iLaboratory Generic HL7 interface specification

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20 August 2021

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# Introduction

This document describes the iLaboratory Generic HL7 interfaces consisting of the inbound interface (usually named HL7IN) that accepts messages for patient demographics (ADT) and orders (ORM) and the outbound interface (usually named HL7OUT) which sends test results, order status and ADTs depending on configuration. These follow the HL7 standard for application level healthcare information transfer – prior knowledge of which is assumed in the reader of this document.

The interfaces transfer information in real time across TCP/IP protocol client/server sockets. The main purpose of this document is to define the content of the messages and the interaction with iLaboratory. The messages must be wrapped with a lower level protocol (Minimal Lower Layer Protocol (MLLP)) defined here :-

## Transport Level Protocol

Message envelopes for the MLLP have the following format:

**<SB>dddd<EB><CR>**

where:

**<SB>** = Start block character (ASCII <VT> that is, x0B)

**dddd** = data, the HL7 message

**<EB>** = end block character (ASCII <FS> that is, x1C)

**<CR>** = Carriage return (ASCII x0D)

**<CR>** is used at the end of each segment (e.g. <MSH><CR><EVN><CR>).

# HL7 IN – inbound messages

The following tables describe the HL7 messages supported inbound to i.Laboratory. Only the segments actually used are listed. Segments within [ ] are optional.

Note that there are several ADT types accepted but they will mostly all have the same effect because iLaboratory does not deal in episodic information i.e. admissions and visits.

## Message Types

| Message Type | **Trigger Event** | **Description** | **Segments used** | **Notes** |
| --- | --- | --- | --- | --- |
| ADT | A01 | Admit/visit notification | [MSH](#_MSH_segment)  [PID](#_PID_segment)  [ [PD1](#_PD1_segment) ]  [ [PV1](#_PV1_segment) ] | Will either create a new patient record in i.Laboratory, or update the existing record. |
| ADT | A02 | Transfer Patient | [MSH](#_MSH_segment)  [PID](#_PID_segment)  [ [PD1](#_PD1_segment) ]  [ [PV1](#_PV1_segment) ] | Will either create a new patient record in i.Laboratory, or update the existing record. |
| ADT | A03 | Discharge Patient | [MSH](#_MSH_segment)  [PID](#_PID_segment)  [ [PD1](#_PD1_segment) ]  [ [PV1](#_PV1_segment) ] | Will either create a new patient record in i.Laboratory, or update the existing record. |
| ADT | A05 | Pre-Admit Patient | [MSH](#_MSH_segment)  [PID](#_PID_segment)  [ [PD1](#_PD1_segment) ]  [ [PV1](#_PV1_segment) ] | Will either create a new patient record in i.Laboratory, or update the existing record. |
| ADT | A08 | Update patient Information | [MSH](#_MSH_segment)  [PID](#_PID_segment)  [ [PD1](#_PD1_segment) ]  [ [PV1](#_PV1_segment) ] | Will either create a new patient record in i.Laboratory, or update the existing record. |
| ADT | A12 | Cancel Transfer | [MSH](#_MSH_segment)  [PID](#_PID_segment)  [ [PD1](#_PD1_segment) ]  [ [PV1](#_PV1_segment) ] | Will either create a new patient record in i.Laboratory, or update the existing record. |
| ADT | A13 | Cancel Discharge | [MSH](#_MSH_segment)  [PID](#_PID_segment)  [ [PD1](#_PD1_segment) ]  [ [PV1](#_PV1_segment) ] | Will either create a new patient record in i.Laboratory, or update the existing record. |
| ADT | A23 | Delete a Patient Record | [MSH](#_MSH_segment)  [PID](#_PID_segment)  [ [PD1](#_PD1_segment) ]  [ [PV1](#_PV1_segment) ] | Will display a message in iLaboratory indicating that the patient has been deleted. |
| ADT | A28 | Add person information | [MSH](#_MSH_segment)  [PID](#_PID_segment)  [ [PD1](#_PD1_segment) ]  [ [PV1](#_PV1_segment) ] | Will either create a new patient record in i.Laboratory, or update the existing record. |
| ADT | A31 | Update person information | [MSH](#_MSH_segment)  [PID](#_PID_segment)  [ [PD1](#_PD1_segment) ]  [ [PV1](#_PV1_segment) ] | Will either create a new patient record in i.Laboratory, or update the existing record. |
| ADT | A40  (or A34) | Merge patient information –patient ID only | [MSH](#_MSH_segment)  [PID](#_PID_segment)  [MRG](#_1.2.5__MRG) | Depending on settings, this will either provide information for a later manual merge or will automatically merge the patient’s records. |
| ACK |  | Message Acknowledgement | [MSH](#_MSH_segment)  [MSA](#_1.2.9__MSA) | An acknowledgement to an outgoing message. |
| ORM | O01 | Order message | [MSH](#_MSH_segment)  [PID](#_PID_segment)  [PV1](#_1.2.4__PV1)  [ORC](#_1.2.6__ORC)  [OBR](#_1.2.7__OBR)  [ [OBX](#_OBX_segment) ] | Sent as a result of the submission or cancellation of an order on the sending system. |

## Segments

|  |  |
| --- | --- |
| **Segment** | **Description** |
| MSH | Message Header |
| MSA | Message Acknowledgement |
| EVN | Event Type |
| PID | Patient Identification |
| PD1 | Patient additional demographics |
| PV1 | Patient Visit |
| MRG | Merge information |
| ORC | Common Order |
| OBR | Observation Request |
| OBX | Observation/Result |
| NTE | Notes and Comments |

## MSH segment

Defines the intent, source, destination, and some specifics of the syntax of a message.

| **Field** | **Description** | **Req./Opt.** | **Len.** | **Notes** |
| --- | --- | --- | --- | --- |
| 01 | Field Separator | R | 1 | ‘|’.  Escape sequence: \F\ |
| 02 | Encoding characters | R | 4 | ‘^~\&’.  Escape sequences: \S\, \R\, \E\, \T\ |
| 03 | Sending application | O |  | The unique identifier for the sending system |
| 04 | Sending facility | O |  | The unique identifier for the organisation (eg. hospital) originating the application message |
| 05 | Receiving application | O |  | ‘iLAB’ |
| 06 | Receiving facility | O |  | The unique identifier for the organisation (eg hospital) receiving the application message |
| 07 | Date/Time of message | R | 14 | YYYYMMDDHHMMSS  Date and time the message was created. |
| 08 – |  |  |  | Not supported |
| 09 | Message type | R | 3^3 | **Components** – message type^trigger event  e.g. ADT^A01 , |
| 10 | Message control ID | R | 20 | Unique message identifier. Used to relate the response to the original message. Returned in MSA:02 in ACK |
| 11 | Processing ID | R | 1 | ‘P’roduction  ‘T’raining  ‘D’ebugging |
| 12 | Version ID | R |  | 2.4 (HL7 version number) |
| 13 -21 |  |  |  | Not supported |

## EVN segment

Used to communicate information about the trigger event

Note: not used by iLab

## PID segment

The primary means of communicating patient identification information.

| **Field** | **Description** | **Req./**  **Opt** | **Len.** | **Notes** |
| --- | --- | --- | --- | --- |
| 01 | Set ID | R | 1 | ‘|’. |
| 02 |  |  |  | Not supported |
| 03 | Patient Identifiers | R | See notes | The identifiers used to uniquely identify a patient.  **Components** –  <ID>^^^<assigning authority>^<identifier type code> - repeatable separated by ~  e.g.  NHS number format: <number>^^^NHS^NH  PRN number format: <number>^^^<assigning authority>^MR  The first number will be used as the unique Patient identification number (PIN) required by i.Laboratory.  The first number with an identifier type code of ‘MR’ will be assumed to be the current Patient Record Number (PRN) and subsequent numbers with ‘MR’ will be treated as alias numbers  Max. length for an MR number is 20.  Numbers may not include more than one ‘/’  Invalid PRN numbers will cause the message to be rejected |
| 04 |  |  |  | Not supported |
| 05 | Patient Name | R | 25^25  ^^^6  See notes | The legal or primary name of the patient  **Components** –  Surname^Forename^Second name^^Title  Second name is filed appended to Forename ( separated by space )  Commas, brackets and full stops are not permitted and will be removed from the name before filing.  Title must be a Valid i.Laboratory code . |
| 06 |  |  |  | Not supported |
| 07 | Date of Birth | R | 12 | YYYYMMDDHHMM  Date and (optionally) time of birth |
| 08 | Sex | O | 1 | ‘M’,’F’ or ‘U’ ( a null will become ‘U’ in iLab ) |
| 09 | Patient Alias | O | 25^25  ^^^^^1 | Name(s) by which the patient has been known at some time.  **Components** –  Surname^Forename^^^^^M Maiden name  Surname^Forename^^^^^A Alias name |
| 10 |  |  |  | Not supported |
| 11 | Patient Address | O | 30^30  ^30^  30^8 | Patient current address  **Components** –  Address line 1^Address line 2^Address line 3^Address line 4^Postcode |
| 12 |  |  |  | Not supported |
| 13 | Home telephone number | O | 15 | Patient current home phone number |
| 14 -15 |  |  |  | Not supported |
| 16 | Marital Status | O | 6 | Valid i.Laboratory code. |
| 17 | Religion | O | 6 | Valid i.Laboratory code. |
| 18 | Patient Account Number | O | 15 | Free format |
| 19-21 |  |  |  | Not supported |
| 22 | Ethnic group | O | 6 | Valid i.Laboratory code. |
| 23 | Place of Birth | O | 30 | Free format |
| 24-28 |  |  |  | Not supported |
| 29 | Date of Death | O | 12 | YYYYMMDDHHMM  Date and (optionally) time of death |
| 30 |  |  |  | Not supported |
| 32 | Identity reliability code | O | 2 | ‘UD’ in this field indicates unknown date of birth ( ‘\*’ in DOB field in iLab) |

## PD1 segment

Contains further demographic information (optional)

| **Field** | **Description** | **Req./**  **Opt** | **Len.** | **Notes** |
| --- | --- | --- | --- | --- |
| 01-02 |  |  |  | Not supported |
| 03 | Patient Primary Facility | O | 6 | Valid National GP practice code of the registered GP of the patient.  Must be defined as the GP Practice code and associated with the GP in i.Laboratory  **Components** –  ^^Practice code ( i.e. only third component used) |
| 04 | Patient Primary Care Provider | O | 8 | Valid i.Laboratory Clinician code / GMC number for the registered GP of the patient. |
| 05-21 |  |  |  | Not supported |

## PV1 segment

Used to communicate information on a visit-specific basis

| **Field** | **Description** | **Req./**  **Opt** | **Len.** | **Notes** |
| --- | --- | --- | --- | --- |
| 01 | Set ID | O |  | ‘1’ |
| 02 | Patient Class | O | 6 | Valid i.Laboratory code.  Becomes the patient type in i.Laboratory e.g. IP in-patient , OP out-patient |
| 03 | Assigned Patient Location | O | 8 | Valid ilab code which will translate to a triplet (hospital/dept/location) before populating the database. |
| 04-06 |  |  |  | Not supported |
| 07 | Attending Doctor | O | 8 | Valid i.Laboratory code / GMC number for the clinician responsible for the patient.  Details will only be filed if PV1:09 is not sent |
| 08 |  |  |  | Not supported |
| 09 | Consulting Doctor | O | 8 | Valid i.Laboratory code / GMC number for the clinician responsible for the patient |
| 10 | Hospital Service | O | 6 | Valid i.Laboratory code for the Regional Specialty of the clinician responsible for the patient. |
| 11-17 |  |  |  | Not supported |
| 18 | Patient Type | O | 6 | Valid i.Laboratory code  Becomes the patient category in i.Laboratory e.g. NHS,PP |
| 19 | Visit Number | O |  | Not used by i.Laboratory but returned in status messages |
| 20-43 |  |  |  | Not supported |
| 44 | Admission Date/Time | O | 12 | YYYYMMDDHHMM |
| 45-52 |  |  |  | Not supported |

## MRG segment

Provides information necessary to initiate the merging of patient data and groups of records

| **Field** | **Description** | **Req./**  **Opt** | **Len.** | **Notes** |
| --- | --- | --- | --- | --- |
| 01 | Patient Identifier | R | 12 | The patient identifier of the patient that will, if found on the iLab system, be merged into the patient details of that in the PID segment of the message |
| 02-07 |  |  |  | Not supported |

## ORC segment

Used to transmit fields that are common to all orders (all types of servicesthat are requested)

| **Field** | **Description** | **Req./**  **Opt** | **Len.** | **Notes** |
| --- | --- | --- | --- | --- |
| 01 | Order Control | R | 1 | Determines the function of the order segment  ‘NW’ = New Order  ‘CA’ = Cancel a previous order |
| 02 | Placer Order Number | O |  | Not used by iLab, corresponding field in OBR is used |
| 03 |  |  |  | Not supported |
| 04 | Placer Group Number | R | 17 | The identifier that uniquely identifies a group of Orders. The group consists of all the Orders that have the same group number. A group number must only identify orders from a single patient.  This number is used to register the request in i.Laboratory, and should accompany the specimen.  This number may be sent in an OBX segment instead. |
| 05-06 |  |  |  | Not supported |
| 07 | Quantity / Timing | R | 6 | Valid i.Lab code for Priority.  **Components** –  ^^^^^Priority i.e. only 5th component used. |
| 08-14 |  |  |  | Not supported |
| 15 | Order Effective Date/Time | R | 12 | YYYYMMDDHHMM |
| 16-25 |  |  |  | Not supported |

## OBR segment

Provides information that applies to all of the observations that follow

| **Field** | **Description** | **Req./**  **Opt** | **Len.** | **Notes** |
| --- | --- | --- | --- | --- |
| 01 | Set ID | O |  | ‘1’ |
| 02 | Placer Order Number | R |  | The identifier that uniquely identifies an individual Order.  Used internally in the i.Laboratory application ( not visible to normal users) and returned with results. |
| 03 |  |  |  | Not supported |
| 04 | Universal Service ID | R | 6^n^1 | The identifier code for the requested observation/test/battery  **Components** –  Order code^Description^FILID  The Order code must be a valid i.Laboratory code for a Profile, Test, Investigation or Process Category. Profiles of profiles are not permitted  The FILID is the i.Laboratory code used to identify the relevant database area (disciplines)  B = Biochemistry  H = Haematology  M = Microbiology  T = Transfusion  P = Cellular Pathology  If invalid or not supplied the Order will be rejected. A cancellation message will be sent. Details will be recorded in i.Laboratory system messages. |
| 05-06 |  |  |  | Not supported |
| 07 | Observation date/time | O | 12 | YYYYMMDDHHMM  Specimen collection date/time  Future dates are not permitted |
| 08-14 |  |  |  | Not supported |
| 15 | Specimen Source | O  (R for micro) | 6^^^  n^n | Specimen type,site and qualifier (site and qualifier only valid in Microbiology)  **Components** –  Specimen type^^^Specimen site^Site Qualifier  Specimen type must be valid i.Laboratory codes  Specimen type is mandatory for Microbiology orders  Specimen site/qualifier can be valid i.Lab codes but specimen site can be free text |
| 16-47 |  |  |  | Not supported |

## OBX segment

Used to convey additional patient clinical information relevant to an Order.

The data items supported are described in Table A.

| **Field** | **Description** | **Req./**  **Opt** | **Len.** | **Notes** |
| --- | --- | --- | --- | --- |
| 01 | Set ID | R |  | Sequence number |
| 02 | Value type | R | 2 | Indicates the type of data in field 05 e.g.CE,ST,TX  DT = YYYYMMDD |
| 03 | Observation Identifier | R | 32 | **Components** –  Variable^variable description  Variable - An identifier specifying either an iLab variable in Table A for populating the iLab database or any item for display in the FSI Ordering Information facility ( see [Section 2.4](#_Orders) )  Variable description – A description used in the F9 display if the variable is not defined in iLab data dictionary |
| 04 |  |  |  | Not supported |
| 05 | Observation Value | R |  | Data item value or free text for the identifier in field 3 |
| 06-19 |  |  |  | Not supported |

**Table A – items supported in OBX segments contained in order messages.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **i.Laboratory variable (in OBX:03)** | **Description** | **Type** | **Iterative?** | **Max. Length** | **Notes** |
| CABT | Current antibiotic therapy | AN | Yes | 6 (x 10) | Microbiology only |
| CHRRQ | Reason for Request | AN | Yes | 6 or 60 (x3) |  |
| COPYLOC | Copy to Location | AN | Yes | 6 (x 6) |  |
| COPYTO | Copy to | AN | Yes | 6 (x 6) |  |
| CTRY | Country of Travel | AN | Yes | 6 (x5) | Microbiology only |
| FOCOM | Specimen (order) comment | AN |  | 6 or 60 |  |
| HCDT | Clinical details | AN | Yes | 6x 5) |  |
| HFAST | Fasting Flag | AN |  | 1 |  |
| HONSD | Symptom onset date | DT |  | 8 | Microbiology only |
| HRFLAG | High Risk Flag | AN |  | 3 | See Notes below |
| OCC | Occupation/School | AN |  | 6 |  |
| ONCL | On-call flag (Charge band) | AN |  | 6 |  |
| PABT | Proposed antibiotic therapy | AN |  | 6 (x 10) |  |
| PCOND | Condition of patient | AN |  | 6 | Cellular Pathology only |
| RFNO | Reference (Order) Number | AN |  | 19 |  |
| RFS | Reason for smear | AN |  | 6 | Cellular Pathology only |
| RNSP | Reason for specimen | AN |  | 6 (x 5) |  |
| SIF | Special Interest Flag | AN |  | 6 (x10) |  |
| DPS | Date of Previous Smear | DT |  | 8 | Cellular Pathology only |
| SLMP | Last menstrual period | DT |  | 8 |  |
| SSTUDY | Specimen study code | AN |  |  |  |
| TOSMEAR | Taker of smear | AN |  | 8 |  |
| VABT | Previous antibiotic therapy | AN |  | 6 (x 10) |  |

Notes:

1. If iterative the variable can be sent as varname(n) e.g. HCDT(1),COPYTO(1),COPYTO(2)

2. If the length of data sent for CHRRQ is more than 60 chars it will still be viewable in the FSI Ordering Information screen (f9) but will be truncated in the specimen details within iLab.

3. HRFLAG . This is a special case. If the data value is “Yes” (case sensitive) then the patient referred to in PID will be marked as High Risk.

## MSA segment

Contains information about a message being acknowledged.

| **Field** | **Description** | **Req./**  **Opt** | **Len.** | **Notes** |
| --- | --- | --- | --- | --- |
| 01 | Acknowledgement Code | R | 1 | ‘AA’ - application accept  If ‘AA’ is not received, error is assumed |
| 02 | Message Control ID | O |  | The Message Control ID from MSH:10 in the message being acknowledged |
| 03-06 |  |  |  | Not supported |

## Patient Identification

The primary means of identifying the patient record that may be updated by the incoming message is to use the first number in the PID:3 field (PID segment field 3) as an identifier (PIN). If this exists in the index of primary identifiers then the referenced patient will be updated, if not, then a new registration will be made.

It is possible, however, to configure variations on this incorporating patient matching – as follows.

## Patient Matching

If the switch NNHSPIN is set then patient matching is undertaken according to the following flowchart.

PIN number

(first in PID:3)

found in PIN index?

Patient Match successful?

Yes

No

PIN number in NHS index?

PIN number in PRN index?

Yes

Yes

No

‘No Reject’

switch?

PRN in PRN index?

‘No Reject’

switch?

Patient Match successful?

Update patient details

Yes

No

No

Create new patient record.

If failed patient match and ‘No Reject’ switch set, file without NHS number.

No

No

Yes

Yes

Yes

No

No

Yes

Reject message

Patient Match successful?

Yes

No

## No Patient Matching

If the NNHSPIN switch is not set, the flow without patient matching is as follows –

PIN number

(first in PID:3)

found in PIN index?

Yes

No

Update patient details

Create new patient record.

If failed patient match and ‘No Reject’ switch set, file without NHS number.

NNHS SEARCH switch set and PIN in NHS index?

Patient Match successful?

Yes

No

No

Yes

## Conditions for Rejecting an Incoming Message

1. PIN number is null or greater than 14 characters and ‘Allow No Pin’ switch not set.
2. Patient matching criteria fails and ‘Pat Match No Reject’ switch not set.
3. Patient surname is null or contains a leading space or has more than 2 hyphens.
4. The NHS number is invalid and is also the PIN and ‘NNHSPIN’ switch is set.
5. If incoming ADT is held up waiting for a merge to finish more than 20 seconds.

## Orders

When an ORM message is successfully received, the order details are displayed on the iLab screen IOE (Interface Order Entry) from which the orders are subsequently ‘booked in’ and assigned to a specimen.

The ORC/OBR segment pair will define the iLab test profile with associated other information. There can be several ORC/OBR pairs containing the same placer group number in ORC:04 which in iLab terms is known as the RFN (reference number) . Each entry on the IOE screen represents an RFN which can ‘contain’ several test profiles. These can also be across different disciplines if required.

Each ORC/OBR pair can be received in a separate HL7 message or can be grouped together in one message under common patient demographic segments.

With each ORC/OBR pair there can be a number of OBX segments which provide extra information as defined in section 2.2.9. This information is viewable in IOE using option 2 (Extra) and when viewing results on other screens using the F9 key/‘FSI Ordering Info’ option or, if using GUI screens, the ‘F’ button. The OBX data that defines iLab specific variables (as in 2.2.9 Table A) will be loaded into the iLab specimen data when the order is booked in.

# HL7 Out – outbound messages

The following tables describe the HL7 messages that can be sent out by i.Laboratory. Which ones are sent will depend on how the system is configured (see [Section 4](#_HL7_OUT)). Only the segments actually used are listed. Segments within [ ] are optional.

## Message Types

There are 5 types of messages sent out by iLab as follows –

## Result Messages (ORU^R01)

These contain results to tests carried out in iLab either in response to an order received from this interface or from being ordered on iLab (unsolicited).

#### Delete messages

These are a variation on a result message where the intention is to indicate that a test result has been deleted or deauthorised so that this can be displayed on the foreign system.

## Status Messages (ORM^O01)

These contain status information for orders previously received by iLab and are formed by accessing the original order message (ORM^O01) and using that as a basis for the status message with some fields altered.

#### In Progress

This indicates that an order has been booked in to iLab and allocated a specimen number.

#### Complete

This indicates that an order is complete and a result has been returned. Sent immediately following a result (ORU^O01) message. This is only sent if the configuration is set up to do so. [See 4.2.6](#_’SEND_STATUS’)

#### Cancel

This indicates that an order has been cancelled by a user in iLab.

#### Rejection

This indicates that an order has been rejected due to a problem occurring – either because the validation of the order was unsuccessful or a problem occurred when loading the order into iLab.

## ADT Messages (ADT^A28 and ADT^A31)

If configured to do so, an A28 is sent out when a new patient is registered on iLab. This can be qualified, if required, with a question posed to the user ‘Send registration to FSI?’.

An A31 is sent out when certain demographic details for a patient which is indexed by the interface have been changed. Those details are – Surname, forename, date of birth, sex, maiden name, title, place of birth, time of birth, date of death, time of death, marital status, religion, NHS number, address, post code, telephone number, GP, GP hospital code, alias numbers.

## Message Acknowledgements (ACK)

Sent in response to any message received which is recognisable as an HL7 message. The acknowledgement does not indicate that the received message has been successful.

## Financial Transaction (DFT^P03)

A message that contains billing information (only used in specific customer implementations)

## Table of Outgoing Messages

The following table gives all the message types and the segments contained in each. The segment codes are linked to the appropriate section that defines its content.

| Message Type | **Trigger Event** | **Description** | **Segments used** | **Notes** |
| --- | --- | --- | --- | --- |
| ADT | A28 | Add person information | [MSH](#_2.2.1__MSH)  [PID](#_2.2.2__PID)  [[PD1](#_2.2.3__PD1) ]  [[PV1](#_2.2.6__PV1)] | Sent when a new patient is registered on iLab |
| ADT | A31 | Update person information | [MSH](#_2.2.1__MSH)  [PID](#_2.2.2__PID)  [[PD1](#_2.2.3__PD1) ]  [[PV1](#_2.2.6__PV1)] | Sent when a patient’s details are updated. |
| ACK |  | Message Acknowledgement | [MSH](#_1.2.1__MSH)  [MSA](#_1.2.9__MSA) | An acknowledgement to an incoming message. |
| ORU | O01 | Result message | [MSH](#_3.2.1__MSH)  [PID](#_3.2.2__PID)  [[PD1](#_3.2.4__PD1)]  [PV1](#_3.2.5__PV1)  [ORC](#_3.2.8__ORC)  [OBR](#_1.2.7__OBR)  [OBX](#_3.2.12__OBX)  ([NTE](#_2.2.14__NTE)) |  |
| ORM | O01 | Status message | [MSH](#_2.2.1__MSH)  [PID](#_2.2.3__PID)  [PV1](#_2.2.7__PV1)  [ORC](#_2.2.9__ORC)  [OBR](#_2.2.11__OBR)  ([NTE](#_2.2.14__NTE)) | The Status message is a copy of the received order message with some fields edited |
| DFT | P03 | Financial Transaction | [MSH](#_2.2.1__MSH)  PID  PV1  FT1 | Implemented for a specific customer.  See document |

## Segments

|  |  |
| --- | --- |
| **Segment** | **Description** |
| MSH | Message Header |
| MSA | Message Acknowledgement |
| EVN | Event Type |
| PID | Patient Identification |
| PD1 | Patient additional demographics |
| PV1 | Patient Visit |
| ORC | Common Order |
| OBR | Observation Request |
| OBX | Observation/Result |
| NTE | Notes and Comments |

## MSH Segment

Defines the intent, source, destination, and some specifics of the syntax of a message.

| **Field** | **Description** | **Len.** | **Notes** |
| --- | --- | --- | --- |
| 01 | Field Separator | 1 | ‘|’.  Escape sequence: \F\ |
| 02 | Encoding characters | 4 | ‘^~\&’.  Escape sequences: \S\, \R\, \E\, \T\ |
| 03 | Sending application |  | Configurable - normally ‘iLAB’ |
| 04 | Sending facility |  | Configurable |
| 05 | Receiving application |  | Configurable |
| 06 | Receiving facility |  | Configurable |
| 07 | Date/Time of message | 14 | YYYYMMDDHHMMSS  Date and time the message was created. |
| 08 – |  |  | Not supported |
| 09 | Message type | 7 | **Components** – message type^trigger event  e.g. ORU^R01 , |
| 10 | Message control ID | 20 | Unique message identifier. Returned in MSA:02 in ACK |
| 11 | Processing ID | 1 | ‘P’roduction  ‘T’raining  ‘D’ebugging |
| 12 | Version ID |  | 2.4 (HL7 version number) |
| 13 |  | 20 | Populated with the MSH:10 value to facilitate systems where this field is mandatory. |
| 14 -21 |  |  | Not supported |

## PID Segment (ORU and ADT messages)

The primary means of communicating patient identification information.

| **Field** | **Description** | **Len.** | **Notes** |
| --- | --- | --- | --- |
| 01 | Set ID | 1 | ‘|’. |
| 02 |  |  | Not supported |
| 03 | Patient Identifiers | 14 | The identifiers used to uniquely identify a patient.  **Components** –  <ID>^^^<assigning authority>^<identifier type code> - repeatable separated by ~  e.g.  NHS number format: <number>^^^NHS^NH  PRN number format: <number>^^^<assigning authority>^MR  PIN number format: <number>^^^<assigning authority>^PI  (See [Sect 4.2.19 / 20](#_’ASSIGNING_AUTH_1’)  for assigning authority options.) |
| 04 | SIF codes |  | If configured to send SIF codes( [See Sect 4.2.38](#_‘SEND_SIF_CODES’) )  SIFn^^^^SI repeatable separated by ~ ( n can be up to 10) |
| 05 | Patient Name | 25 | The legal or primary name of the patient  **Components** –  Surname^Forename^Second name^^Title |
| 06 |  |  | Not supported |
| 07 | Date of Birth | 12 | YYYYMMDD0000  Time is always zero |
| 08 | Sex | 1 | ‘M’,’F’ or ‘U’ |
| 09-10 |  |  | Not supported |
| 11 | Patient Address | 30 | Patient current address  **Components** –  Address line 1^Address line 2^Address line 3^Address line 4^Postcode  **Max lengths** –  30^30^30^30^8 |
| 12 |  |  | Not supported |
| 13 | Home telephone number | 20 | Patient current home phone number |
| 14 -15 |  |  | Not supported |
| 16 | Marital Status | 6 | i.Laboratory code. |
| 17 | Religion | 6 | i.Laboratory code. |
| 18-21 |  |  | Not supported |
| 22 | Ethnic group | 6 | i.Laboratory code. (Race) |
| 23 | Place of Birth | 30 | Free format |
| 24-31 |  |  | Not supported |
| 32 | Identity reliability code |  | Approximate DOB flag |

## PID Segment (ORM messages)

The primary means of communicating patient identification information.

In this case reflects information sent in the order message it is responding to.

| **Field** | **Description** | **Len.** | **Notes** |
| --- | --- | --- | --- |
| 01 | Set ID |  | As in order message |
| 02 |  |  | As in order message |
| 03 | Patient Identifiers |  | As in order message |
| 04 |  |  | As in order message |
| 05 | Patient Name |  | As in order message |
| 06 |  |  | As in order message |
| 07 | Date of Birth |  | As in order message |
| 08 | Sex |  | As in order message |

## PD1 Segment

Provides information about the patient’s GP (sent in unsolicited results ORU messages and ADT messages if the information is available).

| **Field** | **Description** | **Len.** | **Notes** |
| --- | --- | --- | --- |
| 01-02 |  |  | Not supported |
| 03 | Patient Primary Facility | 6 | National GP practice code of the registered GP of the patient.  **Components** –  If ORU -  ^^Practice code ( i.e. only third component used)  If ADT-  Name of practice^^Practice code |
| 04 | Patient Primary Care Provider | 8 | i.Laboratory Clinician code / GMC number for the registered GP of the patient. |
| 05-21 |  |  | Not supported |

## PV1 Segment (ORU Segment)

Used to communicate information on a visit-specific basis.

| **Field** | **Description** | **Len.** | **Notes** |
| --- | --- | --- | --- |
| 01 | Set ID |  | ‘1’ |
| 02 | Patient Class | 6 | i.Laboratory patient type code. e.g. IP in-patient , OP out-patient  Can be default for the location see [Sect 4.2.37](#_’ASSIGNING_AUTH_1’) |
| 03 | Assigned Patient Location | 8 | Patient location code and expansion ( location description )  **Components** –  LOC^^^^^^^^LOCDESC |
| 04-06 |  |  | Not supported |
| 07 | Attending Doctor | 8 | i.Laboratory code or GMC number for the clinician responsible for the patient. |
| 08-09 |  |  | Not supported |
| 10 | Hospital Service | 6 | i.Laboratory code for the Medical Specialty of the clinician responsible for the patient. |
| 11-17 |  |  | Not supported |
| 18 | Patient Type | 6 | i.Laboratory code for patient category e.g. NHS,PP |
| 19 | Visit Number |  | If in an ORU message in response to an order then this will be returned as received in that order – otherwise null. |
| 20-52 |  |  | Not supported |

## PV1 segment (ADT messages)

A reduced PV1 segment sent in ADT messages.

| **Field** | **Description** | **Len.** | **Notes** |
| --- | --- | --- | --- |
| 01 | Set ID |  | ‘1’ |
| 02 | Patient Class | 6 | i.Laboratory patient type code. e.g. IP in-patient , OP out-patient |
| 03-52 |  |  | Not supported |

## PV1 segment (ORM messages)

Used to communicate information on a visit-specific basis.

In this case reflects information sent in the order message it is responding to.

| **Field** | **Description** | **Len.** | **Notes** |
| --- | --- | --- | --- |
| 01 | Set ID |  | As in order message |
| 02 | Patient Class | 6 | As in order message |
| 03 | Assigned Patient Location | 8 | As in order message |
| 04-06 |  |  | As in order message |
| 07 | Attending Doctor | 8 | As in order message |
| 08-09 |  |  | As in order message |
| 10 | Hospital Service | 6 | As in order message |
| 11-17 |  |  | As in order message |
| 18 | Patient Type | 6 | As in order message |
| 19 | Visit Number |  | As in order message |

## ORC segment (ORU messages)

Used to transmit fields that are common to all orders (all types of services that are requested).

| **Field** | **Description** | **Len.** | **Notes** |
| --- | --- | --- | --- |
| 01 | Order Control | 1 | Always contains ‘SC’ ( status change ) |
| 02 | Placer Order Number |  | If the order was from the interface this is an identifier that uniquely identifies an individual order - returned exactly as received in the order message.  If the order was added in i.Laboratory then this will be the same as the filler order number – described for field 03    **Components** –  Order number^sending application (where sending application can be as sent in MSH if for an order, otherwise, it will be the configured sending application i.e. iLab) |
| 03 | Filler order number |  | An iLab internally generated order number which is a concatenation of internal iLab variables as follows – ISRN,FILID,OC  Where ISRN is internal specimen number  FILID is discipline code – B,H,M,P or T  OC is the iLab profile or test code. Note that in the case of Cellular Pathology OC is a process category code and if unsolicited can be configured to send a default code according to dept/sect .  **Components** –  Order number^sending application |
| 04 | Placer Group Number | 17 | The reference number that uniquely identifies a group of Orders. If all the orders were generated on iLab ( unsolicited ) then this will be generated as follows – ‘UNKNOWN’ followed by the internal patient number e.g. UNKNOWN57699706651  **Components** –  Reference number^sending application |
| 05 | Order Status |  | Always ‘CM’ – order completed |
| 06-11 |  |  | Not supported |
| 12 | Ordering Provider |  | The order requesting clinician national code. If no national code is stored in iLab it will be the iLab local code. |
| 13-25 |  |  | Not supported |

## ORC segment (ORM messages)

Used to transmit fields that are common to all orders.

In this case reflects some information sent in the order message it is responding to.

| **Field** | **Description** | **Len.** | **Notes** |
| --- | --- | --- | --- |
| 01 | Order Control |  | ‘SC’ - if ‘In progress’ or ‘complete’ status message  ‘UA’ - if ‘cancel’ or ‘reject’ status message |
| 02 | Placer Order Number |  | As in order message |
| 03 | Filler Order Number |  | If switch setting on see [4.2.27](#_‘SEND_WIP_FILLERID’)  ISRN,FILID,OC as in ORU message  Otherwise - As in order message |
| 04 | Placer Group Number | 17 | As in order message |
| 05 | Order Status |  | ‘IP’ - if ‘In progress’ status message  ‘CM’ - if ‘complete’ status message  ‘CA’ - if ‘cancel’ or ‘reject’ status message |
| 06-08 |  |  | As in order message |
| 09 | Date/Time of Transaction | 14 | YYYYMMDDHHMMSS  Date and time the message is sent |

## OBR segment (ORU messages)

Used to convey specific details of the order, provides information that applies to all of the observations that follow:

| **Field** | **Description** | **Len.** | **Notes** |
| --- | --- | --- | --- |
| 01 | Set ID |  | ‘1’ |
| 02 | Placer Order Number |  | As ORC:02 as defined in Section 3.3.8 |
| 03 | Filler order number |  | As ORC:03 as defined in Section 3.3.8 |
| 04 | Universal Service ID |  | The identifier code for the requested observation/test/battery  **Components** –  Order code^Description^FILID  See [section 2.2.8](#_OBR_segment) OBR:04 for definition of FILID |
| 05-06 |  |  | Not supported |
| 07 | Observation date/time |  | YYYYMMDDHHMM  Specimen collection date/time  Received Date/Time will be sent if ‘unknown’ was entered in i.Lab |
| 08-12 |  |  | Not supported |
| 13 | Relevant Clinical Info |  | If configured, Additional clinical information as follows –  11 components are added -  HCDT(1)^HCDT(2)^HCDT(3)^HCDT(4)^HCDT(5)  ^CHRRQ(1)^CHRRQ(2)^CHRRQ(3)^RNSP^HFAST^EXTACN  see [Sect. 4.2.24](#_‘SEND_CLINICAL_INFORMATION’) |
| 14 | Specimen received Date/Time |  | YYYYMMDDHHMM  Specimen received date/time |
| 15 | Specimen Source |  | **Components** – if switch setting on includes type description (see [4.2.26](#_‘EXPAND_SPEC_TYPE’) )  iLab specimen type^Description |
| 16 | Ordering Provider |  | iLab Requesting clinician |
| 17-19 |  |  | Not supported |
| 20 | Filler Field 1 |  | Specimen number (ACN2) |
| 21 | Filler Field 2 |  | In micro only.  I = Investigation  T = Test |
| 22-24 |  |  | Not supported |
| 25 | Result status |  | F = Final result  C = Corrected result  P= Preliminary result  I – Incomplete result |
| 26-27 |  |  | Not supported |
| 28 | ‘Copy to’ clinician(s) |  | The clinician code(s) for those for which copies of the results have been requested  **Components** –  Clinician Code^Clinician name^Location^Location Description  - repeatable separated by ~ |
| 29-31 |  |  | Not supported |
| 32 | Principal Result Interpreter |  | The name of the i.Laboratory user authorising the results. |

## OBR segment (ORM messages)

Used to convey specific details of the order.

In this case reflects information sent in the order message it is responding to.

| **Field** | **Description** | **Len.** | **Notes** |
| --- | --- | --- | --- |
| 01 | Set ID |  | As in order message |
| 02 | Placer Order Number |  | As in order message |
| 03 | Filler Order Number |  | If switch setting on see [4.2.27](#_‘SEND_WIP_FILLERID’)  ISRN,FILID,OC as in ORU message  Otherwise - As in order message |
| 04 | Universal Service ID |  | As in order message |
| 05-06 |  |  | As in order message |
| 07 | Observation date/time | 6 | As in order message |
| 08-13 |  |  | As in order message |
| 14 | Specimen Received date/time |  | YYYYMMDDHHMM  Specimen received date/time  - only if ‘in progress’ status |
| 15 | Specimen Source |  | As in order message |
| 16-24 |  |  | As in order message |
| 25 | Result status |  | ‘I’ - only if ‘In progress’ status message |

## OBX segment

Provides information about a single observation / result.

| **Field** | **Description** | **Len.** | **Notes** |
| --- | --- | --- | --- |
| 01 | Set ID |  | Sequence number |
| 02 | Value type | 2 | NM = Numeric  ST = String data  TX = Text data |
| 03 | Observation Identifier | 6^n | **Components** –  Order code^description^^read code(if configured see [section 4.2.36](#_‘INCLUDE_READ_CODES’)  i.Lab Test or Investigation code and expansion  In cellular pathology – can be the report sequence number e.g. 1^Reporting Seq. 1 or the order code (process category) as sent in OBR:4 depending on switch (see [section 4.2.25](#_‘PROC_CAT_IN) ) |
| 04 | Observation Sub-ID | 1 | In text reports only – 1 or 2 |
| 05 | Observation Value |  | Test result or Text result line |
| 06 | Units |  | Valid for a numeric result |
| 07 | Reference Range |  | Lower limit – Upper limit  Discrete results only |
| 08 | Abnormal Flags | 2 | L = Below low normal LL = Below alert range  H = Above high normal HH = Above alert range  Discrete results only |
| 09 |  |  | Not supported |
| 10 | Nature of Abnormal Test | 1 | D = Delta check flag (only with switch setting on) |
| 11 | Observation Result Status | 1 | F = Final result  P= Preliminary result  I = Incomplete result  D=Deleted result |
| 12-13 |  |  | Not supported |
| 14 | Date Time of the Observation | 12 | YYYYMMDDHHMM  Date/Time the test was authorised. |
| 15-16 |  |  | Not supported |
| 17 | Observation method | 6 | i.Lab Method code |
| 18-19 |  |  | Not supported |

## NTE segment

Used to convey comments (if following an OBR segment they are order level comments , if following an OBX they are Test level comments).

| **Field** | **Description** | **Len.** | **Notes** |
| --- | --- | --- | --- |
| 01 | Set ID | 1 | Sequence number |
| 02 | Source of comment | 5 | Can be ‘FOCOM’ or ‘LTGC’ for order level comments.  FOCOM means the comment is a specimen comment  LTGC means the comment is an LTG comment ( logical test group ) |
| 03 | Text |  | The comment.  The ~ delimiter indicates commencement of a new line |
| 04-06 |  |  | Not supported |

## NTE segment (ORM Messages)

Used in Reject status messages to return a reason for the Reject.

| **Field** | **Description** | **Len.** | **Notes** |
| --- | --- | --- | --- |
| 01-02 |  |  | Not supported |
| 03 | Text |  | Reason for the Rejection of the Order. |

## MSA segment

Contains information about a message being acknowledged**.**

| **Field** | **Description** | **Len.** | **Notes** |
| --- | --- | --- | --- |
| 01 | Acknowledgement Code | 1 | ‘AA’ - application accept |
| 02 | Message Control ID |  | The Message Control ID from MSH:10 in the message being acknowledged |
| 03-06 |  |  | Not supported |

# Configurable Variations

## HL7 In

The following switch settings allow different behaviour with regard to searching for a patient for possible updating with the incoming message content and treatment of NHS numbers.

## ‘ALLOW NO PIN’

This makes a PIN (patient identification number) no longer mandatory in the PID segment (see section 2.2.3) of incoming messages. Such messages will always register a new patient record and the PIN number will be generated as a copy of the PRN number.

## ‘NNHSPIN’

Enables a patient matching procedure which checks three different indexes for the presence of the PIN number – i.e the PIN index , the NNHS index and the PRN index – and, if found, will also check patient demographics according to matching criteria (see section 2.3).

## ‘NNHS Search’

Ensures that when no PIN number match is found in the PIN index the NHS number index is checked ( in practical terms this is called the NNHS number index in iLab). If a match is found then patient matching criteria is checked. If this passes then the patient found will be updated by the incoming message. Note, this switch is not relevant if the NNHSPIN switch is set.

## ‘PAT MATCH NO REJECT’

This has special significance when set in conjunction with “NNHSPIN” switch (see section 2.3).

If set otherwise it will prevent a rejection of a patient update message when an NHS number is found to exist for a different patient on the database. The message is filed without an NHS number present.

## ‘AUTO MERGE’

This will ensure that when an ADT A40 message is received, the patient records are merged automatically within iLab. If this is not set the merge information is just entered into the ilab screen ‘Show possible FSI merges’ and the patient records will be merged manually by users.

## ‘USE CURRENT DATE/TIME FOR ORDERS’

For order messages, the date and time written to IOE is the current date/time rather than that sent with the message.

## HL7 Out

**Switches to enable outgoing HL7 messages:**

## ‘PMI AMENDMENT’

Enables the sending of A31 messages when patient details are amended (see 3.1.3)

## ‘PMI REGISTRATION’

Enables the sending of A28 messages when a new patient is registered on iLab (see 3.1.3)

## ‘UNCOND PMI REG’

Sends an A28 (PMI registration) out without asking a question of the user (see 3.1.3).

**Switches to stipulate differences in the outgoing message content:**

## ‘UNSOLICITED RESULTS’

Enables the sending of unsolicited results.

## ‘EMPI FOR RESULTS’

Stops results going out if the patient has no EMPI (PIN) number.

## ‘SEND STATUS’

Sends a status ORM message following the results.

## ‘PRIORITISE TESTS’

This ensures that tests within profiles and profiles within messages are transmitted in order of the priority figures stored in iLab and specified in iLab screen MTEST.

## ‘NOT RESTRICT BM LENGTH’

This inhibits a restriction on Bone Marrow reports where they are not sent out if longer than 100 lines. This happens if the report contains a picture and the receiving system cannot handle it.

With the switch set, any length of Bone Marrow report is output.

## ‘DON’T SEND ALIAS NUMBERS’

Inhibits the sending of patient alias numbers in the outgoing messages.

## ‘BLANK FIRST LINE’

Adds an additional blank line to the top of a Cellular Pathology report.

### ‘ALL CELLPATH REPORTS’

Sends all previous reports if the current report is not the first.

### ‘ADD CELLPATH PATHOLOGIST’

Adds the ‘reporting pathologist’ to the bottom of the report.

### ‘ADD CELLP COLL DATE/TIMES’

Adds the collection date and times to the top of the report.

### ‘ADD REASON FOR REQUEST’

Adds the ‘reason for request’ to the top of a Cell Path report.

### ‘EMPI FOR RESULTS’

Disallows results being sent out if there is no PIN number attached to the patient.

### ’NORMAL CTIME’

Inhibits the substitution of receive time for collect time if the collect time is unknown.

### ’UNKNOWN CDATTIM’

If the collect date or time has been set as ‘unknown’ in iLab, this will output a null value.

### ’SEND EMPI WITH RESULTS’

Outputs the PIN number in the PID segment with the results.

### ’EMPI ASSIGNING AUTH’

Contains the value of the assigning authority of the PIN sent out in ORU messages.

### ’ASSIGNING AUTH 1’

Assigning Authority code sent with main patient number (PRN) in PID segment.

### ’ASSIGNING AUTH 2’

Assigning Authority code sent with alias numbers in PID segment.

### ’NO PRECENTAGES IN RESULTS’

Inhibits the sending of percent values in brackets following differential blood test results

### ‘SPEC TYPE TEST’

Specifies a dummy test that can be sent in the first OBX of an ORU message containing microbiology results.

### ‘SEND CLINICAL INFORMATION’

Enables the sending of clinical information in OBR:13 of an ORU result message as follows:

HCDT(1 – 5) Clinical details (codes as applied in ilab)

CHRRQ(1 – 3) Up to three lines of reason for request free text.

RNSP Reason for specimen (code as applied in iLab)

HFAST Fasting flag

EXTACN External Laboratory Reference Number

### ‘PROC CAT IN OBX’

In Cell Path results puts the Process Category in OBX:3 of the text block OBX’s i.e. same as in OBR:4. Without this set the report number is sent.

### ‘EXPAND SPEC TYPE’

Adds the expanded name of the specimen type to OBR:15 in an ORU result message.

### ‘SEND CONS NATIONAL CODE’

Ensures the national codes are sent for clinicians if available in outward messages.

### ‘SEND WIP FILLERID’

Adds a filler ID value to ORC:3 and OBR:3 of an ‘in progress’ status ORM message.

### ‘GROUP RESULTS’

This groups the ORC/OBR/OBX segments for test profiles into one ORU message rather than sending in separate messages. This is possible if the results are all available together – i.e. if the results have all been authorised. This is configurable for particular disciplines.

### ‘SEND DELTA CHECK’

Enables the sending of the Delta check flag in OBX:10 of a result message.

### ‘TRANSSUP’

Enables a mode of operating where transfusion blood group tests are all output, relying on the users to suppress any tests they do not wish to be sent. Without this set, the interface outputs just the conclusion test within the profile.

### ‘CHANGE MICRO WIDTH’

This changes the width of microbiology textual reports from the usual 80 characters. It is set to the desired value.

### ‘MICROTNUMERIC’

Treats microbiology test results the same as biochem/haematology results i.e. mainly numeric , rather than forming a textual result as with other microbiology results (investigations).

### ‘OMIT MULTIPLE ORC’

If in ‘Group Results’ mode, only send the first ORC segment.

### ‘PLACER ID FROM ORDER’

Make the Placer ID in ORC:2/OBR:2 reflect the sending application received in the order message for the order result being output.

### ‘INCLUDE READ CODES’

Send read codes out in OBX segments for test results.

### ‘DEFAULT PATIENT TYPE’

Send default patient type for location in PV1 segment.

### ‘SEND SIF CODES’

Send Special Interest Flags in PID:4

# Examples

## Inbound Order Message (ORM)

MSH|^~\&|LRC1|RW3|APEX|RW3|20100204151329||ORM^O01|0930435404390288|P|2.4|||NE|NE

PID|1||000000457^^^RW3^PI^RW3~00000173^^^CMMRN^MR^RW3||NEEO-FOUR^TEST^^^MASTR||20100202|M|||Flat 23^Moorside View^^^OR2 7UQ^

^HOME^Smallbrook Rd, Sha|||||S|U|||||U||||||||

PV1|1|I|W\_68^^^RW3^^^^^||||||NEEO^^^^^^^^^^|UnKnown|||||||^^^^^^^^^^||000000457000000001^^^PIMS\_INPATIENT|||||||||||||||||||||||||

ORC|NW|REQ/NHS/007678^LRC1||RWT/S/0000007/2010^|||^^^^^R|||^^^^^^^^^^||NEO1^^^^^^^^^^||^^|20100204151038

OBR|1|REQ/NHS/007678^LRC1|^|FBC^Full blood

count(FBC)^H|||201002041510||||||||^^|NEO1^^^^^^^|^^||||||||||^^^^^R|||||||||

OBX|1|ST|01\_High risk specimen^01\_High riskspecimen^||Y||||||

OBX|2|ST|03\_Will this patient be fasting at the time of specimen collection^03\_Will this patient be fasting at the time of specimen collection^||N||||||

OBX|3|ST|05\_Contact Mode^05\_Contact Mode^||Bleep||||||

OBX|4|ST|CHRRQ(1)^|| prem ||||||

OBX|5|ST|Order Entered By Lorenzo User : ^Order Entered By Lorenzo User : ||NEO1 (Ngozi EDI-OSAGIE)||||||

OBX|6|ST|Order Requested By : ^Order Requested By : ||NEO1 (Ngozi EDI-OSAGIE)||||||

## Inbound ADT Message (ORM)

MSH|^~\&|BARWICK PAS|PMI|iLAB|iLAB|20100215165216||ADT^A31|297815|P|2.4||||

EVN|A31|20100215165100||||

PID|1||5054559^^^PAS^PI~3576709^^^RXF00^MR||TESTER^LILLIAN^^^MR S||19371101|F|||229 BRADFORD ROAD^LIVERSEDGE^WEST YORKSHIRE^^WF1 5 6PL|||0274862583||||||||99|||||||20100118

PD1|||UNKNOWN PRACTICE^^V81999|G9999998^UNKNOWN GP^GP^^^Dr|||||

## Result Message (ORU) – Unsolicited, Blood Sciences

MSH|^~\&|ILAB|LAB|OCS|OCS|20091113151100||ORU^R01|12|D|2.4|12

PID|1||0206431409^^^NHS^NH~4410035^^^AX^MR~4410035^^^AX^PI||TEST^LUCY||195510260000|F|||^^^^|||||||||||U|||||||||||||||||

PV1|1|I|ADM^^^^^^^^Admission Ward||||AARM|||U||||||||GOM||||||||||||||||||||||||||||||||||

ORC|SC|6167757420BBLG^ILAB|6167757420BBLG^ILAB|UNKNOWN6166010388^ILAB|CM|||||||AARM^Dr A Armatys||||||||||||||

OBR||6167757420BBLG^ILAB|6167757420BBLG^ILAB|BLG^Blood Gases (Whole Blood)^B|||200911121557|||||||200911121557|S|AARM||||CR211067W|||||P|||||||Lab Technician|

OBX|1|NM|BE^Base Excess (Whole Blood)||1.2|mmol/l| - 2.5|""|||F|||200911121607|||CMAN|

OBX|2|NM|BIC^Bicarbonate (Serum)||25|mmol/l|21 - 28|""|||P|||200911121649|||CMAN|

OBX|3|NM|O2SAT^Oxygen Saturation ||95|%|95 - 98|""|||P|||200911121649|||CMAN|

OBX|4|NM|PCO2^pCO2 (Whole Blood)||35.0|mmHg|36 - 44|L|||P|||200911121649|||CMAN|

OBX|5|NM|PH^pH (Whole Blood)||7.40||7.37 - 7.42|""|||P|||200911121649|||CMAN|

OBX|6|NM|PO2^pO2 (Whole Blood)||68|mmHg|65 - 100|""|||P|||200911121649|||CMAN|

## Result Message (ORU) – Solicited, Blood Sciences

MSH|^~\&|iLAB|R|MEDTRAK||20091218102029||ORU^R01|TKL16395296|D|2.4|TKL16395296

PID|1||0812361240^^^NHS^NH~500772665K^^^AX^MR~226137^^^AX^MR~0812 261240^^^AX^MR~081226156R^^^AX^MR~2102744PI^^^AX^MR~600130006X^^ AX^MR~LH2000258115^^^AX^MR~0812261240^^^MEDTRAK^PI||EXAMPLE^ISABELLA||192612080000|F

PV1|1|IN|WGH24^^^^^^^^WGH - Ward 24||||C2597454|||SUR||||||||NHS|I0002427702

ORC|SC|6493139\_16^MEDTRAK|6171327967HCUE|BCBW6493139|CM|||||||C2597454^Prof KCH Fearon

OBR||6493139\_16^MEDTRAK|6171327967HCUE|CUE^Urea, creatinine, electrolytes^H|||200912180746|||||||200912180857|BCBW|C2597454^Prof KCH Fearon||||QC154886Z|||||F|||||||Background Authorisation

NTE|1|FOCOM|Evans 8751

OBX|1|NM|BCR^Creatinine||60|umol/L|60 - 120|""|||F|||200912181009|||QF

OBX|2|NM|BK^Potassium||4.3|mmol/L|3.6 - 5|""|||F|||200912181009|||QF

OBX|3|NM|BNA^Sodium||135|mmol/L|135 - 145|""|||F|||200912181009|||QF

OBX|4|NM|BU^Urea||2.7|mmol/L|2.5 - 6.6|""|||F|||200912181009|||QF

## Result Message (ORU) – Solicited, Microbiology

MSH|^~\&|iLAB|R|PCS|iLAB|20100215155816||ORU^R01|1|P|2.4|1

PID|1||4180248403^^^NHS^NH~574680^^^AX^MR||TEST^SARAH^JEAN||197904110000|F||||||||||I2290208

PD1|||^^C81035-3|G9609532

PV1|1|U|209^^^^^^^^RDH WARD 209||||C4045629|||502||||||||A|I2290208

ORC|SC|001BLXTTN^PCS|6176884962MV|001CU7196|CM|||||||C4045629^BALI A MR

OBR||001BLXTTN^PCS|6176884962MV|V^Vaginal MC\T\S^M|||201002112336|||||||201002121031|V|C4045629^BALI A MR||||MM951306Z|I||||F|||||||Dr Azhar Iqbal

OBX|1|TX|SC^Screening|1|Specimen Type : Vaginal swab ||||||F||I

OBX|2|TX|SC^Screening|2|||||||F||I|201002151557|||MANM

OBX|3|TX|SC^Screening|2|Screening||||||F||I|201002151557|||MANM

OBX|4|TX|SC^Screening|2|Microscopy||||||F||I|201002151557|||MANM

OBX|5|TX|SC^Screening|2| Trichomonas vaginalis NOT seen||||||F||I|201002151557|||MANM

OBX|6|TX|SC^Screening|2| Clue cells NOT seen||||||F||I|201002151557|||MANM

OBX|7|TX|SC^Screening|2| Yeasts NOT seen||||||F||I|201002151557|||MANM

OBX|8|TX|SC^Screening|2|Culture||||||F||I|201002151557|||MANM

OBX|9|TX|SC^Screening|2| Light growth of Candida species||||||F||I|201002151557|||MANM

OBX|10|TX|SC^Screening|2|1 Beta Haem Streptococci Group B ISOLATED||||||F||I|201002151557|||MANM

OBX|11|TX|SC^Screening|2|||||||F||I|201002151557|||MANM

OBX|12|TX|SC^Screening|2| 1 1||||||F||I|201002151557|||MANM

OBX|13|TX|SC^Screening|2| Penicillin S Tetracycline R||||||F||I|201002151557|||MANM

OBX|14|TX|SC^Screening|2| Erythromycin R||||||F||I|201002151557|||MANM

## Result Message (ORU) – Unsolicited, Cellular Pathology

MSH|^~\&|iLAB|R|OCS|OCS|20100215155826||ORU^R01|DHT20135|P|2.4|DHT20135

PID|1||4589137988^^^NHS^NH~61265588^^^AX^MR||TESTER^ARNIE^JOHN||19511024|M|||67 SCALPCLIFFE ROAD^A TOWN^STAFFORDSHIRE^^DE88 9AB|||||N|9A|||||X||||||||||NSTS02

PD1|||^^M83042-1|G8802578

PV1|1|IP|BTIP^^^^^^^^BURTON HOSPITAL IN PATIENT||||C3542266|||100||||||||A

ORC|SC|6175548180P1^iLAB|6175548180P1|UNKNOWN6175865588|CM|||||||C3542266^ECCERSLEY AJP MR

OBR||6175548180P1^iLAB|6175548180P1|P^P^P|||201001291323|||||||201002011323||C3542266^ECCERSLEY AJP MR||||PH003064W|||||F|||||||Dr. Sotres

OBX|1|TX|1^Reporting Seq. 1|1|Identifier||||||F|||201002151557

OBX|2|TX|1^Reporting Seq. 1|1|||||||F|||201002151557

OBX|3|TX|1^Reporting Seq. 1|1|HI 00933/10.||||||F|||201002151557

OBX|4|TX|1^Reporting Seq. 1|1|||||||F|||201002151557

OBX|5|TX|1^Reporting Seq. 1|1|Specimen||||||F|||201002151557

OBX|6|TX|1^Reporting Seq. 1|1|||||||F|||201002151557

OBX|7|TX|1^Reporting Seq. 1|1|Intra abdominal mass.||||||F|||201002151557

OBX|8|TX|1^Reporting Seq. 1|1|||||||F|||201002151557

OBX|9|TX|1^Reporting Seq. 1|1|Macroscopy||||||F|||201002151557

OBX|10|TX|1^Reporting Seq. 1|1|||||||F|||201002151557

OBX|11|TX|1^Reporting Seq. 1|1|Ovoid specimen weighing 85grams and measuring 13 x 12 x 9.5cm. It is||||||F|||201002151557

OBX|12|TX|1^Reporting Seq. 1|1|encapsulated though focally there is a tumour perforation measuring 5 x 2cm.||||||F|||201002151557

OBX|13|TX|1^Reporting Seq. 1|1|Around the capsule there is some amount of fatty tissue||||||F|||201002151557

OBX|14|TX|1^Reporting Seq. 1|1|MANY LINES OF TEXT FOLLOWS||||||F|||201002151557

OBX|15|TX|1^Reporting Seq. 1|1|||||||F|||201002151557

OBX|16|TX|1^Reporting Seq. 1|1|SUMMARY: PERFORATED GERM CELL ||||||F|||201002151557

OBX|17|TX|1^Reporting Seq. 1|1|COMMENTS.||||||F|||201002151557

OBX|18|TX|1^Reporting Seq. 1|1|||||||F|||201002151557

OBX|19|TX|1^Reporting Seq. 1|1|Reported by Dr M Dean Martin, typed on 15/02/10.||||||F|||201002151557

## Status Message (ORM) – In Progress

MSH|^~\&|iLAB|R|MEDTRAK||20091218110756||ORM^O01|9735201|D|2.4|9735201

PID|1||2804361069^^^CHI^NH~Y208674V^^^MERGE^MR~800208674W^^^MR^MR||Example^Mary|||F

PV1||IN|SJH24||||C3432857|||A1|||||||||I0002423162

ORC|SC|6493128\_114||F6493128^iLAB|IP||||20091218110756

OBR||6493128\_114||JCTOX^Faeces - C. Difficile toxin test SJH^M||||||||||20091218110700|||||||||||I

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| --- | --- |
| **Author(s)/Author’s appointment(s)** | Richard Shearing |
| **Date created** | 29/07/2017 |
| **Date distributed** | 29/07/2017 |

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| **Document version history** | | | |
| **Date** | **Contributor** | **Description of change** | **Version no** |
| 29/07/2017 | Richard Shearing | Initial document | Initial |
| 20/08/2021 | Ben Needham | Updated to Dedalus Template | Version 2 |
|  |  |  |  |