|19||Resident in: 76133 Karlstown
DSP|20||
DSP|21||Clinical details:
DSP|22||
DSP|23||Cervical spine whiplash trauma
DSP|24||
DSP|25||Cervical spine in 2 planes from 22.11.1998:
DSP|26||
DSP|27||No evidence of fracture, no structural laxness or even subluxation or
DSP|28||luxation, no mentionable neg. posture, no degenerat. changes,
DSP|29||no narrowing of space between intervertebral discs. In as far as can be
DSP|30||judged also perfect proportions on atlant doxial joint.
DSP|31||
DSP|32||
DSP|33||Yours sincerely
DSP|34||
DSP|35||
DSP|36||
DSP|37||
DSP|38||Dr. med. X. Y.
```

6.23.2. Message type: ORU^R01 (unstructured report)

An ORU^R01 message is composed of the following segments:

```
ORU                     Observation Results (Unsolicited)
MSH                     Message Header
[ { SFT } ]             Software Segment
{ PID                   Patient Identification
    [PD1 ]              Additional Identification
    [{ NTE } ]          Notes and Comments (for Patient ID)
    [PV1                Patient Visit
     [ PV2 ]            Patient Visit - Additional Information
    ]
    {[ ORC ]            Common Order
     OBR                Order Detail Segment
      [ { NTE } ]       Notes and Comments (for Detail)
      { [ OBX ]         Observation / Result
       [ { NTE } ]      Notes and Comments (for Results)
      }
       [ ZED ]          Optional Examination Identifier
      {[ CTI ]}         Clinical Trial Information
    }
}
[ DSC ]                 Continuation Pointer
```

Example

```
MSH|^~\&|medavis RIS||OP_SYS||20021010101844||ORU^R01|4|P|2.5|||AL|NE|
PID||52345^^^MEDAVIS^PT|5414354^^^ASSAUT^PI||Doe^John^^^||19701025|M|||Bakerstreet
 34^^New York^^12345^US||555-1234||german
PV1||I|P1^22^4^CHI2|||||6^RefPhys^Mr.||||||||||3424222^^^ASSAUT^VN|||||||||||||||
 |||||||||20081123101200|20081124101000||||||V
ORC|SC|49629^extSys|40764^MEDAVIS|15404276^extSys|IP||1^once^^20081124110725^200811
 24111725^R|||132^Assistant medical technician^Mrs.^^^^^^^^^PN||||555-1234
OBR|1|49629^extSys|40764^MEDAVIS|ctknee^CT Knee^MEDAVIS|||20081124110725|
 20081124111725|||||||^^^^LEFT|||ap|CT1|||||CT|F||1^on ce^^20081124110725^
 20081124111725^R|||WALK|Reason of Study|13&Physician&Clara&&&Dr. med.|12&
 First Physician&John&&&Dr. med|Technician, Mrs.||20081124110000||||||N|
 ^^^^CT1|ctknee^CT Knee^MEDAVIS|||ctknee^CT Knee^MEDAVIS
OBX|1|TX|223^ctknee|1964|Radiological Drs. med. Joe and Smith||||||F
OBX|2|TX|223^ctknee|1964|Group Practice 71 Main St, 76133 Karlstown ||||||F
OBX|3|TX|223^ctknee|1964|Karlstown Phone: 0123/ 456789||||||F
OBX|4|TX|223^ctknee|1964|||||||F
OBX|5|TX|223^ctknee|1964|Emergency Outpatient||||||F
OBX|6|TX|223^ctknee|1964|Surgery||||||F OBX|7|TX|223^ctknee|1964|In-house||||||F
OBX|8|TX|223^ctknee|1964|||||||F
OBX|9|TX|223^ctknee 1964|Karlstown, 10.10.2002 / cr||||||F
OBX|10|TX|223^ctknee|1964|||||||F
OBX|11|TX|223^ctknee|1964|Thank you for referring your patient to us.||||||F
OBX|12|TX|223^ctknee|1964|||||||F
OBX|13|TX|223^ctknee|1964|Doe, John||||||F
OBX|14|TX|223^ctknee|1964|Date of Birth 25.10.1970||||||F
OBX|15|TX|223^ctknee|1964|Resident in: 12345 New York||||||F
OBX|16|TX|223^ctknee|1964|||||||F
OBX|17|TX|223^ctknee|1964|Clinical details:||||||F
OBX|18|TX|223^ctknee|1964|||||||F
OBX|19|TX|223^ctknee|1964|Trauma||||||F
OBX|20|TX|223^ctknee|1964|||||||F
OBX|21|TX|223^ctknee|1964|Computerthomography of knee||||||F
OBX|22|TX|223^ctknee|1964|||||||F
OBX|23|TX|223^ctknee|1964|No evidence of fracture||||||F
OBX|24|TX|223^ctknee|1964|||||||F
OBX|25|TX|223^ctknee|1964|Yours sincerely||||||F
OBX|26|TX|223^ctknee|1964|||||||F
OBX|27|TX|223^ctknee|1964|Dr. med. Clara Physician||||||F
```

6.23.3. Message type: ORU^R01 (structured report)

For report export details, as defined by IHE, please refer to the IHE Framework, Revision 5.4, Chapter 4.28.

An ORU^R01 message for a structured report is therefore composed of the following segments:

ORU	Observation Results (Unsolicited)
MSH	**Message Header**
[{ SFT }]	**Software Segment**
{ PID	**Patient Identification**
[PD1]	Additional Identification
[{ NTE }]	Notes and Comments (for Patient ID)

```
ORU                    Observation Results (Unsolicited)
    [PV1               Patient Visit
     [ PV2 ]           Patient Visit - Additional Information
    ]
    {[ ORC ]           Common Order
     OBR               Order Detail Segment
      [ { NTE } ]      Notes and Comments (for Detail)
      { [ OBX ]        Observation / Result
       [ { NTE } ]     Notes and Comments (for Results)
      }
       [ ZED ]         Optional Examination Identifier
      {[ CTI ]}        Clinical Trial Information
    }
}
[ DSC ]                Continuation Pointer
```

Example

```
MSH|^~\&|medavis RIS||ERR_SYS||20081124101844||ORU^R01|4|P|2.5|||AL|NE|
PID||52345^^^MEDAVIS^PT|5414354^^^ASSAUT^PI||Doe^John^^^||19701025|M|||Bakerstreet
 34^^New York^^12345^US||555-1234||german
PV1||I|P1^22^4^CHI2|||||6^RefPhys^Mr.||||||||||3424222^^^ASSAUT^VN|||||||||||||||
 |||||||||20081123101200|20081124101000||||||V
ORC|SC|49629^extSys|40764^MEDAVIS|15404276^extSys|IP||1^once^^20081124110725^200811
 24111725^R|||132^Assistant medical technician^Mrs.^^^^^^^^^PN||||555-1234
OBR|1|49629^extSys|40764^MEDAVIS|ctknee^CT Knee^MEDAVIS|||20081124110725
 |20081124111725|||||||^^^^LEFT|||ap|CT1|||||CT|F||1^on ce^^20081124110725^
 20081124111725^R|||WALK|Reason of Study|13&Physician&Clara&&&Dr. med.|12&First Physician
 &John&&&Dr. med|Technician, Mrs.||20081124110000||||||N|^^^^CT1|ctknee^CT Knee^MEDAVIS||
 |ctknee^CT Knee^MEDAVIS OBX|1|HD|DOC-ID^medavis Document Id||3409||||||F
OBX|2|HD|^Study Instance UID|1|1.2.276.0.37.1.3.199907.123||||||F
OBX|3|TX|^ST Text||Radiological Drs. med. Joe and Smith\X0D\\X0A\Group Practice71
 Main St, 76133 Karlstown \X0D\\X0A\Karlstown Phone: 0123 /
 456789\X0D\\X0A\\X0D\\X0A\Emergency Outpatient\X0D\\X0A\Surgery\X0D\\X0A\In-
 house\X0D\\X0A\\X0D\\X0A\Karlstown, 24.11.2008 / cr\X0D\\X0A\\X0D\\X0A\Thank you
 for referring your patient to us\X0D\\X0A\\X0D\\X0A\Doe, John\X0D\\X0A\Date of
 Birth 25.10.1970\X0D\\X0A\Resident in: 76133 Karlstown\X0D\\X0A\\X0D\\X0A\Clinical
 details:\X0D\\X0A\\X0D\\X0A\Trauma\X0D\\X0A\\X0D\\X0A\Computerthomography of
 knee\X0D\\X0A\\X0D\\X0A\No evidence of fracture\X0D\\X0A\\X0D\\X0A\Yours
 sincerely\X0D\\X0A\X0D\\X0A\Dr. med. John Doe||||||F
```

6.23.4. Message type: ORU^R01 (structured report, CDA)

CDA Report messages differ to standard Report messages (IHE) only in the OBX segment, where each CDA section is represented by an according OBX segment.

An ORU^R01 message for a CDA report is therefore composed of the following segments:

```
ORU                    Observation Results (Unsolicited)
MSH                    Message Header
```

```
ORU                      Observation Results (Unsolicited)
[ { SFT } ]              Software Segment
{ PID                    Patient Identification
    [PV1                 Patient Visit
     [ PV2 ]             Patient Visit - Additional Information
    ]
    {[ ORC ]             Common Order
     OBR                 Order Detail Segment
      [ { NTE } ]        Notes and Comments (for Detail)
      { [ OBX ]          Observation / Result - One Segment per CDA section
       [ { NTE } ]       Notes and Comments (for Results)
      }
       [ ZED ]           Optional Examination Identifier
      {[ CTI ]}          Clinical Trial Information
    }
}
[ DSC ]                  Continuation Pointer
```

OBX-2	"TX"
OBX-3.1	code
OBX-3.2	displayName
OBX-3.3	codeSystemName
OBX-3.14	codeSystem
OBX-5.4	"Base64"
OBX-5.5	text (Base-64 encoded)

Example with CDA

```
MSH|^~\&|medavis RIS|medavis|ERR|EXT-SYS|20171208130323||ORU^R01|374|P|2.4|||AL|NE||8859/1
PID|1|4712^^^MEDAVIS^PI|4711^^^DOMAIN-A^PT~4712^^^medavis^PI|44|Deckenhauer^Franzl^^^Dr.||19501101|M|
 ||Tollestr. 10^^Musterstadt^^12345^D||294386~343434^^CP|294386~343434^^CP|||||||||||||||N
PV1|1|I|001003^001101^001201^^^^000901||||48395|13^Schubert^Franz^^^Prof.^^^MEDAVIS|||
 ||||||||44^^^^VN|||||Patient||||||||||||||ABC|||||20110818080300|||||||V
ORC|RE||135^MEDAVIS||IP||1^once^^20110603123300^20110603123300^R|||3^Pan^Peter^Dr.^^^^^^^^^PN|
 |13^Schubert^Franz^^^Prof.
OBR|1||135^MEDAVIS|^^MEDAVIS^^^MEDAVIS|||20110603123300|20110603123300|||||||
 |13^Schubert^Franz^^^Prof.||U-ID135||||20110513114000|||F||1^once^^20110603123300^20110603123300^0|
||WALK||4&Middle&Steve&&&Dr.&&&MEDAVIS|2&Captain&Hook&&&Dr.&&&MEDAVIS|4&Middle&Steve&&&Dr.&&&MEDAVIS|
 |20100101010000||||||N
OBX|1|ED|11329-0^History general^LOINC^^^^^^^^^^^2.16.840.1.113883.6.1||^^^Base64^QW5hbW5l...
OBX|2|ED|121181^DICOM Object Catalog^DCM^^^^^^^^^^^1.2.840.10008.2.16.4||^^^Base64
OBX|3|ED|18782-3^Complications^LOINC^^^^^^^^^^^2.16.840.1.113883.6.1||^^^Base64^ZGVm
OBX|4|ED|18783-1^18783-1^2.16.840.1.113883.6.1^^^^^^^^^^^2.16.840.1.113883.6.1||^^^Base64
OBX|5|ED|18785-6^Reason for study^LOINC^^^^^^^^^^^2.16.840.1.113883.6.1||^^^Base64^VGV4dCBmdWVyIE...
OBX|6|ED|18834-2^18834-2^2.16.840.1.113883.6.1^^^^^^^^^^^2.16.840.1.113883.6.1||^^^Base64
OBX|7|ED|19005-8^19005-8^2.16.840.1.113883.6.1^^^^^^^^^^^2.16.840.1.113883.6.1||^^^Base64
OBX|8|ED|55107-7^55107-7^2.16.840.1.113883.6.1^^^^^^^^^^^2.16.840.1.113883.6.1||^^^Base64^CgkJCQk...
OBX|9|ED|55108-5^55108-5^2.16.840.1.113883.6.1^^^^^^^^^^^2.16.840.1.113883.6.1||^^^Base64
OBX|10|ED|55109-3^Complications^LOINC^^^^^^^^^^^2.16.840.1.113883.6.1||^^^Base64^VGVCB...
OBX|11|ED|55110-1^55110-1^2.16.840.1.113883.6.1^^^^^^^^^^^2.16.840.1.113883.6.1||^^^Base64
OBX|12|ED|55111-9^Current imaging procedure descriptions^LOINC^^^^^^^^^^^2.16.840.1.113883.6.1|
 |^^^Base64^VGV4d...
OBX|13|ED|55112-7^55112-7^2.16.840.1.113883.6.1^^^^^^^^^^^2.16.840.1.113883.6.1||^^^Base64
OBX|14|ED|55113-5^55113-5^2.16.840.1.113883.6.1^^^^^^^^^^^2.16.840.1.113883.6.1||^^^Base64
OBX|15|ED|55114-3^55114-3^2.16.840.1.113883.6.1^^^^^^^^^^^2.16.840.1.113883.6.1||^^^Base64
OBX|16|ED|55115-0^Requested imaging studies information^LOINC^^^^^^^^^^^2.16.840.1.113883.6.1|
 |^^^Base64^VGV4d...
OBX|17|ED|BRIEFT^Brieftext^ELGA_Sections^^^^^^^^^^^1.2.40.0.34.5.40||^^^Base64^U2Voc...
```

6.23.5. Message type: MDM^T02

For general information on MDM^T02 messages, see Section 6.19, “Original Document Notification and Content - MDM^T02”.

MDM^T02 (embedded document)

```
MSH|^~\&|medavis RIS|MEDAVIS|ERR|ERR|20160606150747||MDM^T02|401|P|2.3.1|||AL|NE
EVN|T02|20160606150747||||20160606145939
PID|1|8^^^MEDAVIS^PI|205983^^^HIS^PT||Wahrenberger^Regula||19440503|U||||||||||
 |||||||||||N
PV1|1|||||||1^^^^^^^^MEDAVIS~0000000^^^^^^^^SEAL^^^^DN||||||||||23^^^MEDAVIS^VN
 |||||a_Bayerischer GUVV / München
TXA|1|other||||20160606145900||||||14^MEDAVIS|||||DO
OBX|1|CE|^Examination ID|1|26^^MEDAVIS
OBX|2|EI|^Document Identifier||14^MEDAVIS
OBX|3|ED|39^ctabdobnkm|14\S\MEDAVIS|PDF^multipart^Octet-Stream^Base64^JVBERi0x
 [A lot of data]||||||F|||||2^medavis^GmbH^^^^^^^^^^^PN
OBX|4|HD|^Study Instance UID||1.2.43.53.7.77.26||||||||||2^medavis^GmbH^^^^^^^^^^^PN
```


MDM^T02 (reference to document)

```
MSH|^~\&|medavis RIS|MEDAVIS|ERR|ERR|20201105100027||MDM^T02^MDM_T02|7849156|P|2.3.1|||AL|NE
EVN|T02|20201105100027||||20201105100025
PID|1|199^^^MEDAVIS^PI|KIS394^^^VHIS^PT|KIS90855|Jesse^Guadalupe~Kaylie^^^^^^B||19470517|M||
  |Vestdijk 45^^Eindhoven^^2603 AO^NL||0031-0298103685|0031-0298103685||||JCYD5D32OTE87BPS|
  ||||||||||N
PV1|1|I|E|||||2^^Peter^^^Dr. med.^^^MEDAVIS~999999900^^Peter^^^^^^SEAL^^^^DN||||||21|||||
  KIS90855^^^^VN|||||Unbekannt||||||||||||||NA|||||20190305162400|20190305162400||||||V
TXA|1|other||20201105||20201105100000||||||800^MEDAVIS||KIS20190305162402|166518^MEDAVIS||DO
OBX|1|EI|^Document Identifier||800^MEDAVIS
OBX|2|RP|^Document Reference Pointer|800\S\MEDAVIS|
  /MM/7849156-36.pdf^smb://localhost&URI^multipart^Octet-Stream||||||F|||||
  2^medavis^GmbH^^^^^^^^^^^PN
OBX|3|HD|^Study Instance UID||1.2.276.0.37.1.123.201609.1753||||||||||
  2^medavis^GmbH^^^^^^^^^^^PN
```

MDM^T02 with embedded CDA

```
MSH|^~\&|medavis
 RIS|MEDAVIS|KIS|KIS|20171129141626||MDM^T02|385|P|2.3.1|||AL|NE||8859/2
EVN|T02|20171129141626|||4^Middle^Steve^Dr.^^^^^^^^^PN|20110513181548
PID|1|4712^^^MEDAVIS^PI||44|Deckenhauer^Franzl^^^Dr.||19501101|M|||Tollestr. 10
 ^^Musterstadt^^12345^D||294386~343434^^CP|294386~343434^^CP|||||||||||||||N
PV1|1|I|001003^001101^001201^^^^000901|||||13^^^^^^^^MEDAVIS|||||||||||44^^^^VN|||||||||||||||||
 ||ABC|||||20110818080300|||||||V
ORC|RE|demo1500624^PLACER|780^MEDAVIS|1140^PLACERGROUP|CM||1^once^^20110603123300^2011
 0603123300^R|||4^Middle^Steve^Dr.^^^^^^^^^PN||13
OBR|1|demo1500624^PLACER|780^MEDAVIS|^^^cpanc^CT Pancreas^MEDAVIS|||20110603123300|
 20110603123300||||^ServiceTypeCd\T\INNE||||13||U-ID146
 ||||20110513114000||CT|F||1^once^^20110603123300^20110603123300^0|||WALK||4&Middle&
 Steve&&&Dr.&&&MEDAVIS||4&Middle&Steve&&&Dr.&&&MEDAVIS||20100101010000||||||N
TXA|1|other||||20171127154451||||||||demo1500624^PLACER|780^MEDAVIS||DO
OBX|1|CE|^Examination ID|1|146^^MEDAVIS|||N
OBX|2|EI|^Document Identifier||25761^MEDAVIS
OBX|3|ED|364^cpanc|25761\S\MEDAVIS|^application^hl7-v3+xml^Base64^PHhtbD5jZGEgZG9jdW1lbnQgdjQ8L3htbD4=
 ||||||F|||||4^Middle^Steve^Dr.^^^^^^^^^PN
OBX|4|HD|^Study Instance UID||1.2.276.0.37.1.3.199907.99999.1234.146||||||||||
 |4^Middle^Steve^Dr.^^^^^^^^^PN
```

MDM^T02 with multiple embedded document formats

```
                    MSH|^~\&|medavis
 RIS|MEDAVIS|KIS|KIS|20181031124351||MDM^T02|389|P|2.3.1|||AL|NE||8859/2
EVN|T02|20181031124351||02|4^Middle^Steve^Dr.^^^^
 ^&1.2.276.0.37.1.3.199907.99999.1234.72&ISO^^^^PN|20110513181548
PID|1|4712^^^MEDAVIS^PI||44|Deckenhauer^Franzl^^^Dr.||19501101|M|||
 Tollestr. 10^^Musterstadt^^12345^D||294386~343434^^CP|294386~343434^^CP|||||||||||||||N
PV1|1|I|001003^001101^001201^^^^000901|||||13^^^^^^^^ThisDomain||||||||||
 44^^^^^VN|||||||||||||||||||ABC|||||20110818080300|||||||V
ORC|RE|demo1500624^PLACER|780^MEDAVIS|1140^PLACERGROUP|CM||1^once^^
 20110603123300^20110603123300^R|||4^Middle^Steve^Dr.^^^^^^^^^PN||13
OBR|1|demo1500624^PLACER|780^MEDAVIS|^^^cpanc^CT Pancreas^MEDAVIS|||
 20120823082015|20120823083727||||^ServiceTypeCd\T\INNE||||13||U-ID148||||
 20110513114000||CT|F||1^once^^20120823082015^20120823083727^0|||WALK||
 4&Middle&Steve&&&Dr.&&&ThisDomain||4&Middle&Steve&&&Dr.&&&ThisDomain||20100101010000|||||N
TXA|1|other||20120823082015+0200||20771116073800|||
 1111^Isabella^Stern^^^^^^&1.2.40.0.34.99.111.1.3&ISO^L|||abc199doc^ThisDomain||
 demo1500624^PLACER|780^MEDAVIS||LA|U||||
 2222^Sigrid^Kollmann^^^^^^&1.2.40.0.34.99.111.1.3&ISO^L^^^^^20120824082015+0200
OBX|1|CE|^Examination ID|1|148^^MEDAVIS|||N
OBX|2|EI|^Document Identifier||abc199doc^ThisDomain
OBX|3|ED|364^cpanc|1|^application^hl7-v3+xml^Base64^PD94bWwgd[..data here..]+DQo=
 ||||||F|||||4^Middle^Steve^Dr.^^^^^^^^^PN
OBX|4|TX|364^cpanc|2|Befund mit Sonderzeichen [\X1F\,\X0B\]\X0A\\X0A\
 ||||||F|||||4^Middle^Steve^Dr.^^^^^^^^^PN
OBX|5|ED|364^cpanc|3|PDF^multipart^Octet-Stream^Base64^JVBERi0xLj[..data here..]go=
 ||||||F|||||4^Middle^Steve^Dr.^^^^^^^^^PN
OBX|6|FT|364^cpanc|4|{\E\rtf1\E\ansi\E\ansicpg1252[..data here..]\E\par }
 ||||||F|||||4^Middle^Steve^Dr.^^^^^^^^^PN
OBX|7|HD|^Study Instance UID||1.2.276.0.37.1.3.199907.99999.1234.148
 |||||||||||4^Middle^Steve^Dr.^^^^^^^^^PN
```

7. Segment Definitions

The following describes all segments used in the medavis interface. Fields marked in the table in **bold** type are evaluated by the interface.

- SEQ: Sequence

  LEN: Length

  DT: Data type

  R/O: Required/Optional

  RP#: Repetition allowed (sometimes with the amount of allowed repetitions)

  TBL#: Tables in the HL7 standard that contain values, allowed for this field

  ITEM: Identifier of the sequence

  ELEMENT NAME: The name of the sequence

  Explanation: Further information on the sequence

  I/O: The sequence is evaluated I(inbound) and/or sent O(outbound)

7.1. MSH - Message Header Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**1**	**ST**	**R**			**00001**	**Field separator**	**Constant: |**	**I/O**
2	**4**	**ST**	**R**			**00002**	**Encoding characters**	**Constant: ^~\&**	**I/O**
3	**180**	**HD**	**R2**			**00003**	**Sending application**		**I/O**
4	180	HD	O			00004	Sending facility		I/O
5	**180**	**HD**	**O**			**00005**	**Receiving application**		**I/O**
6	180	HD	O			00006	Receiving facility		I/O
7	**26**	**TS**	**O**			**00007**	**Date/time of message**	**Format: YYYYMMDDHHNNSS**	**I/O**
8	40	ST	O			00008	Security		I/O
9	**7**	**CM**	**R**		**0076, 0003**	**00009**	**Message type**		**I/O**
10	**20**	**ST**	**R**			**00010**	**Message control ID**		**I/O**
11	3	PT	R		0103	00011	Processing ID		O
12	8	ID	R		0104	00012	Version ID		O
13	15	NM	O			00013	Sequence number		
14	180	ST	O			00014	Continuation pointer		
15	2	ID	O		0155	00015	Accept acknowledgement type		O
16	2	ID	O		0155	00016	Application acknowledgement type		
17	2	ID	O			00017	Country code		

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
18	6	ID	O	Y/3	0211	00692	Character set		O
19	60	CE	O			00693	Principal language of message		

7.2. MSA - Message Acknowledgement Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**2**	**ID**	**R**		**0008**	**00018**	**Acknowledgement code**		**I/O**
2	**20**	**ST**	**R**			**00010**	**Message Control ID**	**(obtained from MSH-10)**	**I/O**
3	**80**	**ST**				**00020**	**Text Message**		**I/O**
4	15	NM				00021	Expected Sequence Number		
5	1	ID			0102	00022	Delayed Acknowledgement type		
6	**100**	**CE**				**00023**	**Error Condition**		**O**

7.3. EVN - Event Type Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**3**	**ID**	**B**		**0003**	**00099**	**Event Type Code**	**(MSH-9.2)**	**I/O**
2	**26**	**TS**	**R**			**00100**	**Date/Time of Event**	**(MSH-7)**	**I/O**
3	26	TS	O			00101	Date/Time Planned Event		
4	3	IS	O		0062	00102	Event Reason Code		
5	60	XCN	O		0188	00103	Operator ID		
6	**26**	**TS**	**O**			**01278**	**Event Occurred**		**I/O**

7.4. ERR - Error Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	493	ELD	B	Y		00024	Error Code and Location		O
2	18	ERL	O	Y		01812	Error Location		O
3	705	CWE	R		0357	01813	HL7 Error Code		O
4	2	ID	R		0516	01814	Severity		O
5	705	CWE	O		0533	01815	Application Error Code		
6	80	ST	O	Y/10		01816	Application Error Parameter		
7	2048	TX	O			01817	Diagnostic Information		
8	250	TX	O			01818	User Message		O

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
9	20	IS	O	Y	0517	01819	Inform Person Indicator		
10	705	CWE	O		0518	01820	Override Type		
11	705	CWE	O	Y	0519	01821	Override Reason Code		
12	652	XTN	O	Y		01822	Help Desk Contact Point		

7.5. AIG - Appointment Information

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	4	SI	R			00896	Set ID -AIG		O
2	3	ID	C		0206	00763	Segment Action Code		
3	250	CE	C			00897	Resource ID		O
4	250	CE	R			00898	Resource Type		O
5	250	CE	O	Y		00899	Resource Group		
6	5	NM	O			00900	Resource Quantity		
7	250	CE	O			00901	Resource Quantity Units		
8	26	TS	C			01202	Start Date/Time		
9	20	NM	C			00891	Start Date/Time Offset		
10	250	CE	C			00892	Start Date/Time Offset Units		
11	20	NM	O			00893	Duration		
12	250	CE	O			00894	Duration Units		
13	10	IS	C		0279	00895	Allow Substitution Code		
14	250	CE	C		0278	00889	Filler Status Code		

7.6. AIL - Appointment Information - Location Resource

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	4	SI	R			00902	Set ID -AIL		O
2	3	ID	C		0206	00763	Segment Action Code		
3	80	PL	C	Y		00903	Location Resource ID		I/O
4	250	CE	C		305	00904	Location Type-AIL		
5	250	CE	O			00905	Location Group		
6	26	TS	C			01202	Start Date/Time		I
7	20	NM	C			00891	Start Date/Time Offset		
8	250	CE	C			00892	Start Date/Time Offset Units		
9	20	NM	O			00893	Duration		I
10	250	CE	O			00894	Duration Units		I
11	10	IS	C		0278	00895	Allow Substitution Code		
12	250	CE	C		0278	00889	Filler Status Code		

7.7. AIP - Appointment Information - Personnel Resource

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	4	SI	R			00906	Set ID -AIP		O
2	3	ID	C		0206	00763	Segment Action Code		
3	250	XCN	C	Y		00913	Personnel Resource ID		I/O
4	250	CE	C		0182	00907	Resource Type		
5	250	CE	O			00899	Resource Group		
6	26	TS	C			01202	Start Date/Time		
7	20	NM	C			00891	Start Date/Time Offset		
8	250	CE	C			00892	Start Date/Time Offset Units		
9	20	NM	O			00893	Duration		I
10	250	CE	O			00894	Duration Units		
11	10	IS	C		0279	00895	Allow Substitution Code		
12	250	CE	C		0278	00889	Filler Status Code		

7.8. ARV - Access Restriction

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
3	**705**	**CWE**			**0717**	**02145**	**Access Restriction Value**		**I**

7.9. AIS - Appointment Information

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	4	SI	R			00890	Set ID -AIS		O
2	3	ID	C		0206	00763	Segment Action Code		
3	250	CE	R			00238	Universal Service Identifier		I/O
4	26	TS	C			01202	Start Date/Time	Optional if Date/Time is already sent in SCH,TQ1 or AIL.	I
5	20	NM	C			00891	Start Date/Time Offset		
6	250	CE	C			00892	Start Date/Time Offset Units		
7	20	NM	O			00893	Duration	Optional if Date/T me is already sent in SCH,TQ1 or AIL	I/O
8	250	CE	O			00894	Duration Units	Optional if Date/Time is already sent inSCH,	I

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
								TQ1 or AIL. "MIN" or"SEC"	
9	10	IS	C		0279	00895	Allow Substitution Code		
10	250	CE	C		0278	00889	Filler Status Code		
11	250	CE	O	Y	0411	01474	Placer Supple mental Service Information		I/O
12	250	CE	O	Y	0411	01475	Filler Supplemental Service Information		

7.10. DSC - Continuation Pointer

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	180	ST	O			00014	Continuation Pointer		I
2	1	ID	O		0398	01354	Continuation Style		I

7.11. PID - Patient Identification Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	4	SI	O			00104	Set ID - Patient ID		I
2	**20**	**CX**	**O**			**00105**	**Patient ID (External ID)**	**Deprecated since HL7 version 2.4**	**O**
3	**20**	**CX**	**R**	**Y**		**00106**	**Patient identifier list (Internal ID)**	**(Patient ID of the ADT's)**	**I/O**
4	**20**	**CX**	**O**	**Y**		**00107**	**Alternate Patient ID**		**I**
5	**48**	**XPN**	**R**	**Y**		**00108**	**Patient Name**		**I/O**
6	**48**	**XPN**	**O**			**00109**	**Mother's Maiden Name**		**I/O**
7	**26**	**TS**	**O**			**00110**	**Date of Birth**	**Format: YYYYMMDD**	**I/O**
8	**1**	**IS**	**O**		**0001**	**00111**	**Sex**		**I/O**
9	48	XPN	O	Y		00112	Patient Alias		
10	1	IS	O		0005	00113	Race	Not used	
11	**106**	**XAD**	**O**	**Y**		**00114**	**Patient Address**		**I/O**
12	4	IS	B			00115	County code		
13	**40**	**XTN**	**O**	**Y**		**00116**	**Phone Number - Home**		**I**
14	**40**	**XTN**	**O**	**Y**		**00117**	**Phone Number - Business**		**I**
15	**60**	**CE**	**O**		**0296**	**00118**	**Language - Patient**		**O**
16	1	IS	O		0002	00119	Marital Status		
17	3	IS	O		0006	00120	Religion		
18	**20**	**CX**	**O**			**00121**	**Patient Account Number**		**I/O**
19	**16**	**ST**	**O**			**00122**	**SSN Number - Patient**		**O**
20	25	DLN	O			00123	Driver's Lic Num - Patient	Not used	

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
21	20	CX	O	Y		00124	Mother's Identifier		
22	3	IS	O		0189	00125	Ethnic Group		
23	**60**	**ST**	**O**			**00126**	**Birth Place**		**I**
24	2	ID	O		0136	00127	Multiple Birth Indicator		
25	2	NM	O			00128	Birth Order		
26	**4**	**IS**	**O**	**Y**	**0171**	**00129**	**Citizenship**	**(country code)**	**I/O**
27	60	CE	O		0172	00130	Veterans Military Status	Patient’s job/ profession	
28	80	CE	O			00739	Nationality		
29	**26**	**TS**	**O**			**00740**	**Patient Death Date and Time**		**O**
30	**1**	**ID**	**O**		**0136**	**00741**	**Patient Death Indicator**		**O**

7.12. FT1 - Financial Transaction Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	7	SI	O			00355	Set ID financial transaction	Transaction number	O
2	12	ST	O			00356	Transaction ID	Bookingno./Receipt no./ Invoice no.	O
3	10	ST	O			00357	Transaction batch ID	Batch / account ing coder	O
4	26	TS	R			00358	Transaction Date	Receipt /Service/ Invoice date	I/O
5	26	TS	O			00359	Transaction Posting date		O
6	8	IS	R		0017	00360	Transaction Type		O
7	80	CE	R		0132	00361	Transaction Code	Service code/text	I/O
8	40	ST	B			00362	Transaction Description		
9	40	ST	B			00363	Transaction Description alternate	Number of sessions	O
10	6	NM	O			00364	Transaction Quantity	No. of services/no. of points	O
11	12	CP	O			00365	Transaction Amount extended	Amount(total)	
12	12	CP	O			00366	Transaction Amount unit	Unit price/point value	O
13	60	CE	O		0049	00367	Department Code		
14	60	CE	O		0072	00368	Insurance Plan ID	Tariff code of cost unit	
15	12	CP	O			00369	Insurance Amount	Paymentamount	
16	80	PL	O			00133	Assigned Patient Location		0

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
17	1	IS	O		0024	00370	Fee Schedule	No longer used (see FT1-7)	
18	2	IS	O		0018	00148	PatientType	Type of patient(PPR)	
19	60	CE	O	Y	0051	00371	DiagnosisCode		
20	120	XCN	O	Y	0084	00372	Performed by Code		I/O
21	120	XCN	O			00373	Ordered by Code		O
22	12	CP	O			00374	UnitCost	Accounting factor	O
23	22	EI	O			00217	Filler Order Number		O
24	120	XCN	O			00765	Entered By Code		O
25	80	CE	O		0088	00393	Procedure Code		O
26	250	CE	O	Y	0340	01316	Procedure Code Modifier	(HL 7 v2.4 and later)	O
27	250	CE	O		0339	01310	Advanced Beneficiary Code	(HL 7 v2.5 and later)	O
28	250	CWE	O		0476	01646	Medically Necessary Duplicate Procedure Reason	(HL 7 v2.5 and later)	
29	250	CNE	O			01845	NDC Code	(HL 7 v2.5 and later)	
30	250	CX	O			01846	Payment Reference ID	(HL 7 v2.5 and later)	O

7.13. GT1 - Guarantor

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	4	SI	R			00405	Set ID – GT1		I/O
2	250	CX	O	Y		00406	Guarant or Number		
3	250	XPN	R	Y		00407	Guarant or Name		I/O
4	250	XPN	O	Y		00408	Guarant or Spouse Name		
5	250	XAD	O	Y		00409	Guarant or Address		
6	250	XTN	O	Y		00410	Guarant or Ph Num - Home		
7	250	XTN	O	Y		00411	Guarant or Ph Num Business		
8	26	TS	O			00412	Guarant or Date/Time Of Birth		
9	1	IS	O		0001	00413	Guarant or Administrative Sex		
10	2	IS	O		0068	00414	Guarant or Type		
11	250	CE	O		0063	00415	Guarant or Relationship		
12	11	ST	O			00416	Guarant or SSN		
13	8	DT	O			00417	Guarant or Date - Begin		
14	8	DT	O			00418	Guarant or Date - End		
15	2	NM	O			00419	Guarant or Priority		
16	250	XPN	O	Y		00420	Guarant or Employer Name		

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
17	250	XAD	O	Y		00421	Guarant or Employer Address		
18	250	XTN	O	Y		00422	Guarant or Employer Phone Number		
19	250	CX	O	Y		00423	Guarant or Employee ID Number		
20	2	IS	O		0066	00424	Guarant or Employment Status		
21	250	XON	O	Y		00425	Guarant or Organization Name		
22	1	ID	O		0136	00773	Guarant or Billing Hold Flag		
23	250	CE	O		0341	00774	Guarant or Credit Rating Code		
24	26	TS	O			00775	Guarant or Death Date And Time		
25	1	ID	O		0136	00776	Guarant or Death Flag		
26	250	CE	O		0218	00777	Guarant or Charge Adjustment Code		
27	10	CP	O			00778	Guarant or Household Annual Income		
28	3	NM	O			00779	Guarant or Household Size		
29	250	CX	O	Y		00780	Guarant or Employer ID Number		
30	250	CE	O		0002	00781	Guarant or Marital Status Code		
31	8	DT	O			00782	Guarant or Hire Effective Date		
32	8	DT	O			00783	Employment Stop Date		
33	2	IS	O		0223	00755	Living Dependency		
34	2	IS	O	Y	0009	00145	Ambulatory Status		
35	250	CE	O	Y	0171	00129	Citizenship		
36	250	CE	O		0296	00118	Primary Language		
37	2	IS	O		0220	00742	Living Arrangement		
38	250	CE	O		0215	00743	Publicity Code		
39	1	ID	O		0136	00744	Protection Indicator		
40	2	IS	O		0231	00745	Student Indicator		
41	250	CE	O		0006	00120	Religion		
42	250	XPN	O	Y		00109	Mother’s Maiden Name		
43	250	CE	O		0212	00739	Nationality		
44	250	CE	O	Y	0189	00125	Ethnic Group		
45	250	XPN	O	Y		00748	Contact Person’s Name		
46	250	XTN	O	Y		00749	Contact Person’s Telephone Number		

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
47	250	CE	O		0222	00747	Contact Reason		
48	3	IS	O		0063	00784	Contact Relationship		
49	20	ST	O			00785	Job Title		
50	20	JCC	O			00786	Job Code/Class		
51	250	XON	O	Y		01299	Guarant or Employer's Organiz ation Name		
52	2	IS	O		0295	00753	Handicap		
53	2	IS	O		0311	00752	Job Status		
54	50	FC	O			01231	Guarant or Financial Class		
55	250	CE	O	Y	0005	01291	Guarant or Race		
56	250	ST	O			01851	Guarant or Birth Place		
57	2	IS	O		0099	00146	VIP IndicatorS		

7.14. PV1 - Patient Visit Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**4**	**SI**	**O**			**00131**	**Set ID - Patient Visit**	**Transaction number**	**O**
2	**1**	**IS**	**R**		**0004**	**00132**	**Patient Class**	**(Type of billing)**	**I/O**
3	**80**	**PL**	**R2**			**00133**	**Assigned Patient Location**	**(Dept., ward, room, bed)**	**I/O**
4	2	IS	O		0007	00134	Admission Type		
5	20	CX	O			00135	Preadmit Number		
6	**80**	**PL**	**O**			**00136**	**Prior Patient Location**	**(when transferred)**	**I/O**
7	**60**	**XCN**	**O**	**Y**	**0010**	**00137**	**Attending Doctor**		**I/O**
8	**60**	**XCN**	**O**	**Y**	**0010**	**00138**	**Referring Doctor**		**I/O**
9	**60**	**XCN**	**O**	**Y**	**0010**	**00139**	**Consulting Doctor**		**I/O**
10	**3**	**IS**	**O**		**0069**	**00140**	**Hospital Service**	**Type of treatment intended**	**I/O**
11	80	PL	O			00141	Temporary Location		
12	2	IS	O			00142	Preadmit Test Indicator	Ref. to exam. prog. which must be carried out before the patient is admitted	
13	2	IS	O		0092	00143	Readmission indicator		
14	**3**	**IS**	**O**		**0023**	**00144**	**Admit Source**		**I/O**
15	**2**	**IS**	**O**	**Y**	**0009**	**00145**	**Ambulatory Status**		**O**
16	2	IS	O		0099	00146	VIP Indicator		
17	**60**	**XCN**	**O**	**Y**	**0010**	**00147**	**Admitting Doctor**		**I/O**
18	2	IS	O		0018	00148	Patient Type		
19	**20**	**CX**	**R2**			**00149**	**Visit Number**	**Assigning Authority in PV1-19.4**	**I/O**

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
20	**50**	**FC**	**O**	**Y**	**0064**	**00150**	**Financial Class**	**Type of payment (code 4 GSG)**	**I/O**
21	2	IS	O		0032	00151	Charge Price Indicator	Health-plan patient/ Self-pay patient	
22	2	IS	O		0045	00152	Courtesy Code	Not used	
23	2	IS	O		0046	00153	Credit Rating	Not used	
24	**2**	**IS**	**O**	**Y**	**0044**	**00154**	**Contract Code**	**Type of billing**	**O**
25	8	DT	O	Y		00155	Contract Effective Date	Type of billing valid from	
26	12	NM	O	Y		0156	Contract Amount	Billing amount	
27	3	NM	O	Y		0157	Contract Period	Period of validity for billing	
28	2	IS	O		0073	00158	Interest Code	Not used	
29	1	IS	O		0110	00159	Transfer to Bad Debt Code	Not used	
30	8	DT	O			00160	Transfer to Bad Debt Date	Not used	
31	10	IS	O		0021	00161	Bad Debt Agency Code	Not used	
32	12	NM	O			00162	Bad Debt Transfer Amount	Not used	
33	12	NM	O			00163	Bad Debt Recovery Amount	Not used	
34	1	IS	O		0111	00164	Delete Account Indicator	Not used	
35	8	DT	O			00165	Delete Account Date	Not used	
36	3	IS	O		0112	00166	Discharge Disposition		
37	25	CM	O		0113	00167	Discharged to Location		
38	2	IS	O		0114	00168	Diet Type		
39	**2**	**IS**	**O**		**0115**	**00169**	**Servicing Facility**	**Default Cost Unit**	**I/O**
40	1	IS	B		0116	00170	Bed Status	Not used	
41	2	IS	B		0117	00171	Account Status		
42	80	PL	O			00172	Pending Location		
43	80	PL	O			00173	Prior Temporary Location		
44	**26**	**TS**	**O**			**00174**	**Admit Date/Time**	**Alternative PV1-19.7**	**I/O**
45	**26**	**TS**	**O**			**00175**	**Discharge Date/Time**	**Alternative PV1-19.8**	**I/O**
46	12	NM	O			00176	Current Patient Balance	Not used	
47	12	NM	O			00177	Total Charges	Not used	
48	12	NM	O			00178	Total Adjustments	Not used	
49	12	NM	O			00179	Total Payments	Not used	
50	**20**	**CX**	**O**		**0192**	**00180**	**Alternate Visit ID**		**I/O**
51	**1**	**IS**	**O**		**0326**	**01226**	**Visit Indicator**	**Medical/billing-oriented message**	**I/O**
52	60	XCN	O	Y	0010	01224	Other Healthcare Provider		

7.15. IN1 - Insurance Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**4**	**SI**	**R**			**00426**	**Set ID insurance**	**Transaction number**	**O**
2	**60**	**CE**	**R**		**0072**	**00368**	**Insurance plan ID**	**Tariff code of cost unit (insurance number) is used if IN1-49 not set.**	**I**
3	**59**	**CX**	**R**	**Y**		**00428**	**Insurance company ID**	**Institute code/number of cost unit**	**I/O**
4	**130**	**XON**	**R2**	**Y**		**00429**	**Insurance company name**		**I/O**
5	**106**	**XAD**	**O**	**Y**		**00430**	**Insurance company address**		**O**
6	48	XPN	O	Y		0431	Insurance co. Contact pers		
7	40	XTN	O	Y		0432	Insurance co phone number		
8	**12**	**ST**	**R2**			**00433**	**Group number**	**Mapping takes place only with following ID: 1 = health-plan/BG, 2 = private, 3 = self-pay**	
9	**130**	**XON**	**R2**	**Y**		**00434**	**Group name**	**Type of cost unit**	**I/O**
10	12	CX	O	Y		00435	Insured's group emp ID	Not used	
11	130	XON	O	Y		00436	Insured's group emp Name	Not used	
12	**8**	**DT**	**O**			**00437**	**Plan effective date**	**Start date of health insurance card**	**I/O**
13	**8**	**DT**	**O**			**00438**	**Plan expiration date**	**Expiry date of health insurance card**	
14	55	CM	O			00439	Authorization information	File reference of cost transfer	
15	**3**	**IS**	**O**		**0086**	**00440**	**Plan type**	**Insurance status (M / F / R)**	**I/O**
16	**48**	**XPN**	**O**	**Y**		**00441**	**Name of insured**		**I**
17	2	IS	O		0063	00442	Insured's relationship to patient		
18	**26**	**TS**	**O**			**00443**	**Insured's date of birth**		**I/O**
19	106	XAD	O	Y		00444	Insured's address		
20	2	IS	O		0135	00445	Assignment of benefits		
21	2	IS	O		0173	00446	Coordination of benefits		
22	2	ST	O			00447	Coord of ben. Priority		
23	2	ID	O		0136	00448	Notice of admission code		
24	8	DT	O			00449	Notice of admission date		

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
25	2	ID	O		0136	00450	Rpt of eligibility code	Cost transfer feature (GSG)	
26	8	DT	O			00451	Rpt of eligibility date	Date of cost transfer	
27	2	IS	O		0093	00452	Release information code		
28	15	ST	O			00453	Pre admit cert (PAC)		
29	**26**	**TS**	**O**			**00454**	**Verification date/time**	**Date/time insurance card last verified**	**O**
30	60	XCN	O			00455	Verification by	Verified by	
31	2	IS	O		0098	00456	Type of agreement code	Not used	
32	2	IS	O		0022	00457	Billing status		
33	4	NM	O			00458	Lifetime reserve days	Not used	
34	4	NM	O			00459	Delay before L. R. day	Not used	
35	**8**	**IS**	**O**			**00460**	**Company plan code**	**Insurance card data ICNo.^Ins.no.^validto ^Status^Status suppl. ^KT subgroup** **Example: 6201379^^0405^1000^1^ IN1-35.1 is used if IN1-2 not set. IN1-35.2 is used if IN1-15 not set. IN1-35.3 is used if IN1-13 not set.**	
36	**15**	**ST**	**O**			**00461**	**Policy number**		**O**
37	**12**	**CP**	**O**			**00462**	**Policy deductible**		**O**
38	12	CP	B			00463	Policy limit amount	No longer used (see IN2-29)	
39	4	NM	O			00464	Policy limit days		
40	12	CP	B			00465	Room rate semi private	No longer used	
41	12	CP	B			00466	Room rate private	No longer used	
42	60	CE	O		0066	00467	Insured's employment status		
43	1	IS	O		0001	00468	Insured's sex		
44	106	XAD	O	Y		00469	Insured's employer address		
45	2	ST	O			00470	Verification status	Not used	
46	8	IS	O		0072	00471	Prior insurance plan ID		
47	3	IS	O		0309	01227	Coverage Type		
48	2	IS	O		0310	00753	Handicap Code		
49	**12**	**CX**	**O**	**Z**		**01230**	**Insured's ID Number**	**Insurance number**	**I/O**

7.16. IN2 - Insurance Additional Information Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	250	CX	O	Y		472	Insured's Employe e ID		
2	11	ST	O			473	Insured's Social Security Number		
3	250	XCN	O	Y		474	Insured's Employer's Name and ID		
4	1	IS	O		139	475	Employer Information Data		
5	**1**	**IS**	**O**	**Y**	**137**	**476**	**Mail Claim Party**		**I/O**
6	15	ST	O			477	Medicare Health Ins Card Number		
7	250	XPN	O	Y			478	Medicaid Case Name	
8	15	ST	O			479	Medicaid Case Number		
9	250	XPN	O	Y			480	Military Sponsor Name	
10	20	ST	O			481	Military ID Number		
11	250	CWE	O		342	482	Dependent Of Military Recipient		
12	25	ST	O			483	Military Organiztion		
13	25	ST	O			484	Military Station		
14	14	IS	O		140	485	Military Service		
15	2	IS	O		141	486	Military Rank/Grade		
16	3	IS	O		142	487	Military Status		
17	8	DT	O			488	Military Retire Date		
18	1	ID	O		136	489	Military Non-Avail Cert On File		
19	1	ID	O		136	490	Baby Coverage		
20	1	ID	O		136	491	Combine Baby Bill		
21	1	ST	O			492	Blood Deductible		
22	250	XPN	O	Y		493	Special Coverage Approval Name		
23	30	ST	O			494	Special Coverage Approval Title		
24	8	IS	O	Y	143	495	Non-Covered Insurance Code		
25	250	CX	O	Y		496	Payor ID		
26	250	CX	O	Y		497	Payor Subscriber ID		
27	1	IS	O		144	498	Eligibility Source		
28	82	RMC	O	Y		499	Room Coverage Type/ Amount		
29	56	PTA	O	Y		500	Policy Type/Amount		
30	25	DDI	O			501	Daily Deductible		
31	2	IS	O		223	755	Living Dependency		
32	2	IS	O	Y	9	145	Ambulatory Status		

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
33	705	CWE	O	Y	171	129	Citizenship		
34	705	CWE	O		296	118	Primary Language		
35	2	IS	O		220	742	Living Arrangement		
36	705	CWE	O		215	743	Publicity Code		
37	1	ID	O		136	744	Protection Indicator		
38	2	IS	O		231	745	Student Indicator		
39	705	CWE	O		6	120	Religion		
40	250	XPN	O	Y		109	Mother's Maiden Name		
41	705	CWE	O		212	739	Nationality		
42	705	CWE	O	Y	189	125	Ethnic Group		
43	705	CWE	O	Y	2	119	Marital Status		
44	8	DT	O			787	Insured's Employment Start Date		
45	8	DT	O			783	Employment Stop Date		
46	20	ST	O			785	Job Title		
47	20	JCC	O			786	Job Code/Class		
48	2	IS	O		311	752	Job Status		
49	250	XPN	O	Y		789	Employer Contact Person Name		
50	250	XPN	O	Y		790	Employer Contact Person Phone Number		
51	2	IS	O		222	791	Employer Contact Reason		
52	250	XPN	O	Y		792	Insured's Contact Person's Name		
53	250	XPN	O	Y		793	Insured's Contact Person Phone Number		
54	2	IS	O	Y	222	794	Insured's Contact Person Reason		
55	8	DT	O			795	Relationship to the Patient Start Date		
56	8	DT	O	Y		796	Relationship to the Patient Stop Date		
57	2	IS	O		232	797	Insurance Contact Reason		
58	250	XPN	O	Y		798	Insurance Contact Phone Number		
59	2	IS	O		312	799	Policy Scope		
60	2	IS	O		313	800	Policy Source		
61	250	CX	O			801	Patient Member Number		
62	250	CWE	O		63	802	Guarant or's Relationship to Insured		
63	250	XPN	O	Y		803	Insured's Phone Number - Home		
64	250	XPN	O	Y		804	Insured's Employer Phone Number		

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
65	250	CWE	O		343	805	Military Handicapped Program		
66	1	ID	O		136	806	Suspend Flag		
67	1	ID	O		136	807	Copay Limit Flag		
68	1	ID	O		136	808	Stoploss Limit Flag		
69	250	XON	O	Y		809	Insured Organization Name and ID		
70	250	XON	O	Y		810	Insured Employer Organization Name and ID		
71	705	CWE	O	Y	5	113	Race		
72	705	CWE	O		344	811	Patient's Relationship to Insured		

7.17. MRG - Merge Patient Information Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**20**	**CX**	**R**	**Y**		**00211**	**Prior Patient ID - Internal**		**I/O**
2	20	CX	O	Y		00212	Prior Alternate Patient ID		
3	20	CX	O			00213	Prior Patient Account Number		
4	**20**	**CX**	**O**			**00214**	**Prior Patient ID - External**		
5	**20**	**CX**	**O**			**01279**	**Prior Visit Number**		**I**
6	20	CX	O			01280	Prior Alternate Visit ID		
7	48	XPN	O			01281	Prior Patient Name		

7.18. QRD - Original-style Query Definition Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	26	TS	R			00025	Query Date/Time		
2	1	ID	R		0106	00026	Query Format Code	R – for patient data D – for reports	
3	1	ID	R		0091	00027	Query Priority	constant 'I'	
4	**10**	**ST**	**R**			**00028**	**Query ID**		**I**
5	1	ID			0107	00029	Deferred Response Type	(to QRD 6)	
6	26	TS				00030	Deferred Response Date/Time		

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
7	**10**	**CQ**	**R**		**0126**	**00031**	**Quantity Limited Request**	**Maximum length of response With patient query = '1^RD'**	**I**
8	20	ST	R	Y		00032	Who Subject Filter	Search term – Person (Patient ID)	
9	**3**	**ID**	**R**	**Y**	**0048**	**00033**	**What Subject Filter**	**Search term – Information category APN – patient data RES – results**	**I**
10	**20**	**ST**	**R**	**Y**		**00034**	**What Department Data Code**	**Search term – objects (Order Filler ID)**	**I**
11	20	ST		Y		00035	What Data Code Value Qual.	Search term – Object range	
12	1	ID			0108	00036	Query Results Level		

7.19. DSP - Display Data Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	4	SI				00061	Set ID - Display Data	Transaction number	O
2	4	SI				00062	Display Level	Block number	
3	300	TX	R			00063	Data Line	(Formatting as per default)	O
4	2	ST	R			00064	Logical Break Point		
5	*20*	*TX*	*R*			*00065*	*Result ID*		

7.20. QAK - Query Acknowledgement Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	32	ST	C			00696	QueryTag		O
2	2	ID	O		0208	00708	Query Response Status		O
3	250	CE	O		0471	01375	Message Query Name		
4	10	NM	O			01434	HitCount		
5	10	NM	O			01622	This payload		
6	10	NM	O			01623	Hits remaining		

7.21. QPD - Query Parameter Definition

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	250	CE	R		0471	01375	Message QueryName		

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
2	32	ST	C			00696	QueryTag		
3-n	256	varies				01435	User Parameters (in successive fields)		I

7.22. QRF - Original Style Query Filter

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	20	ST	R	Y		00037	Where Subject Filter		
2	26	TS	B			00038	When Data Start Date/ Time		
3	26	TS	B			00038	When Data End Date/Time		
4	60	ST	O	Y		00040	What User Qualifier		
5	**60**	**ST**	**O**	**Y**		**00041**	**Other QRY Subject Filter**		**I**
6	12	ID	O	Y	0156	00042	Which Date/Time Qualifier		
7	12	ID	O	Y	0157	00043	Which Date/Time Status Qualifier		
8	12	ID	O	Y	0158	00044	Date/Time Selection Qualifier		
9	60	TQ	O			00694	When Quantity/ Timing Qualifier		
10	10	NM	O			01442	Search Confidence Threshold		

7.23. RCP - Response Control Parameter Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	1	ID	O		0091	00027	Query Priority		
2	**10**	**CQ**	**O**		**0126**	**00031**	**Quantity Limited Request**		**I**
3	250	CE	O		0394	01440	Response Modality		
4	26	TS	C			01441	Execution and Delivery Time		
5	1	ID	O		0395	01443	Modify Indicator		
6	512	SRT	O	Y		01624	Sort-by Field		
7	256	ID		Y		01594	Segment group inclusion		

7.24. RGS - Resource Group Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**4**	**SI**	**R**			**01203**	**Set ID - RGS**		**O**
2	**3**	**ID**	**C**		**0206**	**00763**	**Segment Action Code**		**O**
3	250	CE	O			01204	Resource Group ID		

7.25. ORC - Common Order Control

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**2**	**ID**	**R**		**0119**	**00215**	**Order Control**		**I/O**
2	**22**	**EI**	**C**			**00216**	**Placer Order Number**	**Order no. of person/ dept. placing the order**	**I/O**
3	**22**	**EI**	**C**			**00217**	**Filler Order Number**	**Processing number of service dept. filling the order**	**I/O**
4	**22**	**EI**	**R2**			**00218**	**Placer Group Number**	**Clear order group no.**	**I/O**
5	**2**	**ID**	**O**		**0038**	**00219**	**Order Status**		**O**
6	1	ID	O		0121	00220	Response Flag	Scope of desired result message	
7	**200**	**TQ**	**O**			**00221**	**Quantity/Timing**	**Quantity^Interval ^Duration^StartDate/ Time ^EndDate/ Time^Priority**	**I/O**
8	200	CM	O			0222	Parent	Reference to main order	
9	**26**	**TS**	**O**			**00223**	**Date/Time of Transaction**		**O**
10	**120**	**XCN**	**R2**			**00224**	**Entered By**		**I/O**
11	120	XCN	O			00225	Verified By	alternative ORC-10	
12	**120**	**XCN**	**O**			**00226**	**Ordering Provider**	**alternative ORC-11**	**I/O**
13	**80**	**PL**	**O**			**00227**	**Enterer's Location**		
14	**40**	**XTN**	**O**	**Y/2**		**00228**	**Call Back Phone Number**		**I/O**
15	26	TS	O			00229	Order Effective Date/ Time		
16	**200**	**CE**	**O**			**00230**	**Order Control Code Reason**	**Reason for cancellation**	**I**
17	60	CE	O			00231	Entering Organization		
18	60	CE	O			00232	Entering Device		
19	**120**	**XCN**	**O**			**00233**	**Action by**		
20	250	CE	O		0339	01310	Advanced Beneficiary Notice Code		
21	250	XON	O	Y		01311	Ordering Facility Name		
22	250	XAD	O	Y		01312	Ordering Facility Addres		

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
23	250	XTN	O	Y		01313	Ordering Facility Phone Number		
24	250	XAD	O	Y		01314	Ordering Provicer Address		
25	250	CWE	O			01473	Order Status Modifier		O

7.26. OBR - Observation Request Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**4**	**SI**	**C**			**00237**	**Set ID Observation Request**		**I/O**
2	**22**	**EI**	**C**			**00216**	**Placer Order Number**	**Order no. of person/ dept. placing the order**	**I/O**
3	**22**	**EI**	**C**			**00217**	**Filler Order Number**	**Processing number of service dept. filling the order**	**I/O**
4	**200**	**CE**	**R**			**00238**	**Universal Service ID**		**O**
5	2	ID	B			00239	Priority – NOT USED in 2.2	No longer used	
6	26	TS	B			00240	Requested Date/time - NOT USED	No longer used	
7	**26**	**TS**	**C**			**00241**	**Observation Date/Time**		**I/O**
8	**26**	**TS**	**O**			**00242**	**Observation End Date/ Time**		**O**
9	20	CQ	O			00243	Collection Volume		
10	60	XCN	O	Y		00244	Collector Identifier		
11	1	ID	O		0065	00245	Specimen Action Code *		
12	**60**	**CE**	**O**			**00246**	**Danger Code**	**Warning for contagious materials**	**I/O**
13	**300**	**ST**	**O**			**00247**	**Relevant Clinical Info.**	**Comment for order**	**I/O**
14	26	TS	C			00248	Specimen Received Date/ Time *		
15	**300**	**CM**	**O**		**0070**	**00249**	**Specimen Source ***	**Examination option (type of material / type of specimen) Body Site in OBR-15.5**	**I/O**
16	**80**	**XCN**	**O**	**Y**		**00226**	**Ordering Provider**		**I/O**
17	40	XTN	O	Y/2		00250	Order Callback Phone Number		
18	**60**	**ST**	**O**			**00251**	**Placer field 1**	**Accession number (free text 1 for service placer) Option for order**	**I/O**
19	**60**	**ST**	**O**			**00252**	**Placer field 2**	**free text 2 for service placer**	**I/O**

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
20	60	ST	O			00253	Filler Field 1	free text 1 for service filler	O
21	**60**	**ST**	**O**			**00254**	**Filler Field 2**	**free text 2 for service filler**	**O**
22	26	TS	C			00255	Results Rpt/Status Chng -Date/Time +		O
23	40	CM	O			00256	Charge to Practice	Service amount/service code	
24	10	ID	O		0074	00257	Diagnostic Serv Sect ID	Detailed specification of service section	O
25	**1**	**ID**	**C**		**0123**	**00258**	**Result Status +**		**O**
26	400	CM	O			00259	Parent Result		
27	**200**	**TQ**	**O**	**Y**		**00221**	**Quantity/Timing**	**Quantity^Interval^ Duration^StartDate/ Time^ EndDate/ Time^Priority**	**O**
28	**150**	**XCN**	**O**	**Y/5**		**00260**	**Result Copies To**	**Intended Recipients**	**I/O**
29	**150**	**CM**	**O**	**Y/5**		**00261**	**Parent Number**		**I**
30	**20**	**ID**	**O**		**0124**	**00262**	**Transportation Mode**	**(Patient)**	**I/O**
31	**300**	**CE**	**O**	**Y**		**00263**	**Reason for Study**	**Reason for Study**	**I**
32	**200**	**CM**	**O**			**00264**	**Principal Result Interpreter +**	**Principal Result Interpreter**	**I/O**
33	**200**	**CM**	**O**	**Y**		**00265**	**Assistant Result Interpreter**	**First Result Interpreter**	**O**
34	**200**	**CM**	**O**	**Y**		**00266**	**Technician +**	**Medical Assistant**	**O**
35	**200**	**CM**	**O**	**Y**		**00267**	**Transcriptionist +**		**O**
36	26	TS	O			00268	Scheduled Date/Time	Scheduled Date/Time	O
37	4	NM	O			01028	Number of Sample Containers		
38	60	CE	O	Y		01029	Transport Logistics of Collected Sample		
39	200	CE	O	Y		01030	Collector's Comment		
40	60	CE	O			01031	Transport Arrangement Responsibility		
41	**30**	**ID**	**O**		**0224**	**01032**	**Transport Arranged**		**I**
42	1	ID	O		0225	01033	Escort Required		O
43	**200**	**CE**	**O**	**Y**		**01034**	**Planned PatientTransport Comment**		
44	250	CE	O		0088	00393	Procedure Code		O
45	250	CE	O	Y	0340	01316	Procedure Code Modifier		
46	**250**	**CE**	**O**	**Y**	**0411**	**01474**	**Placer Supplemental Service Information**		**O**
47	**250**	**CE**	**O**	**Y**	**0411**	**01475**	**Filler Supplemental Service Information**	**May contain a RIS generated *laboratory context identifier***	**I**

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
								in incoming ORU_R01 messages.	
48	250	CE	O		0476	01646	Medically Necessary Duplicate Procedure Reason		
49	2	IS	O		0507	01647	Result Handling		

7.27. OM1 - General Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	4	NM	R			00586	Sequence Number - Test/Observation Master File		
2	250	CE	R		9999	00587	Producer's Service/ Test/ Observation ID		I
3	12	ID	O	Y	0125	00588	Permitted Data Types		
4	1	ID	R		0136	00589	Specimen Required		
5	250	CE	R		9999	00590	Producer ID		
6	200	TX	O			00591	Observation Description		
7	250	CE	O		9999	00592	Other Service/Test/ Observation IDs for theObservation		I
8	200	ST	R	Y		00593	Other Names		
9	30	ST	O			00594	Preferred Report Name for the Observation		
10	8	ST	O			00595	Preferred Short Name or Mnemonic for Observation		I/O
11	200	ST	O			00596	Preferred Long Name for the Observation		I/O
12	1	ID	O		0136	00597	Orderability		I/O
13	250	CE	O	Y	9999	00598	Identity of Instrument Used to Perform this Study		
14	250	CE	O	Y	9999	00599	Coded Representation of Method		I/O
15	1	ID	O		0136	00600	Portable Device Indicator		
16	250	CE	O	Y	9999	00601	Observation Producing Department/Section		
17	250	XTN	O			00602	Telephone Number of Section		
18	1	IS	R		0174	00603	Nature of Service/ Test/Observation		

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
19	250	CE	O		9999	00604	Report Subheader		
20	20	ST	O			00605	Report Display Order		
21	26	TS	O			00606	Date/Time Stamp for any change in Definition for the Observation		
22	26	TS	O			00607	Effective Date/Time of Change		
23	20	NM	O			00608	Typical Turn-Around Time		
24	20	NM	O			00609	Processing Time		I/O
25	40	ID	O	Y	0168	00610	Processing Priority		
26	5	ID	O		0169	00611	Reporting Priority		
27	250	CE	O	Y	9999	00612	Outside Site(s) Where Observation may be Performed		
28	250	XAD	O	Y		00613	Address of Outside Site(s)		
29	250	XTN	O			00614	Phone Number of Outside Site		
30	250	CWE	O		0177	00615	Confidentiality Code		
31	250	CE	O		9999	00616	Observations Required to Interpret the Observation		
32	6553/6	TX	O			00617	Interpretation of Observations		
33	250	CE	O		9999	00618	Contraindications to Observations		
34	250	CE	O	Y	9999	00619	Reflex Tests/ Observations		
35	80	TX	O			00620	Rules that Trigger Reflex Testing		
36	250	CE	O		9999	00621	Fixed Canned Message		
37	200	TX	O			00622	Patient Preparation		I/O
38	250	CE	O		9999	00623	Procedure Medication		
39	200	TX	O			00624	Factors that may Affect the Observation		
40	60	ST	O	Y		00625	Service/ Test/ Observation erformance Schedule		
41	6553/6	TX	O			00626	Description of Test Methods		
42	250	CE	O		0254	00637	Kind of Quantity Observed		
43	250	CE	O		0255	00638	Point Versus Interval		

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
44	200	TX	O		0256/0257	00939	Challenge Information		
45	250	CE	O		0258	00940	Relationship Modifier		
46	250	CE	O		9999	00941	Target Anatomic Site Of Test		I/O
47	250	CE	O		0259	00942	Modality Of Imaging Measurement		I/O

7.28. OBX - Observation/Result Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	4	SI	R			00569	Set ID - Observational Simple	ID transaction number	I/O
2	2	ID	R		0125	00570	Value Type	Result format	I/O
3	80	CE	O			00571	Observation Identifier	Name of observation Service number^service name^service catalogue	I/O
4	20	ST	O			00572	Observation Sub-ID	Differentiation of observation results (The document ID is set for reports)	I/O
5			C/R			00573	Observation Value		I/O
6	60	CE	O			00574	Units		I
7	60	ST	O			00575	References Range		I
8	10	ID	O		0078	00576	Abnormal Flags		
9	5	NM	O	Y/5		00577	Probability		
10	5	ID	O		0080	00578	Nature of Abnormal Test		
11	2	ID	R/ NA			00579	Observ Result Status		O
12	26	TS	C			00580	Date Last Obs Normal Values		
13	20	ST	C			00581	User Defined Access Checks		
14	26	TS	O			00582	Date/Time of the Observation		I
15	**60**	**CE**	**C**			**00583**	**Producer's ID**		**I**
16	60	XCN	O			00584	Responsible Observer		I/O
17	60	CE	O	Y		00936	Observation Method		
18	427	EI	O	Y		01479	Equipment Instance Identifier		
19	24	DTM	O			01480	Date/Time of the Analysis		
20	705	CWE	O	Y	0163	02179	Observation Site		
21	427	EI	O			02180	Observation Instance Identifier		

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
22	705	CNE	C		0725	02182	Mood Code		
23	**570**	**XON**	**O**	**N**		**02283**	**Performing Organization Name**		**I**

7.29. NTE - Notes and Comments Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**4**	**SI**				**00096**	**Set ID - Notes and Comments**	**Transaction number**	**I/O**
2	8	ID			0105	00097	Source of Comment		
3	65536	FT		Y		00098	Comment		I/O
4	250	CE			0364	00099	Comment Type		I/O

7.30. URD - Results/Update Definition Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	26	TS				00045	R/U Date/Time	Time of report or update	O
2	1	ID			0109	00046	Report Priority		O
3	20	ST	R	Y		00047	R/U Who Subject Definition	Persons to whom the report or the update refers (case number/ admit number)	O
4	3	ID		Y		00048	R/U What Subject Definition	Information category	
5	20	ST		Y		00049	R/U What Department Code	Object of report or update, DOC_ID^UNT_PA_ID^ORD_UNT_or dernumber_Ext (in a collective report, the order position numbers are added to the DOC:ID (e.g."82453-2")	O
6	20	ST		Y		00050	R/U Display/Print Locations		
7	1	ID			0108	00051	R/U Results Level	Constant ‘T’ for results	O

7.31. URS - Unsolicited Selection Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**20**	**ST**	**R**	**Y**		**00052**	**R/U Where Subject Definition**	**Dept. to which the report or update refers**	**O**
2	26	TS				00053	R/U When Data Start Date/Time		
3	**26**	**TS**				**00054**	**R/U When Data End Date/ Time**		**O**
4	**20**	**ST**		**Y**		**00055**	**R/U What User Qualifier**	**(Observation abbreviation)**	**O**
5	**20**	**ST**		**Y**		**00056**	**R/U Other Results Subject Definition**	**(Report title)**	**O**
6	12	ID		Y	0156	00057	R/U Which Date/Time Qualifier	Events to which the report refers	
7	**12**	**ID**		**Y**	**0158**	**00059**	**R/U Date/Time Selection Qualifier**	**Scope of report**	
9	60	TQ	O			00695	R/U Quantity/Timing Qualifier		

7.32. DG1 - Diagnosis Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**4**	**SI**	**R**			**00375**	**Set ID diagnosis**	**Transaction number**	**I/O**
2	**2**	**ID**	**(B) R**		**0053**	**00376**	**Diagnosis coding method**		**I/O**
3	**60**	**CE**	**O**		**0051**	**00377**	**Diagnosis code**		**I/O**
4	**40**	**ST**	**B**			**00378**	**Diagnosis description**		**I/O**
5	**26**	**TS**	**O**			**00379**	**Diagnosis date/time**		**I/O**
6	**2**	**IS**	**R**		**0052**	**00380**	**Diagnosis/DRG type**	**Diagnosis type (UD)**	**I/O**
7	60	CE	B		0118	00381	Major diagnostic category	Not used	
8	60	CE	B		0055	00382	Diagnostic related group	Not used	
9	2	ID	B		0136	00383	DRG approval indicator	Not used	
10	2	ID	B		0056	00384	DRG grouper review code	Not used	
11	60	CE	B		0083	00385	Outlier type	Not used	
12	3	NM	B			00386	Outlier days	Not used	
13	12	CP	B			00387	Outlier cost	Not used	
14	4	ST	B			00388	Grouper version and type	Not used	
15	**2**	**NM**	**B**			**00389**	**Diagnosis Priority**	**(1-main diagnosis, 2..n further diagnoses)**	**I/O**
16	**60**	**XCN**	**O**	**Y**		**00390**	**Diagnosing Clinician**		**I/O**

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
17	3	IS	O		0228	00766	Diagnosis Classification		
18	1	ID	O		0136	00767	Diagnosis Classification		
19	26	TS	O			00768	Attestation Date/Time	Not used	
20	**250**	**EI**	**C**			**01850**	**Diagnosis Identifier**	**Order Filler ID^Diagnosis ID**	**O**
21	**1**	**ID**	**C**		**0206**	**01894**	**Diagnosis Action Code**	**(HL7 v2.5 and later)**	**O**

7.33. PR1 - Procedures Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**4**	**SI**	**R**			**00391**	**Set ID procedure**	**Transaction number Order Filler ID^Diagnosis ID**	**I/O**
2	**2**	**IS**	**(B) R**		**0089**	**00392**	**Procedure coding method**		**O**
3	**80**	**CE**	**R**		**0088**	**00393**	**Procedure code**		**O**
4	**40**	**ST**	**B**			**00394**	**Procedure description**		**O**
5	**26**	**TS**	**R**			**00395**	**Procedure date/time**	**Date and time of procedure**	**O**
6	**2**	**IS**	**R**		**0230**	**00396**	**Procedure type**		**I/O**
7	**4**	**NM**	**O**			**00397**	**Procedure minutes**		**O**
8	120	XCN	B	Y	0010	00398	Anesthesiologist		
9	2	IS	O		0019	00399	Anesthesia code		
10	4	NM	O			00400	Anesthesia minutes		
11	120	XCN	B	Y	0010	00401	Surgeon	Not used (use field 12)	
12	**230**	**XCN**	**B**	**Y**	**0010**	**00402**	**Procedure Practitioner**		**O**
13	60	CE	O		0059	00403	Consent code		
14	**2**	**NM**	**O**			**00404**	**Procedure priority**		**O**
15	80	CE	O			00772	Associated Diagnosis Code		
16	**250**	**CE**	**O**	**Y**	**0340**	**01316**	**Procedure Code Modifier**	**(HL7 v2.4 and later)**	**O**
17	20	IS	O		0416	01501	Procedure DRG Type	(HL7 v2.4 and later)	
18	250	CE	O	Y	0417	01502	Tissue Type Code	(HL7 v2.4 and later)	
19	**441**	**EI**	**C**			**01848**	**Procedure Identifier**	**"Unique ID" (HL7 v2.5 and later)**	**O**
20	**81**	**ID**	**C**		**0206**	**01849**	**Procedure Action Code**	**(HL7 v2.5 and later)**	**O**

7.34. ZDS - Study Instance UID Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**200**	**RP**	**R**			**Z0001**	**Study Instance UID**	**StudyInsUID^^ Application^Dicom**	**I/O**

7.35. SFT - Software Segment (since HL7 version 2.5)

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**567**	**XON**	**R**			**01834**	**Software Vendor Organization**	**"medavis"**	**I/O**
2	**15**	**ST**	**R**			**01835**	**Software Certified Version or Release Number**	**For Example: "3.26.0.4"**	**O**
3	**20**	**ST**	**R**			**01836**	**Software Product Name**	**"medavis HL7"**	**O**
4	20	ST	R			01837	Software Binary ID		
5	1024	TX	O			01838	Software Product Information		
6	26	TS	O			01839	Software Install Date		

7.36. SCH - Scheduling Activity Information

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**75**	**EI**	**C**			**00860**	**Placer Appointment ID**	**Placer application's permanent unique identifier for the appointment. ID and domain are required.**	**I/O**
2	**75**	**EI**	**C**			**00861**	**Filler Appointment ID**		**I**
3	**5**	**NM**	**C**			**00862**	**Occurrence Number**		
4	**22**	**EI**	**O**			**00218**	**Placer Group Number**	**Unique placer ID and domain are required, if an order should be created for this appointment. The order group and case are read by this ID. If not found, new order, order group and case are created.**	**I/O**
5	250	CE	O			00864	Schedule ID		
6	250	CE	R			00883	EventReason		
7	**250**	**CE**	**O**		**00276**	**00866**	**AppointmentReason**	**Appointment Reason.**	**I**

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
8	250	CE	O		00277	00867	Appointment Type		
9	**20**	**NM**	**B**			**00868**	**Appointment Duration**		**I**
10	250	CE	B			00869	Appointment Duration Units		
11	**200**	**TQ**	**B**	**Y**		**00884**	**Appointment Timing Quantity**	**Appointment Timing Quantity (Start date, end date, duration).Optional if Date/Time is already sent in TQ1,AIS or AIL. Pattern: yyyyMMddHHmm(ss)**	**I**
12	250	XCN	O	Y		00874	Placer Contact Person		
13	**250**	**XTN**	**O**			**00875**	**Placer Contact Phone Number**		**I**
14	250	XAD	O	Y		00876	Placer Contact Address		
15	80	PL	O			00877	Placer Contact Location		
16	250	XCN	R	Y		00885	Filler Contact Person		
17	250	XTN	O			00886	Filler Contact Phone Number		
18	250	XAD	O	Y		00887	Filler Contact Address		
19	80	PL	O			00888	Filler Contact Location		
20	250	XCN	R	Y		00878	Entered by Person		
21	250	XTN	O	Y		00879	Entered by Phone Number		
22	80	PL	O			00880	Entered by Location		
23	75	EI	O			00881	Parent Placer Appointment ID		
24	75	EI	C			00882	Parent Filler Appointment ID		
25	**250**	**CE**	**O**		**00278**	**00889**	**Filler Status Code**	**When filled with value "Waitlist" then appointment will be set automatically on the wait list.**	**I/O**
26	**22**	**EI**	**C**	**Y**		**00216**	**Placer Order Number**	**Placer application's order number. Should consist of an unique ID and domain, if an order should be created for this appointment, else it should be empty. This ID can be useful to identify this appoint ment, if the RIS exports other messages like ORU messages, which do**	**I/O**

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
								not contain the placers appointment id.	
27	**22**	**EI**	**C**	**Y**		**00217**	**Filler Order Number**		**O**

7.37. STF - Staff Identification

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**250**	**CE**	**C**		**9999**	**00671**	**Primary Key Value - STF**		**I/O**
2	**250**	**CX**	**O**	**Y**		**00672**	**Staff Identifier List**		**I/O**
3	**250**	**XPN**	**O**	**Y**		**00673**	**Staff Name**		**I/O**
4	**2**	**IS**	**O**	**Y**	**0182**	**00674**	**Staff Type**		**I/O**
5	1	IS	O		0001	00111	Administrative Sex		
6	**26**	**TS**	**O**			**00110**	**Date/Time of Birth**		**I**
7	**1**	**ID**	**O**		**0183**	**00675**	**Active/Inactive Flag**		**I**
8	**250**	**CE**	**O**	**Y**	**0184**	**00676**	**Department**		**I/O**
9	250	CE	O	Y	0069	00677	Hospital Service - STF		
10	**250**	**XTN**	**O**	**Y**		**00678**	**Phone**		**I/O**
11	**250**	**XAD**	**O**	**Y**		**00679**	**Office/Home Address/ Birthplace**		**I/O**
12	**276**	**DIN**	**O**	**Y**	**0537**	**00680**	**Institution Activation Date**		**I**
13	**276**	**DIN**	**O**	**Y**	**0537**	**00681**	**Institution Inactivation Date**		**I**
14	250	CE	O	Y		00682	Backup Person ID		
15	40	ST	O	Y		00683	E-Mail Address		
16	250	CE	O		0185	00684	Preferred Method of Contact		
17	250	CE	O		0002	00119	Marital Status		
18	20	ST	O			00785	Job Title		
19	20	JCC	O			00786	Job Code/Class		
20	250	CE	O		0066	01276	Employment Status Code		
21	1	ID	O		0136	01275	Additional Insured on Auto		
22	25	DLN	O			01302	Driver’s License Number – Staff		
23	1	ID	O		0136	01229	Copy Auto Ins		
24	8	DT	O			01232	Auto Ins.Expires		
25	8	DT	O			01298	Date Last DMV Review		
26	8	DT	O			01234	Date Next DMV Review		
27	250	CE	O		0005	00113	Race		
28	250	CE	O		0189	00125	EthnicGroup		
29	1	ID	O		0136	01596	Re-activation Approval Indicator		

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
30	**250**	**CWE**	**O**	**Y**	**0171**	**00129**	**Citizen ship**		**I**
31	8	TS	O			01886	Death Date and Time		
32	1	ID	O		0136	01887	Death Indicator		
33	250	CWE	O		0538	01888	Institution Relationship Type Code		
34	52	DR	O			01889	Institution Relationship Period		
35	8	DT	O			01890	Expected Return Date		
36	250	CWE	O	Y	0539	01891	Cost Center Code		
37	1	ID	O		0136	01892	Generic Classification Indicator		
38	250	CWE	O	Y	0540	01893	Inactive Reason Code		
39	**1**	**CWE**	**O**	**Y**	**0771**	**02184**	**Generic resource type or category**	**since HL7 version 2.6 for MFN^M02**	**I**

7.38. MFE - Master File Entry

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	3	ID	R		0180	00664	Record- Level EventCode		I/O
2	20	ST	C			00665	MFN Control ID		
3	26	TS	O			00662	Effective Date/Time		
4	200	Varies	R	Y	9999	00667	Primary Key Value – MFE		I/O
5	3	ID	R	Y	0355	01319	Primary Key Value Type		I/O

7.39. MFI - Master File Identification Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**250**	**CE**	**R**		**0175**	**00658**	**Master File Identifier**		**I/O**
2	180	HD	O		0361	00659	Master File Application Identifier		
3	**3**	**ID**	**R**		**0178**	**00660**	**File-Level Event Code**		**I/O**
4	26	TS	O			00661	Entered Date/Time		
5	26	TS	O			00662	Effective Date/Time		
6	**2**	**ID**	**R**		**0179**	**00663**	**Response Level Code**		**O**

7.40. TQ1 - Timing/Quantity Segment

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**4**	**SI**	**O**			**01627**	**Set ID - TQ1**		**O**
2	20	CQ	O			01628	Quantity		
3	540	RPT	O	Y	0335	01629	Repeat Pattern		
4	20	TM	O	Y		01630	Explicit Time		
5	20	CQ	O	Y		01631	Relative Time and Units		
6	20	CQ	O			01632	Service Duration		
7	**26**	**TS**	**O**			**01633**	**Start date/time**		**I/O**
8	**26**	**TS**	**O**			**01634**	**End date/time**		**I/O**
9	**250**	**CWE**	**O**	**Y**	**0485**	**01635**	**Priority**		**I/O**
10	250	TX	O			01636	Condition text		
11	250	TX	O			01637	Text instruction		
12	10	ID	C		0427	01638	Conjunction		
13	20	CQ	O			01639	Occurrence duration		
14	10	NM	O			01640	Total occurrence's		

7.41. TXA - Transcription Document Header

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**4**	**SI**	**R**			**00914**	**Set ID - TXA**		O
2	**30**	**IS**	**R**		**270**	**00915**	**Document Type**		O
3	2	ID	C		0191	00916	Document Content Presentation		
4	26	TS	O			00917	Activity Date/Time		
5	250	XCN	C	Y		00918	Primary Activity Provider Code/Name		
6	**26**	**TS**	**O**			**00919**	**Origination Date/Time**		**O**
7	26	TS	C			00920	Transcription Date/Time		
8	26	TS	O	Y		00921	Edit Date/Time		
9	250	XCN	O	Y		00922	Originator Code/Name		
10	250	XCN	O	Y		00923	Assigned Document Authenticator		
11	250	XCN	C	Y		00924	Transcriptionist Code/ Name		
12	**30**	**EI**	**R**			**00925**	**Unique Document Number**		**I/O**
13	30	EI	C			00926	Parent Document Number		
17	2	ID	R		0271	00928	Document Completion Status		
22	250	PPN	C			00934	Authentication Person, Time Stamp		

7.42. ZWL - Non-Medical Optional Services

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	1	ID				49043	Mandant		
2	1	ID				49044	Belegart		
3	**5**	**ID**	**R**		**4914**	**49045**	**Wahlleistungstyp (nichtmedizinische Wahlleistungen)**	**ZWL segment will only be considered for cost unit calculation if ZWL-3 contains "CHEF".**	**I**
4	**5**	**ID**			**4915**	**49046**	**Wahlleistungsaktion**		**I**
5	6	MO				49047	Betrag		
6	20	ST				49048	Subsystem-Status		
7	**8**	**DT**	**R**			**49049**	**Datum von**	**Start date of the chosen option.**	**I**
8	**8**	**DT**	**O**			**49050**	**Datum bis**	**Optional end date of the chosen option. If none given option will be considered as ongoing.**	**I**
9	4	ID				49051	Tarif		
10	10	ID				49052	Referenznummer		

7.43. ZED - Optional Examination Identifier

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**250**	**EI**	**R**			**49053**	**RIS ID der Untersuchung**		**O**
2	**250**	**EI**	**O**			**49054**	**UUID der Untersuchung**		**O**

7.44. ZBE - Movements

SEQ	LEN	DT	R/O	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
1	**250**	**EI**	**R**	**Y**		**49071**	**Movement ID**		**I**
2	**18**	**TS**	**R**			**49072**	**Start Movement Date/ Time**		**I**
3	18	TS	O			49073	End Movement Date/Time		I
4	**6**	**ID**	**R**		**4901**	**49074**	**Movement Action (INSERT / UPDATE / CANCEL)**	**Instead of "CANCEL", "DELETE" can be used likewise.**	**I**

8. Table Definitions

8.1. User-defined table 0001 - Sex

Attribute value	Description	Explanation
F	Female	
M	Male	
O	Other	
U	Unknown	

8.2. Table 0003 - Event type

Attribute value	Description	Explanation
A01	ADT/ACK - Admit/visit notification	(Inpatient) admittance
A02	ADT/ACK - Transfer a patient	
A03	ADT/ACK - Discharge/end visit	
A04	ADT/ACK - Register a patient	Patient registration (outpatient)
A05	ADT/ACK - Pre-admit a patient	Pre-admit a patient
A06	ADT/ACK - Change an outpatient to an inpatient	
A07	ADT/ACK - Change an inpatient to an outpatient	
A08	ADT/ACK - Update patient information	
A11	ADT/ACK - Cancel admit/visit notification	Cancel A01 and A04
A12	ADT/ACK - Cancel transfer	Cancel A02
A13	ADT/ACK - Cancel discharge/end visit	Cancel A03
A19	QRY/ADR - Patient query	
A23	ADT/ACK - Delete a patient record	
A34	ADT/ACK -Merge patient information - patient ID only	
A38	ADT/ACK - Cancel pre-admit	Cancel A05
A42	ADT/ACK - Case merge	
O01	ORM - Order message (also RDE, RDS, RGV, RAS)	
O02	ORR - Order response (also RRE, RRD, RRG, RRA)	
P01	BAR/ACK - Add patient accounts	Open a patient account
P03	DFT/ACK – Post Financial Data	
P12	BAR/ACK - Diagnosis/Procedures "Action code/unique identifier" Mode)	Update a patient account

Attribute value	Description	Explanation
Q05	UDM/ACK – Unsolicited display update message	Immediate screen display (express message)
R01	ORU/ACK - Unsolicited transmission of an observation message	Unrequested transfer of a report

8.3. Table 0004 – Patient Class

Attribute value	Description	Explanation
E	Emergency	
I	Inpatient	
O	Outpatient	
P	Preadmit	
R	Recurring Patient	
B	Obstetrics	
C	Commercial Account	
N	Not applicable	
U	Unknown	

8.4. Table 0008 - Acknowledgement code

Attribute value	Description	Explanation
AA	Original mode: Application Accept	Accepted by application
AA	Enhanced mode: Application Acknowledgement: Accept	new: Accepted by application
AE	Original mode: Application Error	Transfer error
AE	Enhanced mode: Application Acknowledgement: Error	new: Application error
AR	Original mode: Application Reject	Rejected by application
AR	Enhanced mode: Application Acknowledgement:Reject	new: Rejected by application
CA	Enhanced mode: Accept Acknowledgement: Commit Accept	Transfer accepted (Commit)
CE	Enhance mode: Accept Acknowledgement: Commit Error	Transfer error
CR	Enhanced mode: Accept Acknowledgement: Commit Reject	Transfer rejected

8.5. Table 0017 – Transaction type

Attribute value	Description	Explanation
2		Book (Final invoice)
5		Cancel
CG		Charge

8.6. Table 0038 – Order status

Attribute value	Description	Explanation
CA	Order was cancelled (by placer)	
CM	Order is completed	
DC	Order was discontinued (by filler)	
IP	In process, unspecified	
OD	Order was discontinued	
SC	In process, scheduled	

8.7. Table 0048 – What subject filter

Attribute value	Description	Explanation
APN	Patient name lookup	
RES	Result	

8.8. Table 0051 – Diagnosis Code

Attribute value	Description	Explanation
I10	ICD10 codes	

8.9. Table 0052 – Diagnosis Type

Attribute value	Description	Explanation
A	Admitting	
W	Working	

8.10. Table 0074 – Diagnostic service section ID

Values show with *italics* are extensions of the HL7 standard table additionally supported by medavis RIS. These values are mainly used for RIS PACS communication, thus more close to DICOM codes are used.

Attribute value	Description	Explanation / RIS Method
BMD		*BMD*
CT	*Computed Tomography*	*(CAT Scan) CT*
DX	*Digital Radiography*	*DX*
ECG	*Echocardipgraphy*	*ECG*
IVUS	*Intravascular Ultrasound*	*IVUS*
MG	*Mammography*	*MG*
NMR	*Nuclear Magnetic Resonance*	*MR*
NMS	*Nuclear medicine scan*	*NMS*
OT	*Other*	*OT*
PT	*Positron Emission Tomography (PET)*	*PT*
RX	*Radiograph*	*RÖ, ANG, DL*
RF		*RF*
XA		*XA*

8.11. Table 0076 - Message type

Attribute value	Description	Explanation
ADR	ADT response	
ACK	General acknowledgement message	
ADT	ADT message	
BAR	Add/change billing account	
DFT	Detail financial transaction	
MFN	Master Files Notification	
MDM	Medical document management	
ORM	Order message	
OMG	General clinical order message	
OMI	Imaging Order	
ORR	Order acknowledgement message	
ORU	Observation result/unsolicited	
QRY	Query, original Mode	
SIU	Schedule information unsolicited	
UDM	Unsolicited display update message	

8.12. Table 0078 - Abnormal flags

Attribute value	Description	Explanation
N	normal	
A	abnormal	

8.13. Table 86 – Plan ID

Attribute value	Description	Explanation
M		Insured as member
F		Insured as family member
R		Insured as pensioner

8.14. Table 0106 - Query/response format code

Attribute value	Description	Explanation
D	Response is in display format	
R	Response is in record-oriented format	

8.15. Table 0108 – Query Results Level

Attribute value	Description	Explanation
T	Full Results	

8.16. Table 0109 – Report Priority

Attribute value	Description	Explanation
R	Routine	

8.17. Table 0119 - Order control codes and their meaning

Attribute value	Description	Originator
NW	New order	P
CA	Cancel order request	P

Attribute value	Description	Originator
OC	Order cancelled	F
RU	Replaced unsolicited	F
XO	Change order request	P
XX	Order changed, unsol.	F
RE	Observations to follow	P,F
SC	Status Changed	P,F
SN	Send order number	P

8.18. Table 0123 - Result status

Attribute value	Description	Explanation
C	Correction to results	Corrected
F	Final results; results stored and verified. Can only be changed with a corrected result.	Final
I	No results available; specimen received, procedure incomplete	In Progress
O	Order received; specimen not yet received	Waiting
P	Preliminary: A verified early result is available, final results not yet obtained	Preliminary
R	Results stored; not yet verified	
S	No results available; procedure scheduled, but not done	Scheduled

8.19. Table 0124 - Transportation mode

Values show with *italics* are extensions of the HL7 standard table additionally supported by medavis RIS.

Attribute value	Description	Explanation
CART	Cart - patient travels on cart or gurney	
PORT	The examining device goes to patient's location	
WALK	Patient walks to diagnostic service	
WHLC	Wheelchair	
INTENSIVE	*Intensive-care patient travels on a gurney*	
INTEANAES	*Intensive-care and anaesthesia patient travels on a gurney*	

Attribute value	Description	Explanation
FG	*Walking*	
Bett	*Lying*	
LIE	*Lying*	
LIEST	*Lying*	
SIE	*Sitting*	
SIST	*Sitting*	
SIWA	*Sitting*	
SIWALIE	*Sitting*	
SIWAST	*Sitting*	
Gehend	*Walking*	
Gehend, Begleitet	*Walking assisted*	
Sitzend	*Sitting*	
Sitzend, Begleitet	*Sitting assisted*	
Sitzend, Anästhesie	*Sitting anesthetized*	
Liegend	*Lying*	
Liegend, Begleitet	*Lying anesthetized*	

8.20. Table 0125 - Value type

Attribute value	Description	Originator
FT	Formatted Text (Display)	
NM	Numeric	
TX	Text Data (Display)	

8.21. Table 0126 – Quantity limited request

Attribute value	Description	Originator
RD	Records	

8.22. Table 0136 – Yes/No indicator

Attribute value	Description	Originator
Y	Yes	
N	No	

8.23. Table 0137 – Mail claim party

Attribute value	Description	Originator
P	Patient	
E	Employer	
I	Social health insurance	
O	Other	
G	Guarantor	

8.24. Table 0157 – Which Date/Time Status Qualifier

Attribute value	Description	Originator
PRE	Preliminary	
REP	Report Completion Date/Time	

8.25. Table 0175 – Master File Identifier Code

Attribute value	Description	Originator
OMB	Categorial observation master file	Examination master data
STF	Staff master file	User and referrer master data

8.26. Table 0178 – File level event code

Attribute value	Description	Originator
REP	*Replace current version of this master file with the version contained in this message*	*Not supported*
UPD	Change file records as defined in the record-level event codes for each record that follows	

8.27. Table 0179 – Response level code

Attribute value	Description	Originator
NE	Never No application-level response needed.	Application level responses for master files are not supported.

8.28. Table 0180 – Record level event code

Attribute value	Description	Originator
MAC	Reactivate deactivated record.	
MAD	Add record to master file.	
MDC	Deactivate: discontinue using record in master file, but do not delete from database.	
MDL	Delete record from master file.	not supported
MUP	Update record for master file.	

8.29. Table 0182 – Staff type

Attribute value	Description	Originator
Befundung	Findings	
Diktat	Dictation	

8.30. Table 0183 – Active/Inactive

Attribute value	Description	Originator
A	Active Staff	
I	Inactive Staff	

8.31. Table 0188 – Operator ID

Attribute value	Description	Originator
		When part of a outgoing message, the operator id can identify a medavis RIS user connected to the event.

8.32. Table 0202 – Telecommunication equipment type

Attribute value	Description	Originator
CP	Cellular or Mobile Phone	
Internet		Internet Address

8.33. Table 0206 – Segment action code

Attribute value	Description	Originator
A	Add/Insert	
D	Delete	
U	Update	

8.34. Table 0208 – Query response status

Attribute value	Description	Originator
NF	No data found, no errors	
OK	Data found, no errors	

8.35. Table 0224 – Transport arranged

Attribute value	Description	Originator
A	Arranged	
N	Not Arranged	
U	Unknown	

8.36. Table 0225 – Escort required

Attribute value	Description	Originator
N	Not Required	
R	Required	
U	Unknown	

8.37. Table 0230 – Procedure Functional Type

Attribute value	Description	Originator
D	Diagnostic Procedure	

8.38. Table 0271 – Document completion status

Attribute value	Description	Originator
DO	Documented	

Attribute value	Description	Originator
IN	Incomplete	
CA	Cancelled	

8.39. Table 0278 – Filler status code

Attribute value	Description	Originator
Waitlist	Appointment has been placed on a waiting list for a particular slot, or set of slots	This status code in inbound messages is interpreted as a request to place the appointment directly onto the waiting list of a configured room.

8.40. Table 0326 – Visit indicator

Attribute value	Description	Originator
A	Account level	
V	Visit level	

8.41. Table 0340 – Procedure code modifier

Attribute value	Description	Originator
TC	Technical Billing	
26	Professional Billing	

8.42. Table 0532 – Expanded Yes/No indicator

Attribute value	Description	Originator
ASKU	Asked but unknown	
N	No	
NA	Not applicable	
NASK	Not asked	
NAV	Temporarily unavailable	
NI	No information	
UNK	Not present	
Y	Yes	

8.43. Table 4901 – Movement action

Attribute value	Description	Originator
INSERT	insert	insert new movement
UPDATE	change	changes of movement (exception: movement ID)
DELETE	delete	cancelling movement
CANCEL	cancel	cancelling movement

9. Data Type Definitions

Data Type Category	Data Type	Data Type Name	Notes/Format
Alphanumeric			
	ST	String	
	TX	Text data	
	FT	Formatted text	
Numerical			
	CQ	Composite quantity with units	<quantity (NM)> ^ <units (CE)>
	MO	Money	<quantity (NM)> ^ <denomination (ID)>
	NM	Numeric	
	SI	Sequence ID	
	SN	Structured numeric	<comparator> ^ <num1 (NM)> ^ <separator/ suffix> ^ <num2 (NM)>
Identifier			
	ID	Coded values for HL7 tables	
	IS	Coded values for User-Defined Tables	
	HD	Hierarchic designator	<namespace ID (IS)> ^ <universal ID (ST)> ^ <universal ID type (ID)> Used only as part of EI and other data types
	EI	Entity identifier	<entity identifier (ST)> ^ <namespace ID (IS)> ^ <universal ID (ST)> ^ <universal ID type (ID)>
	RP	Reference Pointer	<pointer (ST) > ^ < application ID (HD)> ^ <type of data (ID)> ^ <subtype (ID)>
	PL	Person Location	<point of care (IS)> ^ <room (IS)> ^ <bed (IS)> ^ <facility (HD)> ^ < location status (IS)> ^ <person location type (IS)> ^ <building (IS)> ^ <floor (IS)> ^<location description (ST)>
	PT	Processing type	<processing ID (ID)> ^ <processing mode (ID)>
Date/Time			
	DT	Date	YYYY[MM[DD]]
	TM	Time	HH[MM[SS[.S[S[S[S]]]]]][+/-ZZZZ]
	TS	Time stamp	YYYY[MM[DD[HHMM[SS[.S[S[S[S]]]]]]]][+/-ZZZZ] ^ <degree of precision>
Code Values			
	CE	Coded Element	<identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)>

Data Type Category	Data Type	Data Type Name	Notes/Format
	CF	Coded Element with Formatted Values	<identifier (ID)> ^ <formatted text (FT)> ^ <name of coding system (ST)> ^<alternate identifier (ID)> ^ <alternate formatted text (FT)> ^ <name of alternate coding system (ST)>
	CK	Composite ID with check digit	<ID number (NM)> ^ <check digit (NM)> ^ <code identifying the check digit scheme employed (ID)> ^ < assigning authority (HD)>
	CN	Composite ID number and name	<ID number (ST)> ^ <family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (e.g., JR or III) (ST)> ^ <prefix (e.g., DR) (ST)> ^ <degree (e.g., MD) (ST)> ^ <source table (IS)> ^ <assigning authority (HD)>
	CX	Extended composite ID with check digit	<ID number (ST)> ^ <family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (e.g., JR or III) (ST)> ^ <prefix (e.g., DR) (ST)> ^ <degree (e.g., MD) (ST)> ^ <source table (IS)> ^ <assigning authority (HD)>
	XCN	Extended composite ID number and name	In version 2.3, use instead of the CN data type. <ID number (ST)> ^ <family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (e.g., JR or III) (ST)> ^ <prefix (e.g., DR) (ST)> ^ <degree (e.g., MD) (ST)> ^ <source table (IS)> ^ <assigning authority (HD)> ^ <name type code (ID)> ^ <identifier check digit (ST)> ^ <code identifying the check digit scheme employed (ID)> ^ <identifier type code (IS)> ^ <assigning facility (HD)>
Generic			
	CM	Composite	No new CMs are allowed after HL7 version 2.2. Hence there are no new CMs in version 2.3
Demographics			
	AD	Address	<street address (ST)> ^ < other designation (ST)> ^ <city (ST)> ^ <state orprovince (ST)> ^ <zip or postal code (ST)> ^ <country (ID)> ^ <address type (ID)> ^ <other geographic designation (ST)>
	PN	Person name	<family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^<suffix (e.g., JR or III) (ST)> ^ <prefix (e.g., DR) (ST)> ^ <degree (e.g., MD) (ST)>
	TN	Telephone number	[NN] [(999)]999-9999[X99999][B99999][C any text]

Data Type Category	Data Type	Data Type Name	Notes/Format
	XAD	Extended Address	In version 2.3, replaces the AD data type. <street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <zip or postal code (ST)> ^ <country (ID)> ^ < address type (ID)> ^ <other geographic designation (ST)> ^ <county/parish code (IS)> ^ <census tract (IS)>
	XPN	Extended Person Name	In version 2.3, replaces the PN data type. <family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (e.g., JR or III) (ST)> ^ <prefix (e.g., DR) (ST)> ^ <degree (e.g., MD) (ST)> ^ <name type code (ID) >
	XON	Extended composite name and ID number for organizations	<organization name (ST)> ^ <organization name type code (IS)> ^ <ID number (NM)> ^ <check digit (NM)> ^ <code identifying the check digit scheme employed (ID)> ^ <assigning authority (HD)> ^ <identifier type code (IS)> ^ <assigning facility ID (HD)>
	XTN	Extended telecommunications number	In version 2.3, replaces the TN data type. [NNN] [(999)]999-9999 [X99999] [B99999] [C any text] ^ <telecommunication use code (ID)> ^<telecommunication equipment type (ID)> ^ <email address (ST)> ^ <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)> ^ <any text (ST)>
Specialty/Chapter Specific			
Waveform			
	CD	Channel definition	<channel identifier (*)> ^ <channel number (NM)> & <channel name (ST)>> ^<electrode names (*) > ^ <channel sensitivity/units (*) > ^ <calibration parameters (*)> ^ <sampling frequency (NM)> ^ <minimum/ maximum data values (*)>
	MA	Multiplexed array	For waveform data only, see Chapter 7, Section 7.15.2. <sample 1 from channel 1 (NM)> ^ <sample 1 from channel 2 (NM)> ^ <sample 1 from channel 3 (NM)>...~<sample 2 from channel 1 (NM)> ^ <sample 2 from channel 2 (NM)> ^ <sample 2 from channel 3 (NM)> ...~
	NA	Numeric array	<value1 (NM)> ^ <value2 (NM)> ^ <value3 (NM)> ^ <value4 (NM)> ^ ...
	ED	Encapsulated Data	Supports ASCII MIME-encoding of binary data. <source application (HD) > ^<main

Data Type Category	Data Type	Data Type Name	Notes/Format
			type of data (ID)> ^ <data subtype (ID)> ^ <encoding (ID)> ^ <data (ST)>
Price data			
	CP	Composite Price	In version 2.3, replaces the MO data type. <price (MO)> ^ <price type (ID)> ^<from value (NM)> ^ <to value (NM)> ^ <range units (CE)> ^ <range type (ID)>
Patient Administration/ Financial Information			
	FC	Financial class	<financial class (ID)> ^ <effective date (TS)>
Extended Queries			
	QSC	Query selection criteria	<name of field (ST)> ^ <relational operator (ID)> ^ <value (ST)> ^ <relational conjunction (ID)>
	QIP	Query input parameter list	<field name (ST) > ^ <value1 (ST) & value2 (ST) & value3 (ST) ...>
	RCD	Row column definition	<HL7 item number (ST)> ^ <HL7 data type (ST)> ^ <maximum column width(NM)>
Master Files			
	DLN	Driver's license number	<license number (ST)> ^ <issuing state, province, country (IS)> ^ <expiration date (DT)
	JCC	Job code/class	<job code (IS)> ^ <job class (IS)>
	VH	Visiting hours	<start day range (ID)> ^ <end day range (ID)> ^ <start hour range (TM)> ^ <end hour range (TM)>
Medical Records/ Information Management			
	PPN	Performing person time stamp	<ID number (ST)> ^ <family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (e.g., JR or III) (ST)> ^ <prefix (e.g., DR) (ST)> ^ <degree (e.g., MD) (ST)> ^ <source table (IS)> ^ <assigning authority (HD)> ^ <name type code(ID)>^ <identifier check digit (ST)> ^ <code identifying the check digit scheme employed (ID)> ^ <identifier type code (IS)> ^ <assigning facility (HD)> ^ < date/ time action performed (TS)>
Time Series			
	DR	Date/time range	Scheduling Chapter Only: <range start date/ time (TS)> ^ <range end date/time (TS)>
	RI	Repeat interval	Scheduling Chapter Only: <repeat pattern (IS)> ^ <explicit time interval (ST)>

Data Type Category	Data Type	Data Type Name	Notes/Format
	SCV	Scheduling class value pair	Scheduling Chapter Only: <parameter class (IS)> ^ <parameter value (IS)>
	TQ	Timing/Quantity	<quantity (CQ)> ^ <interval (*)> ^ <duration (*)> ^ <start date/time (TS)> ^ <end date/time (TS)> ^ <priority (ID)> ^ <condition (ST)> ^ <text (TX)> ^ <conjunction (ID)> ^ <order sequencing (*)> medavis RIS: quantity: always '1' interval: always 'once' priority: A: As soon as possible (a priority lower than stat) (RIS: 1st level) R: Routine (RIS : no emergency) S: Stat (do immediately) (RIS: 3rd level) T: Timing critical (RIS: emergency) 2: 2nd level(RIS: 2nd level)

10. National Extensions

This chapter describes the national needs of the healthcare system which will differ from locale to locale. Some examples of national extensions are:

- Insurance Data
- Billing Data

10.1. German Extensions

This chapter describes the German extensions.

10.1.1. Insurance Information

The HL7 standard does not support the German health insurance card, by default. The German HL7 user group has developed a solution to this problem, which is supported by the medavis HL7.

The health insurance information on a card will be transmitted with an IN1 and IN2 segment and should be used for all types of insurance data.

Please note, the field IN1-3 is a repeatable field and each field's identifier type code must be set. The following fields must be filled:

SEQ	LEN	DT	RP#	TBL#	ITEM	ELEMENT NAME	Explanation	I/O
IN1-1	4	SI			00426	SetID insurance	Transaction number	
IN1-2	5	CE	Y		00368	Insurance Plan ID	Insurance Plan Number	
IN1-3	7	CX	Y		00428	Insurance Company ID	Insurance Company Number	
IN1-4	28	XON	Y		00429	Insurance Company Name	Insurance Company Name	
IN1-15.1	4	IS		0086	00440	Plan type	Insurance Status	
IN1-15.2	3	IS		0086	00440	Plan type	Status Supplement	
IN1-16	90	XPN	Y		00441	Name of Insured		
IN1-18	26	TS			00443	Insured's date of birth		
IN1-19	65	XAD	Y		00444	Insured's address		
IN1-29	26	TS			00454	Verification date/time	Date/time insurance card last verified	
IN1-49.1	12	CX	Y		01230	Insured's ID Number	Insurance Number	
IN1-49.8	12	DT	Y		01230	Insured's ID Number	Expiration Date of insurance health card	
IN2-5				0137		Mail Claim Party	Type of insurance relationship	

Example

```
...
IN1|||4345345^^^^NII~32453^^^^NIIP|AOK|||||||||||1^1|Hamilton^Harry||19740824|71
 Main St^^Kalrstown^^76133^||||||||||||||||||||||||||||||1407752067^^^^^^^200406|
IN2|||||I|
...
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medavis at a glance

Since 1997, medavis has been synonymous with medical IT that goes the extra mile:

- State-of-the-art software technology
- Future-oriented, scalable and upgradable IT processes
- Customised services
- IT experts in radiology process optimisation and network architecture
- High-performance products with depth of functionality
- Long-standing project experience
- Top-class customer service with qualified staff

Medical centres, hospitals, clinic chains and teaching institutions in Germany and abroad – over 450 medical institutions of all sizes already rely on our radiology workflow solutions medavis RIS and portal4med..

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