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Trials of IM/IT clinical integration activities in General Practice

Project #05

SHARED DIABETES CARE IN GENERAL PRACTICE.

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SUMMARY.

We present a set of GEHR archetypes of clinical referral messages associated with the care of patients with diabetes, as well as a message set in HL7. In these messages we have indicated mandatory elements of the message. These represent a minimum set of messages that are required for communication between GPs and other providers of diabetes care. Our message set complements the message set that another group has developed for messages between GPs and Divisions for purposes of data collection in diabetes care. In presenting this report, we acknowledge that it should be submitted to criticism and debate and will probably require revision in the future. Indeed, the ultimate arbiters of the archetype may be within the Open EHR foundation; and the HL7 message set specification will require review by Standards Australia. A series of footnotes identifies areas of controversy and, in particular, areas that require comment from Standards Australia for standardisation of use of segments. There is also the need for development of codes to suit HL7 segments, such as allergies or patient-entered data.

GLOSSARY OF ABBREVIATIONS USED IN THIS REPORT

AHP	Allied Health Professional
CGPIS	Centre for General Practice Integration Studies (Uni of NSW)
GEHR	The Good Electronic Health Record
GP	General Practitioner
GPCG	General Practice Computing Group
HIC	Health Insurance Commission
HL7	The Health Level Seven messaging protocol
MCA	Medical Communications Associates
NSW	New South Wales
XML	eXtensible Markup Language

BACKGROUND.

Diabetes mellitus is a pandemic non-transmissible chronic disease with disabling complications that are difficult to treat. Specialist care of all diabetic patients is not feasible. The strong preventive philosophy of its management makes it well suited to management in the primary sector by general practitioners. However, it has been demonstrated that GP management is only satisfactory if systematic. Thus longitudinal data records are essential and good diabetes management requires booked appointments rather than ad hoc care. This, plus essential and repeated referrals to medical specialists and allied health professionals, makes long term diabetes care extremely complex. Computer systems to support this pattern of care are highly desirable; and transmission of data between different sites and systems will be an essential requirement.

In Australia, the Health Level 7 messaging protocol (HL7) has been recommended as a national standard. This protocol originated in the USA and has been developed cooperatively with representatives of other countries. Prominent among these is Australia, which participates in HL7 development under the banner of Standards Australia.

There are three drawbacks in the message sets required for diabetes management. First of all, the HL7 protocol has its origins in administrative aspects of health care and is not well suited to complex clinical messages. Secondly, the range of clinical messages required in diabetes care is very large, because of the complexity of the disease. While this makes it a good paradigm for testing concepts in messaging and decision support, it leads to a set of messages that require reciprocity between sending and receiving facility. Third, reality and common sense dictate that diabetes care programs must interact closely with standard general practice record systems.

These latter requirements have led us to consideration of the Good Electronic Health Record architecture as a means of resolving the difficulties. In this architecture, an object linked data base is used instead of a relational data base. A form of middleware known as a "GEHR kernel" is used to pass data from clinical interfaces to the data base. The kernel has a standardised interface that allows more than one clinical application to share a common set of data stored in the data base. Clinical concepts or measurements can be shared and transmitted in a fashion that is mutually acceptable to receiving and sending programs by the use of archetypes. Archetypes are a series of concepts of clinical observations and diagnoses that have been developed by panels of

experts. By storing these externally in reference servers, one makes them available to a variety of receiving and sending systems. This not only creates the opportunity for compatibility between systems at different sites, but also between different clinical applications at one site.

Archetypes exist for recording clinical concepts and for recording observations. However, archetypes are also needed for describing the format of transmitted messages. A diabetes referral is a complex message: we set out to establish archetypes for this type of message.

THE SCOPE OF THIS PROJECT.

Shortly after commencement of this project, we were contacted by Peter MacIsaac, from the General Practice Section of the Commonwealth Dept of Health and Family Services, and by Gawaine Powell-Davies of the Centre for General Practice Integration Studies. The CGPIS had obtained a similar grant from the GPCG and it was agreed that we should liaise in order to create complementary, rather than overlapping, solutions.

To improve this liaison, Dr W Braund from MCA took part in steering committee meetings of the CGPIS group. Furthermore Ms Jane Taggart of the CGPIS was one of the participants in the meeting conducted by MCA in Adelaide to address the messaging solutions for referrals. Shortly after MCA developed its draft messages, Mr Klaus Veil (an expert in HL7 who has been consulting for the CGPIS) visited MCA in Adelaide to discuss and review the draft.

As a result of these negotiations, the CGPIS has concentrated on those messages that are required for transmission from the General Practitioner's computing system to the Divisional computing system that aggregates information on diabetes care. Meanwhile MCA have concentrated on those messages that are required for transmission of clinical information between the GP and Specialists or Allied Health Professionals, as well as replies from those referrals back to the GP.

We omitted the following messages from the scope of our task, after detailed debate:

- Obstetric referral messages concerning women who are diabetic or who have developed gestational diabetes. We would regard these as a subset of an Obstetric referral group of messages.

- Messages for use in the emergency referral of seriously ill diabetic patients. We saw these as being a subset of a panel of Emergency referral messages.
- Care Planning messages. Again, we saw these as a specialised group of messages.

The following types of messages were included:

- Request from GP for appointment with specialist or AHP.
- Acknowledgement of receipt of request for appointment.
- Initial referral from GP for review by specialist.
- Initial referral from GP for review by an AHP.
- Response to GP from Specialist (after reviewing the patient).
- Response to GP from AHP (after reviewing the patient).
- Communication to GP after further contact between patient and specialist or AHP.
- Subsequent request from GP for review by specialist or AHP of a previously-referred patient.

METHODS.

From the outset, our plans had an educational focus as well as an investigational focus. The keystone of our approach was a meeting. As well as having invited participants, this meeting was advertised to a variety of potential participants in State Government, Federal Government, Teaching Hospitals, Academic Departments of both Medicine and Information Technology, a local Division of General Practice and through a cooperative network of software companies developing products for the health industry.

Prior to the meeting, the staff of MCA prepared vignettes and scenarios; loaded some of these clinical scenarios as dummy patients into a demonstration version of the MCARE *Diabetes* shared-care program; prepared teaching material; reviewed the HL7 component of the messaging requirements and produced some draft frameworks for the solutions; and used the GEHR web site to aid planning.

The meeting occupied two days. The first of these was didactic. It acted as an introduction to HL7 and GEHR for interested medical practitioners and IT developers, as well as having an expert stream for developers who wanted to

focus on technical issues of HL7, XML or GEHR. *See Appendix E.* Towards the end of the first day, a workshop session was devoted to defining the scope of the following day's work. This scope was reviewed with the larger group at the beginning of the second day.

The second day was devoted entirely to a workshop that made rapid progress in developing our recommended messaging solutions. Participants included software developers, a consumer representative, medical practitioners (one specialist and four GPs), a representative of the CGPIS, experts in HL7 and in GEHR, the general manager of a medical software company that supplies integration engines, the manager of a Divisional Diabetes project, a Diabetes Educator, a health software researcher and an academic researcher in the law and ethics of electronic communication in healthcare . *See Appendix F.*

Message content was partly defined by a workshop/"brainstorming" approach. In addition, however, a copy of an existing diabetes shared- care computing program, MCARE *Diabetes*, was used as a prompt or *aide memoire* to achieve completeness in the review of message content requirements. This program had some dummy patient records loaded in it and the record of one of these patients was reviewed *in toto* to check message content.

MESSAGE REQUIREMENTS ANALYSIS.

Discussion revolved around the generic requirements of messages; and around the specific requirements of each type of message and each type of recipient.

Message components were classified as "mandatory", "optional" or "reference".

Mandatory components are those which are regarded as a bare minimum. Without these, the referral would have no purpose or meaning, or might omit a component that is essential for patient safety

Optional components were distinguished from mandatory by the rules described above. Much as we regard many of them as "recommended" or "highly desirable" we acknowledge that some sending or receiving systems will provide only a minimum of functions. As these systems become more sophisticated, the broader set of components will become required *de facto.*

Reference components reflect the flexibility of the GEHR architecture. It is possible to append a great deal of detail to a GEHR referral. For example, one may send digitised images of the patient's retinas. While both sending and receiving systems may be able to cope with this very large message, transmission times across the Internet are likely to be impaired. Instead, one may be able to send a **Reference**. This takes the form of a "GEHRL" (the GEHR equivalent of a URL) which will point to an address in the sending system or another system, where the detailed information may be found if required. It also incorporates permission to access information from that address.

What are the reasons for sending the information?

The following were identified as reasons for communicating and as components of the communication.

The fact of the referral

- A request for care.
- To a practitioner (not always exactly specified when patient is being directed to a clinic).
- From a practitioner - invariably specified.

Limits of the referral

- Opinion only.
- Opinion and management.
- Definition of duration of care
- Defined duration
- Default duration (12 months)
- Indefinite duration

Degree of urgency

Reference to any discussion of this referral that may already have taken place.

The reason for the referral.

- One specific symptom or problem.[1]
- A group of symptoms or problems.
- A request for general review of one or more problems, diseases or systems.

Text description.

Immunisation history.

Pathology and imaging results.

Current and occasional medications.

Therapeutic precautions[2]

- Allergies to environmental or ingested substances, e.g. peanuts, sulphites
- Allergies to environmental insults, e.g. bee stings
- Allergies to medications or to their colourings, congeners, vehicles, containers, etc.
- Known non-allergic reactions.
- Food sensitivities or preferences or beliefs.
- Patient resistance to certain medications, treatments or modes of treatment.
- Patient preference for certain modes of treatment - conventional or non-conventional.
- Religious beliefs relevant to choice of medicine or therapy.
- Transfusion problems.
- Reasons for having stopped previous medications.
- Reactions to topical agents or bandages and dressings

Problem List

A list of identified medical problems. Some of these may be current, some resolved, some in remission. It is unlikely that every single problem from the past will be regarded as germane to the referral. Different doctors may list the problems in different order and priority. Not all problems may have been formulated as a diagnosis. For example

[1] In some areas of application development, for example the CHIME development, the expression "issue" has been proposed as an improvement on the word "problem". We have chosen to use the word "problem" throughout.

[2] The term "therapeutic precautions" is preferred by the architects of GEHR in Australia, as a means of covering several matters that may not all be described as "allergies."

a problem in a referral letter may be "chest pain" and may reappear in subsequent communication as "oesophagitis" once a diagnosis has been assigned.

Lifestyle issues/Social History.

- Exercise habits
- Marital issues
- Employment issues.
- Smoking.
- Alcohol and other recreational drugs.
- Addiction/intravenous drug use.
- Promiscuous sexuality and/or male homosexuality.
- Bereavement and grief

Physical examination findings.

Family History.

Relevant Guardianship Issues.

Summary of Diabetic Reviews and contacts.

- Particularly extracts from an electronic record of diabetes reviews

Administration of appointments

- Receipt of appointment
- Cancellation of appointment.
- Failure to attend appointment.

Data entered by the patient**.**

Patient-entered data are an increasingly important component of medical care. Patients may monitor and record their own blood sugar (diabetes), their blood pressure (many illnesses), their peak flow (asthma), their weight (heart failure, dialysis), etc.

Such data require a validation point, at which point the clinician decides whether to incorporate them in the clinical record. They then require to be transmitted in a fashion that indicates their origin.

However, before patient-entered data are accepted into the clinical record, they may require editing or transformation. Thus, a blood sugar record may have a time series of readings taken over several months. This may be converted to a range of readings with an assigned time range, e.g. "3.8

- 17 mmol/l before breakfast". Weight is likely to be accepted into the record as presented. Blood Pressure readings may require annotation of the time of day, the patient's posture (lying or standing) and, if detailed, may require editing and compression in the same manner as blood sugar levels.
Other types of patient-entered data are records of administration of medication, diet diaries or diaries of symptoms. An assiduous patient with diabetes may be keeping all of these: a record of weight, blood pressure, blood sugar levels, indications of times and doses of insulin administration, a record of hypoglycaemia symptoms.

Increasingly, patients are asked to complete questionnaires. Within MCARE *Diabetes*, for example, there is a facility for patients to complete a Short Form 36, a Diabetes-related Depression score, a Diabetes Social Adaptation score and a satisfaction with service score. Such patient-entered data not only require validation before entry, but may also require a confidentiality message to be attached to them. For example, it is therapeutically important to have the patient's Depression Score recorded in their record: however, Satisfaction With Service scores will need to be anonymous and recorded for aggregation and audit only.

Results of diagnostic tests and imaging.

- Numeric
- Text
- Formatted or unformatted.
- Batteries of tests or atomic data from individual tests.
- Images.
- Time series.
- Graphs.

PRIVACY ISSUES

A plain English summary of the National Privacy Principles can be found at http://www.privacy.gov.au/publications/fs2.html

We did address these issues, but have not presented a complete or final recommendation because the component of the GEHR architecture that deals with this aspect of messaging has not yet reached its final form. What follows is a discussion and recommendation of our intended use of this architecture.

When entering data about a patient into a written record, it is uncommon to discuss the intended uses and controls, except during research trials. In normal use, the intended uses and controls of usage tend to remain unstated and implicit. Computer systems offer an opportunity for more explicit control of the use and distribution of data. Thus discussions of use and distribution of patient information may become an explicit part of the doctor-patient interview.

Existing clinical applications offer different degrees of control by the patient of data use. Many offer no more control than already exists in the written record paradigm. Some offer substantial degrees of control: for example, MCARE *Diabetes* offers 20 options to the patient. However, once transmission of data to another clinical system at another site has occurred (for example, to a Divisional computing system, such as CARDIAB) how does one maintain the controls on the use of that data that the patient originally requested?

The GEHR solution to this has been the adoption of a hierarchical set of access controls, which the patient can determine. This set of controls is then transmitted as part of the message archetype. We envisage that such a message would be included with each of the message archetypes that we have designed. At this stage, however, the GEHR archetype for confidentiality and access controls remains incomplete.

Once this archetype exists, it should be possible to adapt from it a code that would be used for the same purpose within HL7 messages.

OUTCOMES.

What has emerged from the meeting is an overlapping pair of message sets: one in GEHR archetype format and one in HL7 format.

It was clear that certain messages were of the administrative type that are well defined and managed by HL7. For these, an existing group of software products are already offering, or are about to offer, HL7 compatible message facilities.

On the other hand, messages with a substantially clinical content were better suited by the development of a GEHR messaging archetype, and these are represented in the second set of messages.

Even though there is limited overlap, it is likely that simultaneous use of both message sets will be required for the foreseeable future. Hybrid transmission of both is feasible.

We have presented the GEHR messaging archetypes first, followed by the HL7 specifications. The latter are presented in a much more detailed and complex fashion that reflects the exacting nature of HL7 message specifications - or perhaps reflects the relative simplicity of GEHR archetypes.

The GEHR messaging Archetype for Diabetes Referrals.*

Message Type	New Referral to Specialist	Recurrent referral to specialist	Response from specialist	Referral to AHP	Response from AHP
Request for care	**M**	**M**	**Ref**	**M**	**Ref**
Reason for referral	**M**	**M**	**X**	**M**	**X**
Text Description	**M**	**M**	**M**	**M**	**M**
Therapeutic Precautions	**M**	**M**	**M**	**M**	**M**
Problem List	**O**	**O**	**O**	**O**	**O**
Lifestyle	**O**	**O**	**O**	**O**	**O**
Social History	**O**	**O**	**O**	**O**	**O**
Guardianship	**O**	**O**	**O**	**O**	**O**
Family History	**O**	**O**	**O**	**O**	**O**
Diabetic Reviews	**O**	**O**	**M**	**O**	**M**
Scheduled Appointments	**O**	**O**	**O**	**O**	**O**
Examination Findings	**O**	**O**	**O**	**O**	**O**
Current Medications	**M**	**M**	**M**	**M**	**M**
Laboratory Results	**O**	**O**	**O**	**O**	**O**
Immunisations	**O**	**O**	**M**	**O**	**O**

It can be seen from this table that the **request for care** is mandatory in all referrals to either specialists or allied health professionals. In their response to

* M = Mandatory, O = Optional, Ref = Reference, X = Not Applicable, AHP = Allied Health Professional.

the GP, however, they can provide a reference to the GEHRL that points to the original referral from the GP.
Reason for referral is mandatory in referral requests but is not an essential component of responses. **Text descriptions** are mandatory in all cases.
We believe it is prudent to make **therapeutic precautions** mandatory in all communications because each professional has had the opportunity to identify a new precaution: applications will have to draw new precautions to the attention of the recipient of the communication.
While it would seem appropriate to include **problem lists**, descriptions of **lifestyle, social history, guardianship** and **family history** in all communications, many receiving and sending applications may not provide such features. In that event, these items would have to be included in the text description. We have chosen not to make these items mandatory: instead, we have indicated that they are optional, in preference to rendering many applications incapable of using this referral archetype.
Not all GP applications will be capable of transmitting an extract, or complete copy of specific **diabetes reviews**. On the other hand, the specialists and allied health professionals to whom patients have been sent for a diabetes review should have applications that can record and transmit a comprehensive record of the review of the diabetic patient. Since this is the purpose of the referral, we have indicated that it is mandatory in the response. One hopes that GPs will make use of the modularity and compatibility of the GEHR architecture by installing a diabetes review application - of which *MCAre Diabetes* is a forerunner. In that event it will be possible to transmit diabetes reviews in either direction: for the moment, however, it remains optional.
As before, we have not recommended that **scheduled appointments, examination findings**, or **laboratory results** should be mandatory - for fear of rendering less sophisticated applications incompatible with the archetype.
On the other hand, **current medications** are contained in a mandatory component; and we propose that the GP should not be kept in ignorance about any new **vaccinations** or vaccination recommendations given by the specialist.

Within GEHR, many of these components of the referral archetype have existing definitions. Thus therapeutic precautions, problem list, lifestyle, family history and current medication have defined **Persistent Transaction** archetypes. There are also **Organiser Archetypes** available for problem list, family history, current medication and therapeutic precautions. Components of lifestyle, such as alcohol, tobacco, drug use or exercise have **Subjective Content** archetype definitions. Assessment of the diabetic foot has both a subjective content archetype and an **Observation Content - complex** archetype. Both might appear in a structured diabetes review; only the latter might appear in examination findings.

HL7 message specifications for Diabetes Referrals.

In the following discussion, it is important to bear in mind the following definitions. The word "**Mandatory**" is used in the same sense as in the presentation of the GEHR referral archetype. As a result of our debate and discussion these components have been identified as being so essential that they cannot be dispensed with. On the other hand, the word "**Required**" is a convention within HL7.
In brief, HL7 messages are conceived of as being a response to a "trigger event". For example, "patient is referred" could be a trigger event. This initiates a message from an application; that message is referred to as an "unsolicited update." The unsolicited update requires an acknowledgement from a receiving application: this is purely an electronic acknowledgment and is not a response in any clinically meaningful way. Each message type (e.g. MSH or PID) is composed of segments (e.g.MSH 1, MSH 2) which, in turn, are composed of fields. The HL7 standard indicates which messages and segments are "Required".
In the tables that follow, the column labelled "Optionality" indicates whether a segment is "Required" or "Optional". Occasionally, a segment will be required only in certain circumstances: it will be labelled as "Conditional". Some segments are labelled "B" representing their retention only for purposes of backward compatibility with previous versions of the HL7 standard.
In the right hand column is displayed a synthesis of the two standards. "M" indicates that a message type or segment is "Mandatory" from the point of view of the requirements of GPCG Diabetes messaging. "R" represents the "Required" status of a message type or segment in the HL7 standard.

Other columns indicate the length of a segment, whether it is text or numeric, whether it can be repeated. There are also cross-references to tables and item numbers in the HL7 standard. Further abbreviations within the specification are taken from the HL7 Standard, which should be referred to.

The analysis of message requirements was nominally for the HL7 Version 2.3. However, we have also used the Version 2.3.1 Australian extension of HL7 2.3, which has been proposed for clinical referrals and discharge messages. If incorporated into the HL7 standard, this extension will enter a later version than 2.3. Thus, we have also had to examine the Standard for HL7 Version 2.4 in order to avoid creating any conflict. Wherever possible, footnotes will clarify these points.

Summary from GEHR Archetype Discussion

Topic	*HL7*	*New referral*	*Recurrent referral*	*Response to referral*	*AHP*	*Response to AHP referral*
Request for care	RF1	M	M	Ref	M	Ref
Reason for referral	DG1/ PRB/ RF1	M	M	X	M	X
Text description	NTE	M	M	M	M	M
Therapeutic precautions	AL1/ ?	M	M	M	M	M
Problem list	PRB	O	O	O	O	O
Life-style	PID?/ OBX?	O	O	O	O	O
Social history	PID?/ OBX?	O	O	O	O	O
Family history	PRB?/NK1?	O	O	O	O	O
Diabetic reviews	OBR+OBX	O	O	M	O	M
Scheduled appointments	?	O	O	O	O	O
Examination findings	OBR+OBX	O	O	O	O	O
Current medication list	ORC/ RXO/ RXR (not in V2.4 spec)	M	M	M	M	M
Laboratory results	OBR+OBX	O	O	O	O	O
radiology results	OBR+OBX	O	O	O	O	O
Immunisations	RXO/ RXR	O	O	M	O	O

Additional HL7 Requirements

Topic	*HL7*	*New referral* REF	*Recurrent referral* REF	*Referral Ack* ACK	*Response to referral* RRI	*AHP* REF	*Referral Ack* ACK	*Response to AHP referral* RRI
Message header	MSH	R	R	R	R	R	R	R
Message acknowledgement	MSA	X	X	R	R	X	R	R
Error	ERR	X	X	O	O	X	O	O
Provider details	PRD	R	R	X	R|O	R	R	R|O
Patient details	PID	R	R	X	R|O	R	R	R|O
Patient visit details	PV1	O	O	O	O	O	O	O
Referral Status	RF1	R	R	R	R	R	R	R
Request for care	RF1			M			M	
Reason for referral	DG1/ PRB			X			X	
Text description	NTE			X			X	
Therapeutic precautions	AL1/ ?			X			X	
Problem list	PRB			X			X	
Life-style	PID?/ OBX?			X			X	
Social history	PID?/ OBX?			X			X	
Family history	PRB?/NK1?			X			X	
Diabetic reviews	OBR+OBX			X			X	
Scheduled appointments	?			X			X	
Examination findings	OBR+OBX			X			X	
Current medication list	ORC/ RXO/ RXR (not in V2.4 spec)			X			X	
Laboratory results	OBR+OBX			X			X	
Immunisations	RXO/ RXR			X			X	

Additional GPCG Requirements

Topic	*HL7*	*New referral* REF	*Recurrent referral* REF	*Referral Ack* ACK	*Response to referral* RRI	*AHP* REF	*AHP Referral Ack* ACK	*Response to AHP referral* RRI
Diagnosis	DG1							
Patient-entered data - Diet diary								
Patient-entered data - Symptoms diary								
Patient-entered data - Medication administration								
Patient-entered data - SF36	OBR+OBX							

Final Schema.

Topic	*HL7*	*New referral* REF	*Recurrent referral* REF	*Referral Ack* ACK	*Response to referral* RRI	*AHP* REF	*Referral Ack* ACK	*Response to AHP referral* RRI
Message header	MSH	R	R	R	R	R	R	R
Message acknowledgement	MSA	X	X	R	R	X	R	R
Error	ERR	X	X	O	O	X	O	O
Provider details	PRD	M	M	M	M	M	M	M
Patient details	PID	M	M	M	M	M	M	M
Patient visit details	PV1	O	O	O	O	O	O	O
Referral Status	RF1	M	M	M	M	M	M	M

Request for care	RF1	R	R	X	X	R	X	X
Clinical Reason for referral[3]	DG1/ PRB	R	R	X	X	R	X	X
Text description	NTE	R	R	X	R	R	X	R
Therapeutic precautions	AL1/ ?	R	R	X	R	R	X	R
Problem list[4]	PRB	O	O	X	O	O	X	O
Life-style[5]	OBX?	O	O	X	O	O	X	O
Social history[6]	PID?/ OBX?	O	O	X	O	O	X	O
Family history	PRB?	O	O	X	O	O	X	O
Diabetic reviews	OBR+OBX	O	O	X	R	O	X	R
Scheduled appointments[7]	?	O	O	X	O	O	X	O
Examination findings	OBR+OBX	O	O	X	O	O	X	O
Current medication list	ORC/ RXO/ RXR (not in V2.4 spec)	R	R	X	R	R	X	R
Laboratory results	OBR+OBX	O	O	X	O	O	X	O
Radiology results	OBR+OBX	O	O	X	O	O	X	O
Immunisations[8]	?	O	O	X	R	O	X	O
Patient-entered data[9]	?	O	O	X	O	O	X	O

Legend: R = (HL7) Required, M = (GPCG) Mandatory, O = Optional, X = Not applicable

HL7 segment usage

HL7 segment ID	*HL7 segment description*	*New referral* REF	*Recurrent referral* REF	*Referral Ack* RRI	*Response to referral* RRI	*AHP* REF	*Referral Ack* RRI	*Response to AHP referral* RRI
MSH	Message header	R	R	R	R	R	R	R

[3] The Clinical Reason for Referral represents the clinician's request and problem formulation. In RF1, the Request for Care, there may also be a coded Reason for Referral - such as Second Opinion, Provider Ordered, etc

[4] PRB is in the NSW Referrals proposal, but not in Version 2.3

[5] Not specifically represented in HL7

[6] The PID segment includes marital status, religion, ethnicity

[7] This does not appear to have been resolved by the NSW referral messaging specification

[8] There is a need for a standard code for immunisations

[9] A suitable code for patient-entered data does not exist

MSA	Message acknowledgement	X	X	R	R	X	R	R
ERR	Error	X	X	O	O	X	O	O
RF1	Referral information	M	M	M	X	M	M	X
PRD	Provider data	M	M	M	M	M	M	M
PID	Patient identification	R	R	R	R	R	R	R
NK1	Next of kin information	O	O	X	O	O	X	O
DG1	Diagnosis	M*[10]	M*	X	O	M*	X	O
AL1	Allergy information	M	M	X	M	M	X	M
OBR	Observation request	O	O	X	M	O	X	M
OBX	Observation/Result	O	O	X	M	O	X	M
PV1	Patient visit details	O	O	X	O	O	X	O
PV2	Patient visit additional details	O	O	X	O	O	X	O
NTE	Notes and comments	M	M	X	M	M	X	M
ORC	Common order segment	M	M	X	M	M	X	M
RXO	Prescribed drug/item	M	M	X	M	M	X	M
RXR	Route of prescribed drug	M	M	X	M	M	X	M
PRB	Problem details	M*	M*	X	O	M*	X	O

Legend: R = (HL7) Required, M = (GPCG) Mandatory, O = Optional, X = Not applicable

[10] At least one of DG1or PRB is required as “Reason(s) for Referral” as well as RF1

HL7 Referral Message (REF)

Used for a new or recurrent referral.

Segments

Legend for HL7 Required/GPCG Mandatory:	R = (HL7) Required, M = (GPCG) Mandatory, O = Optional, X = Not included

REF^I12-I15^REF_I12	Patient Referral	Comments/ GPCG Topic(s)	HL7 Required/ GPCG Mandatory	HL7 V2.4 Ref	
				Section	Page
MSH	Message Header	Required	R	2.16.9	2-113
[RF1]	Referral Information	Request for care,	M	11.6.1	11-18
[{PRD}]	Provider Data	Doctor details (GP, from, to)	M	11.6.3	11-24
PID	Patient Identification	Patient details, Lifestyle?, Social history?,	R	3.4.2	3-63
[{NK1}]	Next of kin	Contact	O	3.4.5	3-102
[{DG1}]	Diagnosis	Reason for referral?	M*	6.5.2	6-21
[{AL1}]	Allergy Information	Therapeutic precautions	M	3.4.6	3-111
[{PR1}]	Procedures	Not included in GPCG requirements	X	6.5.4	6-27
[					
{					
OBR	Observation Request	Diabetic reviews, Examination findings, Laboratory results	O	4.5.3 7.4.1	4-43 7-21
[{OBX}]	Observation/Result	Diabetic reviews, Examination findings, Laboratory results, Lifestyle?, Social history?	O	7.4.2	7-38
}					
]					
[					
PV1	Patient Visit	Patient visit details	O	3.4.3	3-77
[PV2]	Patient Visit Additional Info	Additional patient visit details	O	3.4.4	3-92
]					
[{NTE}]	Notes and Comments	Text description	M	2.16.10	2-124
[					
{					
ORC	Common order segment	(Not in V2.4 spec) Current medication list	M	4.5.1	4-25
{					

REF^I12-I15^REF_I12	Patient Referral	Comments/ GPCG Topic(s)	HL7 Required/ GPCG Mandatory	HL7 V2.4 Ref	
RXO	Prescribed drug/item	Current medication list, Immunisations	M	4.14.1	4-88
{RXR}	Route of a prescribed drug	Current medication list, Immunisations	M	4.14.2	4-95
[{RXC}]	Component of a prescribed drug compound	Not included in GPCG requirements	M	4.14.3	4-97
}					
}					
]					
[{PRB}]	Problem details	Reason for referral?, Problem list	M*	12.4.2	12-20
[{GOL}]	Goals	Not included in GPCG requirements	?	12.4.1	12-17
[{PTH}]	Pathways	Not included in GPCG requirements	?	12.4.4	12-27

Issues

- This is a variation from the released V2.4 by the inclusion of

```
[
 {
   ORC                  Common order segment
    {
       RXO              Prescribed drug/item
      {RXR}             Route of a prescribed drug
     [{RXC}]            Component of a prescribed drug compound
    }
 }
]
[{PRB}]                 Problem details
[{GOL}]                 Goals
[{PTH}]                 Pathways
```

Fields

The following tables are adapted from the HL7 version 2.4 specification

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
MSH							***Message Header [Required for HL7]***	***HL7 V2.4 Ref: Section 2.16.9, page 2-113***	***R***
MSH.1	1	ST	R			00001	Field Separator	|	*R*
MSH.2	4	ST	R			00002	Encoding Characters	^~\&	*R*
MSH.3	180	HD[11]*	O		0361[12]**	00003	Sending Application	<Sending application>	*M*
MSH.4	180	HD*	O		0362**	00004	Sending Facility	<Sending facility>	*M*
MSH.5	180	HD*	O		0361**	00005	Receiving Application	<Receiving application>	*M*
MSH.6	180	HD*	O		0362**	00006	Receiving Facility	<Receiving facility>	*M*
MSH.7	26	TS	R[13]			00007	Date/Time Of Message	<Now>	*R*
MSH.8	40	ST	O			00008	Security[14]	*May be used for access control?*	
MSH.9	13	CM	R		0076/ 0003	00009	Message Type	REF^I12	*R*
MSH.10	20	ST	R			00010	Message Control ID	<Message control ID>	*R*
MSH.11	3	PT	R			00011	Processing ID	D|T|P	*R*
MSH.12	60	VID	R		0104	00012	Version ID	2.3.1	*R*
MSH.13	15	NM	O			00013	Sequence Number	*Not recommended*	*X*
MSH.14	180	ST	O			00014	Continuation Pointer	*Not recommended*	*X*
MSH.15	2	ID	O		0155	00015	Accept Acknowledgment Type	AL	

[11] * In HL7 Version 2.3.1 the data type of MSH3-.6 is EI which includes <entity identifier (ST)> as the first component of four
[12] ** In HL7 Version 2.3.1 no table is associated with either of the fields MSH.3-.6, MSH.17 or MSH.20
[13] In HL7 Version 2.3.1 MSH.7 is an optional field, but will be Required in 2.4,
[14] Possibly adaptable for access controls - a GEHR confidentiality archetype in development - but note that it is a string

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
MSH.16	2	ID	O		0155	00016	Application Acknowledgment Type	AL	
MSH.17	3	ID	O		0399*	00017	Country Code	*Not recommended*	*X*
MSH.18	16	ID	O	Y	0211	00692	Character Set	*Not recommended*	*X*
MSH.19	250	CE	O			00693	Principal Language Of Message	*Not recommended*	*X*
MSH.20	20	ID	O		0356*	01317	Alternate Character Set Handling Scheme	*Not recommended*	*X*
~~MSH.21[15]~~	~~10~~	~~ID~~	~~O~~	~~Y~~	~~0449~~	~~01598~~	~~Conformance Statement ID~~	~~*Not recommended*~~	~~*X*~~
RF1							***Referral information [Request for care]***	***HL7 V2.4 Ref: Section 11.6.1, page 11-18***	***R***
RF1.1	250[16]*	CE	O		0263	01137	Referral Status	P	
RF1.2	250*	CE	O		0280	01138	Referral Priority	*Urgency:* S|A|R	
RF1.3	250*	CE	O		0281	01139	Referral Type	Med|Skn|Hom|<Other user-defined>[17]	
RF1.4	250*	CE	O	Y	0282	01140	Referral Disposition	WR|RP|AM|SO	
RF1.5	250*	CE	O		0284	01141	Referral Category	I|O|A|E	
RF1.6	30	EI	R			01142	Originating Referral Identifier	<Referral ID>	*R*
RF1.7	26	TS	O			01143	Effective Date	<Now>[18]	*M?*[19]
RF1.8	26	TS	O			01144	Expiration Date[20]	<A date to integrate with RF1.7 to indicate period of validity>	*M?*
RF1.9	26	TS	O			01145	Process Date	<Defined by the sending application>	
RF1.10	250	CE	O		0336	01228	Referral Reason	*Administrative "purpose" (not a clinical reason):* S|P|O[|W][21]	
RF1.11	30	EI	O	Y		01300	External Referral Identifier	*Difficult to conceive of a purpose*	*X?*
~~RF1.12[22]~~	~~?~~	~~ST|TX~~	~~O~~	~~Y~~		~~?~~	~~Clinical reason/Referral description~~	~~*?Proposed*~~	~~*X*~~

[15] In HL7 Version 2.3.1 MSH.21 is not included
[16] * In HL7 Version 2.3.1 the length specified for RF1.1-.5 is 200 bytes
[17] This requires a standard coding system for Allied Health Professionals
[18] The HIC may wish to comment on legal aspects of the date from which the referral is effective
[19] The HIC may wish to make this mandatory/required to suit Australia's legislated division between primary and specialist care
[20] This date to be created by the application by means of entering the referring doctor's preferred duration of referral
[21] Workload transfer does not seem a valid reason in the Australian context of referrals from General Practice, There is no code for medicolegal.

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
PRD							***Provider data [Doctor details: GP, from, to]***	***Repeatable HL7 V2.4 Ref: Section 11.6.3, page 11-24***	***RM***
PRD.1	250[23]	CE	R	Y	0286	01155	Provider Role	RP|PP|CP|RT *(Use PP for patient's GP, RP for "referring" provider and RT for "referred to" provider)*	*M*
PRD.2	250	XPN	O	Y		01156	Provider Name	<Provider name>	*M*
PRD.3	250	XAD	O	Y		01157	Provider Address	<Provider address>	*M*
PRD.4	60	PL	O			01158	Provider Location	<Provider Location>	
PRD.5	250	XTN	O	Y		01159	Provider Communication Information	<Provider communication information>	
PRD.6	250	CE	O		0185	00684	Preferred Method of Contact – Provider	<Preferred method of contact>	
PRD.7	100	CM	O	Y		01162	Provider Identifiers	<Provider identifiers: Provider#[24]	
PRD.8	26	TS	O			01163	Effective Start Date of Provider Role	*Not recommended*	*X*
PRD.9	26	TS	O			01164	Effective End Date of Provider Role	*Not recommended*	*X*
PID							***Patient details [Patient details, Lifestyle?, Social history?]***	***HL7 V2.4 Ref: Section 3.4.2, page 3-63***	***RM***
PID.1	4	SI	O			00104	Set ID – PID	*Not recommended*	*X*
PID.2	20	CX	B			00105	Patient ID	*Not recommended*	*X*
PID.3	250[25]*	CX	R	Y		00106	Patient Identifier List	<Patient IDs (including any aliases)> *(Issues with National Privacy Principles re use of Medicare No, DVA No and SS No)[26]*	*M*

[22] Initially a new proposal in this specification
[23] * In HL7 Version 2.3.1 the lengths specified for PRD.1-.6 are, respectively, 200, 106, 60, 60, 100 and 200 bytes
[24] The HIC may wish to comment in the Australian context
[25] * In HL7 version 2.3.1 the lengths specified for PID.3, .5, .6, .9, .10, .11, .13, .14, .15, .16, .17, .18, .21, .22, .23, .26, .27, and 28 are, respectively, 20, 48, 48, 48, 80, 106, 40, 40, 60, 80, 80, 20, 20, 80, 60, 80, 60 and 80 bytes

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
PID.4	20	CX	B	Y		00107	Alternate Patient ID – PID	*Not recommended*	*X*
PID.5	250	XPN	R	Y		00108	Patient Name	<Patient name (including aliases)>	*M*
PID.6	250	XPN	O	Y		00109	Mother's Maiden Name	*Not recommended*	*X*
PID.7	26	TS	O			00110	Date/Time of Birth	<Patient DOB>	*M*
PID.8	1	IS	O		0001	00111	Administrative Sex	<Gender>	
PID.9	250	XPN	B	Y		00112	Patient Alias	*Not recommended*	*X*
PID.10	250	CE	O	Y	0005	00113	Race	<Indigenous status/Aboriginality>	
PID.11	250	XAD	O	Y		00114	Patient Address	<Patient address>	
PID.12	4	IS	B		0289	00115	County Code	*Not recommended*	*X*
PID.13	250	XTN	O	Y		00116	Phone Number – Home	<Home phone No (including e-mail, mobile, pager, etc)>	
PID.14	250	XTN	O	Y		00117	Phone Number – Business	<Business phone No>	
PID.15	250	CE	O		0296	00118	Primary Language	<Language spoken at home>	
PID.16	250	CE	O		0002	00119	Marital Status	<Marital status>	
PID.17	250	CE	O		0006	00120	Religion	<Religion>	
PID.18	250	CX	O			00121	Patient Account Number	*Not recommended*	*X*
PID.19	16	ST	B			00122	SSN Number – Patient	<Medicare Number + Line Number>[27]	
PID.20	25	DLN	O			00123	Driver's License Number – Patient	*Not recommended*	*X*
PID.21	250	CX	O	Y		00124	Mother's Identifier	*Not recommended*	*X*
PID.22	250	CE	O	Y	0189	00125	Ethnic Group	<Ethnic group (not to be used for aboriginality)>	
PID.23	250	ST	O			00126	Birth Place	<Country of birth>	
PID.24	1	ID	O		0136	00127	Multiple Birth Indicator	<Multiple birth indicator (*relevant to twin studies*)>	
PID.25	2	NM	O			00128	Birth Order	*Not recommended*	*X*

[26] Medicare No and Vet Affairs No are the only numbers for which a standard number exists in Table 0363. We understand that the Privacy Commissioner is concerned abut the use of these numbers as identifying numbers for the purposes of electronic transmissions, although they may be contained within the transmission.

[27] Note that the Australian standard differs here from the international standard; that the NSW 2.3.1 Referrals proposal recommends the use of PID.3; and that there is some disagreement within Australia's HL7 experts about the use of PID.19

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
PID.26	250	CE	O	Y	0171	00129	Citizenship	*Not recommended*	*X*
PID.27	250	CE	O		0172	00130	Veterans Military Status	<Australian Veterans Affairs File No>	
PID.28	250	CE	B		0212	00739	Nationality	*Not recommended*	*X*
PID.29	26	TS	O			00740	Patient Death Date and Time	*Not recommended*	*X*
PID.30	1	ID	O		0136	00741	Patient Death Indicator	*Not recommended*	*X*
~~PID.31[28]*~~	~~1~~	~~ID~~	~~O~~		~~0136~~	~~01535~~	~~Identity Unknown Indicator~~	~~*Not recommended*~~	~~*X*~~
~~PID.32*~~	~~20~~	~~IS~~	~~O~~	~~Y~~	~~0445~~	~~01536~~	~~Identity Reliability Code~~	~~*Not recommended*~~	~~*X*~~
~~PID.33*~~	~~26~~	~~TS~~	~~O~~			~~01537~~	~~Last Update Date/Time~~	~~<Last update Date/Time>~~	
~~PID.34*~~	~~40~~	~~HD~~	~~O~~			~~01538~~	~~Last Update Facility~~	~~<Last update Facility>~~	
~~PID.35*~~	~~250~~	~~CE~~	~~C~~		~~0446~~	~~01539~~	~~Species Code~~	~~*Not recommended*~~	~~*X*~~
~~PID.36*~~	~~250~~	~~CE~~	~~C~~		~~0447~~	~~01540~~	~~Breed Code~~	~~*Not recommended*~~	~~*X*~~
~~PID.37*~~	~~80~~	~~ST~~	~~O~~			~~01541~~	~~Strain~~	~~*Not recommended*~~	~~*X*~~
~~PID.38*~~	~~250~~	~~CE~~	~~O~~	~~2~~	~~0429~~	~~01542~~	~~Production Class Code~~	~~*Not recommended*~~	~~*X*~~
NK1							***Next of kin***	***Repeatable*** ***HL7 V2.4 Ref: Section 3.4.5, page 3-102***	***O***
NK1.1	4	SI	R			00190	Set ID – NK1	<n>	*R*
NK1.2	250[29]*	XPN	O	Y		00191	Name	<Name>	
NK1.3	250*	CE	O		0063	00192	Relationship	<Relationship>	
NK1.4	250*	XAD	O	Y		00193	Address	<Address>	
NK1.5	250*	XTN	O	Y		00194	Phone Number	<Home phone number (including mobile, e-mail, pager, etc>	
NK1.6	250*	XTN	O	Y		00195	Business Phone Number	<Business phone number>	
NK1.7	250*	CE	O		0131	00196	Contact Role	<Contact role (eg teacher)>	
NK1.8	8	DT	O			00197	Start Date	*Not recommended*	*X*
NK1.9	8	DT	O			00198	End Date	*Not recommended*	*X*

[28] * In HL7 version 2.3.1 fields PID.31-38 do not exist

[29] * In HL7 version 2.3.1 the lengths specified for NK1.2,-.7, .12-.14, .19, .20, .22, .25-.33 and .35 are, respectively, 48, 60, 106, 40, 60, 20, 90, 80, 80, 60, 80, 80, 48, 80, 80, 80, 48, 40, 106, 32 and 80 bytes

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
NK1.10	60	ST	O			00199	Next of Kin / Associated Parties Job Title	*Not recommended*	*X*
NK1.11	20	JCC	O		0327/ 0328	00200	Next of Kin / Associated Parties Job Code/Class	*Not recommended*	*X*
NK1.12	250*	CX	O			00201	Next of Kin / Associated Parties Employee Number	*Not recommended*	*X*
NK1.13	250*	XON	O	Y		00202	Organization Name – NK1	<Organisation name>[30]	
NK1.14	250*	CE	O		0002	00119	Marital Status	*Not recommended*	*X*
NK1.15	1	IS	O		0001	00111	Administrative Sex	*Not recommended*	*X*
NK1.16	26	TS	O			00110	Date/Time of Birth	*Not recommended*	*X*
NK1.17	2	IS	O	Y	0223	00755	Living Dependency	<Living dependency (eg Guardianship order)>	
NK1.18	2	IS	O	Y	0009	00145	Ambulatory Status	*Not recommended*	*X*
NK1.19	250*	CE	O	Y	0171	00129	Citizenship	*Not recommended*	*X*
NK1.20	250*	CE	O		0296	00118	Primary Language	<Language spoken at home>	
NK1.21	2	IS	O		0220	00742	Living Arrangement	*Not recommended*	*X*
NK1.22	250*	CE	O		0215	00743	Publicity Code	*Not recommended*	*X*
NK1.23	1	ID	O		0136	00744	Protection Indicator	*Not recommended*	*X*
NK1.24	2	IS	O		0231	00745	Student Indicator	*Not recommended*	*X*
NK1.25	250*	CE	O		0006	00120	Religion	*Not recommended*	*X*
NK1.26	250*	XPN	O	Y		00109	Mother's Maiden Name	*Not recommended*	*X*
NK1.27	250*	CE	O		0212	00739	Nationality	*Not recommended*	*X*
NK1.28	250*	CE	O	Y	0189	00125	Ethnic Group	*Not recommended*	*X*
NK1.29	250*	CE	O	Y	0222	00747	Contact Reason	<Contact reason>	
NK1.30	250*	XPN	O	Y		00748	Contact Person's Name	<Contact person's name>	
NK1.31	250*	XTN	O	Y		00749	Contact Person's Telephone Number	<Contact person's telephone number>	
NK1.32	250*	XAD	O	Y		00750	Contact Person's Address	<Contact person's address>	
NK1.33	250*	CX	O	Y		00751	Next of Kin/Associated Party's Identifiers	*Not recommended*	*X*
NK1.34	2	IS	O		0311	00752	Job Status	*Not recommended*	*X*

[30] suitable for patients referred from army, prison or school

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
NK1.35	250*	CE	O	Y	0005	00113	Race	*Not recommended* >	*X*
NK1.36	2	IS	O		0295	00753	Handicap	<Handicap>	
NK1.37	16	ST	O			00754	Contact Person Social Security Number	*Not recommended*	*X*
DG1							***Diagnosis [Reason(s) for referral?]***	***Repeatable HL7 V2.4 Ref: Section 6.5.2, page 6-21***	***R*[31]**
DG1.1	4	SI	R			00375	Set ID – DG1	<n>	*R*
DG1.2	2	ID	(B) R		0053	00376	Diagnosis Coding Method	*Not recommended*	*X*
DG1.3	250[32]*	CE	O		0051	00377	Diagnosis Code – DG1	<Diagnosis code>^ <Diagnosis description> ^<?>^<?>^<?>^<?>	*M*
DG1.4	40	ST	B			00378	Diagnosis Description	*Not recommended*	*X*
DG1.5	26	TS	O			00379	Diagnosis Date/Time	<Diagnosis date/time>	
DG1.6	2	IS	R		0052	00380	Diagnosis Type	<Diagnosis type>	*R*
DG1.7	250*	CE	B		0118	00381	Major Diagnostic Category	*Not recommended*	*X*
DG1.8	250*	CE	B		0055	00382	Diagnostic Related Group	*Not recommended*	*X*
DG1.9	1*	ID	B		0136	00383	DRG Approval Indicator	*Not recommended*	*X*
DG1.10	2	IS	B		0056	00384	DRG Grouper Review Code	*Not recommended*	*X*
DG1.11	250*	CE	B		0083	00385	Outlier Type	*Not recommended*	*X*
DG1.12	3	NM	B			00386	Outlier Days	*Not recommended*	*X*
DG1.13	12	CP	B			00387	Outlier Cost	*Not recommended*	*X*
DG1.14	4	ST	B			00388	Grouper Version And Type	*Not recommended*	*X*
DG1.15	2	ID	O		0359	00389	Diagnosis Priority	<Diagnosis priority>[33]	
DG1.16	250*	XCN	O	Y		00390	Diagnosing Clinician	<Diagnosing clinician>	
DG1.17	3	IS	O		0228	00766	Diagnosis Classification	*Not recommended*	*X*
DG1.18	1	ID	O		0136	00767	Confidential Indicator	Y[34]	*M*

[31] At least one of DG1 or PRB (or AL1?) is mandatory for "Reason(s) for Referral"

[32] * In HL7 version 2.3.1 the lengths specified for DG1.3, .7-.9,.11 and .16 are, respectively, 60, 60, 60, 2, 60 and 60 bytes

[33] might be used by applications that allow development of hierarchical problem list, e.g. renal failure might be shown to be secondary to diabetes

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
DG1.19	26	TS	O			00768	Attestation Date/Time	*Not recommended*	*X*
AL1							***Allergies [Therapeutic precautions]***	***Repeatable HL7 V2.4 Ref: Section 3.4.6, page 3-111***	***M***
AL1.1	250[35]**	CE	R			00203	Set ID – AL1	<n>	*R*
AL1.2	250**	CE	O		0127	00204	Allergen Type Code	<Allergen category: DA|FA|AA|PA|…>[36]	*M*
AL1.3	250**	CE	R			00205	Allergen Code/Mnemonic/Description	<Specific Allergen identification>	*M*
AL1.4	250**	CE	O		0128	00206	Allergy Severity Code	<Allergen severity: SV|MO|MI|U>	*M*
AL1.5	15	ST	O	Y		00207	Allergy Reaction Code	<Textual description of reaction>	*M*
AL1.6	8	DT	B			00208	Identification Date	<Identification date>	
~~***PR1***~~							~~***Procedures [Not included in GPCG requirements]***~~	~~***Repeatable HL7 V2.4 Ref: Section 6.5.4, page 6-27***~~	~~***X***~~
~~PR1.1~~	~~4~~	~~SI~~	~~R~~			~~00391~~	~~Set ID – PR1~~		~~R~~
~~PR1.2~~	~~3~~	~~IS~~	~~(B) R~~		~~0089~~	~~00392~~	~~Procedure Coding Method~~		~~R~~
~~PR1.3~~	~~250~~	~~CE~~	~~R~~		~~0088~~	~~00393~~	~~Procedure Code~~		~~R~~
~~PR1.4~~	~~40~~	~~ST~~	~~B~~			~~00394~~	~~Procedure Description~~		
~~PR1.5~~	~~26~~	~~TS~~	~~R~~			~~00395~~	~~Procedure Date/Time~~		~~R~~
~~PR1.6~~	~~2~~	~~IS~~	~~O~~		~~0230~~	~~00396~~	~~Procedure Functional Type~~		
~~PR1.7~~	~~4~~	~~NM~~	~~O~~			~~00397~~	~~Procedure Minutes~~		
~~PR1.8~~	~~250~~	~~XCN~~	~~B~~	~~Y~~	~~0010~~	~~00398~~	~~Anesthesiologist~~		
~~PR1.9~~	~~2~~	~~IS~~	~~O~~		~~0019~~	~~00399~~	~~Anesthesia Code~~		
~~PR1.10~~	~~4~~	~~NM~~	~~O~~			~~00400~~	~~Anesthesia Minutes~~		
~~PR1.11~~	~~250~~	~~XCN~~	~~B~~	~~Y~~	~~0010~~	~~00401~~	~~Surgeon~~		

[34] Yes/No seems an inadequate indicator of confidentiality. All clinical messages should be confidential (hence the default is 'Y') but further discussion is needed on how to indicate from whom the data are confidential, and to indicate access controls

[35] ** In HL7 version 2.3.1 the lengths specified for AL1.1-.4 are, respectively, 4, 2, 60 and 2 bytes

[36] The existing allergen codes are inadequate for common clinical use

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
~~PR1.12~~	~~250~~	~~XCN~~	~~B~~	~~Y~~	~~0010~~	~~00402~~	~~Procedure Practitioner~~		
~~PR1.13~~	~~250~~	~~CE~~	~~O~~		~~0059~~	~~00403~~	~~Consent Code~~		
~~PR1.14~~	~~2~~	~~ID~~	~~O~~		~~0418~~	~~00404~~	~~Procedure Priority~~		
~~PR1.15~~	~~250~~	~~CE~~	~~O~~		~~0051~~	~~00772~~	~~Associated Diagnosis Code~~		
~~PR1.16~~	~~250~~	~~CE~~	~~O~~	~~Y~~	~~0340~~	~~01316~~	~~Procedure Code Modifier~~		
~~PR1.17~~	~~20~~	~~IS~~	~~O~~		~~0416~~	~~01501~~	~~Procedure DRG Type~~		
~~PR1.18~~	~~250~~	~~CE~~	~~O~~	~~Y~~	~~0417~~	~~01502~~	~~Tissue Type Code~~		
OBR							***Observation request [Diabetic reviews, Examination findings, Laboratory results, Family history?, Social history?]***	***Repeatable HL7 V2.4 Ref: Section 4.5.3, page 4-43 and Section 7.4.1, page 7-21***	***O***
OBR.1	4	SI	O			00237	Set ID – OBR	<n>	
OBR.2	22	EI	C			00216	Placer Order Number	*Not recommended*	*X*
OBR.3	22	EI	C			00217	Filler Order Number	*Not recommended*	*X*
OBR.4	250[37]*	CE	R			00238	Universal Service Identifier	<Test/Observation/Result name: Diabetes review| Examination findings| Lab results| Patient-entered data| …>[38]	*M*
OBR.5	2	ID	B			00239	Priority – OBR	*Not recommended*	*X*
OBR.6	26	TS	B			00240	Requested Date/Time	*Not recommended*	*X*
OBR.7	26	TS	C			00241	Observation Date/Time #	<Observation Date/Time>	
OBR.8	26	TS	O			00242	Observation End Date/Time #	*Not recommended*	*X*
OBR.9	20	CQ	O			00243	Collection Volume *	*Not recommended*	*X*
OBR.10	250*	XCN	O	Y		00244	Collector Identifier *	<Collector identifier>	

[37] * In HL7 version 2.3.1 the lengths specified for OBR.4, .10, .12, .16, .17, .28, .29, .31, .38-.40 and .43-.47 are, respectively, 200, 60, 60, 12, 40, 150, 150, 300, 60, 200, 60, 200, 60, 106, 48 and 106 bytes

[38] An opportunity for identifying patient-entered data here. Codes will need to be created and agreed. See also OBX.16

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
OBR.11	1	ID	O		0065	00245	Specimen Action Code *	*Not recommended*	*X*
OBR.12	250*	CE	O			00246	Danger Code	*Not recommended*	*X*
OBR.13	300	ST	O			00247	Relevant Clinical Information	<Relevant clinical information>	
OBR.14	26	TS	C			00248	Specimen Received Date/Time *	*Not recommended*	*X*
OBR.15	300	CM	O		0070/ 0163/ 0369[39]	00249	Specimen Source	<Specimen source>	
OBR.16	250*	XCN	O	Y		00226	Ordering Provider	<Ordering provider>	
OBR.17	250*	XTN	O	Y/2		00250	Order Callback Phone Number	*Not recommended*	*X*
OBR.18	60	ST	O			00251	Placer Field 1	*Not recommended*	*X*
OBR.19	60	ST	O			00252	Placer Field 2	*Not recommended*	*X*
OBR.20	60	ST	O			00253	Filler Field 1 +	*Not recommended*	*X*
OBR.21	60	ST	O			00254	Filler Field 2 +	*Not recommended*	*X*
OBR.22	26	TS	C			00255	Results Rpt/Status Chng – Date/Time +	*Not recommended*	*X*
OBR.23	40	CM	O			00256	Charge to Practice +	*Not recommended*	*X*
OBR.24	10	ID	O		0074	00257	Diagnostic Serv Sect ID	<Service/Department code>	
OBR.25	1	ID	C		0123	00258	Result Status +	<Report status>	
OBR.26	400	CM	O			00259	Parent Result +	*Not recommended*	*X*
OBR.27	200	TQ	O	Y		00221	Quantity/Timing	*Not recommended*	*X*
OBR.28	250*	XCN	O	Y/5		00260	Result Copies To	*Not recommended*	*X*
OBR.29	200*	CM	O			00222	Parent	*Not recommended*	*X*
OBR.30	20	ID	O		0124	00262	Transportation Mode	*Not recommended*	*X*
OBR.31	250*	CE	O	Y		00263	Reason for Study	*Not recommended*	*X*
OBR.32	200	CM	O			00264	Principal Result Interpreter +	*Not recommended*	*X*
OBR.33	200	CM	O	Y		00265	Assistant Result Interpreter +	*Not recommended*	*X*
OBR.34	200	CM	O	Y		00266	Technician +	*Not recommended*	*X*
OBR.35	200	CM	O	Y		00267	Transcriptionist +	*Not recommended*	*X*
OBR.36	26	TS	O			00268	Scheduled Date/Time +	*Not recommended*	*X*

[39] * In HL7 Version 2.3.1 only table 0070 is specified for OBR.15

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
OBR.37	4	NM	O			01028	Number of Sample Containers *	*Not recommended*	*X*
OBR.38	250*	CE	O	Y		01029	Transport Logistics of Collected Sample *	*Not recommended*	*X*
OBR.39	250*	CE	O	Y		01030	Collector's Comment *	*Not recommended*	*X*
OBR.40	250*	CE	O			01031	Transport Arrangement Responsibility	*Not recommended*	*X*
OBR.41	30	ID	O		0224	01032	Transport Arranged	*Not recommended*	*X*
OBR.42	1	ID	O		0225	01033	Escort Mandatory	*Not recommended*	*X*
OBR.43	250*	CE	O	Y		01034	Planned Patient Transport Comment	*Not recommended*	*X*
OBR.44-47 in HL7 V2.4									
OBR.44[40]*	*250**	*CE*	*O*		*0088*	*00393*	*Procedure Code*	*NA*	-
*OBR.45**	*250**	*CE*	*O*	*Y*	*0340*	*01316*	*Procedure Code Modifier*	*NA*	-
*OBR.46**	*250**	*CE*	*O*	*Y*	*0411*	*01474*	*Placer Supplemental Service Information*	*NA*	-
*OBR.47**	*250**	*CE*	*O*	*Y*	*0411*	*01475*	*Filler Supplemental Service Information*	*NA*	-
OBR.44-47 in HL7 V2.3.1									
*OBR.44**	*60*	*XON*	*O*	*Y*		*01311*	*Ordering Facility Name*	*Not recommended*	*X*
*OBR.45**	*106*	*XAD*	*O*	*Y*		*01312*	*Ordering Facility Address*	*Not recommended*	*X*
*OBR.46**	*48*	*XTN*	*O*	*Y*		*01313*	*Ordering Facility Phone Number*	*Not recommended*	*X*
*OBR.47**	*106*	*XAD*	*O*	*Y*		*01314*	*Ordering Provider Address*	*Not recommended*	*X*
OBX							***Observation/Result [Diabetic reviews, Examination findings, Laboratory results, Family history?, Social history?***	***Repeatable HL7 V2.4 Ref: Section 7.4.2, page 7-38***	***O***
OBX.1	4[41]**	SI	O			00569	Set ID – OBX	<n>	
OBX.2	2**	ID	C		0125	00570	Value Type	<Data type: CE|CF|ED|FT|NM|RP|SN|ST|TX>	
OBX.3	250**	CE	R			00571	Observation Identifier	<Test/Observation/Result code>	*R*
OBX.4	20	ST	C			00572	Observation Sub-ID	<Observation sub-id>	

[40] * Note that there is apparently a conflict between the HL7 V2.3.1 and HL7 V2.4 specifications of OBR.44-.47
[41] ** In HL7 Version 2.3.1 the lengths specified for OBX.1-.3, .6 and .15-.17 are, respectively, 10, 3, 590, 60, 60, 80 and 60 bytes

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
OBX.5	65536	*	C	Y		00573	Observation Value	<Test/Observation/Result value>	
OBX.6	250**	CE	O			00574	Units	<Units for OBX.5>	
OBX.7	60	ST	O			00575	References Range	<References range for OBX.5>	
OBX.8	5	IS	O	Y/5	0078	00576	Abnormal Flags	<Observation abnormal flag>	
OBX.9	5	NM	O			00577	Probability	*Not recommended*	*X*
OBX.10	2	ID	O	Y	0080	00578	Nature of Abnormal Test	<Nature of abnormal test(result)>	
OBX.11	1	ID	R		0085	00579	Observation Result Status	<Observation status>	*R*
OBX.12	26	TS	O			00580	Date Last Observation Normal Value	<Date last observation normal>	
OBX.13	20	ST	O			00581	User Defined Access Checks	*Not recommended*	*X*
OBX.14	26	TS	O			00582	Date/Time of the Observation	<Date/time of the observation(s)>	
OBX.15	250**	CE	O			00583	Producer's ID	<Producer's ID>	
OBX.16	250**	XCN	O	Y		00584	Responsible Observer	*An opportunity to indicate patient-entered data*[42]	
OBX.17	250**	CE	O	Y		00936	Observation Method	<Observation method>	
~~OBX.18*~~[43]	~~22~~	~~EI~~	~~O~~	~~Y~~		~~01479~~	~~Equipment Instance Identifier~~	~~*Not recommended*~~	~~*X*~~
~~OBX.19*~~	~~26~~	~~TS~~	~~O~~			~~01480~~	~~Date/Time of the Analysis~~	~~*Not recommended*~~	~~*X*~~
PV1							***Patient visit***	***HL7 V2.4 Ref: Section 3.4.3, page 3-77***	***O***
PV1.1	4	SI	O			00131	Set ID – PV1	*Not recommended*	*X*
PV1.2	1	IS	R		0004	00132	Patient Class	I|O|N|U	*R*
PV1.3	80	PL	O			00133	Assigned Patient Location	*Not recommended*	*X*
PV1.4	2	IS	O		0007	00134	Admission Type	*Not recommended*	*X*
PV1.5	250[44]**	CX	O			00135	Preadmit Number	*Not recommended*	*X*
PV1.6	80	PL	O			00136	Prior Patient Location	*Not recommended*	*X*
PV1.7	250**	XCN	O	Y	0010	00137	Attending Doctor	*Not recommended*	*X*
PV1.8	250**	XCN	O	Y	0010	00138	Referring Doctor	*Not recommended*	*X*

[42] See also OBR.4
[43] * In HL7 Version 2.3.1 OBX.18 and .19 do not exist
[44] ** In HL7 Version 2.3.1 the lengths specified for PV1.5, .7-.9, .17, .19 and .38 are, respectively, 20, 60, 60, 60, 60, 20 and 80

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
PV1.9	250**	XCN	B	Y	0010	00139	Consulting Doctor	*Not recommended*	*X*
PV1.10	3	IS	O		0069	00140	Hospital Service	<Hospital service>	*X*
PV1.11	80	PL	O			00141	Temporary Location	*Not recommended*	*X*
PV1.12	2	IS	O		0087	00142	Preadmit Test Indicator	*Not recommended*	*X*
PV1.13	2	IS	O		0092	00143	Re-admission Indicator	*Not recommended*	*X*
PV1.14	6	IS	O		0023	00144	Admit Source	*Not recommended*	*X*
PV1.15	2	IS	O	Y	0009	00145	Ambulatory Status	<Ambulatory Status>	
PV1.16	2	IS	O		0099	00146	VIP Indicator	<VIP indicator>	
PV1.17	250**	XCN	O	Y	0010	00147	Admitting Doctor	*Not recommended*	*X*
PV1.18	2	IS	O		0018	00148	Patient Type	*Not recommended*	*X*
PV1.19	250**	CX	O			00149	Visit Number	*Not recommended*	*X*
PV1.20	50	FC	O	Y	0064	00150	Financial Class	*Not recommended*	*X*
PV1.21	2	IS	O		0032	00151	Charge Price Indicator	*Not recommended*	*X*
PV1.22	2	IS	O		0045	00152	Courtesy Code	*Not recommended*	*X*
PV1.23	2	IS	O		0046	00153	Credit Rating	*Not recommended*	*X*
PV1.24	2	IS	O	Y	0044	00154	Contract Code	*Not recommended*	*X*
PV1.25	8	DT	O	Y		00155	Contract Effective Date	*Not recommended*	*X*
PV1.26	12	NM	O	Y		00156	Contract Amount	*Not recommended*	*X*
PV1.27	3	NM	O	Y		00157	Contract Period	*Not recommended*	*X*
PV1.28	2	IS	O		0073	00158	Interest Code	*Not recommended*	*X*
PV1.29	1	IS	O		0110	00159	Transfer to Bad Debt Code	*Not recommended*	*X*
PV1.30	8	DT	O			00160	Transfer to Bad Debt Date	*Not recommended*	*X*
PV1.31	10	IS	O		0021	00161	Bad Debt Agency Code	*Not recommended*	*X*
PV1.32	12	NM	O			00162	Bad Debt Transfer Amount	*Not recommended*	*X*
PV1.33	12	NM	O			00163	Bad Debt Recovery Amount	*Not recommended*	*X*
PV1.34	1	IS	O		0111	00164	Delete Account Indicator	*Not recommended*	*X*
PV1.35	8	DT	O			00165	Delete Account Date	*Not recommended*	*X*
PV1.36	3	IS	O		0112	00166	Discharge Disposition	*Not recommended*	*X*
PV1.37	25	CM	O		0113	00167	Discharged to Location	*Not recommended*	*X*

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
PV1.38	250**	CE	O		0114	00168	Diet Type	*Not recommended*	*X*
PV1.39	2	IS	O		0115	00169	Servicing Facility	*Not recommended*	*X*
PV1.40	1	IS	B		0116	00170	Bed Status	*Not recommended*	*X*
PV1.41	2	IS	O		0117	00171	Account Status	*Not recommended*	*X*
PV1.42	80	PL	O			00172	Pending Location	*Not recommended*	*X*
PV1.43	80	PL	O			00173	Prior Temporary Location	*Not recommended*	*X*
PV1.44	26	TS	O			00174	Admit Date/Time	*Not recommended*	*X*
PV1.45	26	TS	O	Y		00175	Discharge Date/Time	*Not recommended*	*X*
PV1.46	12	NM	O			00176	Current Patient Balance	*Not recommended*	*X*
PV1.47	12	NM	O			00177	Total Charges	*Not recommended*	*X*
PV1.48	12	NM	O			00178	Total Adjustments	*Not recommended*	*X*
PV1.49	12	NM	O			00179	Total Payments	*Not recommended*	*X*
~~PV1.50[45]*~~	~~250~~	~~CX~~	~~O~~		~~0203~~	~~00180~~	~~Alternate Visit ID~~		
~~PV1.51*~~	~~1~~	~~IS~~	~~O~~		~~0326~~	~~01226~~	~~Visit Indicator~~		
~~PV1.52*~~	~~250~~	~~XCN~~	~~B~~	~~Y~~	~~0010~~	~~01274~~	~~Other Healthcare Provider~~		
PV2							***Patient visit additional information***	***HL7 V2.4 Ref: Section 3.4.4, page 3-92***	***O***
PV2.1	80	PL	C			00181	Prior Pending Location	*Not recommended*	*X*
PV2.2	250[46]*	CE	O		0129	00182	Accommodation Code	*Not recommended*	*X*
PV2.3	250*	CE	O			00183	Admit Reason	<Reason for referral>	
PV2.4	250*	CE	O			00184	Transfer Reason	*Not recommended*	*X*
PV2.5	25	ST	O	Y		00185	Patient Valuables	*Not recommended*	*X*
PV2.6	25	ST	O			00186	Patient Valuables Location	*Not recommended*	*X*
PV2.7	2	IS	O	Y	0130	00187	Visit User Code	*Not recommended*	*X*
PV2.8	26	TS	O			00188	Expected Admit Date/Time	*Not recommended*	*X*
PV2.9	26	TS	O			00189	Expected Discharge Date/Time	*Not recommended*	*X*

[45] * In HL7 Version 2.3.1 PV1.50-.52 do not exist
[46] ** In HL7 Version 2.3.1 the lengths specified for PV2.2-.4, .13, .23 and .30 are, respectively, 60, 60, 60, 90, 90 and 80 bytes

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
PV2.10	3	NM	O			00711	Estimated Length of Inpatient Stay	*Not recommended*	*X*
PV2.11	3	NM	O			00712	Actual Length of Inpatient Stay	*Not recommended*	*X*
PV2.12	50	ST	O			00713	Visit Description	<Visit Description>	
PV2.13	250*	XCN	O	Y		00714	Referral Source Code	*Not recommended*	*X*
PV2.14	8	DT	O			00715	Previous Service Date	*Not recommended*	*X*
PV2.15	1	ID	O		0136	00716	Employment Illness Related Indicator	<Employment illness related indicator (*for Work Cover cases*)>	
PV2.16	1	IS	O		0213	00717	Purge Status Code	*Not recommended*	*X*
PV2.17	8	DT	O			00718	Purge Status Date	*Not recommended*	*X*
PV2.18	2	IS	O		0214	00719	Special Program Code	*Not recommended*	*X*
PV2.19	1	ID	O		0136	00720	Retention Indicator	*Not recommended*	*X*
PV2.20	1	NM	O			00721	Expected Number of Insurance Plans	*Not recommended*	*X*
PV2.21	1	IS	O		0215	00722	Visit Publicity Code	<Visit publicity code>	
PV2.22	1	ID	O		0136	00723	Visit Protection Indicator	<Visit protection indicator (*for Access Control*)>[47]	*M?*
PV2.23	250*	XON	O	Y		00724	Clinic Organisation Name	<Clinic organisation name>	
PV2.24	2	IS	O		0216	00725	Patient Status Code	<Patient status code>	
PV2.25	1	IS	O		0217	00726	Visit Priority Code	<Visit priority code>	
PV2.26	8	DT	O			00727	Previous Treatment Date	*Not recommended*	*X*
PV2.27	2	IS	O		0112	00728	Expected Discharge Disposition	*Not recommended*	*X*
PV2.28	8	DT	O			00729	Signature on File Date	*Not recommended*	*X*
PV2.29	8	DT	O			00730	First Similar Illness Date	*Not recommended*	*X*
PV2.30	250*	CE	O		0218	00731	Patient Charge Adjustment Code	*Not recommended*	*X*
PV2.31	2	IS	O		0219	00732	Recurring Service Code	*Not recommended*	*X*
PV2.32	1	ID	O		0136	00733	Billing Media Code	*Not recommended*	*X*
PV2.33	26	TS	O			00734	Expected Surgery Date and Time	*Not recommended*	*X*
PV2.34	1	ID	O		0136	00735	Military Partnership Code	*Not recommended*	*X*
PV2.35	1	ID	O		0136	00736	Military Non-Availability Code	*Not recommended*	*X*

[47] This could be adapted for access controls (Confidentiality) but may be outside the intended HL7 use and would require debate before adoption.

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
PV2.36	1	ID	O		0136	00737	Newborn Baby Indicator	*Not recommended*	*X*
PV2.37	1	ID	O		0136	00738	Baby Detained Indicator	*Not recommended*	*X*
~~PV2.38[48]*~~	~~250~~	~~CE~~	~~O~~		~~0430~~	~~01543~~	~~Mode of Arrival Code~~		~~X~~
~~PV2.39*~~	~~250~~	~~CE~~	~~O~~	~~Y~~	~~0431~~	~~01544~~	~~Recreational Drug Use Code~~		~~X~~
~~PV2.40*~~	~~250~~	~~CE~~	~~O~~		~~0432~~	~~01545~~	~~Admission Level of Care Code~~		~~X~~
~~PV2.41*~~	~~250~~	~~CE~~	~~O~~	~~Y~~	~~0433~~	~~01546~~	~~Precaution Code~~		~~X~~
~~PV2.42*~~	~~250~~	~~CE~~	~~O~~		~~0434~~	~~01547~~	~~Patient Condition Code~~		~~X~~
~~PV2.43*~~	~~2~~	~~IS~~	~~O~~		~~0315~~	~~00759~~	~~Living Will Code~~		~~X~~
~~PV2.44*~~	~~2~~	~~IS~~	~~O~~		~~0316~~	~~00760~~	~~Organ Donor Code~~		~~X~~
~~PV2.45*~~	~~250~~	~~CE~~	~~O~~	~~Y~~	~~0435~~	~~01548~~	~~Advance Directive Code~~		~~X~~
~~PV2.46*~~	~~8~~	~~DT~~	~~O~~			~~01549~~	~~Patient Status Effective Date~~		~~X~~
~~PV2.47*~~	~~26~~	~~TS~~	~~C~~			~~01550~~	~~Expected LOA Return Date/Time~~		~~X~~
NTE							***Notes and comments [Other information relevant to the referral]***	***Repeatable HL7 V2.4 Ref: Section 2.16.10, page 2-124***	***R[49]***
NTE.1	4	SI	O			00096	Set ID – NTE		
NTE.2	8	ID	O		0105	00097	Source of Comment		
NTE.3	65536	FT	O	Y		00098	Comment	<Clinical Reason for referral>	
NTE.4	250[50]	CE	O		0364[51]	01318	Comment Type	<Comment type>[52]	
ORC							***Common order segment [Current medication list]***	***Repeatable HL7 V2.4 Ref: Section 4.5.1, page 4-25***	***R[53]***
ORC.1	2	ID	R	N	0119	00215	Order Control	<NULL>	*R*

[48] * In HL7 Version 2.3.1 PV2.38-.47 do not exist
[49] Effectively mandatory if used to send the reason for referral
[50] In HL7 Version 2.3.1 the length specified for NTE.4 is 60 bytes
[51] In HL7 Version 2.3.1 no table is associated with NTE.4
[52] Table 0364 in HL7 Standard lists some comment types: this list should be expanded
[53] This segment is recommended for transmitting clinical information in the NSW Version 2.3.1 proposal

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
ORC.2	22	EI	C			00216	Placer Order Number	*Not recommended*	*X*
ORC.3	22	EI	C			00217	Filler Order Number	*Not recommended*	*X*
ORC.4	22	EI	O			00218	Placer Group Number[54]	*Not recommended*	*X*
ORC.5	2	ID	O	N	0038	00219	Order Status	*Not recommended*	*X*
ORC.6	1	ID	O		0121	00220	Response Flag	*Not recommended*	*X*
ORC.7	200	TQ	O	Y		00221	Quantity/Timing	<Quantity/timing>Should be same No as OBR.27	
ORC.8	200	CM	O			00222	Parent	*Not recommended*	*X*
ORC.9	26	TS	O			00223	Date/Time of Transaction	*Not recommended*	*X*
ORC.10	250[55]*	XCN	O	Y		00224	Entered By	*Not recommended*	*X*
ORC.11	250*	XCN	O	Y		00225	Verified By	*Not recommended*	*X*
ORC.12	250*	XCN	O	Y		00226	Ordering Provider	<Prescriber's prescribing ID>Same as OBR 16[56]	*X*
ORC.13	80	PL	O			00227	Enterer's Location	*Not recommended*	*X*
ORC.14	250*	XTN	O	Y/2		00228	Call Back Phone Number	*Not recommended*	*X*
ORC.15	26	TS	O			00229	Order Effective Date/Time	<Order effective date/time>	*X*
ORC.16	250*	CE	O			00230	Order Control Code Reason	*Not recommended*	*X*
ORC.17	250*	CE	O			00231	Entering Organization	*Not recommended*	*X*
ORC.18	250*	CE	O			00232	Entering Device	*Not recommended*	*X*
ORC.19	250*	XCN	O	Y		00233	Action By	*Not recommended*	*X*
ORC.20	250*	CE	O		0339	01310	Advanced Beneficiary Notice Code	*Not recommended*	*X*
~~ORC.21[57]**~~	~~250~~	~~XON~~	~~O~~	~~Y~~		~~01311~~	~~Ordering Facility Name~~	~~?~~	
~~ORC.22**~~	~~250~~	~~XAD~~	~~O~~	~~Y~~		~~01312~~	~~Ordering Facility Address~~		
~~ORC.23**~~	~~250~~	~~XTN~~	~~O~~	~~Y~~		~~01313~~	~~Ordering Facility Phone Number~~		
~~ORC.24**~~	~~250~~	~~XAD~~	~~O~~	~~Y~~		~~01314~~	~~Ordering Provider Address~~		

[54] Has been recommended in the NSW 2.3.1 proposal for transmitting prescriber number; but see also ORC.12
[55] * In HL7 Version 2.3.1 the lengths specified for ORC.10-.12, .14 and .16-.20 are, respectively, 120, 120, 120, 40, 200, 60, 60, 120 and 40 bytes
[56] seems appropriate for prescriber number - but this is at variance with the NSW 2.3.1 proposal
[57] ** In HL7 Version 2.3.1 ORC.21-.25 do not exist

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
~~ORC.25**~~	~~250~~	~~CWE~~	~~O~~	~~N~~		~~01473~~	~~Order Status Modifier~~		
RXO							***Prescribed drug/item [Current medication list, Immunisations]***	***Repeatable HL7 V2.4 Ref: Section 4.14.1, page 4-88***	***R***
RXO.1	250[58]**+	CE	C[59]*+			00292	Requested Give Code	<Requested give code>	*R*
RXO.2	20	NM	C*+			00293	Requested Give Amount – Minimum	< Requested give amount – minimum>	*R*
RXO.3	20	NM	O			00294	Requested Give Amount – Maximum	*Not recommended*	*X*
RXO.4	250**+	CE	C*+			00295	Requested Give Units	<Requested give units>	*R*
RXO.5	250**+	CE	C*+			00296	Requested Dosage Form	<Requested dosage form>	
RXO.6	250**+	CE	O	Y		00297	Provider's Pharmacy/Treatment Instructions	<Provider's pharmacy/treatment instructions>[60]	
RXO.7	250**+	CE	O	Y		00298	Provider's Administration Instructions	<Provider's administration instructions>	
RXO.8	200	CM	O			00299	Deliver-To Location	*Not recommended*	*X*
RXO.9	1	ID	O		0161	00300	Allow Substitutions	*Not recommended*	*X*
RXO.10	250**+	CE	O			00301	Requested Dispense Code	*Not recommended*	*X*
RXO.11	20	NM	O			00302	Requested Dispense Amount	*Not recommended*	*X*
RXO.12	250**+	CE	O			00303	Requested Dispense Units	*Not recommended*	*X*
RXO.13	3	NM	O			00304	Number Of Refills	*Not recommended*	*X*
RXO.14	250**+	XCN	C	Y		00305	Ordering Provider's DEA Number	*Not recommended*	*X*
RXO.15	250**+	XCN	C	Y		00306	Pharmacist/Treatment Supplier's Verifier ID	*Not recommended*	*X*
RXO.16	1	ID	O		0136	00307	Needs Human Review	<Needs human review>	
RXO.17	20	ST	C			00308	Requested Give Per (Time Unit)	*Not recommended*	*X*
RXO.18	20	NM	O			01121	Requested Give Strength	<Requested give strength>	
RXO.19	250**+	CE	O			01122	Requested Give Strength Units	<Requested give strength units>	

[58] **+ In HL7 Version 2.3.1 the lengths specified for RXO.1, .4-.7, .10, .12, .14, .15, .19, .20 and .22 are, respectively, 100, 60, 60, 200, 200, 100, 60, 60, 60, 60, 200 and 60 bytes

[59] *+ In HL7 Version 2.3.1RXO.1, .2 and .4 are required fields. RXO.5 is optional

[60] RXO.6 is a text alternative to RXO.2, .3, .4. Should this be standardised or left optional?

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
RXO.20	250**+	CE	O	Y		01123	Indication	<Indication>[61]	
RXO.21	6	ST	O			01218	Requested Give Rate Amount	*Not recommended*	*X*
RXO.22	250**+	CE	O			01219	Requested Give Rate Units	*Not recommended*	*X*
RXO.23	10	CQ	O			00329	Total Daily Dose	*Not recommended*	*X*
~~RXO.24[62]~~	~~250~~	~~CE~~	~~O~~	~~Y~~		~~01476~~	~~Supplementary Code~~		
RXR							***Route of a prescribed drug [Current medication list, Immunisations]***	***Repeatable HL7 V2.4 Ref: Section 4.14.2, page 4-95***	***M***
RXR.1	250[63]**	CE	R		0162	00309	Route	<Route	*R*
RXR.2	250**	CE	O		0163	00310	Administration Site	<Administration site>	
RXR.3	250**	CE	O		0164	00311	Administration Device	<Administration device>	
RXR.4	250**	CE	O		0165	00312	Administration Method	<Administration method>	
RXR.5	250**	CE	O			01315	Routing Instruction	<Routing instruction>	
RXC							***Component of a prescribed drug compound [Not included in GPCG requirements]***	***Repeatable HL7 V2.4 Ref: Section 4.14.3, page 4-97***	***M***
RXC.1	1	ID	R		0166	00313	RX Component Type	<RX Component type>[64]	*R*
RXC.2	250[65]***	CE	R			00314	Component Code	<Component code>	*R*
RXC.3	20	NM	R			00315	Component Amount	<Component amount>	*R*
RXC.4	250***	CE	R			00316	Component Units	<Component units>	*R*
RXC.5	20	NM	O			01124	Component Strength	<Component strength>	
RXC.6	250***	CE	O			01125	Component Strength Units	<Component strength units>	
~~RXC.7[66]~~	~~250~~	~~CE~~	~~O~~	~~Y~~		~~01476~~	~~Supplementary Code~~		

[61] This field appears to have been omitted from the NSW 2.3.1 proposal, yet also appears important
[62] In HL7 Version 2.3.1 RXO.24 does not exist
[63] ** In HL7 Version 2.3.1 the lengths specified for RXR.1-.5 are all 60 bytes
[64] inpatient setting
[65] *** In HL7 Version 2.3.1 the lengths specified for RXC.2, .4 and .6 are, respectively, 100, 60 and 60 bytes
[66] In HL7 Version 2.3.1 RXC.7 does not exist

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
PRB							***Problem details [Reason(s) for referral?]***	***Repeatable HL7 V2.4 Ref: Section 12.4.2, page 12-20***	***M****
PRB.1	2	ID	R		0287	00816	Action Code	<Action code>	*R*
PRB.2	26	TS	R			00817	Action Date/Time	<Action date/time>	*R*
PRB.3	250[67]**+	CE	R			00838	Problem ID	<Problem ID>	*R*
PRB.4	60	EI	R			00839	Problem Instance ID	<Problem instance ID>	*R*
PRB.5	60	EI	O			00820	Episode of Care ID	*Not recommended*	*X*
PRB.6	60	NM	O			00841	Problem List Priority	<Problem list priority>	
PRB.7	26	TS	O			00842	Problem Established Date/Time	<Problem established date/time>	
PRB.8	26	TS	O			00843	Anticipated Problem Resolution Date/Time	*Not recommended*	*X*
PRB.9	26	TS	O			00844	Actual Problem Resolution Date/Time	<Actual problem resolution date/time>	
PRB.10	250**+	CE	O			00845	Problem Classification	*Not recommended*	*X*
PRB.11	250**+	CE	O	Y		00846	Problem Management Discipline	<Problem management discipline>	
PRB.12	250**+	CE	O			00847	Problem Persistence	<Problem persistence>	
PRB.13	250**+	CE	O			00848	Problem Confirmation Status	<Problem confirmation status>	
PRB.14	250**+	CE	O			00849	Problem Life Cycle Status	<Problem life cycle status>	
PRB.15	26	TS	O			00850	Problem Life Cycle Status Date/Time	<Problem life cycle status date/time>[68]	
PRB.16	26	TS	O			00851	Problem Date of Onset	<Problem data of onset>	
PRB.17	80	ST	O			00852	Problem Onset Text	<Problem onset text>e.g "started three years ago"	
PRB.18	250**+	CE	O			00853	Problem Ranking	<Problem ranking>	
PRB.19	250**+	CE	O			00854	Certainty of Problem	<Certainty of problem: HI|LO|ME>	
PRB.20	5	NM	O			00855	Probability of Problem (0-1)	*Not recommended*	*X*
PRB.21	250**+	CE	O			00856	Individual Awareness of Problem	<Individual awareness of problem>	
PRB.22	250**+	CE	O			00857	Problem Prognosis	<Problem prognosis>	
PRB.23	250**+	CE	O			00858	Individual Awareness of Prognosis	<Individual awareness of prognosis>	

[67] **+ In HL7 Version 2.3.1 the lengths specified for PRB.3, .10-.14, .18, .19 and .21-25 are, respectively, 80, 80, 80, 80, 80, 80, 80, 60, 80, 80, 80, 200 and 80 bytes

[68] for inpatient and acute referrals

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
PRB.24	200**+	ST	O			00859	Family/Significant Other Awareness of Problem/Prognosis	<Family/significant other awareness of problem/prognosis>	*X*
PRB.25	250**+	CE	O			00823	Security/Sensitivity	*Not recommended*	
GOL							***Goals*[69] [Not included in GPCG requirements]**	***Repeatable HL7 V2.4 Ref: Section 12.4.1, page 12-17***	***O***
GOL.1	2	ID	R		0287	00816	Action Code	<Action code>	*R*
GOL.2	26	TS	R			00817	Action Date/Time	<Action date/time>	*R*
GOL.3	250[70]*	CE	R			00818	Goal ID	<Goal ID>	*R*
GOL.4	60	EI	R			00819	Goal Instance ID	<Goal instance ID>	*R*
GOL.5	60	EI	O			00820	Episode of Care ID	<Episode of care ID>	
GOL.6	60	NM	O			00821	Goal List Priority	<Goal list priority>	
GOL.7	26	TS	O			00822	Goal Established Date/Time	<Goal established date/time>	
GOL.8	26	TS	O			00824	Expected Goal Achieve Date/Time	<Expected goal achieve date/time>	
GOL.9	250*	CE	O			00825	Goal Classification	<Goal classification>	
GOL.10	250*	CE	O			00826	Goal Management Discipline	<Goal management discipline>	
GOL.11	250*	CE	O			00827	Current Goal Review Status	<Current goal review status>	
GOL.12	26	TS	O			00828	Current Goal Review Date/Time	<Current goal review date/time>	
GOL.13	26	TS	O			00829	Next Goal Review Date/Time	<Next goal review date/time>	
GOL.14	26	TS	O			00830	Previous Goal Review Date/Time	<Previous goal review date/time>	
GOL.15	200	TQ	O			00831	Goal Review Interval	<Goal review interval>	
GOL.16	250*	CE	O			00832	Goal Evaluation	<Goal evaluation>	
GOL.17	300	ST	O	Y		00833	Goal Evaluation Comment	<Goal evaluation comment>	
GOL.18	250*	CE	O			00834	Goal Life Cycle Status	<Goal life cycle status>	
GOL.19	26	TS	O			00835	Goal Life Cycle Status Date/Time	<Goal life cycle status date/time>	
GOL.20	250*	CE	O	Y		00836	Goal Target Type	<Goal target type>	
GOL.21	250*	XPN	O	Y		00837	Goal Target Name	<Goal target name>	

[69] More applicable in coordinated care and some AHP applications; therefore included in this referral spec, although outside of scope
[70] * In HL7 Version 2.3.1 the lengths specified for GOL.3, .9-.11, .16, .18, .20 and .21 are, respectively, 80, 80, 80, 80, 80, 80, 80 and 80

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
~~*PTH*~~							~~*Pathways*~~ ~~*[Not included in GPCG requirements]*~~	~~*Repeatable*~~ ~~*HL7 V2.4 Ref: Section 12.4.4, page 12-27*~~	~~*X*~~
~~PTH.1~~	~~2~~	~~ID~~	~~R~~		~~0287~~	~~00816~~	~~Action Code~~		~~*R*~~
~~PTH.2~~	~~250[71]*~~	~~CE~~	~~R~~			~~01207~~	~~Pathway ID~~		~~*R*~~
~~PTH.3~~	~~60~~	~~EI~~	~~R~~			~~01208~~	~~Pathway Instance ID~~		~~*R*~~
~~PTH.4~~	~~26~~	~~TS~~	~~R~~			~~01209~~	~~Pathway Established Date/Time~~		~~*R*~~
~~PTH.5~~	~~250*~~	~~CE~~	~~O~~			~~01210~~	~~Pathway Life Cycle Status~~	~~*Not recommended*~~	
~~PTH.6~~	~~26~~	~~TS~~	~~C~~			~~01211~~	~~Change Pathway Life Cycle Status Date/Time~~	~~*Not recommended*~~	

- Some Required data items are not accommodated
  - Social history
    - *Needs more information*
    - *Could use OBR+OBX for some of these, but there is a concern about the overuse of these segments for many different purposes.*
  - Family history
    - *Consider the introduction of a new segment for Clinically Related Party*
    - *Could use OBR+OBX for some of these, but there is a concern about the overuse of these segments for many different purposes.*
  - Scheduled appointments
    - *IT 14-6-6 (a committee of Standards Australia)- is already considering this*
  - Patient entered data
    - *See Appendix H*

[71] * In HL7 Version 2.3.1 the lengths specified for PTH.2 and .5 are respectively, 80 and 80 bytes

HL7 Referral Acknowledgement Message (ACK)

Used to acknowledge receipt of a referral. This an electronic acknowledgement, not a clinical response.

Since the “P” status of the message will not change at this point, RF1.1-Referral status is not Mandatory and the standard acknowledgement message (ACK) will suffice.

Segments

ACK^I12-I15^ACK_I12	Referral Acknowledgement	Comments/ GPCG Topic(s)	HL7 Required/ GPCG Mandatory	HL7 V2.4 Ref	
				Section	Page
MSH	Message Header	Required	R	2.16.9	2-113
MSA	Message acknowledgement information	Request for care, Reason for referral?,	R	2.16.8	2-111
ERR	Message error information	Request for care, Reason for referral?,	O	2.16.10	2-124

Fields

The following tables are adapted from the HL7 version 2.4 specification

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
MSH							***Message Header [Required for HL7]***	***HL7 V2.4 Ref: Section 2.16.9, page 2-113***	***M***
MSH.1	1	ST	R			00001	Field Separator	|	*R*
MSH.2	4	ST	R			00002	Encoding Characters	^~\&	*R*
MSH.3	180	HD[72]*	O		0361[73]**	00003	Sending Application	<Sending application>	*M*
MSH.4	180	HD*	O		0362**	00004	Sending Facility	<Sending facility>	*M*
MSH.5	180	HD*	O		0361**	00005	Receiving Application	<Receiving application>	*M*
MSH.6	180	HD*	O		0362**	00006	Receiving Facility	<Receiving facility>	*M*
MSH.7	26	TS	R[74]			00007	Date/Time Of Message	<Now>	*R*
MSH.8	40	ST	O			00008	Security	*May be used for access control?*	
MSH.9	13	CM	R		0076/ 0003	00009	Message Type	ACK^I12	*R*
MSH.10	20	ST	R			00010	Message Control ID	<Message control ID>	*R*
MSH.11	3	PT	R			00011	Processing ID	D|T|P	*R*
MSH.12	60	VID	R		0104	00012	Version ID	2.3.1	*R*
MSH.13	15	NM	O			00013	Sequence Number	*Not recommended*	*X*
MSH.14	180	ST	O			00014	Continuation Pointer	*Not recommended*	*X*
MSH.15	2	ID	O		0155	00015	Accept Acknowledgment Type	NE	
MSH.16	2	ID	O		0155	00016	Application Acknowledgment Type	NE	
MSH.17	3	ID	O		0399*	00017	Country Code	*Not recommended*	*X*

[72] * In HL7 Version 2.3.1 the data type of MSH3-.6 is EI which includes <entity identifier (ST)> as the first component of four
[73] ** In HL7 Version 2.3.1 no table is associated with either of the fields MSH.3-.6, MSH.17 or MSH.20
[74] In HL7 Version 2.3.1 MSH.7 is an optional field but will be required in 2.4

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	*HL7 Required/ GPCG Mandatory*
MSH.18	16	ID	O	Y	0211	00692	Character Set	*Not recommended*	*X*
MSH.19	250	CE	O			00693	Principal Language Of Message	*Not recommended*	*X*
MSH.20	20	ID	O		0356*	01317	Alternate Character Set Handling Scheme	*Not recommended*	*X*
~~MSH.21~~[75]	~~10~~	~~ID~~	~~O~~	~~Y~~	~~0449~~	~~01598~~	~~Conformance Statement ID~~	~~*Not recommended*~~	~~*X*~~
MSA							***Message acknowledgement information***	***HL7 V2.4 Ref: Section 2.16.8, page 2-111***	***M***[76]
MSA.1	2	ID	R		0008	00018	Acknowledgment Code	AA|AE|AR|CA|CE|CR	*R*
MSA.2	20	ST	R			00010	Message Control ID	<Message control ID of original REF message>	*R*
MSA.3	80	ST	O			00020	Text Message	*May be useful with MSA.6 to explain errors or rejections. ERR.1 is preferred*	
MSA.4	15	NM	O			00021	Expected Sequence Number	*Not recommended*	
MSA.5	1	ID	B		0102	00022	Delayed Acknowledgment Type	*Not recommended*	
MSA.6	250[77]	CE	O		0357[78]	00023	Error Condition	*May be useful with MSA.3 to explain errors or rejections. ERR.1 is preferred*	
ERR							***Message error information***	***HL7 V2.4 Ref: Section 2.16.10, page 2-124***	***O***
ERR.1	80	CM	R	Y		00024	Error Code and Location	*Preferred over MSA.3 and MSA.6*	*R*

[75] In HL7 Version 2.3.1 MSH.21 is not included
[76] recommended in NSW 2.3.1 proposal
[77] In HL7 Version 2.3.1 the lengths specified for MSA.6 is100 bytes
[78] In HL7 Version 2.3.1 no table is associated with MSA.6

HL7 Referral Response Message (RRI)

Used to respond to a referral with scheduling or discharge information.

Segments

REF^I12-I15^REF_I12	Patient Referral	Comments/ GPCG Topic(s)	HL7 Required/ GPCG Mandatory	HL7 V2.4 Ref	
				Section	Page
MSH	Message Header	Required	R	2.16.9	2-113
MSA	Message acknowledgement information	Request for care, Reason for referral?,	R	2.16.8	2-111
ERR	Message error information	Request for care, Reason for referral?,	x	2.16.10	2-124
RF1	Referral Information	Request for care, Reason for referral?,	X	11.6.1	11-18
[{PRD}]	Provider Data	Doctor details (GP, from, to)	M	11.6.3	11-24
PID	Patient Identification	Patient details, Lifestyle?, Social history?,	R	3.4.2	3-63
[{NK1}]	Next of kin	Patient details	O	3.4.5	3-102
[{DG1}]	Diagnosis	Reason for referral?	X	6.5.2	6-21
[{AL1}]	Allergy Information	Therapeutic precautions	M	3.4.6	3-111
[{PR1}]	Procedures		O	6.5.4	6-27
[					
{					
OBR	Observation Request	Diabetic reviews, Examination findings, Laboratory results	M	4.5.3 7.4.1	4-43 7-21
[{OBX}]	Observation/Result	Diabetic reviews, Examination findings, Laboratory results, Lifestyle?, Social history?	M	7.4.2	7-38
}					
]					
[					
PV1	Patient Visit	Patient visit details	O	3.4.3	3-77
[PV2]	Patient Visit Additional Info	Additional patient visit details	O	3.4.4	3-92
]					
[{NTE}]	Notes and Comments	Text description	M	2.16.10	2-124
[					
{					
ORC	Common order segment	(Not in V2.4 spec) Current medication list	M	4.5.1	4-25
{					

REF^I12-I15^REF_I12	Patient Referral	Comments/ GPCG Topic(s)	HL7 Required/ GPCG Mandatory	HL7 V2.4 Ref	
RXO	Prescribed drug/item	Current medication list, Immunisations	M	4.14.1	4-88
{RXR}	Route of a prescribed drug	Current medication list, Immunisations	M	4.14.2	4-95
[{RXC}]	Component of a prescribed drug compound	Not included in GPCG requirements	M	4.14.3	4-97
}					
}					
]					
[{PRB}]	Problem details	Reason for referral?, Problem list	X	12.4.2	12-20
[{GOL}]	Goals	Not included in GPCG requirements	O	12.4.1	12-17
[{PTH}]	Pathways	Not included in GPCG requirements	O	12.4.4	12-27

Fields

The following tables are adapted from the HL7 version 2.4 specification

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
MSH							***Message Header [Required for HL7]***	***HL7 V2.4 Ref: Section 2.16.9, page 2-113***	***M***
MSH.1	1	ST	R			00001	Field Separator	|	*R*
MSH.2	4	ST	R			00002	Encoding Characters	^~\&	*R*
MSH.3	180	HD[79]*	O		0361[80]**	00003	Sending Application	<Sending application>	*M*
MSH.4	180	HD*	O		0362**	00004	Sending Facility	<Sending facility>	*M*
MSH.5	180	HD*	O		0361**	00005	Receiving Application	<Receiving application>	*M*
MSH.6	180	HD*	O		0362**	00006	Receiving Facility	<Receiving facility>	*M*
MSH.7	26	TS	R[81]			00007	Date/Time Of Message	<Now>	*R*
MSH.8	40	ST	O			00008	Security	*May be used for access control?*	
MSH.9	13	CM	R		0076/ 0003	00009	Message Type	RRI^I12	*R*
MSH.10	20	ST	R			00010	Message Control ID	<Message control ID>	*R*
MSH.11	3	PT	R			00011	Processing ID	D|T|P	*R*
MSH.12	60	VID	R		0104	00012	Version ID	2.3.1	*R*
MSH.13	15	NM	O			00013	Sequence Number	*Not recommended*	*X*
MSH.14	180	ST	O			00014	Continuation Pointer	*Not recommended*	*X*
MSH.15	2	ID	O		0155	00015	Accept Acknowledgment Type	AL	
MSH.16	2	ID	O		0155	00016	Application Acknowledgment Type	AL	

[79] * In HL7 Version 2.3.1 the data type of MSH3-.6 is EI which includes <entity identifier (ST)> as the first component of four

[80] ** In HL7 Version 2.3.1 no table is associated with either of the fields MSH.3-.6, MSH.17 or MSH.20

[81] In HL7 Version 2.3.1 MSH.7 is an optional field but will be required in 2.4

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
MSH.17	3	ID	O		0399*	00017	Country Code	*Not recommended*	*X*
MSH.18	16	ID	O	Y	0211	00692	Character Set	*Not recommended*	*X*
MSH.19	250	CE	O			00693	Principal Language Of Message	*Not recommended*	*X*
MSH.20	20	ID	O		0356*	01317	Alternate Character Set Handling Scheme	*Not recommended*	*X*
~~MSH.21~~[82]	~~10~~	~~ID~~	~~O~~	~~Y~~	~~0449~~	~~01598~~	~~Conformance Statement ID~~	~~*Not recommended*~~	~~*X*~~
MSA							***Message acknowledgement information***	***HL7 V2.4 Ref: Section 2.16.8, page 2-111***	***M***[83]
MSA.1	2	ID	R		0008	00018	Acknowledgment Code	AA|AE|AR|CA|CE|CR	*R*
MSA.2	20	ST	R			00010	Message Control ID	<Message control ID of original REF message>	*R*
MSA.3	80	ST	O			00020	Text Message	*May be useful with MSA.6 to explain errors or rejections. ERR.1 is preferred*	
MSA.4	15	NM	O			00021	Expected Sequence Number	*Not recommended*	
MSA.5	1	ID	B		0102	00022	Delayed Acknowledgment Type	*Not recommended*	
MSA.6	250[84]	CE	O		0357[85]	00023	Error Condition	*Not recommended*	
~~***ERR***~~							~~***Message error information***~~	~~***HL7 V2.4 Ref: Section 2.16.10, page 2-124***~~	~~***X***~~
~~ERR.1~~	~~80~~	~~CM~~	~~R~~	~~Y~~		~~00024~~	~~Error Code and Location~~	~~*Preferred over MSA.3 and MSA.6*~~	~~*R*~~
RF1							***Referral information [Request for care]***	***HL7 V2.4 Ref: Section 11.6.1, page 11-18***	***M***
RF1.1	250[86]*	CE	O		0263	01137	Referral Status	A|R|E	
RF1.2	250*	CE	O		0280	01138	Referral Priority	*Urgency:* S|A|R	
RF1.3	250*	CE	O		0281	01139	Referral Type	Med	
RF1.4	250*	CE	O	Y	0282	01140	Referral Disposition	*Not recommended*	

[82] In HL7 Version 2.3.1 MSH.21 is not included
[83] recommended in NSW 2.3.1 proposal
[84] In HL7 Version 2.3.1 the lengths specified for MSA.6 is100 bytes
[85] In HL7 Version 2.3.1 no table is associated with MSA.6
[86] * In HL7 Version 2.3.1 the length specified for RF1.1-.5 is 200 bytes

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
RF1.5	250*	CE	O		0284	01141	Referral Category	I|O|A|E	
RF1.6	30	EI	R			01142	Originating Referral Identifier	<Copied from original referral>	*R*
RF1.7	26	TS	O			01143	Effective Date	<Copied from original referral>	
RF1.8	26	TS	O			01144	Expiration Date	<A date to integrate with RF1.7 to indicate period of validity>[87]	
RF1.9	26	TS	O			01145	Process Date	<Copied from original referral>	
RF1.10	250	CE	O		0336	01228	Referral Reason	<Copied from original referral>	
RF1.11	30	EI	O	Y		01300	External Referral Identifier	*Difficult to conceive of a purpose*	
~~RF1.12[88]~~	~~?~~	~~ST|TX~~	~~O~~	~~Y~~		~~?~~	~~Clinical reason/Referral description~~	~~*?Proposed*~~	~~*X*~~
PRD							***Provider data [Doctor details: GP, from, to]***	***Repeatable HL7 V2.4 Ref: Section 11.6.3, page 11-24***	***M***
PRD.1	250[89]	CE	R	Y	0286	01155	Provider Role	RP|PP|CP|RT *(Use PP for patient's GP, RP for "referring" provider and RT for "referred to" provider)*	*M*
PRD.2	250	XPN	O	Y		01156	Provider Name	<Provider name>	*M*
PRD.3	250	XAD	O	Y		01157	Provider Address	<Provider address>	*M*
PRD.4	60	PL	O			01158	Provider Location	<Provider Location>	
PRD.5	250	XTN	O	Y		01159	Provider Communication Information	<Provider communication information>	
PRD.6	250	CE	O		0185	00684	Preferred Method of Contact – Provider	<Preferred method of contact>	
PRD.7	100	CM	O	Y		01162	Provider Identifiers	<Provider identifiers: Provider#[90]	
PRD.8	26	TS	O			01163	Effective Start Date of Provider Role	*Not recommended*	*X*
PRD.9	26	TS	O			01164	Effective End Date of Provider Role	*Not recommended*	*X*

[87] We do not recommend copying this from the original referral message: the referral may have indicated indefinite referral, but the specialist may be unwilling to accept this;
[88] Initially a new proposal in this specification
[89] * In HL7 Version 2.3.1 the lengths specified for PRD.1-.6 are, respectively, 200, 106, 60, 60, 100 and 200 bytes
[90] The HIC may wish to comment in the Australian context

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
PID							***Patient details [Patient details, Lifestyle?, Social history?]***	***HL7 V2.4 Ref: Section 3.4.2, page 3-63***	***M***
PID.1	4	SI	O			00104	Set ID – PID	*Not recommended*	*X*
PID.2	20	CX	B			00105	Patient ID	*Not recommended*	*X*
PID.3	250[91]*	CX	R	Y		00106	Patient Identifier List	<Patient IDs (including any aliases)> *(Issues with National Privacy Principles re use of Medicare No, DVA No and SS No)*[92]	*M*
PID.4	20	CX	B	Y		00107	Alternate Patient ID – PID	*Not recommended*	*X*
PID.5	250	XPN	R	Y		00108	Patient Name	<Patient name (including aliases)>	*M*
PID.6	250	XPN	O	Y		00109	Mother's Maiden Name	*Not recommended*	*X*
PID.7	26	TS	O			00110	Date/Time of Birth	<Patient DOB>	*M*
PID.8	1	IS	O		0001	00111	Administrative Sex	<Gender>	
PID.9	250	XPN	B	Y		00112	Patient Alias	*Not recommended*	*X*
PID.10	250	CE	O	Y	0005	00113	Race	<Indigenous status/Aboriginality>	
PID.11	250	XAD	O	Y		00114	Patient Address	<Patient address>	
PID.12	4	IS	B		0289	00115	County Code	*Not recommended*	*X*
PID.13	250	XTN	O	Y		00116	Phone Number – Home	<Home phone No (including e-mail, mobile, pager, etc)>	
PID.14	250	XTN	O	Y		00117	Phone Number – Business	<Business phone No>	
PID.15	250	CE	O		0296	00118	Primary Language	<Language spoken at home>	
PID.16	250	CE	O		0002	00119	Marital Status	<Marital status>	
PID.17	250	CE	O		0006	00120	Religion	<Religion>	
PID.18	250	CX	O			00121	Patient Account Number	*Not recommended*	*X*

[91] * In HL7 version 2.3.1 the lengths specified for PID.3, .5, .6, .9, .10, .11, .13, .14, .15, .16, .17, .18, .21, .22, .23, .26, .27, and 28 are, respectively, 20, 48, 48, 48, 80, 106, 40, 40, 60, 80, 80, 20, 20, 80, 60, 80, 60 and 80 bytes

[92] Medicare No and Vet Affairs No are the only numbers for which a standard number exists in Table 0363. We understand that the Privacy Commissioner is concerned abut the use of these numbers as identifying numbers for the purposes of electronic transmissions, although they may be contained within the transmission.

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
PID.19	16	ST	B			00122	SSN Number – Patient	<Medicare Number + Line Number>[93]	
PID.20	25	DLN	O			00123	Driver's License Number – Patient	*Not recommended*	*X*
PID.21	250	CX	O	Y		00124	Mother's Identifier	*Not recommended*	*X*
PID.22	250	CE	O	Y	0189	00125	Ethnic Group	<Ethnic group (*not to be used for aboriginality*)>	
PID.23	250	ST	O			00126	Birth Place	<Country of birth>	
PID.24	1	ID	O		0136	00127	Multiple Birth Indicator	<Multiple birth indicator (*relevant to twin studies*)>	
PID.25	2	NM	O			00128	Birth Order	*Not recommended*	*X*
PID.26	250	CE	O	Y	0171	00129	Citizenship	*Not recommended*	*X*
PID.27	250	CE	O		0172	00130	Veterans Military Status	<Australian Veterans Affairs File No>	
PID.28	250	CE	B		0212	00739	Nationality	*Not recommended*	*X*
PID.29	26	TS	O			00740	Patient Death Date and Time	*Not recommended*	*X*
PID.30	1	ID	O		0136	00741	Patient Death Indicator	*Not recommended*	*X*
~~PID.31[94]*~~	~~1~~	~~ID~~	~~O~~		~~0136~~	~~01535~~	~~Identity Unknown Indicator~~	~~*Not recommended*~~	~~*X*~~
~~PID.32*~~	~~20~~	~~IS~~	~~O~~	~~Y~~	~~0445~~	~~01536~~	~~Identity Reliability Code~~	~~*Not recommended*~~	~~*X*~~
~~PID.33*~~	~~26~~	~~TS~~	~~O~~			~~01537~~	~~Last Update Date/Time~~	~~<Last update Date/Time>~~	
~~PID.34*~~	~~40~~	~~HD~~	~~O~~			~~01538~~	~~Last Update Facility~~	~~<Last update Facility>~~	
~~PID.35*~~	~~250~~	~~CE~~	~~C~~		~~0446~~	~~01539~~	~~Species Code~~	~~*Not recommended*~~	~~*X*~~
~~PID.36*~~	~~250~~	~~CE~~	~~C~~		~~0447~~	~~01540~~	~~Breed Code~~	~~*Not recommended*~~	~~*X*~~
~~PID.37*~~	~~80~~	~~ST~~	~~O~~			~~01541~~	~~Strain~~	~~*Not recommended*~~	~~*X*~~
~~PID.38*~~	~~250~~	~~CE~~	~~O~~	~~2~~	~~0429~~	~~01542~~	~~Production Class Code~~	~~*Not recommended*~~	~~*X*~~
NK1							***Next of kin***	***Repeatable*** ***HL7 V2.4 Ref: Section 3.4.5, page 3-102***	***O***
NK1.1	4	SI	R			00190	Set ID – NK1	<n>	*R*

[93] Note that the Australian standard differs here from the international standard; that the NSW 2.3.1 Referrals proposal recommends the use of PID.3; and that there is some disagreement within Australia's HL7 experts about the use of PID.19

[94] * In HL7 version 2.3.1 fields PID.31-38 do not exist

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
NK1.2	250[95]*	XPN	O	Y		00191	Name	<Name>	
NK1.3	250*	CE	O		0063	00192	Relationship	<Relationship>	
NK1.4	250*	XAD	O	Y		00193	Address	<Address>	
NK1.5	250*	XTN	O	Y		00194	Phone Number	<Home phone number (including mobile, e-mail, pager, etc>	
NK1.6	250*	XTN	O	Y		00195	Business Phone Number	<Business phone number>	
NK1.7	250*	CE	O		0131	00196	Contact Role	<Contact role (eg teacher)>	
NK1.8	8	DT	O			00197	Start Date	*Not recommended*	*X*
NK1.9	8	DT	O			00198	End Date	*Not recommended*	*X*
NK1.10	60	ST	O			00199	Next of Kin / Associated Parties Job Title	*Not recommended*	*X*
NK1.11	20	JCC	O		0327/ 0328	00200	Next of Kin / Associated Parties Job Code/Class	*Not recommended*	*X*
NK1.12	250*	CX	O			00201	Next of Kin / Associated Parties Employee Number	*Not recommended*	*X*
NK1.13	250*	XON	O	Y		00202	Organization Name – NK1	<Organisation name>[96]	
NK1.14	250*	CE	O		0002	00119	Marital Status	*Not recommended*	*X*
NK1.15	1	IS	O		0001	00111	Administrative Sex	*Not recommended*	*X*
NK1.16	26	TS	O			00110	Date/Time of Birth	*Not recommended*	*X*
NK1.17	2	IS	O	Y	0223	00755	Living Dependency	<Living dependency (eg Guardianship order)>	
NK1.18	2	IS	O	Y	0009	00145	Ambulatory Status	*Not recommended*	*X*
NK1.19	250*	CE	O	Y	0171	00129	Citizenship	*Not recommended*	*X*
NK1.20	250*	CE	O		0296	00118	Primary Language	<Language spoken at home>	
NK1.21	2	IS	O		0220	00742	Living Arrangement	*Not recommended*	*X*
NK1.22	250*	CE	O		0215	00743	Publicity Code	*Not recommended*	*X*
NK1.23	1	ID	O		0136	00744	Protection Indicator	*Not recommended*	*X*

[95] * In HL7 version 2.3.1 the lengths specified for NK1.2,-.7, .12-.14, .19, .20, .22, .25-.33 and .35 are, respectively, 48, 60, 106, 40, 60, 20, 90, 80, 80, 60, 80, 80, 48, 80, 80, 80, 48, 40, 106, 32 and 80 bytes

[96] suitable for patients referred from army, prison or school

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
NK1.24	2	IS	O		0231	00745	Student Indicator	*Not recommended*	*X*
NK1.25	250*	CE	O		0006	00120	Religion	*Not recommended*	*X*
NK1.26	250*	XPN	O	Y		00109	Mother's Maiden Name	*Not recommended*	*X*
NK1.27	250*	CE	O		0212	00739	Nationality	*Not recommended*	*X*
NK1.28	250*	CE	O	Y	0189	00125	Ethnic Group	*Not recommended*	*X*
NK1.29	250*	CE	O	Y	0222	00747	Contact Reason	<Contact reason>	
NK1.30	250*	XPN	O	Y		00748	Contact Person's Name	<Contact person's name>	
NK1.31	250*	XTN	O	Y		00749	Contact Person's Telephone Number	<Contact person's telephone number>	
NK1.32	250*	XAD	O	Y		00750	Contact Person's Address	<Contact person's address>	
NK1.33	250*	CX	O	Y		00751	Next of Kin/Associated Party's Identifiers	*Not recommended*	*X*
NK1.34	2	IS	O		0311	00752	Job Status	*Not recommended*	*X*
NK1.35	250*	CE	O	Y	0005	00113	Race	*Not recommended >*	*X*
NK1.36	2	IS	O		0295	00753	Handicap	<Handicap>	
NK1.37	16	ST	O			00754	Contact Person Social Security Number	*Not recommended*	*X*
[97]							***Diagnosis [Reason(s) for referral?]***	***Repeatable HL7 V2.4 Ref: Section 6.5.2, page 6-21***	***O***
DG1.1	4	SI	R			00375	Set ID – DG1	<n>	*R*
DG1.2	2	ID	(B) R		0053	00376	Diagnosis Coding Method	*Not recommended*	*X*
DG1.3	250[98]*	CE	O		0051	00377	Diagnosis Code – DG1	<Diagnosis code>^ <Diagnosis description> ^<?>^<?>^<?>^<?>	*M*
DG1.4	40	ST	B			00378	Diagnosis Description	*Not recommended*	*X*
DG1.5	26	TS	O			00379	Diagnosis Date/Time	<Diagnosis date/time>	
DG1.6	2	IS	R		0052	00380	Diagnosis Type	<Diagnosis type>	*R*
DG1.7	250*	CE	B		0118	00381	Major Diagnostic Category	*Not recommended*	*X*
DG1.8	250*	CE	B		0055	00382	Diagnostic Related Group	*Not recommended*	*X*

[97] At least one of DG1 or PRB (or AL1?) is mandatory for "Reason(s) for Referral"
[98] * In HL7 version 2.3.1 the lengths specified for DG1.3, .7-.9,.11 and .16 are, respectively, 60, 60, 60, 2, 60 and 60 bytes

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
DG1.9	1*	ID	B		0136	00383	DRG Approval Indicator	*Not recommended*	*X*
DG1.10	2	IS	B		0056	00384	DRG Grouper Review Code	*Not recommended*	*X*
DG1.11	250*	CE	B		0083	00385	Outlier Type	*Not recommended*	*X*
DG1.12	3	NM	B			00386	Outlier Days	*Not recommended*	*X*
DG1.13	12	CP	B			00387	Outlier Cost	*Not recommended*	*X*
DG1.14	4	ST	B			00388	Grouper Version And Type	*Not recommended*	*X*
DG1.15	2	ID	O		0359	00389	Diagnosis Priority	<Diagnosis priority>[99]	
DG1.16	250*	XCN	O	Y		00390	Diagnosing Clinician	<Diagnosing clinician>	
DG1.17	3	IS	O		0228	00766	Diagnosis Classification	*Not recommended*	*X*
DG1.18	1	ID	O		0136	00767	Confidential Indicator	Y[100]	*M*
DG1.19	26	TS	O			00768	Attestation Date/Time	*Not recommended*	*X*
AL1							***Allergies [Therapeutic precautions]***	***Repeatable HL7 V2.4 Ref: Section 3.4.6, page 3-111***	***M***
AL1.1	250[101]**	CE	R			00203	Set ID – AL1	<n>	*R*
AL1.2	250**	CE	O		0127	00204	Allergen Type Code	<Allergen category: DA|FA|AA|PA|…>[102]	*M*
AL1.3	250**	CE	R			00205	Allergen Code/Mnemonic/Description	<Specific Allergen identification>	*M*
AL1.4	250**	CE	O		0128	00206	Allergy Severity Code	<Allergen severity: SV|MO|MI|U>	*M*
AL1.5	15	ST	O	Y		00207	Allergy Reaction Code	<Textual description of reaction>	*M*
AL1.6	8	DT	B			00208	Identification Date	<Identification date>	
PR1							***Procedures [Not included in GPCG requirements]***	***Repeatable HL7 V2.4 Ref: Section 6.5.4, page 6-27***	***O***
PR1.1	4	SI	R			00391	Set ID – PR1	<n>	*R*

[99] might be used by applications that allow development of hierarchical problem list, e.g. renal failure might be shown to be secondary to diabetes

[100] Yes/No seems an inadequate indicator of confidentiality. All clinical messages should be confidential (hence the default is 'Y') but further discussion is needed on how to indicate from whom the data are confidential, and to indicate access controls

[101] ** In HL7 version 2.3.1 the lengths specified for AL1.1-.4 are, respectively, 4, 2, 60 and 2 bytes

[102] The existing allergen codes are inadequate for common clinical use

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
PR1.2	3	IS	(B) R		0089	00392	Procedure Coding Method	*Not recommended*	
PR1.3	250	CE	R		0088	00393	Procedure Code	<Procedure code>	*R*
PR1.4	40	ST	B			00394	Procedure Description	*Not recommended*	
PR1.5	26	TS	R			00395	Procedure Date/Time	<Procedure date/time>	*R*
PR1.6	2	IS	O		0230	00396	Procedure Functional Type	<Procedure functional type>	
PR1.7	4	NM	O			00397	Procedure Minutes	*Not recommended*	
PR1.8	250	XCN	B	Y	0010	00398	Anesthesiologist	<Anesthesiologist>[103]	
PR1.9	2	IS	O		0019	00399	Anesthesia Code	<Code (*to be defined*) for type of anesthesia>	
PR1.10	4	NM	O			00400	Anesthesia Minutes	*Not recommended*	
PR1.11	250	XCN	B	Y	0010	00401	Surgeon	<Surgeon>[104]	
PR1.12	250	XCN	B	Y	0010	00402	Procedure Practitioner	<Procedure practitioner>[105]	
PR1.13	250	CE	O		0059	00403	Consent Code	*Not recommended*	
PR1.14	2	ID	O		0418	00404	Procedure Priority	*Not recommended*	
PR1.15	250	CE	O		0051	00772	Associated Diagnosis Code	*Not recommended*	
PR1.16	250	CE	O	Y	0340	01316	Procedure Code Modifier	*Not recommended*	
~~PR1.17*~~	~~20~~	~~IS~~	~~O~~		~~0416~~	~~01501~~	~~Procedure DRG Type~~	~~*Not recommended*~~	
~~PR1.18*~~	~~250~~	~~CE~~	~~O~~	~~Y~~	~~0417~~	~~01502~~	~~Tissue Type Code~~	~~*Not recommended*~~	
OBR							***Observation request [Diabetic reviews, Examination findings, Laboratory results, Family history?, Social history?]***	***Repeatable HL7 V2.4 Ref: Section 4.5.3, page 4-43 and Section 7.4.1, page 7-21***	***M***
OBR.1	4	SI	O			00237	Set ID – OBR	<n>	
OBR.2	22	EI	C			00216	Placer Order Number	*Not recommended*	*X*

[103] Used in the absence of ROL segments in the NSW proposal for 2.3.1 Referrals
[104] Used in the absence of ROL segments in the NSW proposal for 2.3.1 Referrals
[105] Used in the absence of ROL segments in the NSW proposal for 2.3.1 Referrals
[106] * In HL7 version 2.3.1 fields PR1.17 and 18 do not exist

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
OBR.3	22	EI	C			00217	Filler Order Number	<Filler order number>	
OBR.4	250[107]**	CE	R			00238	Universal Service Identifier	<Test/Observation/Result name: Diabetes review| Examination findings| Lab results| Patient-entered data| …>[108]	*M*
OBR.5	2	ID	B			00239	Priority – OBR	*Not recommended*	*X*
OBR.6	26	TS	B			00240	Requested Date/Time	*Not recommended*	*X*
OBR.7	26	TS	C			00241	Observation Date/Time #	<Observation Date/Time>	
OBR.8	26	TS	O			00242	Observation End Date/Time #	*Not recommended*	*X*
OBR.9	20	CQ	O			00243	Collection Volume *	*Not recommended*	*X*
OBR.10	250**	XCN	O	Y		00244	Collector Identifier *	*Not recommended*	*X*
OBR.11	1	ID	O		0065	00245	Specimen Action Code *	*Not recommended*	*X*
OBR.12	250**	CE	O			00246	Danger Code	*Not recommended*	*X*
OBR.13	300	ST	O			00247	Relevant Clinical Information	<Relevant clinical information>	
OBR.14	26	TS	C			00248	Specimen Received Date/Time *	<Specimen received date/time>	
OBR.15	300	CM	O		0070/ 0163/ 0369[109]	00249	Specimen Source	<Specimen source>	
OBR.16	250**	XCN	O	Y		00226	Ordering Provider	<Ordering provider>	
OBR.17	250**	XTN	O	Y/2		00250	Order Callback Phone Number	*Not recommended*	*X*
OBR.18	60	ST	O			00251	Placer Field 1	*Not recommended*	*X*
OBR.19	60	ST	O			00252	Placer Field 2	*Not recommended*	*X*
OBR.20	60	ST	O			00253	Filler Field 1 +	*Not recommended*	*X*
OBR.21	60	ST	O			00254	Filler Field 2 +	*Not recommended*	*X*

[107] ** In HL7 version 2.3.1 the lengths specified for OBR.4, .10, .12, .16, .17, .28, .29, .31, .38-.40 and .43-.47 are, respectively, 200, 60, 60, 12, 40, 150, 150, 300, 60, 200, 60, 200, 60, 106, 48 and 106 bytes

[108] Codes will need to be created and agreed

[109] * In HL7 Version 2.3.1 only table 0070 is specified for OBR.15

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
OBR.22	26	TS	C			00255	Results Rpt/Status Chng – Date/Time +	*Not recommended*	*X*
OBR.23	40	CM	O			00256	Charge to Practice +	*Not recommended*	*X*
OBR.24	10	ID	O		0074	00257	Diagnostic Serv Sect ID	<Service/Department code>	
OBR.25	1	ID	C		0123	00258	Result Status +	<Report status>	
OBR.26	400	CM	O			00259	Parent Result +	*Not recommended*	*X*
OBR.27	200	TQ	O	Y		00221	Quantity/Timing	*Not recommended*	*X*
OBR.28	250**	XCN	O	Y/5		00260	Result Copies To	*Not recommended*	*X*
OBR.29	200**	CM	O			00222	Parent	*Not recommended*	*X*
OBR.30	20	ID	O		0124	00262	Transportation Mode	*Not recommended*	*X*
OBR.31	250**	CE	O	Y		00263	Reason for Study	*Not recommended*	*X*
OBR.32	200	CM	O			00264	Principal Result Interpreter +	*Not recommended*	*X*
OBR.33	200	CM	O	Y		00265	Assistant Result Interpreter +	*Not recommended*	*X*
OBR.34	200	CM	O	Y		00266	Technician +	*Not recommended*	*X*
OBR.35	200	CM	O	Y		00267	Transcriptionist +	*Not recommended*	*X*
OBR.36	26	TS	O			00268	Scheduled Date/Time +	*Not recommended*	*X*
OBR.37	4	NM	O			01028	Number of Sample Containers *	*Not recommended*	*X*
OBR.38	250**	CE	O	Y		01029	Transport Logistics of Collected Sample *	*Not recommended*	*X*
OBR.39	250**	CE	O	Y		01030	Collector's Comment *	*Not recommended*	*X*
OBR.40	250**	CE	O			01031	Transport Arrangement Responsibility	*Not recommended*	*X*
OBR.41	30	ID	O		0224	01032	Transport Arranged	*Not recommended*	*X*
OBR.42	1	ID	O		0225	01033	Escort Mandatory	*Not recommended*	*X*
OBR.43	250**	CE	O	Y		01034	Planned Patient Transport Comment	*Not recommended*	*X*
OBR.44-47 in HL7 V2.4									
OBR.44[110]*	*250***	*CE*	*O*		*0088*	*00393*	*Procedure Code*	*NA*	-
*OBR.45**	*250***	*CE*	*O*	*Y*	*0340*	*01316*	*Procedure Code Modifier*	*NA*	-
*OBR.46**	*250***	*CE*	*O*	*Y*	*0411*	*01474*	*Placer Supplemental Service Information*	*NA*	-
*OBR.47**	*250***	*CE*	*O*	*Y*	*0411*	*01475*	*Filler Supplemental Service Information*	*NA*	-

[110] * Note that there is a conflict between the HL7 V2.3.1 and HL7 V2.4 specifications of OBR.44-.47

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
OBR.44-47 in HL7 V2.3.1									
*OBR.44**	*60*	*XON*	*O*	*Y*		*01311*	*Ordering Facility Name*	*Not recommended*	*X*
*OBR.45**	*106*	*XAD*	*O*	*Y*		*01312*	*Ordering Facility Address*	*Not recommended*	*X*
*OBR.46**	*48*	*XTN*	*O*	*Y*		*01313*	*Ordering Facility Phone Number*	*Not recommended*	*X*
*OBR.47**	*106*	*XAD*	*O*	*Y*		*01314*	*Ordering Provider Address*	*Not recommended*	*X*
OBX							***Observation/Result [Diabetic reviews, Examination findings, Laboratory results, Family history?, Social history?***	***Repeatable HL7 V2.4 Ref: Section 7.4.2, page 7-38***	***O***
OBX.1	4[111]**	SI	O			00569	Set ID – OBX	<n>	
OBX.2	2**	ID	C		0125	00570	Value Type	<Data type: CE|CF|ED|FT|NM|RP|SN|ST|TX>	
OBX.3	250**	CE	R			00571	Observation Identifier	<Test/Observation/Result code>	*M*
OBX.4	20	ST	C			00572	Observation Sub-ID	<Observation sub-id>	
OBX.5	65536	*	C	Y		00573	Observation Value	<Test/Observation/Result value>	
OBX.6	250**	CE	O			00574	Units	<Units for OBX.5>	
OBX.7	60	ST	O			00575	References Range	<References range for OBX.5>	
OBX.8	5	IS	O	Y/5	0078	00576	Abnormal Flags	<Observation abnormal flag>	
OBX.9	5	NM	O			00577	Probability	*Not recommended*	*X*
OBX.10	2	ID	O	Y	0080	00578	Nature of Abnormal Test	<Nature of abnormal test(result)>	
OBX.11	1	ID	R		0085	00579	Observation Result Status	<Observation status>	*M*
OBX.12	26	TS	O			00580	Date Last Observation Normal Value	<Date last observation normal>	
OBX.13	20	ST	O			00581	User Defined Access Checks	*Not recommended*	*X*
OBX.14	26	TS	O			00582	Date/Time of the Observation	<Date/time of the observation(s)>	
OBX.15	250**	CE	O			00583	Producer's ID	<Producer's ID>	
OBX.16	250**	XCN	O	Y		00584	Responsible Observer	*An opportunity to indicate patient-entered data*	

[111] ** In HL7 Version 2.3.1 the lengths specified for OBX.1-.3, .6 and .15-.17 are, respectively, 10, 3, 590, 60, 60, 80 and 60 bytes

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
OBX.17	250**	CE	O	Y		00936	Observation Method	<Observation method>	
~~OBX.18[112]*~~	~~22~~	~~EI~~	~~O~~	~~Y~~		~~01479~~	~~Equipment Instance Identifier~~	~~*Not recommended*~~	~~*X*~~
~~OBX.19*~~	~~26~~	~~TS~~	~~O~~			~~01480~~	~~Date/Time of the Analysis~~	~~*Not recommended*~~	~~*X*~~
PV1							***Patient visit***	***HL7 V2.4 Ref: Section 3.4.3, page 3-77***	***O***
PV1.1	4	SI	O			00131	Set ID – PV1	*Not recommended*	*X*
PV1.2	1	IS	R		0004	00132	Patient Class	I|O|N|U	*M*
PV1.3	80	PL	O			00133	Assigned Patient Location	*Not recommended*	*X*
PV1.4	2	IS	O		0007	00134	Admission Type	E|U	
PV1.5	250[113]**	CX	O			00135	Preadmit Number	*Not recommended*	*X*
PV1.6	80	PL	O			00136	Prior Patient Location	*Not recommended*	*X*
PV1.7	250**	XCN	O	Y	0010	00137	Attending Doctor	<Attending doctor>	
PV1.8	250**	XCN	O	Y	0010	00138	Referring Doctor	<Referring doctor>	
PV1.9	250**	XCN	B	Y	0010	00139	Consulting Doctor	<Consulting doctor>	
PV1.10	3	IS	O		0069	00140	Hospital Service	<Hospital service>	*X*
PV1.11	80	PL	O			00141	Temporary Location	*Not recommended*	*X*
PV1.12	2	IS	O		0087	00142	Preadmit Test Indicator	*Not recommended*	*X*
PV1.13	2	IS	O		0092	00143	Re-admission Indicator	*Not recommended*	*X*
PV1.14	6	IS	O		0023	00144	Admit Source	*Not recommended*	*X*
PV1.15	2	IS	O	Y	0009	00145	Ambulatory Status	<Ambulatory Status>	
PV1.16	2	IS	O		0099	00146	VIP Indicator	*Not recommended*	*X*
PV1.17	250**	XCN	O	Y	0010	00147	Admitting Doctor	*Not recommended*	*X*
PV1.18	2	IS	O		0018	00148	Patient Type	*Not recommended*	*X*
PV1.19	250**	CX	O			00149	Visit Number	*Not recommended*	*X*
PV1.20	50	FC	O	Y	0064	00150	Financial Class	*Not recommended*	*X*
PV1.21	2	IS	O		0032	00151	Charge Price Indicator	*Not recommended*	*X*

[112] * In HL7 Version 2.3.1 OBX.18 and .19 do not exist
[113] ** In HL7 Version 2.3.1 the lengths specified for PV1.5, .7-.9, .17, .19 and .38 are, respectively, 20, 60, 60, 60, 60, 20 and 80

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
PV1.22	2	IS	O		0045	00152	Courtesy Code	*Not recommended*	*X*
PV1.23	2	IS	O		0046	00153	Credit Rating	*Not recommended*	*X*
PV1.24	2	IS	O	Y	0044	00154	Contract Code	*Not recommended*	*X*
PV1.25	8	DT	O	Y		00155	Contract Effective Date	*Not recommended*	*X*
PV1.26	12	NM	O	Y		00156	Contract Amount	*Not recommended*	*X*
PV1.27	3	NM	O	Y		00157	Contract Period	*Not recommended*	*X*
PV1.28	2	IS	O		0073	00158	Interest Code	*Not recommended*	*X*
PV1.29	1	IS	O		0110	00159	Transfer to Bad Debt Code	*Not recommended*	*X*
PV1.30	8	DT	O			00160	Transfer to Bad Debt Date	*Not recommended*	*X*
PV1.31	10	IS	O		0021	00161	Bad Debt Agency Code	*Not recommended*	*X*
PV1.32	12	NM	O			00162	Bad Debt Transfer Amount	*Not recommended*	*X*
PV1.33	12	NM	O			00163	Bad Debt Recovery Amount	*Not recommended*	*X*
PV1.34	1	IS	O		0111	00164	Delete Account Indicator	*Not recommended*	*X*
PV1.35	8	DT	O			00165	Delete Account Date	*Not recommended*	*X*
PV1.36	3	IS	O		0112	00166	Discharge Disposition	<Discharge disposition>	
PV1.37	25	CM	O		0113	00167	Discharged to Location	<Discharge to location>	
PV1.38	250**	CE	O		0114	00168	Diet Type	<Diet type>	
PV1.39	2	IS	O		0115	00169	Servicing Facility	<Servicing facility>	
PV1.40	1	IS	B		0116	00170	Bed Status	*Not recommended*	*X*
PV1.41	2	IS	O		0117	00171	Account Status	*Not recommended*	*X*
PV1.42	80	PL	O			00172	Pending Location	*Not recommended*	*X*
PV1.43	80	PL	O			00173	Prior Temporary Location	*Not recommended*	*X*
PV1.44	26	TS	O			00174	Admit Date/Time	<Admit date/time>	
PV1.45	26	TS	O	Y		00175	Discharge Date/Time	<Discharge date/time>	
PV1.46	12	NM	O			00176	Current Patient Balance	*Not recommended*	*X*
PV1.47	12	NM	O			00177	Total Charges	*Not recommended*	*X*
PV1.48	12	NM	O			00178	Total Adjustments	*Not recommended*	*X*
PV1.49	12	NM	O			00179	Total Payments	*Not recommended*	*X*

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
~~PV1.50[114]*~~	~~250~~	~~CX~~	~~O~~		~~0203~~	~~00180~~	~~Alternate Visit ID~~		
~~PV1.51*~~	~~1~~	~~IS~~	~~O~~		~~0326~~	~~01226~~	~~Visit Indicator~~		
~~PV1.52*~~	~~250~~	~~XCN~~	~~B~~	~~Y~~	~~0010~~	~~01274~~	~~Other Healthcare Provider~~		
PV2							***Patient visit additional information***	***HL7 V2.4 Ref: Section 3.4.4, page 3-92***	***O***
PV2.1	80	PL	C			00181	Prior Pending Location	*Not recommended*	*X*
PV2.2	250[115]*	CE	O		0129	00182	Accommodation Code	*Not recommended*	*X*
PV2.3	250*	CE	O			00183	Admit Reason	<Reason for referral>	
PV2.4	250*	CE	O			00184	Transfer Reason	*Not recommended*	*X*
PV2.5	25	ST	O	Y		00185	Patient Valuables	*Not recommended*	*X*
PV2.6	25	ST	O			00186	Patient Valuables Location	*Not recommended*	*X*
PV2.7	2	IS	O	Y	0130	00187	Visit User Code	*Not recommended*	*X*
PV2.8	26	TS	O			00188	Expected Admit Date/Time	<Expected admit date/time>	
PV2.9	26	TS	O			00189	Expected Discharge Date/Time	*Not recommended*	*X*
PV2.10	3	NM	O			00711	Estimated Length of Inpatient Stay	<Expected length of inpatient stay>	
PV2.11	3	NM	O			00712	Actual Length of Inpatient Stay	<Actual length of inpatient stay>	
PV2.12	50	ST	O			00713	Visit Description	<Visit Description>	
PV2.13	250*	XCN	O	Y		00714	Referral Source Code	*Not recommended*	*X*
PV2.14	8	DT	O			00715	Previous Service Date	*Not recommended*	*X*
PV2.15	1	ID	O		0136	00716	Employment Illness Related Indicator	<Employment illness related indicator (*for Work Cover cases*)>	
PV2.16	1	IS	O		0213	00717	Purge Status Code	*Not recommended*	*X*
PV2.17	8	DT	O			00718	Purge Status Date	*Not recommended*	*X*
PV2.18	2	IS	O		0214	00719	Special Program Code	<Special program code>	
PV2.19	1	ID	O		0136	00720	Retention Indicator	*Not recommended*	*X*
PV2.20	1	NM	O			00721	Expected Number of Insurance Plans	*Not recommended*	*X*
PV2.21	1	IS	O		0215	00722	Visit Publicity Code	*Not recommended*	*X*

[114] * In HL7 Version 2.3.1 PV1.50-.52 do not exist
[115] ** In HL7 Version 2.3.1 the lengths specified for PV2.2-.4, .13, .23 and .30 are, respectively, 60, 60, 60, 90, 90 and 80 bytes

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
PV2.22	1	ID	O		0136	00723	Visit Protection Indicator	*Not recommended*[116]	*X*
PV2.23	250*	XON	O	Y		00724	Clinic Organisation Name	<Clinic organisation name>	
PV2.24	2	IS	O		0216	00725	Patient Status Code	<Patient status code>	
PV2.25	1	IS	O		0217	00726	Visit Priority Code	<Visit priority code>	
PV2.26	8	DT	O			00727	Previous Treatment Date	<Previous treatment date>	
PV2.27	2	IS	O		0112	00728	Expected Discharge Disposition	<Expected discharge disposition>	
PV2.28	8	DT	O			00729	Signature on File Date	*Not recommended*	*X*
PV2.29	8	DT	O			00730	First Similar Illness Date	*Not recommended*	*X*
PV2.30	250*	CE	O		0218	00731	Patient Charge Adjustment Code	*Not recommended*	*X*
PV2.31	2	IS	O		0219	00732	Recurring Service Code	*Not recommended*	*X*
PV2.32	1	ID	O		0136	00733	Billing Media Code	*Not recommended*	*X*
PV2.33	26	TS	O			00734	Expected Surgery Date and Time	<Expected surgery date/time>	
PV2.34	1	ID	O		0136	00735	Military Partnership Code	*Not recommended*	*X*
PV2.35	1	ID	O		0136	00736	Military Non-Availability Code	*Not recommended*	*X*
PV2.36	1	ID	O		0136	00737	Newborn Baby Indicator	*Not recommended*	*X*
PV2.37	1	ID	O		0136	00738	Baby Detained Indicator	*Not recommended*	*X*
~~PV2.38[117]*~~	~~250~~	~~CE~~	~~O~~		~~0430~~	~~01543~~	~~Mode of Arrival Code~~		~~X~~
~~PV2.39*~~	~~250~~	~~CE~~	~~O~~	~~Y~~	~~0431~~	~~01544~~	~~Recreational Drug Use Code~~		~~X~~
~~PV2.40*~~	~~250~~	~~CE~~	~~O~~		~~0432~~	~~01545~~	~~Admission Level of Care Code~~		~~X~~
~~PV2.41*~~	~~250~~	~~CE~~	~~O~~	~~Y~~	~~0433~~	~~01546~~	~~Precaution Code~~		~~X~~
~~PV2.42*~~	~~250~~	~~CE~~	~~O~~		~~0434~~	~~01547~~	~~Patient Condition Code~~		~~X~~
~~PV2.43*~~	~~2~~	~~IS~~	~~O~~		~~0315~~	~~00759~~	~~Living Will Code~~		~~X~~
~~PV2.44*~~	~~2~~	~~IS~~	~~O~~		~~0316~~	~~00760~~	~~Organ Donor Code~~		~~X~~
~~PV2.45*~~	~~250~~	~~CE~~	~~O~~	~~Y~~	~~0435~~	~~01548~~	~~Advance Directive Code~~		~~X~~
~~PV2.46*~~	~~8~~	~~DT~~	~~O~~			~~01549~~	~~Patient Status Effective Date~~		~~X~~
~~PV2.47*~~	~~26~~	~~TS~~	~~C~~			~~01550~~	~~Expected LOA Return Date/Time~~		~~X~~

[116] This could be adapted for access controls (Confidentiality) but may be outside the intended HL7 use and would require debate before adoption.
[117] * In HL7 Version 2.3.1 PV2.38-.47 do not exist

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
NTE							***Notes and comments [Other information relevant to the referral]***	***Repeatable HL7 V2.4 Ref: Section 2.16.10, page 2-124***	***M[118]***
NTE.1	4	SI	O			00096	Set ID – NTE	<n>	
NTE.2	8	ID	O		0105	00097	Source of Comment	<Source of comment>	
NTE.3	65536	FT	O	Y		00098	Comment	<Clinical Reason for referral>	
NTE.4	250[119]	CE	O		0364[120]	01318	Comment Type	<Comment type>[121]	
ORC							***Common order segment [Current medication list]***	***Repeatable HL7 V2.4 Ref: Section 4.5.1, page 4-25***	***M[122]***
ORC.1	2	ID	R	N	0119	00215	Order Control	<NULL>	*R*
ORC.2	22	EI	C			00216	Placer Order Number	*Not recommended*	*X*
ORC.3	22	EI	C			00217	Filler Order Number	*Not recommended*	*X*
ORC.4	22	EI	O			00218	Placer Group Number[123]	*Not recommended*	*X*
ORC.5	2	ID	O	N	0038	00219	Order Status	*Not recommended*	*X*
ORC.6	1	ID	O		0121	00220	Response Flag	*Not recommended*	*X*
ORC.7	200	TQ	O	Y		00221	Quantity/Timing	<Quantity/timing>	
ORC.8	200	CM	O			00222	Parent	*Not recommended*	*X*
ORC.9	26	TS	O			00223	Date/Time of Transaction	*Not recommended*	*X*
ORC.10	250[124]*	XCN	O	Y		00224	Entered By	*Not recommended*	*X*
ORC.11	250*	XCN	O	Y		00225	Verified By	*Not recommended*	*X*
ORC.12	250*	XCN	O	Y		00226	Ordering Provider	<Prescriber's prescribing ID>[125]	*X*

[118] Effectively mandatory if used to send the reason for referral
[119] In HL7 Version 2.3.1 the length specified for NTE.4 is 60 bytes
[120] In HL7 Version 2.3.1 no table is associated with NTE.4
[121] Table 0364 in HL7 Standard lists some comment types: this list should be expanded
[122] This segment is recommended for transmitting clinical information in the NSW Version 2.3.1 proposal
[123] Has been recommended in the NSW 2.3.1 proposal for transmitting prescriber number; but see also ORC.12
[124] * In HL7 Version 2.3.1 the lengths specified for ORC.10-.12, .14 and .16-.20 are, respectively, 120, 120, 120, 40, 200, 60, 60, 120 and 40 bytes

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
ORC.13	80	PL	O			00227	Enterer's Location	*Not recommended*	*X*
ORC.14	250*	XTN	O	Y/2		00228	Call Back Phone Number	*Not recommended*	*X*
ORC.15	26	TS	O			00229	Order Effective Date/Time	<Order effective date/time>	*X*
ORC.16	250*	CE	O			00230	Order Control Code Reason	*Not recommended*	*X*
ORC.17	250*	CE	O			00231	Entering Organization	*Not recommended*	*X*
ORC.18	250*	CE	O			00232	Entering Device	*Not recommended*	*X*
ORC.19	250*	XCN	O	Y		00233	Action By	*Not recommended*	*X*
ORC.20	250*	CE	O		0339	01310	Advanced Beneficiary Notice Code	*Not recommended*	*X*
~~ORC.21[126]*~~	~~250~~	~~XON~~	~~O~~	~~Y~~		~~01311~~	~~Ordering Facility Name~~	~~?~~	
~~ORC.22**~~	~~250~~	~~XAD~~	~~O~~	~~Y~~		~~01312~~	~~Ordering Facility Address~~		
~~ORC.23**~~	~~250~~	~~XTN~~	~~O~~	~~Y~~		~~01313~~	~~Ordering Facility Phone Number~~		
~~ORC.24**~~	~~250~~	~~XAD~~	~~O~~	~~Y~~		~~01314~~	~~Ordering Provider Address~~		
~~ORC.25**~~	~~250~~	~~CWE~~	~~O~~	~~N~~		~~01473~~	~~Order Status Modifier~~		
RXO							***Prescribed drug/item [Current medication list, Immunisations]***	***Repeatable HL7 V2.4 Ref: Section 4.14.1, page 4-88***	***M***
RXO.1	250[127]**+	CE	C[128]*+			00292	Requested Give Code	<Requested give code>	*M*
RXO.2	20	NM	C*+			00293	Requested Give Amount – Minimum	< Requested give amount – minimum>	*M*
RXO.3	20	NM	O			00294	Requested Give Amount – Maximum	*Not recommended*	*X*
RXO.4	250**+	CE	C*+			00295	Requested Give Units	<Requested give units>	*M*
RXO.5	250**+	CE	C*+			00296	Requested Dosage Form	<Requested dosage form>	
RXO.6	250**+	CE	O	Y		00297	Provider's Pharmacy/Treatment Instructions	<Provider's pharmacy/treatment instructions>[129]	

[125] seems appropriate for prescriber number - but this is at variance with the NSW 2.3.1 proposal
[126] ** In HL7 Version 2.3.1 ORC.21-.25 do not exist
[127] **+ In HL7 Version 2.3.1 the lengths specified for RXO.1, .4-.7, .10, .12, .14, .15, .19, .20 and .22 are, respectively, 100, 60, 60, 200, 200, 100, 60, 60, 60, 60, 200 and 60 bytes
[128] *+ In HL7 Version 2.3.1RXO.1, .2 and .4 are required fields. RXO.5 is optional

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
RXO.7	250**+	CE	O	Y		00298	Provider's Administration Instructions	<Provider's administration instructions>	
RXO.8	200	CM	O			00299	Deliver-To Location	*Not recommended*	*X*
RXO.9	1	ID	O		0161	00300	Allow Substitutions	*Not recommended*	*X*
RXO.10	250**+	CE	O			00301	Requested Dispense Code	*Not recommended*	*X*
RXO.11	20	NM	O			00302	Requested Dispense Amount	*Not recommended*	*X*
RXO.12	250**+	CE	O			00303	Requested Dispense Units	*Not recommended*	*X*
RXO.13	3	NM	O			00304	Number Of Refills	*Not recommended*	*X*
RXO.14	250**+	XCN	C	Y		00305	Ordering Provider's DEA Number	*Not recommended*	*X*
RXO.15	250**+	XCN	C	Y		00306	Pharmacist/Treatment Supplier's Verifier ID	*Not recommended*	*X*
RXO.16	1	ID	O		0136	00307	Needs Human Review	<Needs human review>	
RXO.17	20	ST	C			00308	Requested Give Per (Time Unit)	*Not recommended*	*X*
RXO.18	20	NM	O			01121	Requested Give Strength	<Requested give strength>	
RXO.19	250**+	CE	O			01122	Requested Give Strength Units	<Requested give strength units>	
RXO.20	250**+	CE	O	Y		01123	Indication	<Indication>[130]	
RXO.21	6	ST	O			01218	Requested Give Rate Amount	*Not recommended*	*X*
RXO.22	250**+	CE	O			01219	Requested Give Rate Units	*Not recommended*	*X*
RXO.23	10	CQ	O			00329	Total Daily Dose	*Not recommended*	*X*
~~RXO.24~~[131]	~~250~~	~~CE~~	~~O~~	~~Y~~		~~01476~~	~~Supplementary Code~~		
RXR							***Route of a prescribed drug [Current medication list, Immunisations]***	***Repeatable HL7 V2.4 Ref: Section 4.14.2, page 4-95***	***M***
RXR.1	250[132]**	CE	R		0162	00309	Route	<Route>[133]	*R*
RXR.2	250**	CE	O		0163	00310	Administration Site	<Administration site>	

[129] RXO.6 is a text alternative to RXO.2, .3, .4. Should this be standardised or left optional?
[130] This field appears to have been omitted from the NSW 2.3.1 proposal, yet also appears important
[131] In HL7 Version 2.3.1 RXO.24 does not exist
[132] ** In HL7 Version 2.3.1 the lengths specified for RXR.1-.5 are all 60 bytes
[133] needed for inpatient referrals

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
RXR.3	250**	CE	O		0164	00311	Administration Device	<Administration device>	
RXR.4	250**	CE	O		0165	00312	Administration Method	<Administration method>	
RXR.5	250**	CE	O			01315	Routing Instruction	<Routing instruction>	
RXC							***Component of a prescribed drug compound [Not included in GPCG requirements]***	***Repeatable HL7 V2.4 Ref: Section 4.14.3, page 4-97***	***O***
RXC.1	1	ID	R		0166	00313	RX Component Type	<RX Component type>[134]	*R*
RXC.2	250[135]***	CE	R			00314	Component Code	<Component code>	*R*
RXC.3	20	NM	R			00315	Component Amount	<Component amount>	*R*
RXC.4	250***	CE	R			00316	Component Units	<Component units>	*R*
RXC.5	20	NM	O			01124	Component Strength	<Component strength>	
RXC.6	250***	CE	O			01125	Component Strength Units	<Component strength units>	
~~RXC.7[136]~~	~~250~~	~~CE~~	~~O~~	~~Y~~		~~01476~~	~~Supplementary Code~~		
PRB							***Problem details [Reason(s) for referral?]***	***Repeatable HL7 V2.4 Ref: Section 12.4.2, page 12-20***	***O***
PRB.1	2	ID	R		0287	00816	Action Code	<Action code>	*M*
PRB.2	26	TS	R			00817	Action Date/Time	<Action date/time>	*M*
PRB.3	250[137]**+	CE	R			00838	Problem ID	<Problem ID>	*M*
PRB.4	60	EI	R			00839	Problem Instance ID	<Problem instance ID>	*M*
PRB.5	60	EI	O			00820	Episode of Care ID	*Not recommended*	*X*
PRB.6	60	NM	O			00841	Problem List Priority	<Problem list priority>	
PRB.7	26	TS	O			00842	Problem Established Date/Time	<Problem established date/time>	

[134] inpatient setting
[135] *** In HL7 Version 2.3.1 the lengths specified for RXC.2, .4 and .6 are, respectively, 100, 60 and 60 bytes
[136] In HL7 Version 2.3.1 RXC.7 does not exist
[137] **+ In HL7 Version 2.3.1 the lengths specified for PRB.3, .10-.14, .18, .19 and .21-25 are, respectively, 80, 80, 80, 80, 80, 80, 80, 60, 80, 80, 80, 200 and 80 bytes

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
PRB.8	26	TS	O			00843	Anticipated Problem Resolution Date/Time	*Not recommended*	*X*
PRB.9	26	TS	O			00844	Actual Problem Resolution Date/Time	<Actual problem resolution date/time>	
PRB.10	250**+	CE	O			00845	Problem Classification	*Not recommended*	*X*
PRB.11	250**+	CE	O	Y		00846	Problem Management Discipline	<Problem management discipline>	
PRB.12	250**+	CE	O			00847	Problem Persistence	<Problem persistence>	
PRB.13	250**+	CE	O			00848	Problem Confirmation Status	<Problem confirmation status>	
PRB.14	250**+	CE	O			00849	Problem Life Cycle Status	<Problem life cycle status>	
PRB.15	26	TS	O			00850	Problem Life Cycle Status Date/Time	<Problem life cycle status date/time[138]>	
PRB.16	26	TS	O			00851	Problem Date of Onset	<Problem data of onset>	
PRB.17	80	ST	O			00852	Problem Onset Text	<Problem onset text>	
PRB.18	250**+	CE	O			00853	Problem Ranking	<Problem ranking>	
PRB.19	250**+	CE	O			00854	Certainty of Problem	<Certainty of problem: HI|LO|ME>	
PRB.20	5	NM	O			00855	Probability of Problem (0-1)	*Not recommended*	*X*
PRB.21	250**+	CE	O			00856	Individual Awareness of Problem	<Individual awareness of problem>	
PRB.22	250**+	CE	O			00857	Problem Prognosis	<Problem prognosis>	
PRB.23	250**+	CE	O			00858	Individual Awareness of Prognosis	<Individual awareness of prognosis>	
PRB.24	200**+	ST	O			00859	Family/Significant Other Awareness of Problem/Prognosis	<Family/significant other awareness of problem/prognosis>	*X*
PRB.25	250**+	CE	O			00823	Security/Sensitivity	*Not recommended*	
GOL							***Goals[139]*** ***[Not included in GPCG requirements]***	***Repeatable*** ***HL7 V2.4 Ref: Section 12.4.1, page 12-17***	***O***
GOL.1	2	ID	R		0287	00816	Action Code	<Action code>	*M*
GOL.2	26	TS	R			00817	Action Date/Time	<Action date/time>	*M*
GOL.3	250[140]*	CE	R			00818	Goal ID	<Goal ID>	*M*
GOL.4	60	EI	R			00819	Goal Instance ID	<Goal instance ID>	*M*

[138] for inpatient and acute referrals

[139] More applicable in coordinated care and some AHP applications; therefore included in this referral spec, although outside of scope

[140] * In HL7 Version 2.3.1 the lengths specified for GOL.3, .9-.11, .16, .18, .20 and .21 are, respectively, 80, 80, 80, 80, 80, 80, 80 and 80

Item	LEN	DT	OPT	RP/#	TBL#	ITEM #	Item Name	Comments	HI7 Required/ GPCG Mandatory
GOL.5	60	EI	O			00820	Episode of Care ID	<Episode of care ID>	
GOL.6	60	NM	O			00821	Goal List Priority	<Goal list priority>	
GOL.7	26	TS	O			00822	Goal Established Date/Time	<Goal established date/time>	
GOL.8	26	TS	O			00824	Expected Goal Achieve Date/Time	<Expected goal achieve date/time>	
GOL.9	250*	CE	O			00825	Goal Classification	<Goal classification>	
GOL.10	250*	CE	O			00826	Goal Management Discipline	<Goal management discipline>	
GOL.11	250*	CE	O			00827	Current Goal Review Status	<Current goal review status>	
GOL.12	26	TS	O			00828	Current Goal Review Date/Time	<Current goal review date/time>	
GOL.13	26	TS	O			00829	Next Goal Review Date/Time	<Next goal review date/time>	
GOL.14	26	TS	O			00830	Previous Goal Review Date/Time	<Previous goal review date/time>	
GOL.15	200	TQ	O			00831	Goal Review Interval	<Goal review interval>	
GOL.16	250*	CE	O			00832	Goal Evaluation	<Goal evaluation>	
GOL.17	300	ST	O	Y		00833	Goal Evaluation Comment	<Goal evaluation comment>	
GOL.18	250*	CE	O			00834	Goal Life Cycle Status	<Goal life cycle status>	
GOL.19	26	TS	O			00835	Goal Life Cycle Status Date/Time	<Goal life cycle status date/time>	
GOL.20	250*	CE	O	Y		00836	Goal Target Type	<Goal target type>	
GOL.21	250*	XPN	O	Y		00837	Goal Target Name	<Goal target name>	
~~*PTH*~~							~~*Pathways*~~ ~~*[Not included in GPCG requirements]*~~	~~*Repeatable*~~ ~~*HL7 V2.4 Ref: Section 12.4.4, page 12-27*~~	~~*X*~~
~~PTH.1~~	~~2~~	~~ID~~	~~R~~		~~0287~~	~~00816~~	~~Action Code~~		~~*R*~~
~~PTH.2~~	~~250[141]*~~	~~CE~~	~~R~~			~~01207~~	~~Pathway ID~~		~~*R*~~
~~PTH.3~~	~~60~~	~~EI~~	~~R~~			~~01208~~	~~Pathway Instance ID~~		~~*R*~~
~~PTH.4~~	~~26~~	~~TS~~	~~R~~			~~01209~~	~~Pathway Established Date/Time~~		~~*R*~~
~~PTH.5~~	~~250*~~	~~CE~~	~~O~~			~~01210~~	~~Pathway Life Cycle Status~~	~~*Not recommended*~~	
~~PTH.6~~	~~26~~	~~TS~~	~~C~~			~~01211~~	~~Change Pathway Life Cycle Status Date/Time~~	~~*Not recommended*~~	

[141] * In HL7 Version 2.3.1 the lengths specified for PTH.2 and .5 are respectively, 80 and 80 bytes

APPENDIX A - Relevant HL7 V2.4 message definitions

REF/RRI - Patient referral message

(Reproduced fromHL7 Standard Version 2.4, Chapter 11)

REF^I12-I15^REF_I12	Patient Referral	Chapter
MSH	Message Header	2
[RF1]	Referral Information	11
[		
AUT	Authorization Information	11
[CTD]	Contact Data	11
]		
{		
PRD	Provider Data	11
[{CTD}]	Contact Data	11
}		
PID	Patient Identification	3
[{NK1}]	Next of Kin/Associated Parties	6
[{GT1}]	Guarantor	6
[		
{		
IN1	Insurance	6
[IN2]	Insurance Additional Info	6
[IN3]	Insurance Add'l Info -Cert	6
}		
]		
[ACC]	Accident Information	6
[{DG1}]	Diagnosis	6
[{DRG}]	Diagnosis Related Group	6
[{AL1}]	Allergy Information	3
[		
{		
PR1	Procedure	6
[		
AUT	Authorization Information	11
[CTD]	Contact Data	11
	]	
}		
]		
[		
{		
OBR	Observation Request	4
[{NTE}]	Notes and Comments	2
[		
{		
OBX	Observation/Result	7
[{NTE}]	Notes and Comments	2
}		
]		
}		
]		
[		
PV1	Patient Visit	3
[PV2]	Patient Visit Additional Info	3
]		
[		
PV1	Patient Visit	3
[PV2]	Patient Visit Additional Info	3
]		
[{NTE}]	Notes and Comments	2

RRI^I12-I15^RRI_I12	Return Referral Information	Chapter
MSH	Message Header	2
[MSA]	Message Acknowledgment	3
[RF1]	Referral Information	11
[		
AUT	Authorization Information	11
[CTD]	Contact Data	11
]		
{ PRD	Provider Data	11
[{CTD}]	Contact Data	11
}		
PID	Patient Identification	3
[ACC]	Accident Information	6
[{DG1}]	Diagnosis	6
[{DRG}]	Diagnosis Related Group	6
[{AL1}]	Allergy Information	3
[		
{		
PR1	Procedure	6
[		
AUT	Authorization Information	11
[CTD]	Contact Data	11
	]	
}		
]		
[		
{		
OBR	Observation Request	4
[{NTE}]	Notes and Comments	2
[		
{		
OBX	Observation/Result	7
[{NTE}]	Notes and Comments	2
}		
]		
}		
]		
[		
PV1	Patient Visit	3
[PV2]	Patient Visit Additional Info	3
]		
[{NTE}]	Notes and Comments	2

Note:	The abstract message definitions for both the REF and RRI include the patient visit segments (PV1 and PV2). The PV1 and PV2 segments appear in the REF as an optional grouping to specify the visit or encounter that **generated** the referral. The PV1 and PV2 **should not** be used to provide suggested information for a future encounter or visit generated by the referral.

The PV1 and PV2 are also included in the RRI message definition. It should be noted that these segments do not merely mirror the segments in the originating REF message. Rather, they may contain information regarding the visit or encounter that **resulted** from the referral.

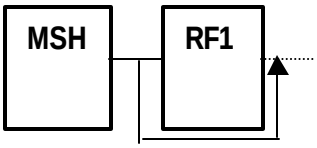
ACK – General Acknowledgement

(Reproduced from HL7 Standard Version 2.4, Chapter 10)

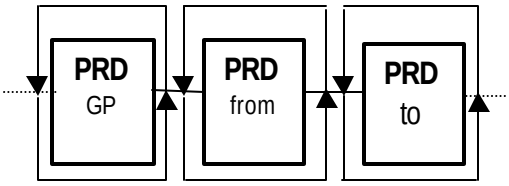
ACK	General Acknowledgment	Chapter
MSH	Message Header	2
MSA	Message Acknowledgment	2
[ERR]	Error Information	2

APPENDIX B - NSW Health/Standards Australia Referral Message Proposal

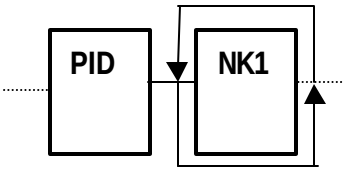
Discharge/Referral Message (REF) Structure



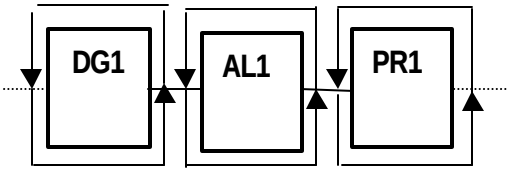
MSH: Message Control and Routing Information
RF1: Referral Information



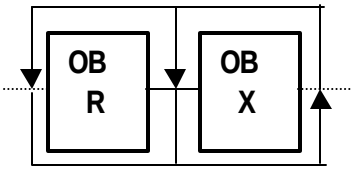
PRD: Practitioner/Provider Information



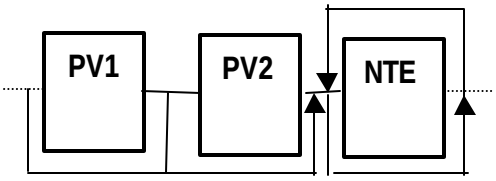
PID: Patient Demographic Information
NK1: Next-of-Kin Information



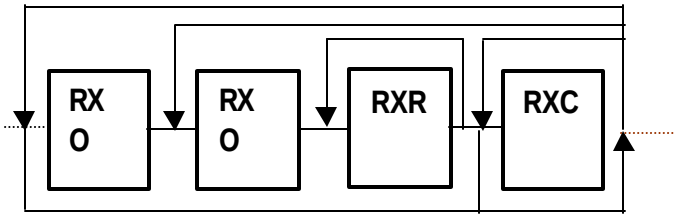
DG1: Diagnosis
AL1: Allergies
PR1: Procedures



OBR: Pathology/Radiology Order Information
OBX: Pathology/Radiology Test Result or any other Clinical Observation

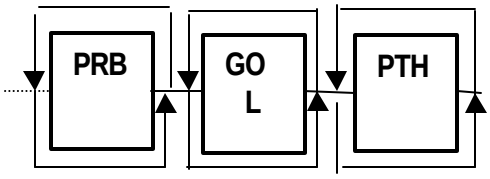


PV1: Patient Visit Information
PV2: Additional Patient Visit Information
NTE: Discharge/Referral Free-Form Text



ORC: Prescription Order Information
RXO: A Prescribed Drug/Item
RXR: Route of a Prescribed Drug/Item
RXC: Component of a Prescribed Drug Compound

Contact info (CTD)?



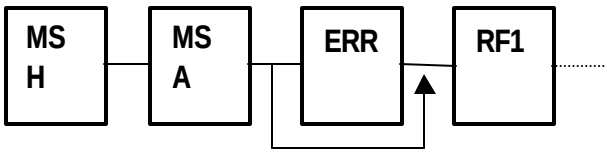
PRB: Problems
GOL: Goals
PTH: Pathways

HL7 Abstract Message Definition interpretation

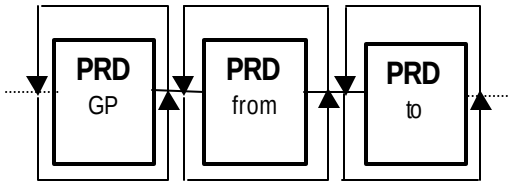
REF^I12-I15^REF_I12	**Patient Referral**
MSH	Message Header
[RF1]	Referral Information
[{PRD}]	Provider Data
PID	Patient Identification
[{NK1}]	Next of kin
[{DG1}]	Diagnosis
[{AL1}]	Allergy Information
[{PR1}]	Problem details
[	
{	
OBR	Observation Request
[{OBX}]	Observation/Result
}	
]	
[	
PV1	Patient Visit
[PV2]	Patient Visit Additional Info
]	
[{NTE}]	Notes and Comments
[	
{	
ORC	Common order segment
{	
RXO	Prescribed drug/item
{RXR}	Route of a prescribed drug
[{RXC}]	Component of a prescribed drug compound
}	
}	
]	
[{PRB}]	Problem details
[{GOL}]	Goals
[{PTH}]	Pathways

Discharge/Referral Response Message (RRI) Structure

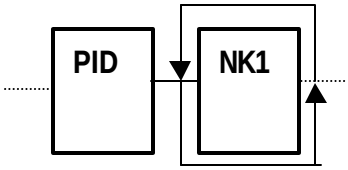
The Discharge/Referral Response Message (RRI) acknowledges the receipt and, usually, successful processing of the REF.



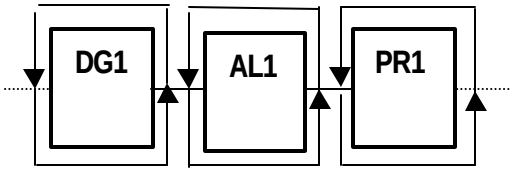
MSH: Message Control and Routing Information
MSA: Message Acknowledgment information
ERR: Message Error Information
RF1: Referral Information



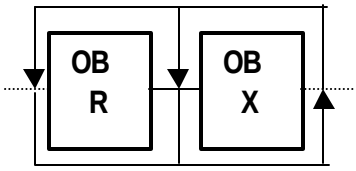
PRD: Practitioner/Provider Information



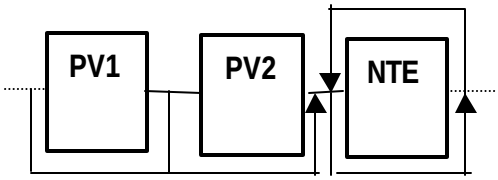
PID: Patient Demographic Information
NK1: Next-of-Kin Information



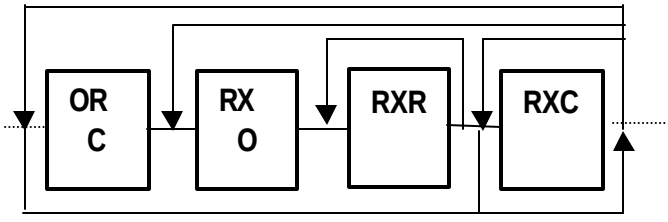
DG1: Diagnosis
AL1: Allergies
PR1: Procedures



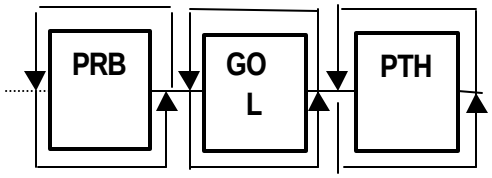
OBR: Pathology/Radiology Order Information
OBX: Pathology/Radiology Test Result or any other Clinical Observation



PV1: Patient Visit Information
PV2: Additional Patient Visit Information
NTE: Discharge/Referral Free-Form Text



ORC: Prescription Order Information
RXO: A Prescribed Drug/Item
RXR: Route of a Prescribed Drug/Item
RXC: Component of a Prescribed Drug Compound



PRB: Problems
GOL: Goals
PTH: Pathways

HL7 Abstract Message Definition interpretation

RRI^I12-I15^RRI_I12	**Return Referral Information**
MSH	Message Header
MSA	Message acknowledgement information
[ERR]	Message error information
RF1	Referral Information
[{PRD}]	Provider Data
PID	Patient Identification
[{NK1}]	Next of kin
[{DG1}]	Diagnosis
[{AL1}]	Allergy Information
[{PR1}]	Problem details
[	
{	
OBR	Observation Request
[{OBX}]	Observation/Result
}	
]	
[	
PV1	Patient Visit
[PV2]	Patient Visit Additional Info
]	
[{NTE}]	Notes and Comments
[	
{	
ORC	Common order segment
{	
RXO	Prescribed drug/item
{RXR}	Route of a prescribed drug
[{RXC}]	Component of a prescribed drug compound
}	
}	
]	
[{PRB}]	Problem details
[{GOL}]	Goals
[{PTH}]	Pathways

APPENDIX C - Some GEHR Archetypes

The current list

(this list can be browsed on the GEHR Web-site at www.gehr.org/gpcg/Archetypes/List_archetypes.htm)

- Adverse reaction — Subjective content
- Alcohol — Subjective content
- Allergies — Subjective content
- Assessment of Diabetic foot — Subjective content
- Biochemistry
- Biochemistry time series
- Blood lipids — Observation content
- Blood pressure — Observation content
- Body Mass Index — Observation content
- Body height — Observation content
- Body part measurement — Observation content - generic measurement of different body parts
- Current medication — Compound organiser
- Current medication — Persistent transaction
- Diabetic foot — Observation content - complex
- Drug use — Subjective content - not tobacco, alcohol
- Exercise — Organiser
- Exercise — Subjective content
- Eye exam — Observation content
- Family history — Organiser
- Family history — Organiser
- Family member history — Subjective content
- HBA1c — Observation content - laboratory
- Lifestyle — Persistent transaction
- Lower limb exam — Observation content
- Medication order — Instruction content
- Medication orders — Organiser
- Medication orders-AUS — Organiser
- Prescription — Generic prescription as transaction
- Prescription-AUS — Prescription for use in Australia
- Problem — Subjective content
- Problem list — Organiser
- Problem list — Persistent transaction
- Referral — Instruction content
- Skin ulcer — Observation content
- Target — Definition content
- Targets — Persistent transaction
- Targets — Organiser
- Therapeutic precautions — Persistent transaction
- Therapeutic precautions — Organiser

- Tobacco — Subjective content
- Urinalysis — Observation content
- Weight — Observation content - whole body weight only

Some examples

The following schematics illustrate elements of the structure of some GEHR archetypes that may be relevant to this project

Referral

```
Name
Role
Location
Appointment
```

Current medication

```
Ongoing
 Name
  Alt classification
  Instructions
  Form
  Route
  Dose
  Strength
  Frequency
  Rate
  Quantity
  Duration
  Repeats
  Decision support
   Over-rides
  Alt classification
   Indication
Acute
 (as above)
 ...
```

Therapeutic precautions

```
Adverse reactions
 Name
 Alt classification
 Date
 Description
 Scope
 Comment
Allergies
  Substance name
   Code
    Code set
    Drug code
   Date
   Type
   Scope
   Comment
Therapeutic preference
 ...
 ...
Therapeutic prohibition
 ...
 ...
```

Family history

```
Genetic relations
 Family member history
Non-genetic relations
 Family member history
Adoptive
 Family member history
Partnered
 Family member history
Other
 Family member history
```

Family member history

```
Name
Problem
Date onset
Date diagnosed
Status
State date
Comment
```

Problem list

```
Problem
 Name
 Date onset
 Date diagnosed
 State
 State date
 Comment
```

Diabetic foot (objective content)

```
 Left
  Calus
  Fissures
  Nail distrophy
  Interdigital maceration
  No of ulcers
 Right
  (as above)
  ...
```

Diabetic foot (subjective content)

```
 Left
  Peripheral vasc disease
  Peripheral vasc
neuropathy
  Foot abnormality
  Infection
 Right
  (as above)
  ...
```

LIfeStyle

```
 Exercise
  Amount
  Start
  Stop
 Substance use
  Tobacco
   ...
   ...
  Alcohol
   Consumption/week
   Drinking days/week
   Maximum daily intake
   Start
   Stop
   Comment
  Drug
   ...
   ...
```

APPENDIX D - National Privacy Principles

(Plain English summary reproduced from the Australian Privacy Commissioner's Web-site at http://www.privacy.gov.au/publications/fs2.html)

Summary only: not the full version of the NPPs

NPP 1 – Collection

Collection of personal information must be fair, lawful and not intrusive. A person must be told the organisation's name, the purpose of collection, that the person can get access to their personal information and what happens if the person does not give the information.

NPP 2 – Use & Disclosure

An organisation should only use or disclose information for the purpose it was collected unless the person has consented, or the secondary purpose is related to the primary purpose and a person would reasonably expect such use or disclosure, or the use is for direct marketing in specified circumstances, or in circumstances related to public interest such as law enforcement and public or individual health and safety.

NPP 3 – Data Quality

An organisation must take reasonable steps to make sure that the personal information it collects, uses or discloses is accurate, complete and up-to date.

NPP 4 – Data Security

An organisation must take reasonable steps to protect the personal information it holds from misuse and loss and from unauthorised access modification or disclosure.

NPP 5 – Openness

An organisation must have a policy document outlining its information handling practices and make this available to anyone who asks.

NPP 6 – Access & Correction

Generally speaking, an organisation must give an individual access to personal information it holds about that individual on request.

NPP 7 – Identifiers

Generally speaking an organisation must not adopt, use or disclose, an identifier that has been assigned by a Commonwealth government 'agency'.

NPP 8 – Anonymity

Organisations must give people the option to interact anonymously whenever it is lawful and practicable to do.

NPP 9 – Transborder Data Flows

An organisation can only transfer personal information to a recipient in a foreign country in circumstances where the information will have appropriate protection.

NPP 10 – Sensitive Information

An organisation must not collect sensitive information unless the individual has consented, it is Mandatory by law – or in other special specified circumstances (for example, relating to health services provision and individual or public health or safety).

For further information please contact

Privacy Commissioner
GPO Box 5218
Sydney NSW 1042
Privacy Hotline: 1300 363 992
Telephone: (02) 9284 9800
Fax: (02) 9284 9666
E-mail: privacy@privacy.gov.au

APPENDIX E -

Programme of meeting.

Day 1, Monday 19th March

8.45am **Convening, registering**

9.15 **Introduction and Overview of the meeting**
Stephen Dippy
(Medical Communications Associates)

Messages, Records and Information Models
- a brief overview

Dr Peter Schloeffel
(Medical Communications Associates)

9.45 **Introduction and Overview of HL7**
Brenton Norman
(Medical Communications Associates)

- Anatomy of an HL7 Message
- A sample HL7message
- How HL7 messaging standards are developed in Australia and the USA
- Commonly seen errors
- Sample errors for discussion
- How the Standards System has responded to some errors
- HL7 RIM
- HL7 and XML

10.45-11.00 **MORNING TEA**

11.00 Good Electronic Health Record
Sam Heard
Ocean Informatics; Flinders University (Darwin).
Tom Beale
Ocean Informatics; Deep Thought Informatics.

- Introduction and Overview
- History of GEHR
- Transactions
- GEHR archetypes
- GEHR vs RIM or GEHR plus RIM?
- GEHR and XML

12.00-1.00pm LUNCH

APPENDIX E (Continued)

1.00pm **Joint Workshop - two "cases" for discussion**
Wilton Braund
MCA and Flinders University
Brenton Norman

- A Histopathology Sample from Theatre
- A Diabetes Message

Brief illustrative discussions to highlight the approach taken with HL7 and/or GEHR to these two very different challenges. Comments and discussion from all participants - with GEHR reflections from Sam Heard and Tom Beale.

1.45pm **DIVISION INTO TWO WORKSHOP STREAMS**

TECHNICAL

1.50 **Interface vs hardcoding Parsing engines**
Heath Frankel
MCA

Interfaces between the GEHR kernel and applications, databases or communications
Tom Beale

3.00 **AFTERNOON TEA**

3.10 **Practical problems encountered in divisional projects.**

Leading to a general Question and Answer session including HL7, XML and GEHR.

Heath Frankel, Brenton Norman, Tom Beale

4.45 **Summary and conclusion.**

MEDICAL

Problems of diabetes management, documentation and referral. A model of chronic disease management.
Wilton Braund

A Divisional Diabetes Project
Challenges of a small diabetes information project
Brenton Norman

AFTERNOON TEA

GPCG Messages
Sam Heard

Setting out a format for working out the messaging solutions for the GPCG Diabetes Project.

Three sample problems.

John Guy, Wilton Braund - and all interested technical or medical participants.

APPENDIX E (Continued)

List of Participants

Ask, Alexander *Flinders University Health Research Institute*
Beale, Thomas *Deep Thought Informatics*
Braund, Wilton *Flinders Medical Centre and MCA*
Charlton, Peter *Health Insurance Commission*
Dahlin, Tony *Integra Medical Imaging*
Dippy, Stephen *Medical Communications Associates*
Frankel, Heath *Medical Communications Associates*
Guy, John *Southern Division of General Practice*
Heard, Sam *Flinders University Medical School, Darwin Campus*
Lewis, Bryn *Latrobe University School of Public Health*
Mulligan, Ea *Flinders University Law School*
Norman, Brenton *Medical Communications Associates*
Schloeffel, Peter *Medical Communications Associates*
Sickles, David *Consumer Representative*
Socorro, Cue *Health Insurance Commission*
Taggart, Jane *Centre for General Practice Integration Studies,Univ of NSW*
Unterweger, Zlatko *Flinders Medical Centre*
Venables, Paul *Power Solutions*
Whitfield, Graeme *Health Insurance Commission*

APPENDIX F - Participants in the message archetype workshop, with details of their qualifications.

Beale, Thomas *Deep Thought Informatics*
Software designer and developer, involved in GEHR research and development for 12 years.

Braund, Wilton *Flinders Medical Centre and MCA*
Diabetes Physician; Director of Clinical Training at FMC

Frankel, Heath *Medical Communications Associates*
Software Developer; projects include a Coordinated Care application, MCAre Diabetes, several HL7 projects

Guy, John *Southern Division of General Practice*
Director of projects and training in a 60-doctor Diabetes Interest Group

Heard, Sam *Flinders University Medical School, Darwin Campus*
General Practitioner; Senior Lecturer; involved in GEHR research and development for 12 years.

Lewis, Bryn *Latrobe University School of Public Health*
IT Communications Researcher

Mulligan, Ea *Flinders University Law School*
General Practitioner; Medical Administrator; Researcher in Ethics, Privacy and Law

Norman, Brenton *Medical Communications Associates*
Software Developer; projects include General Practice Divisional Clinical Applications, MCAre Diabetes, several HL7 projects

Schloeffel, Peter *Medical Communications Associates*
General Practitioner; Clinical Computing Consultant and Activist

Sickles, David *Consumer Representative*
Retired computing developer. Developed *MCAre Diabetes*.

Taggart, Jane *Centre for General Practice Integration Studies,Univ of NSW*
Representing another GPCG Project in HL7 messaging.

Venables, Paul *Power Solutions*
Managing Director.

APPENDIX G - A list of documents and references used to support the meeting.

NDOQRIN minimum data set for diabetes (Diabetes Guideline Checklist Dataset)

HL7 versions 2.3 and 2.4

National Health Data Dictionary Version 9 (2000) Australian Institute of Health and Welfare

National Privacy Principles - Plain English Summary.

HL7 Reference Information Model

NSW Health / Standards Australia Referral Message Proposal Version 0.34

APPENDIX H - Data entered by the patient: Issues to be considered for a coding system in HL7

Blood glucose, Blood Pressure, Heart Rate, Peak Flow, Weight, Fluid Intake, Fluid Output, Foetal Heart Rate, Uterine Contractions, Bowel Charts, Menstrual Charts, Mucus Scores, Temperature

Clinician validation
Clinician's estimate of reliability.

Type of Equipment used

Automatically sensed data (for example an automatic record of BP as performed in 24 hour monitoring systems; or a electrocardiographic trace)
Patient processed data (for example, blood pressure readings obtained manually by the patient without use of an automated device)

Transformation of data.
Not transformed.
Transformed by patient or clinician.
Automated transformation.
Statistical technique (e.g. cusum, geometric mean)

Symptom record: narrative record; coded record; analogue scores

Symptom linked to an event. e.g. symptoms of a hypo present or absent in association with a low blood sugar; patient symptom records associated with automated heart monitor records.
Position linked to an event. e.g. blood pressure supine or standing

Questionnaire scores.
Self-administered

Associated confidentiality messages.

ACKNOWLEDGEMENTS

Special acknowledgment is made to the following people and institutions:

- Ms Rosemary Hilton of MCA for organising and managing the meeting.
- Mr Brenton Norman and Mr Heath Frankel of MCA for developing the meeting.
- The staff of Flinders Private Hospital (and the Adelaide Community Hospital Alliance) for having hosted our meeting.
- All of the participants in the archetype development workshop – see Appendix F
- Mr Brenton Norman for his major contribution to development of the HL7 message formats.