Diabetes Cycle of Care

Data Returns for Annual Review Consultation (first visit) and Annual Follow-up Consultation (second visit)

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1 Version History

Date	Version	Authors	Change
28/09/2015	0.1	Brian O'Mahony	First draft
29/09/2015	0.2	Karen Wynne,	Included details for LOINC Codes, Code Tables, message segment data & samples
29/10/2015	0.3	Brian O'Mahony	LOINC and local codes added, code tables gathered together
16/11/2015	0.4	Karen Wynne	Include PID.11 in Patient segment, validation of height and weight
30/12/2015	0.5	Brian O'Mahony	Addition of section on timing of data returns (section 6)
18/01/2016	0.6	Declan Butler, Brian O'Mahony	Include PID.22 for ethnic group, table of codes for ethnic group
21/01/2016	0.7	Declan Butler, Brian O'Mahony	Editing of section 6
27/01/2016	0.8	Karen Wynne	Reference code tables at relevant sections within the doc. Updated PID Patient Identifier IHI comment, PV1.7 IHPI comment and HL7 sample. Include Physician ID code table.
22/02/2016	0.9	Karen Wynne	Updated MSH.10 definition, replaced PCRS wsdl with link to web service, included 'Medication review' in comment section of Review Treatment.
26/02/2016	0.10	Karen Wynne	Updated MSH.10 comment
09/06/2016	0.11	Karen Wynne	Update details on consent, registration, XML case sensitivity, OBX.14 is mandatory, clarify units of measure, message transportation clarification, PCRS web service definition.
22/07/2016	0.12	Karen Wynne	Update units of measure & references to N/A
25/08/2016	1.0	Karen Wynne	Added clarification on date of registration
19/10/2015	1.1	John Cattanach	Revised web service for new PCRS security model
13/04/2017	1.5	Brian O'Mahony	Revised specification to facilitate pseudo nonymization of clinical data
28/04/2017	1.6	John Cattanach, Karen Wynne, Brian O'Mahony	Changes to sections on Acknowledgement Messages, Message Transportation, new codes in Tables 18 and 23, removal of patient consent field in PV1.2, Cholesterol test changed to required if available from laboratory.
02/05/2017	1.7	Karen Wynne	Updated PID.3 sample xml for clinical data message.

09/05/2017	1.8	Brian O'Mahony John Cattanach	Year of birth used for Diabetes cycle of care, editing of typos,
23/05/2017	2.0	John Cattanach	Addition of GP Data Returns Report and updating of Web services,
30/05/2017	2.1	Ivan McConkey	Clarifications re patient identifier, registration viewer web service and Data Returns report.
11/08/2017	2.2	Karen Wynne	PV1.2 is a mandatory field. Values have been specified for reimbursement & clinical messages. Updates to Section 9 re PMS tracking and validation note.
17/08/2017	2.3	Garry Donnelly	Added new webservice call details. Sample CSV
26/09/2017	2.4	Karen Wynne	Clarification re year of birth for Clinical Message
03/10/2017	2.5	Garry Donnelly	Updated new webservice call to include exam date

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3 Revised Specification

This is the second specification for Diabetes Data Returns. Initially the plan was to return patient identifiable clinical data when patient consent was present. Data protection considerations have changed this approach to returning clinical data in a pseudo anonymised manner.

Within the first specification, when a review, for example the Diabetes Annual Review Consultation (first visit) was completed, the GP System generated a HL7 Observation Result message (ORU_R01) and sent this, via Healthlink to PCRS. This message contained both administrative and clinical information. Under the new proposal, the GP System will generate two Observation Result (ORU_R01) messages, one reimbursement message to PCRS to indicate that the review has taken place and one clinical message to a clinical data repository.

The Reimbursement message will contain the following information:

- Date and Time of message;
- GP identifier: Doctor's GMS number;
- Patient identifiers: Patient's GMS number (Medical Card Number and Patient Code Letter), name, address, date of birth, gender;
- Service provided and date e.g. Diabetes Annual Review Consultation;

The Clinical message will contain the following information:

- Date and Time of message;
- GP identifier: Doctor's GMS number;
- Patient pseudo identifier: Patient ID from GP system, age range, gender, ethnicity (for diabetes);
- Clinical data;

The first specification required the GP practice software system to interact with the Primary Care Reimbursement Service (PCRS) via web services to check if consent to exchange clinical data was present. The consent web service will not now be needed as the clinical data is anonymised.

The PCRS makes available a web service to authenticate GP users and a web service on Registration. These two web services will continue. The Registration Viewer web service indicates, for an identified patient, the cycles of care for which they are registered and the dates of registration for each cycle of care.

There is a need to assist GPs in identifying patients who are due review under the cycles of care. The PCRS will provide, for each GP, via the GP Suite, access electronically to a 'GP Data Returns Report' to assist in recall and review.

This revised specification details the message flow and message content for the two messages from GP systems to the HSE, triggered by completing a diabetes review. The same approach will apply to other parts of GP Data Returns: periodic assessments and asthma cycle of care.

4 Document Aim

This document aims to help General Practice (GP) Practice Software Vendors to construct electronic messages to facilitate data returns related to the Diabetes Cycle of Care (Diabetes annual review consultation and annual follow up consultation). The data returns are from the GP practice software systems via Healthlink, the National Messaging Broker, to the Clinical Data Repository and the Primary Care Reimbursement Service (PCRS) of the Health Service Executive (HSE).

5 Pseudo Anonymised Clinical Data

In order for the clinical data to be anonymised, it must not be possible to link the reimbursement and clinical messages back together. This requires attention to a number of considerations.

- Date of birth should change to year of birth for Diabetes and Asthma Cycle of Care.
- For periodic assessments in Under 6s, date of birth is required to generate centile information.
- The use of a patient ID generated by the GP system will allow for linking of results for an individual patient over time, as long as the patient stays registered with that GP. Healthlink has utilised practice patient identifiers for the MedLIS lab ordering process. The patient then becomes unique within the clinical repository based on the combination of system generated patient ID and GP GMS number
- The patient name is a required field in HL7 messages. A pseudo name will be used to ensure anonymity.
- An Acknowledgement message should be returned for both Reimbursement and Clinical Messages.
- Patient Class, PV1.2 requires the value ‘CA’ to be populated in the reimbursement messages and ‘O’ in the clinical messages.

6 Registration and PCRS Web Service

Registration of a patient, as having a disease that may avail of a cycle of care, is carried out by the GP on the PCRS GP Suite. The GP Practice Software System can only return a Diabetes review where the patient is already registered with PCRS as having Type 2 Diabetes. Thus the PCRS web service will indicate, for an individual patient, what diseases they are registered as having. Once a patient is registered, they do not need to be registered again if they change GP. The registration is on a national level and moves with the patient. Returns submitted for a patient that has not been registered will be rejected. The PCRS will define the specification for the Registration Viewer web service. The PCRS will also define the specification to allow GP Systems to authenticate and connect securely to the PCRS web service.

7 PCRS GP Data Returns Report

It has been suggested by the Healthlink GP Data Returns Steering Group that a facility be provided via PCRS online service to help GPs plan and conduct health checks in support of the under 6 wellness, asthma and diabetes cycles of care.

In support of this it is proposed to provide a regular[1] csv report via the GP suite. This report will be considered for presentation to GPs under a "Health Check" menu option.

This report will provide the following columns:

Card number	Up to 10 chars	
Patient letter	1 char	
Date of Birth	dd/mm/yyyy	
Date of under six registration[2]	dd/mm/yyyy	
Last under six submission	dd/mm/yyyy	
Next under six submission	dd/mm/yyyy	
Deadline for next under six submission	dd/mm/yyyy	
Date of asthma registration	dd/mm/yyyy	
Last asthma submission	dd/mm/yyyy	
Next asthma submission	dd/mm/yyyy	
Deadline for next asthma submission	dd/mm/yyyy	
Date of diabetes registration	dd/mm/yyyy	
Last diabetes submission	dd/mm/yyyy	
Type of last diabetes submission	ANNUAL/FOLLOWUP	
Next diabetes submission	dd/mm/yyyy	
Type of next diabetes submission	ANNUAL/FOLLOWUP	
Deadline for next diabetes submission	dd/mm/yyyy	

Sample CSV

card_num,pat_ltr,dte_birth,dte_u6_reg,dte_last_u6_sub,dte_next_u6_sub,dte_deadline_next_u6_sub,dte_asthma_reg,dte_last_asthma_sub,dte_next_asthma_sub,dte_deadline_next_asthma_sub,dte_diabetes_reg,dte_last_diabetes_sub,last_diabetes_sub_type,dte_next_diabetes_sub,next_diabetes_sub_type,dte_deadline_next_diabetes_sub

1234567,A,01/01/1980,,,,,,,,01/08/2017,17/08/2017,ANNUAL,17/12/2017,FOLLOWUP,17/08/2018

8 Level of Automation

The intention is that the returns can be provided by the GP with the minimum of administrative burden, e.g. the GP's practice management system could initiate the return procedure on a real time or a scheduled basis. However, it is also the case that returns cannot be provided to the HSE without a conscious decision by the GP to submit the returns, i.e. returns cannot be submitted unbeknown to the GP.

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[1] Monthly is considered a reasonable compromise between timeliness and system capacity.

[2] Some of the dates in the report depend on the interface being operational for accuracy, e.g. the deadline dates for next submission. At the point of go live, a clarification may need to be considered for GPs to avoid confusion caused by the delay in commencement of the operation of the interface.

[2] [3] Under 6s are not explicitly registered – their point of registration is considered when they first receive a GMS number.

9 Timing of Returns of Diabetes Cycle of Care Data

Registration of a patient as having Type 2 Diabetes takes place online on the PCRS GP Suite. Here are the business rules around return of data for the Annual Review Consultation (first visit) and the Annual Follow up Consultation (second visit).

- A return should be made to the PCRS each year for both the Annual Review Consultation (first visit) and the Annual Follow up Consultation (second visit).
- There should be an interval of at least 4 months between the Annual Review Consultation (first visit) and the Annual Follow up Consultation (second visit).
- The data returns for the first and second visit should be made when the required data set, including blood tests, is completed and reviewed.
- You may not send a partial return of Diabetes cycle of care data. All the fields are mandatory or conditional and only fully completed returns will be accepted.
- At the latest, the data return for the Annual Review Consultation (first visit) and the Annual Follow up Consultation (second visit) should take place by the end of the first quarter following the year in which the capitation payment relates. For example, for a patient registered in December 2015, the data return should take place before the end of March 2017.

= Note on Validation =
For a six month period from the national go live of GP Data Returns, PCRS will accept all returns of Diabetes Cycle of Care data without validation as to whether an Annual Review Consultation (first visit) or/and Annual Follow up Consultation (second visit) is expected. After this six month period the returns will be analysed and validation put in place to ensure the business rules are followed when GP Data Returns are made.

Frequency of Uploads: It is proposed that Cycle of Care data returns would ideally be delivered close to real time, i.e. when completed to the GPs satisfaction, the return could be submitted there and then. This would ensure that if there was an issue with the return, the GP would know quickly while the matter is current. However, if a GP wished to send data returns for a number of patients at the same time, the return frequency would ideally be no longer than monthly. To the extent that returns have a bearing on reimbursement processes, the interface should ensure that GPs can safely deliver returns to the HSE in a timely manner without any risk of missing a date which might be required to facilitate the monthly payment.

10 Message Flow

Messages may relate to periodic assessments at age 2 and 5 years, asthma cycle of care or diabetes cycle of care.

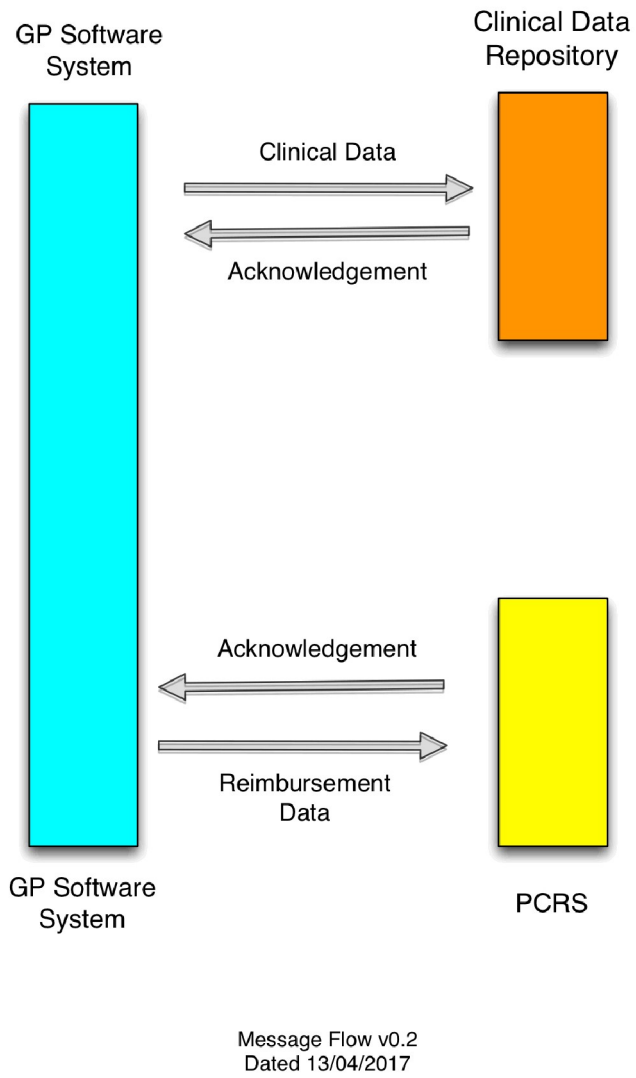


Figure 1 Message Flow

11 Message Types

The GP Practice Software system should generate two Observation Messages (ORU_R01) for each assessment. One of these is a Reimbursement Message and the other is a Clinical Data Message. The Reimbursement Message goes via Healthlink to PCRS and the Clinical Data Message goes via Healthlink to the HSE Clinical Data Repository. An acknowledgement message comes back to the GP Practice Software system for each of the two message generated.

The XML message is not case sensitive except for the unit field <OBX.6>.

12 HL7 Segments to Consider for ORU_R01 Message

ORU^R01	Unsolicited Observation Message	Chapter
MSH	Message Header	2
{		
[		

ORU^R01	Unsolicited Observation Message	Chapter
PID	Patient Identification	3
[PD1]	Additional Demographics	3
[{NK1}]	Next of Kin/Associated Parties	3
[{NTE}]	Notes and Comments	2
[		
PV1	Patient Visit	3
[PV2]	Patient Visit – Additional Info	3
]		
]		
{		
[ORC]	Order common	4
OBR	Observations Report ID	7
{[NTE]}	Notes and comments	2
[CTD]	Contact Data	11
{		
[OBX]	Observation/Result	7
{[NTE]}	Notes and comments	2
}		
[{FT1}]	Financial Transaction	6
{[CTI]}	Clinical Trial Identification	7
}		
}		
[DSC]	Continuation Pointer	2

Table 2 Abstract Message Structure for Unsolicited Observation Message

The following sections describe how to construct a reimbursement message and a clinical data message.

13 Reimbursement Message

These are the segments used for the reimbursement message:

ORU_R01	Observation Message	HL7 Chapter
MSH	Message Header	2
PID	Patient Identification	3
PV1	Patient Visit	3
OBR	Observation Request	7

Table 3 Segments in use for Reimbursement Message

Message Header Segment (MSH)

Field	Mand	Value	Comment	HL7
Sending Application	Yes	HELIXPM.HEALTHLINK.42	Made up of name of GP Practice Software System, Healthlink and Healthlink Message Type, see code tables for possible values	<MSH.3>
Sending Facility	Yes		GP's Medical Council Number	<MSH.4>
Receiving Application	Yes	PCRS (Constant)	Defined application within Primary Care Reimbursement Service (PCRS)	<MSH.5>
Receiving Facility	Yes	PCRS (Constant)	PCRS	<MSH.6>

Date/time of message	Yes	YYYYMMDDHHMM		<MSH.7>
Message Type	Yes	ORU_R01 (Constant)		<MSH.9>
Message Control ID	Yes	ORU20150827162054050035 64	Uniquely identifies the message. The format used to generate the Message Control ID is "ORU" + date and time in the format YYYYMMDDHHMMSSSS + GP's 6 digit Medical Council Number. Note the max length of this field is 50 characters.	<MSH.10>
Processing ID	Yes	P (Constant)		<MSH.11>
Version ID	Yes	2.4 (Constant)	HL7 version number	<MSH.12>
Accept ACK Type	Yes	AL (Constant)	ACK always expected	<MSH.15>

Table 4 Message Header Segment MSH

Patient Identification Segment (PID)

Field	Mand	Value	Comment	HL7
Patient Identifier	Yes	1234567A	Patient's GMS number. Individual Health Identifier as a repeating field, which will also be mandatory when it becomes available. See HL7 formatting in Patient Identification Segment	<PID.3>
Patient Name	Yes	Varchar(50)	Surname, first name	<PID.5>
Date of Birth	Yes	YYYYMMDD	Min: 19000101 Max: current date	<PID.7>
Gender	Yes	F, M	F for female, M for male	<PID.8>
Address	Yes	Four lines, each line Varchar(30)	Four lines, first two are mandatory	<PID.11>

Table 5 Patient Identification Segment PID

Note: Ethnic Group, PID.22, is included in the Clinical Message, but not in the Reimbursement Message.

Patient Visit Segment (PV1)

Field	Mand	Value	Comment	HL7
Patient Class	Yes	CA O	'CA' populated in reimbursement messages	<PV1.2>

			'O' populated in Clinical messages	
Attending doctor	Yes	Identifies GP's GMS number. Refer to code table 0010 for permitted values.	This indicates the patient's registered GP. Individual Health Professional Identifier (IHPI) as a repeating field, which will also be mandatory when it becomes available. See HL7 formatting in Patient Visit Segment	<PV1.7>

Table 6 Patient Visit Segment PV1

Observation Request Segment (OBR)

Field	Mand	Value	Comment	HL7
Set ID	Yes	Numeric	Value 1	<OBR.1>
Universal Service Identifier	Yes	LOINC code and name for observation request	Different codes for reimbursement messages for annual review consultation (first visit) and annual follow up consultation (second visit). See Codes for OBR Segments for permitted values.	<OBR.4>
Observation time	Yes	YYYYMMDD	Date of the consultation	<OBR.7>

Table 7 Observation Request Segment OBR

Message Fragments for Reimbursement Message

MSH Segment

The first five lines are standard in all ORU_R01 messages and show the XML declaration, the XML names space and, in the <MSH.1> and <MSH.2> fields, the legacy field separator and encoding characters used in traditional encoded HL7.

The practice software system, which is the sending application <MSH.3>, is called HELIXPM for Helix Practice Manager. Other software application names include HEALTHONE, SOCRATES, MEDTECH and COMPLETEGP. See Codes for Practice Software Systems for list of GP practice software systems.

The sending facility <MSH.4> is the GP's medical council number. Please fill all three components of this field, <HD.1>, <HD.2> and <HD.3>. The format is GP's family name and

first name separated by comma, code, coding system, where L signifies a local coding system.

The receiving application <MSH.5> is the specific application in PCRS, populated by Web Service.

The receiving facility <MSH.6> is PCRS, populated by Web Service.

<MSH.7> is the date/time the ORU message was created by the practice software system. The format is YYYYMMDDHHMM.

MSH.9 is the message type.

MSH.10 is the Message Control ID and uniquely identifies the message. The format used to generate the Message Control ID is "ORU" + date and time in the format YYYYMMDDHHMMSSSS + GP's 6 digit medical council number. The max length of this field is 50 characters.

MSH.11 is the Processing ID. P is for production, D is for debugging or testing and T for training. Always use P.

MSH.12 is the HL7 version number, 2.4.

MSH.15 Accept Acknowledgement Type will be AL for always because the system expects to get an acknowledgement back.

```
<?xml version="1.0" encoding="UTF-8"?>
<ORU_R01 xmlns="urn:hl7-org:v2xml">
  <MSH>
    <MSH.1>|</MSH.1>
    <MSH.2>^~\&amp;</MSH.2>
    <MSH.3>
      <HD.1>HELIXPM.HEALTHLINK.42</HD.1>
      <HD.2/>
      <HD.3/>
    </MSH.3>
    <MSH.4>
      <HD.1>Dr. Smith, John</HD.1>
      <HD.2>123564</HD.2>
      <HD.3>L</HD.3>
    </MSH.4>
    <MSH.5>
      <HD.1>PCRS</HD.1>
      <HD.2/>
      <HD.3/>
    </MSH.5>
    <MSH.6>
      <HD.1>PCRS</HD.1>
      <HD.2>99990</HD.2>
      <HD.3>L</HD.3>
    </MSH.6>
    <MSH.7>
      <TS.1>20150915103136</TS.1>
    </MSH.7>
```

```
    <MSH.9>
      <MSG.1>ORU</MSG.1>
      <MSG.2>R01</MSG.2>
    </MSH.9>
    <MSH.10>ORU20150914162054003564</MSH.10>
    <MSH.11>
      <PT.1>P</PT.1>
    </MSH.11>
    <MSH.12>
      <VID.1>2.4</VID.1>
    </MSH.12>
    <MSH.15>AL</MSH.15>
  </MSH>
```

Patient Identification Segment

The practice software system must send the patient demographics in the referral. The patient's GMS number must be present. If an Individual Health Identifier is available for the patient then this should be sent as a repeating PID.3 field. PCRS will make a match based on the patient's GMS number. The patient's ethnicity, PID.22, is not included in the Reimbursement Message.

```
  <ORU_R01.PATIENT_RESULT>
    <ORU_R01.PATIENT>
      <PID>
        <PID.3>
          <CX.1>12345A</CX.1>
          <CX.4>
            <HD.1>PCRS</HD.1>
            <HD.2/>
            <HD.3/>
          </CX.4>
          <CX.5>GMS</CX.5>
        </PID.3>
        <PID.3>
          <CX.1>5393014123456789</CX.1>
          <CX.4>
            <HD.1>PCRS</HD.1>
            <HD.2/>
            <HD.3/>
          </CX.4>
          <CX.5>IHI</CX.5>
        </PID.3>
        <PID.5>
          <XPN.1>
            <FN.1>Mouse</FN.1>
          </XPN.1>
          <XPN.2>Michael</XPN.2>
          <XPN.5>Mr</XPN.5>
          <XPN.7>L</XPN.7>
        </PID.5>
        <PID.7>
          <TS.1>20130505</TS.1>
        </PID.7>
        <PID.8>M</PID.8>
        <PID.11>
          <XAD.1>
            <SAD.1>58 SEA VIEW</SAD.1>
          </XAD.1>
          <XAD.2>HOWTH ROAD</XAD.2>
```

```
        <XAD.3>HOWTH</XAD.3>
        <XAD.4>CO DUBLIN</XAD.4>
      </PID.11>
      </PID>
```

Patient Visit Segment

This segment contains the GMS number of the patient's registered doctor.

```
    <ORU_R01.PATIENT_VISIT>
      <PV1>
        <PV1.2>CA</PV1.7>
        <PV1.7>
          <XCN.1>12345</XCN.1>
          <XCN.13>GMS</XCN.13>
        </PV1.7>
        <PV1.7>
          <XCN.1>99992222211233214545</XCN.1>
          <XCN.13>IHPI</XCN.13>
        </PV1.7>
      </PV1>
    </ORU_R01.PATIENT_VISIT>
```

The PCRS Web Service will indicate:

- What Cycle of Care the patient is registered for;
- The date a patient was registered for a disease;

Please be aware that PCRS will only accept reimbursement data from the patient's current registered GP. Patient Class, PV1.2 requires the value 'CA' to be populated in the reimbursement messages and 'O' to be populated in the clinical messages.

Observation Request Segment

```
<ORU_R01.ORDER_OBSERVATION>
    <OBR>
      <OBR.1>1</OBR.1>
      <OBR.4>
        <CE.1>X0130-0</CE.1>
        <CE.2>Diabetes annual review consultation (first visit) reimbursement
message</CE.2>
        <CE.3>L</CE.3>
      </OBR.4>
      <OBR.7>
        <TS.1>20150929</TS.1>
      </OBR.7>
      <OBR.25/>
    </OBR>
  </ORU_R01.ORDER_OBSERVATION>
```

This indicates the nature of the assessment to which the reimbursement message relates and the date of the assessment.

14 Clinical Data Message

These are the segments used for the clinical data message:

ORU_R01	Observation Message	HL7 Chapter
MSH	Message Header	2
PID	Patient Identification	3
PV1	Patient Visit	3
OBR	Observation Request	7
OBX	Observation Result	7

Table 8 Segments in use for Clinical Data Messages

Message Header Segment (MSH)

Field	Mand	Value	Comment	HL7
Sending Application	Yes	HELIXPM.HEALTHLINK.42	Made up of name of GP Practice Software System, Healthlink and Healthlink Message Type, see code tables for possible values	<MSH.3>
Sending Facility	Yes		GP's Medical Council Number	<MSH.4>
Receiving Application	Yes		Defined application within Clinical Data Repository	<MSH.5>
Receiving Facility	Yes		HSE Clinical Data Repository	<MSH.6>
Date/time of message	Yes	YYYYMMDDHHMM		<MSH.7>
Message Type	Yes	ORU_R01 (Constant)		<MSH.9>
Message Control ID	Yes	ORU201508271620540500356 4	Uniquely identifies the message. The format used to generate the Message Control ID is "ORU" + date and time in the format YYYYMMDDHHMMSSSS + GP's 6 digit Medical Council Number. Note the max length of this field is 50 characters.	<MSH.10>
Processing ID	Yes	P (Constant)		<MSH.11>
Version ID	Yes	2.4 (Constant)	HL7 version number	<MSH.12>
Accept ACK Type	Yes	AL (Constant)	ACK always expected	<MSH.15>

Table 9 Message Header Segment MSH

Patient Identification Segment (PID)

Field	Mand	Value	Comment	HL7
Patient Identifier	Yes		Patient identifier generated by the GP practice software system. See HL7 formatting in Patient Identification Segment	<PID.3>
Patient Name	Yes	Varchar(50)	Pseudo name	<PID.5>
Date of Birth	Yes		Year of birth	<PID.7>
Gender	Yes	F, M	F for female, M for male	<PID.8>
Address	No		No address provided	<PID.11>
Ethnic Group	Conditional	Refer to Codes for Ethnicity for permitted values.	Should only be populated for diabetes clinical data returns	<PID.22>

Table 10 Patient Identification Segment PID

Note: Year of birth, PID.7, is used instead of date of birth in the Clinical Message.
Note: Ethnic Group is included in the Clinical Message, but not in the Reimbursement Message.

Patient Visit Segment (PV1)

Field	Mand	Value	Comment	HL7
Patient Class	Yes	CA		<PV1.2>
Attending doctor	Yes	Identifies GP's GMS number. Refer to code table 0010 for permitted values.	This indicates the patient's registered GP. Individual Health Professional Identifier (IHPI) as a repeating field, which will also be mandatory when it becomes available. See HL7 formatting in Patient Visit Segment	<PV1.7>

Table 11 Patient Visit Segment PV1

Note: Patient Class, PV1.2 requires the value 'CA' to be populated in the reimbursement messages and 'O' to be populated in the clinical messages.

Observation Request Segment (OBR)

Field	Mand	Value	Comment	HL7
Set ID	Yes	Numeric	Value 1	<OBR.1>
Universal Service Identifier	Yes	LOINC code and name for observation	Different codes for clinical data messages for annual review consultation (first	<OBR.4>

		request	visit) and annual follow up consultation (second visit). See Codes for OBR Segments for permitted values.	
Observation time	Yes	YYYYMMDD	Date of the consultation	<OBR.7>

Table 12 Observation Request Segment OBR

Observation Result Segment (OBX)

Field	Mand	Value	Comment	HL7
Set ID	Yes	Numeric	Starts at 1 and incrementally increases, order is not significant	<OBX.1>
Value type	Yes	FT, NM, CE	FT for formatted text, NM for numeric, CE for coded entry	<OBX.2>
Observation identifier	Yes	LOINC code and name for observation result. Local code where LOINC not available	See Codes for OBX Segments, e.g. LOINC code for Weight measured in Kg is 3141-9	<OBX.3>
Observation value	Yes		The value of the observation	<OBX.5>
Observation units		Units relevant to result		<OBX.6>
Reference range		Reference range of result		<OBX.7>
Abnormal flag		Abnormal flag value		<OBX.8>
Observation result status	Yes	F (Constant)	F for final	<OBX.11>
Date/time of the observation	Yes	YYYYMMDD	Timestamp	<OBX.14>

Table 13 Observation Request Segment OBX

Message Fragments for Clinical Data Message

MSH Segment

The first five lines are standard in all ORU_R01 messages and show the XML declaration, the XML names space and, in the <MSH.1> and <MSH.2> fields, the legacy field separator and encoding characters used in traditional encoded HL7.

The practice software system, which is the sending application <MSH.3>, is called HELIXPM for Helix Practice Manager. Other software application names include HEALTHONE, SOCRATES, MEDTECH and COMPLETEGP. See Codes for Practice Software Systems for list of GP practice software systems.

The sending facility <MSH.4> is the GP's medical council number. Please fill all three components of this field, <HD.1>, <HD.2> and <HD.3>. The format is GP's family name and first name separated by comma, code, coding system, where L signifies a local coding system.

The receiving application <MSH.5> is the specific application in the HSE Clinical Data Repository, populated by Web Service.

The receiving facility <MSH.6> is the HSE Clinical Data Repository, populated by Web Service.

<MSH.7> is the date/time the ORU message was created by the practice software system. The format is YYYYMMDDHHMM.

MSH.9 is the message type.

MSH.10 is the Message Control ID and uniquely identifies the message. The format used to generate the Message Control ID is "ORU" + date and time in the format YYYYMMDDHHMMSSSS + GP's 6 digit medical council number. The max length of this field is 50 characters.

MSH.11 is the Processing ID. P is for production, D is for debugging or testing and T for training. Always use P.

MSH.12 is the HL7 version number, 2.4.

MSH.15 Accept Acknowledgement Type will be AL for always because the system expects to get an acknowledgement back.

```
<?xml version="1.0" encoding="UTF-8"?>
<ORU_R01 xmlns="urn:hl7-org:v2xml">
  <MSH>
    <MSH.1>|</MSH.1>
    <MSH.2>^~\&amp;</MSH.2>
    <MSH.3>
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      <HD.2/>
      <HD.3/>
    </MSH.3>
    <MSH.4>
      <HD.1>Dr. Smith, John</HD.1>
      <HD.2>123564</HD.2>
      <HD.3>L</HD.3>
    </MSH.4>
    <MSH.5>
      <HD.1>PCRS</HD.1>
```

```
    <HD.2/>
    <HD.3/>
  </MSH.5>
  <MSH.6>
    <HD.1>ClinicalRepository</HD.1>
    <HD.2>99991</HD.2>
    <HD.3>L</HD.3>
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  <MSH.7>
    <TS.1>20150915103136</TS.1>
  </MSH.7>
  <MSH.9>
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    <MSG.2>R01</MSG.2>
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  <MSH.10>ORU20150914162054003564</MSH.10>
  <MSH.11>
    <PT.1>P</PT.1>
  </MSH.11>
  <MSH.12>
    <VID.1>2.4</VID.1>
  </MSH.12>
  <MSH.15>AL</MSH.15>
</MSH>
```

Patient Identification Segment

The patient identifier is generated by the GP practice software system.

```
<ORU_R01.PATIENT_RESULT>
  <ORU_R01.PATIENT>
    <PID>
      <PID.3>
       <CX.1>12345</CX.1>
       <CX.4>
         <HD.1>SOCRATES </HD.1>
         <HD.2>5043</HD.2>
         <HD.3>HIDS</HD.3>
       </CX.4>
       <CX.5>PMS</CX.5>
      </PID.3>
      <PID.5>
        <XPN.1>
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        </XPN.1>
        <XPN.2>Surname</XPN.2>
        <XPN.5></XPN.5>
        <XPN.7>S</XPN.7>
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      <PID.7>
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      </PID.7>
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      <PID.11>
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          <SAD.1></SAD.1>
        </XAD.1>
        <XAD.2></XAD.2>
        <XAD.3></XAD.3>
        <XAD.4></XAD.4>
      </PID.11>
```

```
    <PID.22>
      <CE.1>01</CE.1>
      <CE.2>White Irish</CE.2>
      <CE.3>L</CE.3>
    </PID.22>
  </PID>
```

Notes:

- The name, PID.5, is a pseudo name with name type code S;
- Year of birth, PID.7, is used instead of date of birth;
- There is no address shown in PID.11;
- Ethnicity is included, as this has clinical significance in Diabetes care;

Patient Visit Segment

This segment contains the GMS number of the patient's registered doctor.

```
<ORU_R01.PATIENT_VISIT>
  <PV1>
     <PV1.2>CA</PV1.7>
     <PV1.7>
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      <XCN.13>GMS</XCN.13>
    </PV1.7>
    <PV1.7>
      <XCN.1>9999222211233214545</XCN.1>
      <XCN.13>IHPI</XCN.13>
    </PV1.7>
  </PV1>
</ORU_R01.PATIENT_VISIT>
```

The PCRS Web Service will indicate:

- What Cycle of Care the patient is registered for
- The date a patient was registered for a disease

Please be aware that PCRS will only accept clinical data from the patient's current registered GP. Patient Class, PV1.2 requires the value 'CA' to be populated in the reimbursement messages and 'O' to be populated in the clinical messages.

15 Diabetes Annual Review Consultation (first visit) Segments

OBX Segment	Mandatory	Data Type	Comment	Code
HbA1c	Yes	Numeric	Units are mmol/mol (IFCC)	59161-8
Total Cholesterol	No, should be present if available from local lab	Numeric	Units are mmol/L	14647-2
LDL Cholesterol	Yes	Numeric	Units are mmol/L	22748-8
Creatinine	Yes	Numeric	Units are umol/L	14682-9
Albumin	No	Numeric	Units are mg/mmol	X0133-0

Creatinine Ratio (ACR)				
Microalbuminuria	*Conditional	Text	If ACR not available, test urine for microalbuminuria, result: +ve or -ve	X0134-0
Smoking issue	Yes	Yes, No		X0135-0
Alcohol issue	Yes	Yes, No		X0136-0
Exercise issue	Yes	Yes, No		X0137-0
Brief intervention	*Conditional	Yes, No	If issue present with one or more lifestyle factors (i.e. smoking, alcohol or exercise)	X0123-0
Review Treatment	Yes	Yes, No	Medication review	X0125-0
Foot review	Yes	Yes, No		X0075-0
Foot referral	*Conditional	Yes, No	If foot review provided	X0075-1
Retinopathy Screening	Yes	Yes, No	Patient reported participation in Retinopathy Screening Programme	X0138-0
Retinopathy Screening Referral	*Conditional	Yes, No, N/A	If not participating in Retinopathy Screening Programme	X0138-1
Patient Weight	Yes	Numeric, to one decimal point	Weight in kg (Kg, KG also permitted)	3141-9
Patient Height	Yes	Numeric	Height in cm (Cm, CM also permitted)	3137-7
BMI	Yes	Numeric	Derived by the practice software system. Unit is kg/m2 (Kg/m2, KG/M2 also permitted)	39156-5
Weight brief intervention	*Conditional	Yes, No	If BMI >25	X0139-0
Systolic blood pressure	Yes	Numeric	Units are mm/Hg (Mm/Hg, mmHg, mm[Hg], mm(Hg) also permitted)	8480-6
Diastolic blood pressure	Yes	Numeric	Units are mm/Hg (Mm/Hg, mmHg, mm[Hg], mm(Hg) also permitted)	8462-4
Immunisation offered	Yes	Yes, No	Immunisation status for influenza and pneumococcus reviewed	X0124-0
Patient education	Yes	Yes, No	Provide HSE patient education literature	X0128-0
Cycle of Care	Yes	Yes, No	Is the patient continuing on	X0140-0

			the cycle of care?	
Reason for stopping	*Conditional	a, b, c, d	If not continuing on the cycle of care. Coded table: a. Patient has passed away b. Patient has changed doctor c. Patient is no longer diabetic d. Patient no longer wishes to participate	X0140-1
Schedule next review	Yes	Yes, No		X0141-0

Table 14 Data Fields for Diabetes Annual Review Consultation (first visit)

The information on the Diabetes annual review consultation (first visit) is structured as follows:

- OBR (Diabetes Annual Review Consultation (first visit))
- OBR (Laboratory Studies)
  - OBX HbA1c
  - OBX Total Cholesterol
  - OBX LDL Cholesterol
  - OBX Creatinine
  - OBX Albumin Creatinine Ratio (ACR)
- OBR (Physical Examination)
  - OBX Microabluminuria
  - OBX Foot Review
  - OBX Foot Referral
  - OBX Systolic Blood Pressure
  - OBX Diastolic Blood Pressure
  - OBX Weight
  - OBX Height
  - OBX BMI
  - OBX Weight Brief Intervention
- OBR (Prevention and Education)
  - OBX Smoking Issue
  - OBX Alcohol Issue
  - OBX Exercise Issue
  - OBX Brief Intervention
  - OBX Review Treatment
  - OBX Retinopathy Screening
  - OBX Retinopathy Screening Referral
  - OBX Immunisation Offered
  - OBX Patient Education
  - OBX Cycle of Care
  - OBX Reason for Stopping
  - OBX Schedule Next Visit

Notes:

1. The results for the Laboratory Studies segment are blood tests and should be available as laboratory results from Healthlink messages.
2. The blood test results should relate to samples taken within 6 months of the date of review.
3. The results for the Physical Examination segment are clinical examinations made by the doctor or nurse. Microalbuminuria is a urine test carried out in the surgery.
4. Please implement validation of height and weight entries to prevent data input errors, e.g. maximum height 300cm, maximum weight 200kg.
5. Some hospital laboratories no longer carry out total cholesterol tests, thus this field is not mandatory.

```
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          <CE.2>Diabetes annual review consultation (first visit)</CE.2>
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        <OBR.25/>
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            <CE.3>LN</CE.3>
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16 Diabetes Annual Follow Up Consultation (second visit)

OBX Segment	Mandatory	Data Type	Comment	Code
HbA1c	Yes	Numeric	Units are mmol/mol (IFCC)	59161-8
Total Cholesterol	No, should be present if available from local lab	Numeric	Units are mmol/L	14647-2
LDL Cholesterol	Yes	Numeric	Units are mmol/L	22748-8
Smoking issue	Yes	Yes, No		X0135-0
Alcohol issue	Yes	Yes, No		X0136-0

Exercise issue	Yes	Yes, No		X0137-0
Brief intervention	*Conditional	Yes, No	If issue present with one or more lifestyle factors	X0123-0
Review Treatment	Yes	Yes, No	Medication review	X0125-0
Patient Weight	Yes	Numeric, to one decimal point	Weight in kg (Kg, KG also permitted)	3141-9
Patient Height	Yes	Numeric	Height in cm (Cm, CM also permitted)	3137-7
BMI	Yes	Numeric	Derived by the practice software system. Unit is kg/m2 (Kg/m2, KG/M2 also permitted)	39156-5
Weight brief intervention	*Conditional	Yes, No	If BMI >25	X0139-0
Systolic blood pressure	Yes	Numeric	Units are mm/Hg (Mm/Hg, mmHg, mm[Hg], mm(Hg) also permitted)	8480-6
Diastolic blood pressure	Yes	Numeric	Units are mm/Hg (Mm/Hg, mmHg, mm[Hg], mm(Hg) also permitted)	8462-4

Table 15 Data Fields for Diabetes Follow Up Consultation (second visit)

The information on the Diabetes annual follow up consultation (second visit) is structured as follows:

- OBR (Diabetes Annual follow Up Consultation (second visit))
- OBR (Laboratory Studies)
  - OBX HbA1c
  - OBX Total Cholesterol
  - OBX LDL Cholesterol
- OBR (Physical Examination)
  - OBX Systolic Blood Pressure
  - OBX Diastolic Blood Pressure
  - OBX Weight
  - OBX Height
  - OBX BMI
  - OBX Weight Brief Intervention
- OBR (Prevention and Education)
  - OBX Smoking Issue
  - OBX Alcohol Issue
  - OBX Exercise Issue
  - OBX Issues Brief Intervention
  - OBX Review Treatment

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17 Acknowledgement Message

When the vendor system sends an assessment reimbursement/clinical message to PCRS/Clinical Repository via Healthlink, an acknowledgement message must be sent back to the vendor by both recipients. If no acknowledgement is received within 24 hours then we can assume the reimbursement/clinical message has not been received. The GP needs to be aware that no acknowledgement means the submission has not been received.

ACK	General Acknowledgment	Chapter
MSH	Message Header	2
MSA	Message Acknowledgment	2
[ERR]	Error	2

Table 16 Segments for Acknowledgement Message

Below is an XML sample of how an ACK message type is formatted. Values in blue are taken from the originating Vendor message segments.

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  <MSH>
    <MSH.1>|</MSH.1>
    <MSH.2>^~\&amp;</MSH.2>
    <MSH.3>
      <HD.1>PCRS.HEALTHLINK.13 [FacilityName.HEALTHLINK.13]</HD.1>
    </MSH.3>
    <MSH.4>
      <HD.1>PCRS [Facility Name MSH.6/HD.1]</HD.1>
      <HD.2>99990 [Facility Code MSH.6/HD.2] </HD.2>
      <HD.3>L</HD.3>
    </MSH.4>
    <MSH.5>
      <HD.1>HELIXPM</HD.1>
      <HD.2></HD.2>
      <HD.3></HD.3>
    </MSH.5>
    <MSH.6>
      <HD.1>Dr. Smith, John [GP Name MSH.4/HD.1]</HD.1>
      <HD.2>123564.1234 [GP MCN MSH.4/HD.2]</HD.2>
      <HD.3>MCN.HLPracticeID [MSH.4/HD.3]</HD.3>
    </MSH.6>
    <MSH.7>
      <TS.1>20150914162235</TS.1>
    </MSH.7>
    <MSH.9>
      <MSG.1>ACK</MSG.1>
      <MSG.2>R01 [MessageType MSH.9/MSG.2]</MSG.2>
    </MSH.9>
    <MSH.10>ACK201509141622353564</MSH.10>
    <MSH.11>
      <PT.1>P</PT.1>
    </MSH.11>
    <MSH.12>
      <VID.1>2.4</VID.1>
    </MSH.12>
  </MSH>
  <MSA>
    <MSA.1>AA</MSA.1>
    <MSA.2>ORU20150914162054003564</MSA.2>
  </MSA>
</ACK>
```

The values for sending application and sending facility in the acknowledgement message are the same as the values for receiving application and receiving facility in the initiating assessment message and vice versa.

MSH.10 is the unique message control ID of the acknowledgement message and is not related to MSA.2, the message control ID of the assessment message that is being acknowledged. MSH.10 is generated using the format of the current date and time, up to the milliseconds. `Ex: ACKyyyyMMddHHmmssfff`

The three possible values for MSA.1, Acknowledgement Code are:

- AA Application Acknowledgement
- AE Application Error (details/reasons to be provided by PCRS)

- AR Application Reject

This tells you whether the original assessment message, as identified in MSA.2, has been accepted by PCRS.

An Application Reject acknowledgement may mean one of two things:

- There is a major problem with the message and it cannot be validated by the receiving system;
- There is a problem with the receiving system and it is unable to process the message, though the message itself is fine;

An Application Error message means there is a problem with the content of the message. This should be diagnosed and corrected by the sending system before resending the message.

The Message Error Segment (ERR) is required where an error is found in a HL7 message. The ERR Segment is used to add error information to acknowledgement messages. Healthlink have added codes to the HL7 Table 0357 - Message Error Condition Codes, included in this document. If an error is not included in this table, the unknown code can be used and new errors can be added to this table accordingly as they occur.

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM #	ELEMENT NAME
1	80	CM	R	**Y**		00024	Error Code and Location

Table 17 Message Error (ERR) Segment

Notes:

- The ERR segment is optional in an ACK message, but where it does appear the ERR.1 field is required.
- The ERR.1 field is repeatable, allowing for information on multiple errors to be displayed.
- The components of the ERR.1 field are:
    - segment ID, the three letter identifier of the segment in which the error occurred;
    - sequence, the Set ID of the segment if there is more than one segment with the same segment ID in the message;
    - field position, the field number within the segment where the error occurred;
    - code identifying error, taken from HL7 table 0357 Message Error Condition Codes and shown in Section 14 of this document.

Consider an example where an ORU_R01 message is missing the required fields PID.3 Patient Identifier and PID.5 Patient Name in the MSH Segment. In this case the ERR segment of the acknowledgment message, which would have AE in the MSA.1 field, would look as follows:

```
<ERR>
        <ERR.1>
                <ELD.1>PID</ELD.1>
                <ELD.3>3</ELD.3>
                <ELD.4>
                        <CE.1>101</CE.1>
```

```
                    <CE.2>Required field missing</CE.2>
                    <CE.3>HL70357</CE.3>
                </ELD.4>
            </ERR.1>
            <ERR.1>
                <ELD.1>PID</ELD.1>
                <ELD.3>5</ELD.3>
                <ELD.4>
                    <CE.1>101</CE.1>
                    <CE.2>Required field missing</CE.2>
                    <CE.3>HL70357</CE.3>
                </ELD.4>
            </ERR.1>
</ERR>
```

For the current list of error codes see HL7 Table 0357 in Code Tables section below.

18 Validation of Data

Healthlink will validate the MSH and PID segments of the assessment message to ensure that the sender, receiver and patient details are valid. The overall structure of the message will also be validated prior to forwarding on to PCRS/clinical repository. However, the onus is on the vendor to ensure correct OBR & OBX segments and codes are used for each type of reimbursement and clinical message.

19 Message Transportation

See "WS HealthlinkOnline Tech GP Vendor v1.14.pdf" for the latest version of the vendor web service documentation.

Vendors submit messages to Healthlink via the normal SubmitMessage API web service.

1. Each submitted message will return an Ack/Nack from Healthlink, similar to the referral process, indicating the message has been received.
2. Where messages are integrated into hospital systems, as in the case of PCRS messages and numerous referrals, an Ack/Nack will be generated by PCRS/hospital system for the vendor. Therefore the processing of these ack messages may be somewhat slower. Vendors will need to retrieve the acks using the RetrieveACKbyMessageID or GetAllUnprocessedMessages(ByMsgtype) web service methods. When GetAllUnprocessedMessages(ByMsgtype) is invoked it will be necessary to flag messages as processed using the SetMessagesProcessed method. This step will not be required for the RetrieveACKbyMessageID API.

The same transport mechanism will be used for ACKs that is used to send the originating message to the PCRS/Hospital system:

- The Assessment messages will be placed on an MSMQ on the Healthlink Central Bridge and sent to the PCRS/Clinical Repository Bridge
- The PCRS/Clinical Repository Bridge will use FTP to place the Assessment messages in a dedicated folder on the PCRS FTP server. E.g. folder 40
    - FTPHealthlinkFolder/Live/42 or FTPHealthlinkFolder/Test/42
- ACKs and NACKS will be placed by PCRS/Clinical Repository in folder '13/sub-folder' for pickup by Healthlink
    - e.g. FTPHealthlinkFolder/Test/13/42

20 Code Tables

Codes for Observation Request Segments (OBR)

Text	Code
Diabetes annual review consultation (first visit) reimbursement message	X0130-0
Diabetes annual follow up consultation (second visit) reimbursement message	X0131-0
Diabetes annual review consultation (first visit) clinical data message	X0133-0
Diabetes annual follow up consultation (second visit) clinical data message	X0134-0
Laboratory studies	26436-6
Physical exam.total	22029-3
Prevention & Education	X0132-0

Table 18 Codes for Observation Request Segments (OBR)

LOINC Codes for Assessment Observation Result Segments (OBX)

Text	LOINC code
Systolic Blood Pressure in mm/Hg	8480-6
Diastolic Blood Pressure in mm/Hg	8462-4
Body Mass Index (BMI) Kg/M^2	39156-5
Weight	3141-9
Height	3137-7
Household Smoking	63771-0
Self Management	44943-9
HbA1c	59161-8
Total Cholesterol	14647-2
LDL Cholesterol	22748-8
Creatinine	14682-9

Table 19 LOINC codes for OBX Segments

Local Codes for Data Items for which a LOINC Code is not available

Text	Local code
Brief Intervention	X0123-0
Immunisation Offered	X0124-0
Review Treatment	X0125-0
Patient Education	X0128-0
Albumin Creatinine Ratio (ACR)	X0133-0
Microalbuminuria	X0134-0
Smoking issue	X0135-0
Alcohol issue	X0136-0
Exercise issue	X0137-0

Foot review	X0075-0
Foot referral	X0075-1
Retinopathy Screening	X0138-0
Retinopathy Screening Referral	X0138-1
Weight brief intervention	X0139-0
Cycle of Care	X0140-0
Reason for stopping	X0140-1
Schedule next review	X0141-0

Table 20 Local codes for OBX Segments

<MSH.3> Sending Application

The format is the name of the GP practice software system, Healthlink, Healthlink Message Type ID e.g. COMPLETEGP.HEALTHLINK.42

GP Practice Software System	***Code***
CompleteGP	COMPLETEGP
Health One	HEALTHONE
Helix Practice Manager	HELIXPM
Socrates	SOCRATES
MedTech32	MEDTECH

Table 21 Code Table for Practice Software Systems

Healthlink Message Type	**Message Type ID**
Diabetes Cycle of Care	42
Acknowledgement	13

Table 22 Healthlink Message Types

<MSH.6> Receiving Facility

Hospital/Agency	**Code**
PCRS	99990
Clinical Repository	99991

Table 23 MSH.6 values

<MSH.11> Processing ID

Description	**Code**
Debugging	D
Production	P
Training	T

Table 24 HL7 Table 0103 - Processing ID

HL7 Table 0010

Description	Code
General Medical Services	GMS
Medical Council Registration Number	MCN
Individual Health Professionals Identifier	IHPI
An Bord Altranis Registration Number	ABARN

Table 25 HL7 Table 0010 - Physician ID

Codes for Ethnicity (PID.22)

Text	Code
White Irish	01
White Irish Traveller	02
Any other White Background	03
Black or Black Irish – African	04
Black or Black Irish – any other black background	05
Asian or Asian Irish – Chinese	CN
Asian or Asian Irish – any other Asian background	07
Other including mixed background	10

Table 25 Codes for Ethnicity, PID.22, as taken from CSO code table

Reason for Stopping Cycle of Care

Description	Code
Patient has passed away	A
Patient has changed doctor	B
Patient is no longer diabetic	C
Patient no longer wishes to participate	D

Table 26 Code table for Reason for Stopping Diabetes Cycle of Care

Please note: it is possible that other reasons will be added over time, as they become available.

Key Data Elements

Name	HL7 Segment and Field	Comment
GP's GMS Number	PV1.7	
Patient's GMS Number	PID.3	
Type of Assessment	OBR.4	
Date of Assessment	OBR.7	

Table 27 Mapping of Key Data Elements to HL7 Fields

HL7 Table 008, Acknowledgement Code (for original mode acknowledgements)

Value	Description
AA	Application Accept
AE	Application Error
AR	Application Reject

Table 28 HL7 Table 008, Acknowledgement Code

HL7 Table 0357, Message Error Condition Codes (for the fourth component of the ERR.1 field)

Error Code	Error Condition Text	Description/Comment
Success		
0	**Message accepted**	Success. Optional, as the AA conveys success. Used for systems that must always return a status code.
Errors		
100	**Segment sequence error**	The message segments were not in the proper order, or required segments are missing.
101	**Required field missing**	A required field is missing from a segment
102	**Data type error**	The field contained data of the wrong data type, e.g. an NM field contained "FOO".
103	**Table value not found**	A field of data type ID or IS was compared against the corresponding table, and no match was found.
Rejection		
200	**Unsupported message type**	The Message Type is not supported.
201	**Unsupported event code**	The Event Code is not supported.
202	**Unsupported processing id**	The Processing ID is not supported.
203	**Unsupported version id**	The Version ID is not supported.
204	**Unknown key identifier**	The ID of the patient, order, etc., was not found. Used for transactions other than additions, e.g. transfer of a non-existent patient.
205	**Duplicate key identifier**	The ID of the patient, order, etc., already exists. Used in response to addition transactions (Admit, New Order, etc.).
206	**Application record locked**	The transaction could not be performed at the application storage level, e.g. database locked.
207	**Application internal error**	A catchall for internal errors not explicitly covered by other codes.
208	**Duplicate Message Filename**	The Filename of the message already exists.
Healthlink Codes		

300	**Invalid XML**	Message is not valid xml document
301	**XML Namespace Issue**	Unknown xml namespace
302	**Schema Validation error**	Message cannot be validated against schema
303	**Invalid data format – MSH.3**	Invalid data format, segment 'MSH.3/HD.1', expected format '[GeneratingSystem].[Middleware].[MessageType]'
304	**MSH.9 Message Type Mismatch**	Xml root (Ex: <ORU_R01>) Messagetype doesn't match with MSH.9 Values.
305	**Invalid REF/RRI Message Type**	Invalid data format, segment 'MSH.10', expected format 'REF/RRI[YYYYMMDDHHMMSS][MedicalCouncilNumber]'
306	**Invalid Hospital Data Format MSH.4 or MSH.6**	Invalid data format, segment 'MSH.4-MSH.6/HD.2', expected format '[HospitalCode]' and not '[HospitalCode].[SomeOtherCode]'
307	**Invalid Agency Data Format MSH.4 or MSH.6**	Invalid data format, segment 'MSH.4-MSH.6/HD.2', expected format '[GPCode/AgencyCode/MCNcode]' and not '[GPCode/AgencyCode/MCNcode].[SomeOtherCode]'
308	**Invalid MCN.HLPracticeID Data Format MSH.4 or MSH.6**	Invalid data format, segment 'MSH.4-MSH.6/HD.2', expected format '[MCN.HLPracticeID]'
Receiving System Codes		
400	**General Message Exception**	Detailed error description returned by receiving system. This can contain any exception not captured by codes listed above. e.g. Message cannot be accepted Message was previously submitted

Table 29 HL7 Table 0357, Message Error Condition Codes

21 Appendix A: PCRS web service

These web services allow integrated software to determine which data returns a given patient is registered for.

NB Consent to Share Data was returned by an earlier version of these web services. It has been removed as redundant since the patient data has been split between reimbursable anonymised clinical data returns. This version of the web service is identical to the previous 1.1 in all respects bar the removal of consent attributes.

a. getCycleOfCare

The service will be secured and authentication will be from a GP client certificate and securityToken (see following getAuthTokenRequest service).

- Inputs:
  - securityToken: returned from getAuthTokenRequest. Will have defined lifespan, can be renewed by getAuthTokenRequest.
  - gmsDoctorNumber: the PCRS contract number of the examining GP, must be linked to the credentials represented by the token.
  - patient GMS card number and letter e.g. 1234567A.
- Output:
  - patient GMS card number: The patient identity as supplied in the inputs
  - gmsDoctorNumber: The GP identity as supplied in the inputs.
  - list of registered diseases
  - errors: details of any failures

b. getConditionRequest

The service will be secured and authentication will be from a GP client certificate and securityToken (see following getAuthTokenRequest service).

- Inputs:
  - securityToken: returned from getAuthTokenRequest. Will have defined lifespan, can be renewed by getAuthTokenRequest.
  - gmsDoctorNumber: the PCRS contract number of the examining GP, must be linked to the credentials represented by the token.
  - patient GMS card number and letter e.g. 1234567A.
- Output:
  - patient GMS card number: The patient identity as supplied in the inputs
  - gmsDoctorNumber: The GP identity as supplied in the inputs.
  - Condition: list of registered illnesses plus registration dates
  - errors: details of any failures to authenticate

c. getPatientRegistrationsRequest

The service will be secured and authentication will be from a GP client certificate and securityToken (see following getAuthTokenRequest service).

- Inputs:
  - securityToken: returned from getAuthTokenRequest. Will have defined lifespan, can be renewed by getAuthTokenRequest.
  - gmsDoctorNumber: the PCRS contract number of the examining GP, must be linked to the credentials represented by the token.
  - patient GMS card number and letter e.g. 1234567A.
  - Exam date: the date the exam was carried out (optional, defaults to today)
- Output:
  - patient GMS card number: The patient identity as supplied in the inputs
  - gmsDoctorNumber: The GP identity as supplied in the inputs.
  - Exam date
  - Registrations: list of registered illnesses including

        - registration date
        - last exam date
        - last exam type
        - next exam due from date
        - next exam due to date
        - next exam type
    - errors: details of any failures to authenticate

d. getAuthTokenRequest

This service will return a re-usable authentication token of finite lifespan. It requires a GP client certificate and the PCRS username and password for the authorised representative of one or more GPs.

- Inputs:
    - username: the PCRS username i.e. the same one used for PCRS web applications.
    - password: the PCRS password i.e. the same one used for PCRS web applications.
- Output:
    - username: The username supplied in the inputs
    - securityToken: a valid token for authenticating subsequent calls to secure PCRS web services.
    - gmsDoctorNumbers: a list of PCRS GPs who have agreed to be represented by this authenticated user.
    - errors: details of any failures to authenticate