What is an HL7 ADT Message?

Patient Admission Discharge and Transfer (ADT) messages are used to exchange the patient state within a healthcare facility. HL7 ADT messages keep patient demographic and visit information synchronized across healthcare systems.

ADT is the most commonly used HL7 messaging type, with most clinical applications enabled to receive key ADT messages.
ADT messages within the HL7 standard are typically initiated by the Hospital Information Systems (HIS), or a registration application, to inform ancillary systems that a patient has been admitted, discharged, transferred, merged, that other demographic data about the patient has changed (name, insurance, next of kin, etc.) or that some visit information has changed (patient location, attending doctor, etc.).

ADT Trigger Events

A trigger event is the underlying reason for transmitting a message, e.g. "Patient has been admitted to the hospital", "Patient address has changed", or "Patient has moved from room 11 to room 20". As soon as a trigger happens, a message is sent to all systems that have an interest in that particular type of information, enabling the receiving application to synchronize it's database with the data as known by the sender of the message.
Examples of ADT trigger events (coded A01 up to A62) include:

- A01: Admit notification – an inpatient encounter has started. The patient has been admitted and has been assigned to a location (room or bed)
- A02: Transfer notification – a patient has been transferred from one location to another one.
- A03: Discharge notification – the encounter has ended. The prior location assigned to the patient is made available for use by another patient.
- A04: Patient registration notification – an outpatient encounter has started.
- A05: Pre-admit a patient notification – the pre-admission process of a patient has started; registration of a non-admitted patient.
- A08: Update patient information notification – unspecified details of the encounter or the patient demographics data have changed. This trigger event represents a "other changes" category if a more suitable Axx trigger event doesn't exist.
- A11: Cancel admit notification – the start of an inpatient encounter, for which a previous admit notification message was sent, has been cancelled.
- A12: Cancel transfer notification – the location transfer, for which a previous transfer notification message was sent, has been cancelled.
- A13: Cancel discharge notification – the end of an inpatient encounter, for which a previous discharge notification message was sent, has been cancelled.
- A40: Merge patient identifier list notification – two or more patient records, each identified using a different set of patient identifiers, have been merged.

Even though the standard itself doesn't explicitly define a sequence in which these trigger events occur, it seems clear that normally a patient has to be admitted (A01) before he or she can be transferred (A02) and discharged (A03).
ADT – Admit a patient (A01)
An "admit patient" message (A01 "event") is used for "Admitted" patients only. These messages are sent as a result of patients beginning their stay in the healthcare facility. Normally, this information is entered in the hospital information system and broadcast to nursing units and ancillary systems. A admission message (A01 event) should be used to notify the pharmacy database of a patient's arrival in the healthcare facility.

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification
PV1	Patient Visit
[{OBX}]	Observation / Result
[{AL1}]	Patient Allergy Information
[{DG1}]	Diagnosis Information

Sample Message Sent From Hospital Information System:

MSH|^~\&|hmis|1|||20050110045504||ADT^A01|599102|P|2.3||| EVN|A01|20050110045502|||||
PID|1||10006579^^^1^MRN^1||DUCK^DONALD^D||19241010|M||1|111 DUCK
ST^^FOWL^CA^999990000^^M|1|8885551212|8885551212|1|2||40007716^^^AccMgr^VN^1|123121234|||||||||NO
NK1|1|DUCK^HUEY|SO|3583 DUCK RD^^FOWL^CA^999990000|8885552222||Y|||||||||||||
PV1|1|I|PREOP^101^1^1^^^S|3|||37^DISNEY^WALT^^^^^^^AccMgr^^^^CI|||01||||1|||37^DISNEY^WALT^^^^^^^AccMgr^^^^CI|
2|40007716^^^AccMgr^VN|4|||||||||||||||||||1||G|||20050110045253|||||| GT1|1|8291|DUCK^DONALD^D||111^DUCK
ST^^FOWL^CA^999990000|8885551212||19241010|M||1|123121234||||#Cartoon Ducks Inc|111^DUCK
ST^^FOWL^CA^999990000|8885551212||PT| DG1|1|I9|71596^OSTEOARTHROS NOS-L/LEG ^I9|OSTEOARTHROS NOS-L/LEG ||A|
IN1|1|MEDICARE|3|MEDICARE||||||Cartoon Ducks Inc|19891001|||4|DUCK^DONALD^D|1|19241010|111^DUCK
ST^^FOWL^CA^999990000|||||||||||||||||123121234A||||||PT|M|111 DUCK ST^^FOWL^CA^999990000|||||8291
IN2|1||123121234|Cartoon Ducks Inc|||123121234A|||||||||||||||||||||||||||||||||||||||||||||||||||||||8885551212 IN1|2|NON-
PRIMARY|9|MEDICAL MUTUAL CALIF.|PO BOX 94776^^HOLLYWOOD^CA^441414776||8003621279|PUBSUMB|||Cartoon Ducks
Inc||||7|DUCK^DONALD^D|1|19241010|111 DUCK ST^^FOWL^CA^999990000|||||||||||||||||056269770|||||PT|M|111^DUCK
ST^^FOWL^CA^999990000|||||8291 IN2|2||123121234|Cartoon Ducks
Inc|||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||8885551212 IN1|3|SELF PAY|1|SELF PAY||||||||||5||1

ADT – Transfer a Patient (A02)

A "transfer patient" message (A02 event) should be sent to the interface when a patient is transferred to another ward, room or bed.

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification
PV1	Patient Visit

Sample Message Sent From Hospital Information System:

MSH|^~\&|hmis|1|||20050110114442||ADT^A02|59910287|P|2.3||| EVN|A02|20050110114442|||||
PID|1||10006579^^^1^MRN^1||DUCK^DONALD^D||19241010|M||1|111^DUCK
ST^^FOWL^CA^999990000^^M|1|8885551212|8885551212|1|2||40007716^^^AccMgr^VN^1|123121234|||||||||NO
PV1|1|I|IN1^214^1^1^^^S|3||PREOP^101^|37^DISNEY^WALT^^^^^^^AccMgr^^^^CI|||01||||1|||37^DISNEY^WALT^^^^^^^AccMg
r^^^^CI|2|40007716^^^AccMgr^VN|4|||||||||||||||||||1||I|||20050110045253||||||

ADT – Discharge/End Visit (A03)

A "discharge patient" or "end visit" message (A03 event) should be sent when an inpatient's stay in the healthcare facility is ended, or an outpatient or emergency room visit is ended. It signals that the patient's status has changed to "discharged", that a discharge date/time has been assigned, and that the patient no longer requires services normally provided through the pharmacy database.

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification
PV1	Patient Visit

Sample Message Sent From Hospital Information System:

MSH|^~\&|AccMgr|1|||20050112154645||ADT^A03|59912415|P|2.3||| EVN|A03|20050112154642|||||
PID|1||10006579^^^1^MRN^1||DUCK^DONALD^D||19241010|M||1|111^DUCK
ST^^FOWL^CA^999990000^^M|1|8885551212|8885551212|1|2||40007716^^^AccMgr^VN^1|123121234|||||||||NO
PV1|1|I|IN1^214^1^1^^^S|3||IN1^214^1|37^DISNEY^WALT^^^^^^^AccMgr^^^^CI|||01||||1|||37^DISNEY^WALT^^^^^^AccMgr
^^^^CI|2|40007716^^^AccMgr^VN|4|||||||||||||||||1|||1||P|||20050110045253|20050112152000|3115.89|3115.89|||

ADT – Register an Outpatient/ER Patient (A04)

A "register patient" message (A04 event) signals that the patient has arrived or checked in as an outpatient, recurring outpatient, or emergency room patient. Note: Users may be able to configure their system to process, or not process (ignore), some (or all) outpatient and emergency room registrations; in either case an "application accept" acknowledgement will be returned to the sender.

This message uses the same segments as the "admit patient" (A01) message.

ADT – Pre-admit a Patient (A05)

A "pre-admission" message (A05 event) is sent to notify the interface of a patient pre-admission process. This message can also be used to pre-register an outpatient or emergency room patient. Note: Users may be able to configure their system to process, or not process (ignore), this message type; in either case an "application accept" acknowledgement will be returned to the sender.

This message uses the same segments as the "admit patient" (A01) message.

ADT – Change an Outpatient to an Inpatient (A06)

A "change outpatient to inpatient" message (A06 event) is sent when an outpatient or ER patient is being admitted as an inpatient. This message should signal the interface to changes a patient's status from outpatient/ER to inpatient/admitted. If a patient is **pre-**registered (not registered) as an outpatient and then admitted as an inpatient, an "admission" message (A01 event) should be sent instead.

This message uses the same segments as the "admit patient" (A01) message.

ADT – Change an Inpatient to an Outpatient (A07)

A "change inpatient to outpatient" message (A07 event) is sent when an inpatient becomes an outpatient and is still receiving care/services.

This message uses the same segments as the "admit patient" (A01) message.

ADT – Update Patient Information (A08)

This message (A08 event) is used when any patient information has changed but when no other ADT event has occurred. For example, visit information updates.

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This message uses the same segments as the "admit patient" (A01) message.

ADT – Cancel Admission (A11)

For inpatients, the "cancel admission" message (A11 event) is sent when an earlier "admission" message (A01 event) is canceled, either because of an erroneous entry or because of a revised decision to not admit the patient. For outpatients/ER patients, the message is sent when an earlier "register outpatient" message (A04 event) is canceled for similar reasons. If the patient has orders on file, the patient will be discharged by the application. If no orders are on file, the patient's record will be deleted.

This message uses the same segments as the "discharge patient" (A03) message.

ADT – Cancel Transfer (A12)

The "cancel transfer" message (A12 event) is intended to reverse an earlier "transfer" message, either because of an erroneous entry or because of a revised decision to not transfer the patient. This message uses the same segments as the "transfer patient" (A02) message and, for inbound messages, is treated as a second transfer.

ADT – Cancel Discharge (A13)

The "cancel discharge" message (A13 event) is sent when an earlier "discharge patient" message (A03 event) is canceled, either because of erroneous entry or because of a revised decision to not discharge, or end the visit of, the patient.

This message uses the same segments as the "admit patient" (A01) message.

ADT – Swap Patients (A17)

The "swap patients" message (A17 event) is used to identify two patients that have exchanged beds. The interface will process inbound A17 events, but does not support this event for outbound messages.

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification (patient #1)
PV1	Patient Visit (patient #1)
PID	Patient Identification (patient #2)
PV1	Patient Visit (patient #2)

ADT – Merge Records (A18)

For inbound messages, the "merge records" message (A18 event) is used to combine two patient records into one. This may be used if a second, unwanted record for the same patient has been created accidentally by the other system. The interface does not support A18 events for outbound messages. [Note: To update patient medical record numbers, the interface sends outbound A36 event messages; to update patient account numbers, outbound A35 event messages are sent.]

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification
MRG	Merge Information
PV1	Patient Visit

ADT – Delete Record (A23)

The "delete record" message (A23 event) is recognized by the interface for inbound messages and processed in the same manner as a "cancel admission" (A11 event) message. The "delete record" (A23) event is not supported for outbound ADT messages.

This message uses the same segments as the "discharge patient" (A03) message.

ADT – Update Person (A31)

The "update person" message (A31 event) is recognized by the interface for inbound messages and processed in the same manner as a "update patient information" (A08 event) message. The "update person" (A31) event is not supported for outbound ADT messages.

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification
PV1	Patient Visit
[{OBX}]	Observation / Result
[{AL1}]	Patient Allergy Information

ADT – Change Patient Account Number (A35)

The "change account number" (A35 event) is used to update the patient's account number. This might be used if a patient record is entered with an incorrect account number.

Segment	Description
MSH	Message Header
EVN	Event Type

PID	Patient Identification
MRG	Merge Information

ADT – Change Medical Record No and Account No (A36)

For inbound messages, the "change medical record no and account no" (A36 event) may be used to update the patient's medical record number and/or account number. For outbound messages, the interface uses this event to update medical record number only. Outbound updates to patient account number are done via a "change patient account number" message (A35 event).
This message uses that same segments as the "change patient account number" (A35 event) message.

潤沁網路大學

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