

Australian Standard™

**Implementation of Health Level Seven
(HL7) Version 2.3.1**

Part 6: Referral and discharge summary

This Australian Standard was prepared by Committee IT-014, Health Informatics. It was approved on behalf of the Council of Standards Australia on 06 February 2004 and published on 19 March 2004.

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Australian Standard™

**Implementation of Health Level Seven
(HL7) Version 2.3.1**

Part 6: Referral and discharge summary

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PREFACE

This Standard was prepared under the auspices of the Joint Standards Australia/Standards New Zealand Committee IT-014, Health Informatics, in response to requests from the health informatics community. It covers implementation of the Health Level Seven (HL7) Version 2.3.1 protocol, for communication of clinical patient-centred information between health service providers in Australia and New Zealand. It is applicable to clinical communications covering Discharge, Shared Care, Event Summaries, and notification of Shared Electronic Health Record Systems. The original focus was on Discharge Referral, but stakeholder requirements have led to its use in the more general area of patient care messaging.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

This Standard was prepared by the IT-014-06-06 Referral and Health Service Messages Working Group under direction from Committee IT-014, Health Informatics.

The mission of the working group is to—

- (a) advise on the appropriateness of international Standards;
- (b) recommend specific Standards and/or implementation guidelines for messages covering patient discharge and referral together with more general clinical services not covered by the other AS 4700 Standards; and
- (c) consider the need for related Standards.

The HL7 Version 2.3.1 protocol covers a wide range of data interchange functions. However, this Australian implementation Standard focuses on the HL7 discharge and referral, shared care and event summary messages. A Discharge Referral message is analogous to a paper-based discharge referral document and has more comprehensive requirements than the less-specific discharge summary.

All efforts have been made to minimize divergence from the HL7 USA protocol to ensure maximum compatibility with future versions, however, proposal of significant enhancements has been found necessary to adequately represent patient care related concepts.

The term ‘informative’ has been used in this Standard to define the application of the appendix to which it applies. An informative appendix is only for information and guidance.

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FOREWORD

HL7 Version 2.3.1 is a health care application protocol accredited as a Standard by the American National Standards Institute (ANSI). ‘Level Seven’ refers to the highest level of the International Organization for Standardization (ISO) communications model for Open Systems Interconnection (OSI)—the application level. Issues within the application level include definition of the data to be exchanged, the timing of the exchange and the communication of certain errors to the application. This level supports such functions as security checks, identification of the participants, availability checks, negotiating exchange mechanisms and, importantly, structuring the data exchanges themselves.

HL7 focuses on the interface requirements of the entire health care organization. It allows development along the fastest possible track to the unique requirements of already installed hospital and departmental systems, some of which use mature technologies.

Australia and New Zealand already have an existing base of health care institutions that use the HL7 protocol to exchange key sets of data between different computer application systems. While HL7 is concerned with addressing immediate needs, there is a very strong focus on convergence with other Standards development activities in the USA and international HL7 initiatives in countries including Canada, China, Finland, Germany, India, Japan, Korea, the Netherlands, and the United Kingdom.

The HL7 protocol is a collection of standard formats that specify the implementation of interfaces between computer applications. It is not rigid. Flexibility is built into the protocol to allow compatibility for specialized data sets that have facility-specific needs. One of HL7’s strengths is its inbuilt flexibility. However, it is also one of its weaknesses. It is open to misinterpretation in its structure and format. HL7 is based on the health environment in the USA. Implementation of the HL7 Version 2.3.1 Standard in the Australian health environment requires a common and consistent approach.

The intended audience for this Standard includes health authorities, health service providers, general providers, health institutions, health information technology vendors, health information technology consultants and the health informatics community.

This is not a stand-alone document for review in isolation. A basic understanding of HL7 is essential, as this Standard is based on and frequently refers to the HL7 Version 2.3.1 Standard.

In order to communicate clinical information, which is heavily context-dependent, it has been necessary to use local extensions to the Version 2.3.1 standard. These extensions will be proposed for inclusion in a later version of HL7 Version 2.x. A referral or shared care message may, under different circumstances, be required to include almost any data from a health record. This widens the scope of such a message and requires more complex contextual and relationship information applying to the included segments. A simpler message context is inferable from the trigger event but this is insufficient for the more general information in Discharge, Referral, Event Summaries and Shared Care. This message has needed to include and combine segments designed for use in simpler more specific messages where their context is implicit from the trigger event. This applies particularly to History, Observations, Medications, Procedures, Problems, Goals and Pathways.

HL7 has not been widely used for structured clinical communications. When available, HL7 Version 3 Messaging and Clinical Document Architecture (CDA) are expected to be increasingly used for new applications. This Version 2 message is currently being used to inform the requirements and design of these future standards.

Frequent reference is made to AS 4700.1, which covers the implementation of HL7 Version 2.3.1 for patient administration within Australia. AS 4700.1 provides an important foundation for the building of most clinical health care messages. Only those segments that have been identified as relevant have been detailed in the Australian implementation standard. Refer to the HL7 Version 2.3.1 protocol for all other message segments.

Where a segment is extended by the addition of new fields, these are added at the segment end and are to be regarded as 'Local Usage'. It is intended that they be proposed for inclusion in a later release of the HL7 standard.

Specified terminology and coding is required for meaningful information exchange, and this therefore forms part of this standard.

STANDARDS AUSTRALIA

Australian Standard

Implementation of Health Level Seven (HL7) Version 2.3.1

Part 6: Referral and discharge summary

1 SCOPE

1.1 General

Health Level Seven (HL7) is a comprehensive health care communications protocol accredited as a Standard by the American National Standards Institute (ANSI). This Standard covers implementation of electronic referral messages using the HL7 Version 2.3.1 protocol with local extensions, which will be proposed for inclusion in a later version of HL7 2.x. It covers communication between health service providers both within and outside hospitals. The Standard includes the data segments and data elements that are mandatory (required), optional or conditional (required, based on a condition), and relevant usage notes in the Australian health environment. The Standard provides consistent use of data definitions as well as commentary and references to the International Organization for Standardization (ISO), the National Health Data Dictionary (NHDD), the National Association of Testing Authorities Australia (NATA), The General Practice Computing Group (GPCG) and its General Practice Data Model and Core Dataset (co-sponsored with the Commonwealth Department of Health and Ageing).

This Standard is for the purpose of sharing and transferring patient care. Its content is clinical. There are administrative, financial, and eligibility aspects of referral, which are representable in standardized HL7 segments. These are not included in this Standard.

The message structure described here is intended to communicate information representing a complete or partial transfer of care from one clinical provider or organization to another, occurring on discharge from a hospital or other care provider. It differs from a discharge summary although it may include such information or document. Relevant definitions are included in Clause 4 of this Standard.

Clinical management by cooperating providers, mandates health service messaging built on agreed semantic exchange. The above groups are actively participating in developments in this evolving area. While the message protocols described in this implementation Standard employ a required level of coding as in the HL7 tables, they do not specify any particular controlled vocabulary for the broader area of clinical concept representation. A logical next step in terminology agreement should address the headings used in referral, and a code set such as LOINC should be considered for this.

The HL7 messages detailed here have the capability but not the requirement of exchanging clinical data, and the segments have the capacity to include flexible structures containing both coded and free-form representations. This Standard is applicable across clinical domains, and is intended to be used for communication between providers and organizations with different information models and datasets. This will present a challenge to the exchange of structured clinical information, which will be required for a richer utilization of health information. Such a level of semantic exchange will enable processing aimed at supporting clinical decision making for optimal health outcomes. It is for this purpose that the referral message has been designed to optionally include segments covering the more complex clinical situations reflected in Problems, Goals, and Pathways. It is not however dependent on standardized clinical datasets, and is therefore immediately applicable.

1.2 Breadth of health record information content

This message is a general clinical communication, which carries health record information, including past history, family history, allergies, medications and medication history, social status, problem, goal and other management details as well as the requested services, which constitute the reason for referral.

Referral involves the transfer of care in part (e.g. request for an opinion or a specialized service accompanied by relevant health event summary and record extracts) or in whole (e.g. transfer from one GP practice to another with complete health record data and summary).

2 APPLICATION

2.1 Users of the Standard

Australia already has an existing base of health care institutions that use the HL7 protocol to exchange key sets of data between different computer application systems. However, because of HL7's inbuilt flexibility, it is open to interpretation in structure and content. Implementation of the HL7 Standard in the Australian health environment requires a common and consistent approach.

This Standard is for use by Australian health authorities, health service providers, general providers, health institutions, health information technology vendors, health information technology consultants and the health informatics community.

For the purposes of this Standard, only human patients are considered.

2.2 Uses of the Standard

The comprehensive structured clinical information contained in this message makes it suitable for the following uses in co-ordinated patient care:

- (a) Inter-practitioner referral.
- (b) Hospital discharge:
 - (i) Discharge summary.
 - (ii) Discharge referral.
- (c) Ongoing shared care (continuing exchanges of care responsibility, record extracts, and event summaries) by notification.
- (d) Decision support systems (machine-based care / responsibility) by notification.
- (e) Notification of repositories, and shared EHRs (*Virtual Referral*—treatment request and target providers not specified).

3 REFERENCED AND RELATED DOCUMENTS

3.1 Referenced documents

The following documents are referred to in this Standard:

STANDARDS

AS

- 4700 Implementation of Health Level Seven (HL7) Version 2.3.1
 4700.1 Part 1: Patient administration
 4700.2 Part 2: Pathology orders and results

5017 Health Care Client Identification

AS/NZS

- 4700 Implementation of Health Level Seven (HL7) Version 2.3.1
 4700.3 Part 3: Electronic messages for exchange of information on drug prescription

HB 262 Pathology electronic messaging—Guidelines for pathology messaging between pathology providers and health service providers—Implementation guide

ANSI HL7 Version 2.3.1. Health Level Seven Inc, Ann Arbor 1999

OTHER DOCUMENTS

NHDD National Health Data Dictionary Version 10.0. National Health Data Committee, Canberra. Australian Institute of Health and Welfare, 2001

3.2 Related documents

Attention is drawn to the following related documents:

ISO

- 2955 Information processing—Representation of SI and other units in systems with limited character sets
 15489 Records management
 15489.1 Part 1: General
 15489.2 Part 2: Guidelines

ASTM

E 1238 Specification for transferring clinical observations between independent computer systems

Broadsheet No 29 SI Units Revisited. The Royal College of Pathologists of Australasia, Sydney, 1986

ICD-10-AM International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification

4 DEFINITIONS

For the purpose of the Standard, the definitions below apply.

4.1 Discharge

The relinquishing of patient care in whole or in part by a health care provider or organization.

4.2 Discharge Referral

A referral occurring in the context of discharge.

4.3 Discharge Summary

A collection of information about events during care by a provider or organization.

NOTE: A discharge summary does not necessarily represent or enable transfer of care, nor is it necessarily intended for any particular provider or organization. Such a summary may form part of a discharge referral. If a discharge summary is intended to take on the role of discharge referral then additional constraints are applicable on content, and the full referral information and encapsulating message should be used.

4.4 Order

A request for diagnostic services for a specified patient.

4.5 Referral

Referral is the communication, with the intention of initiating care transfer, from the provider making the referral to the receiver.

NOTE: The essential components of referral are the intent and facilitation of transferring patient care in whole or in part from one health care provider or organization to another provider or organization. Self referral is also possible: a person, the subject of care, may be the referrer or the referee. Referral is normally accompanied by clinical information to responsibly enable takeover of such care by the referee.

Referral can take several forms most notably:

- (a) *Request* for management of a problem or provision of a service e.g. a request for an investigation, intervention, or treatment.
- (b) *Notification* of a problem with *hope, expectation, or imposition* of its management e.g. a Discharge Summary in a setting which *imposes* care responsibility on the recipient.

The common factors in all of these are a *communication* whose *intent* is the *transfer* of care.

In the messaging environment of HL7, these different situations will mandate different sender-receiver application roles and responsibilities. The request scenario will be taken as the basis for this Referral message.

4.6 Trigger event

Action that takes place in an application, based on some predefined condition such as an admission, ward transfer, or placement of an order and the like. The action usually results in the compilation and transmission of a data message.

5 MESSAGES

5.1 Communications overview

5.1.1 Referral or discharge summary

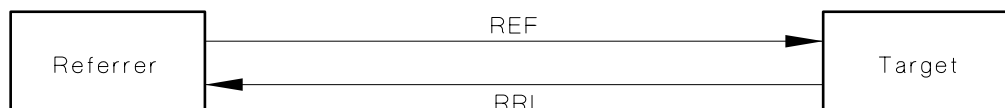


FIGURE 1 PATIENT REFERRAL MESSAGE

Figure 1 represents the simple form of acknowledgment. Enhanced acknowledgment rules can also apply. Refer to HL7 V2.3.1 section 2.12.1.2.2.

5.1.2 Patient referral (REF)

A patient referral message is transmitted when the referral event or discharge summary occurs. No other prerequisite is required. The sending system expects a Referral response message (RRI) as confirmation, otherwise it assumes the REF message was not received by the destination system.

5.1.3 Referral response message (RRI)

This message is the response to a received REF message. This is defined as *Return response information (RRI)* in HL7. It is not intended to include clinical information and reports that would relate to services consequent to the original referral. These would use a new, separate REF message.

5.2 Message structural overview

Figure 2 is an overview of the representation of an HL7 message structure. A line above a segment indicates that it may be repeated. A line below a segment indicates that the segment is optional.

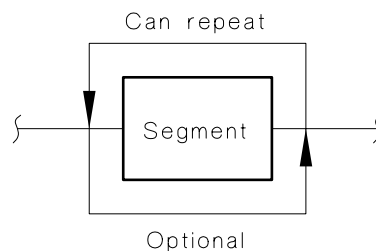


FIGURE 2 MESSAGE STRUCTURAL OVERVIEW

NOTE: The NTE segment should not be used to convey referral information. It should therefore be discarded by receiving applications.

5.3 Referral message (events I12, I13 and I14)

5.3.1 Patient referral message (REF)

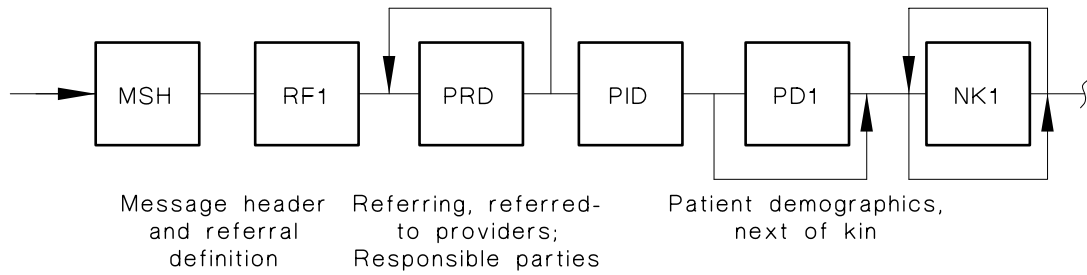
Figure 3 shown in Item (a) is an overview of the referral message (REF) and consists of the segments as detailed.

NOTES:

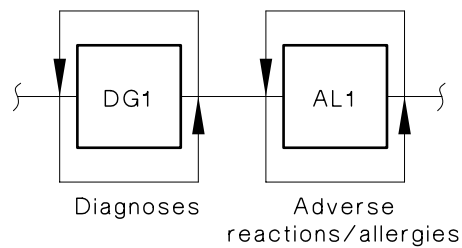
- 1 The PD1, ORC/RXO/RXR/RXC and PRB/GOL/PTH segments are optional Australian extensions to HL7 V2.3.1.
- 2 The ORC segment is optional due to Version 2.3.1 parsing rules, however, it is strongly recommended to be included in order to ensure proper context of the subsequent OBR/OBX segments.

The following applies:

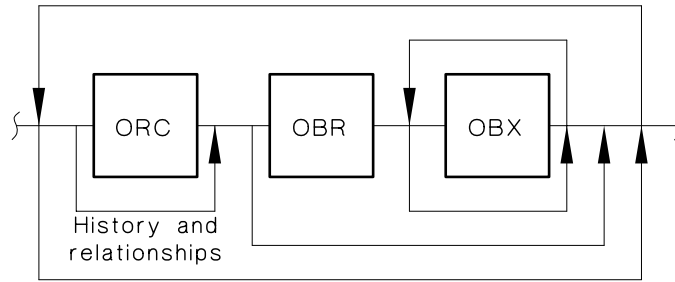
(a) Diagrammatic representation as shown in Figure 3.



(a) Referral message—1 Basic data

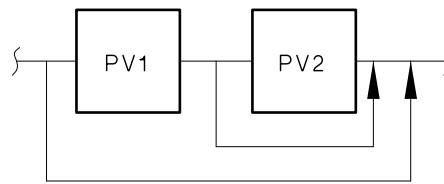


(b) Referral message—2 Diagnoses and allergies



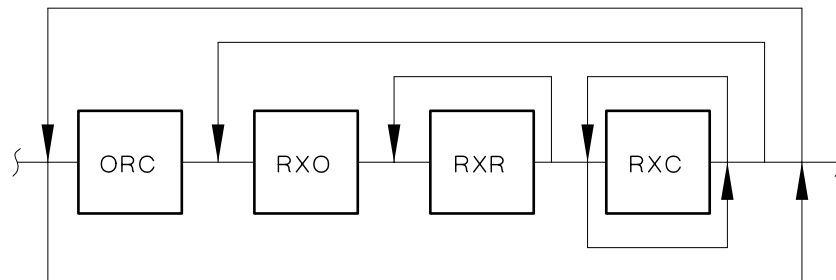
Clinical requests and history: Services, observations
 Record structure: Segment relationships

(c) Referral message—3 Clinical history, results, requests and segment relationships



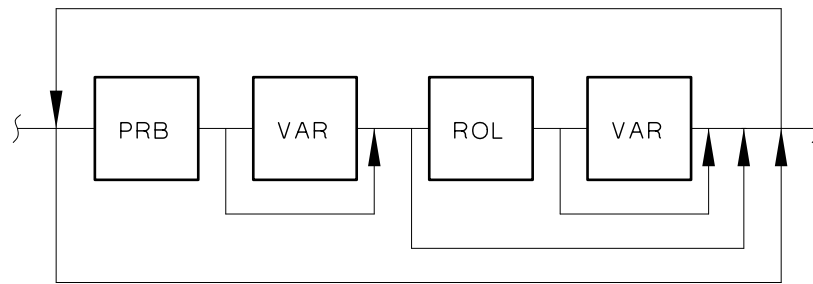
Patient visit information

(d) Referral message—4 Patient visit data

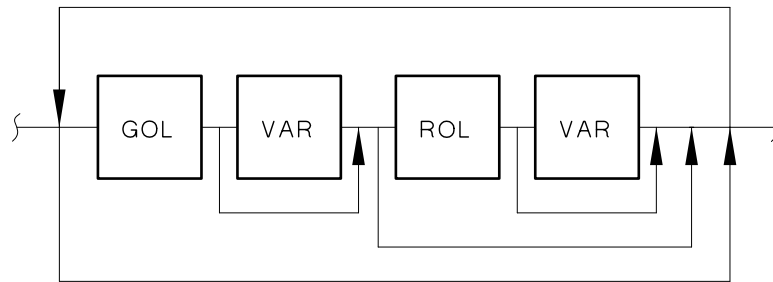


Medication: History, current, recommendations

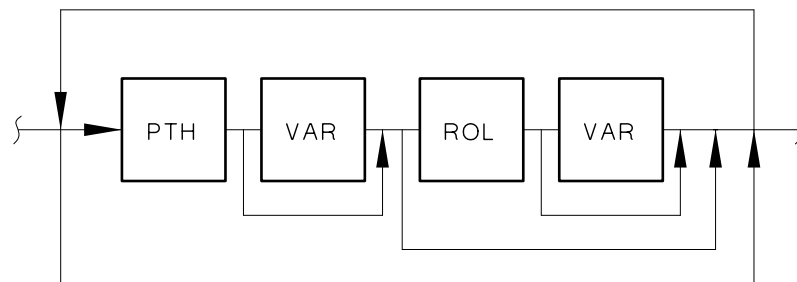
(e) Referral message—5 Medications



(i) Patient problems



(ii) Goals



(iii) Care pathways

(f) Referral message— 6 Problems, goals, pathways

FIGURE 3 OVERVIEW OF REFERRAL MESSAGE (REF)

(b) Function

The function of the referral message is to transmit information about a handover of patient care. This includes a GP admitting a patient to a hospital, or referring to a specialist, referral of patients between hospitals, discharge of patient to the GP or home care, or death.

(c) Trigger event

The trigger event, I12, for this message is any referral or discharge of a patient to and from any health care provider. This includes GP to specialist referral, GP to hospital referral, or hospital discharges.

- (d) Required message segments:
- (i) Message header (MSH) segment. See AS 4700.1.
 - (ii) Referral information (RF1) segment. See Table 1 for the Australian implementation of the RF1 segment. In HL7 V2.3.1 the RF1 segment is specified as ‘optional’. However, in the context of this Standard it is ‘required’.
 - (iii) Provider data (PRD) segment. See Table 2 for the Australian implementation of the provider data segment.
 - (iv) Patient identification (PID) segment. See AS 4700.1.
- (e) Optional message segments:
- (i) Patient demographics (PD1) segment. Refer to AS 4700.1.
 - (ii) Next of kin information (NK1) segment. See AS 4700.1.
 - (iii) Diagnosis (DG1) segment. See Table 3 for the Australian implementation of the diagnosis segment.
 - (iv) Adverse reaction / Allergy (AL1) segment. See AS 4700.1.
Note that a code for an Administrative Alert (‘AA’) has been added to table 0127 in the ‘Allergy Type’ (AL1-2) data element to allow for non-medical alerts.
 - (v) Observation request (OBR) segment. See AS 4700.2.
 - (vi) Observation result (OBX) segment. See AS 4700.2.
 - (vii) Patient visit (PV1) segment. See AS 4700.1.
 - (viii) Patient visit additional info (PV2) segment. See AS 4700.1.
 - (ix) Order detail (ORC) segment. See AS 4700.2.
 - (x) Pharmacy/treatment order (RXO) segment. See AS/NZS 4700.3.
 - (xi) Pharmacy/treatment route (RXR) segment. See AS/NZS 4700.3.
 - (xii) Pharmacy/treatment component order (RXC) segment. See AS/NZS 4700.3.
 - (xiii) Detail problem (PRB) segment. See Table 4 for the Australian implementation of the detail problem segment.
 - (xiv) Detail goal (GOL) segment. See Table 5 for the Australian implementation of the detail goal segment.
 - (xv) Detail pathway (PTH) segment. See Table 6 for the Australian implementation of the detail pathway segment.
 - (xvi) Role (ROL) segment. See Table 7 for the Australian implementation of the role segment, which is unchanged from the HL7 implementation.
 - (xvii) Variance (VAR) segment. See Table 8 for the Australian implementation of the variance segment, which is unchanged from the HL7 implementation.

5.3.2 HL7 REF message segments not used

- (a) Segments used in HL7 Referral Message, not used in this patient care specification. The following segments have a primarily financial focus or contain information expressible in a more structured way within this Standard.
- (i) PR1: Procedure Segment. Richer clinical information containable in ORC+OBR+OBX segments used as above
 - (ii) GT1: Guarantor. Financial
 - (iii) IN1, IN2, IN3: Insurance Information
 - (iv) ACC: Accident Information
 - (v) DRG: Diagnosis related Group
 - (vi) AUT: Authorization Information
 - (vii) CTD: Contact Data. Adequate information is contained in the proposed extended PRD segment
 - (viii) DSP: Display Data. Not required
 - (ix) DSC: Continuation Pointer. Not required

5.3.3 Referral response message (RRI)

Figure 4 shown in Item (a) is an overview of the referral response message (RRI) and consists of the segments as detailed.

The RFI segment includes the referral status RF1-1 and the external referral identifier RF1-11.

This is to inform the originating referrer about the referral, and where applicable, the allocated id. It is not intended to convey any clinical findings from the referred to provider.

Reports, results, recommendations etc, from the originally referred to provider would be included in another REF message.

The RRI message, at the minimum, consists of the following segments: MSH, MSA, (ERR in event of an error), RF1 and PID. The remaining segments of the RRI message as per HL7 Version 2.3.1 are legal but should not be used in the Australian context.

NOTE: The ERR segment is an Australian extension to the HL7 Version 2.3.1 RRI message.

The following applies:

- (a) Diagrammatic representation as shown in Figure 4.

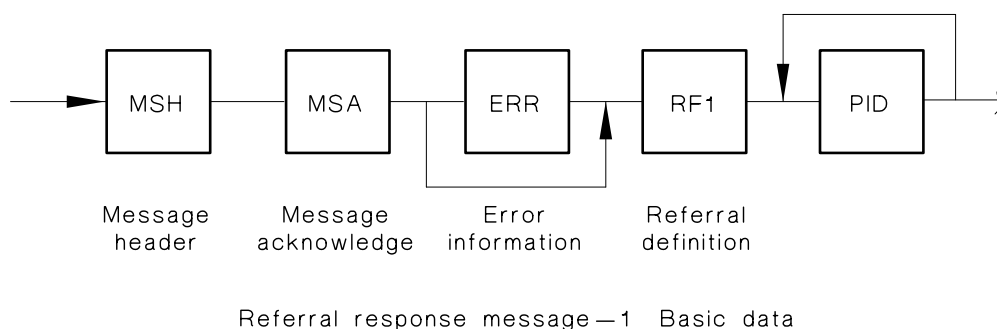


FIGURE 4 OVERVIEW OF REFERRAL RESPONSE (RRI)

(b) Function

The function of the referral response message is to transmit information in response to a referral message.

(c) Trigger event

The trigger event for this message is the receiving of a referral (REF) message.

(d) Required message segments:

- (i) Message header (MSH) segment. See AS 4700.1.
- (ii) Message acknowledgment (MSA) segment. See AS 4700.1. In HL7 V2.3.1 the MSA segment is specified as ‘optional’. However, in the context of this Standard it is ‘required’.
- (iii) Error (ERR) segment. See AS 4700.1.
- (iv) Referral information (RF1) segment. See Table 1 for the Australian implementation of the RF1 segment. In HL7 V2.3.1 the RF1 segment is specified as ‘optional’. However, in the context of this Standard it is ‘required’.
- (v) Patient identification (PID) segment. See AS 4700.1.

6 MESSAGE SEGMENTS

6.1 General

Except where defined in this Standard, all HL7 V2.3.1 protocol message segment definitions, types and descriptions apply. The associated data element definition, formats and usage apply unless otherwise indicated. The following applies:

(a) Sequence (Seq)

This is the sequence number of the data element within the segment.

(b) Length (Len)

This is the maximum number of characters that one occurrence of the data element may occupy.

NOTE: The indicated field length is the length specified by the HL7 V2.3.1 Standard document; in some cases these are impractical or contradictory. AS 4700.2 addresses this issue by increasing the length of the CE, CK, CN, CNE, CWE, CX, PPN, XAD, XCN, XON, XPN and XTN data types to 250 characters, and hence this has been reflected in this document.

(c) Data type (DT)

This is the HL7 required data type for the field.

(d) Optionality

One of the following applies for each data element:

- (i) *Required (R)*
Data element must be present for every transmission.
- (ii) *Conditional (C)*
Data element must be present for specified trigger events.
- (iii) *Optional (O)*
Data element need not be present for any transmission.

(iv) *Backward compatibility (B)*

Data element superseded. Appears for backward compatibility only.

(e) Repetition (Rp#)

This indicates whether the data element may repeat. A 'Y' indicates that repetition is indefinite or site determined. An integer indicates repetition to the number of times specified in the integer.

(f) Table (Tbl#)

This is the number of the HL7 V2.3.1 table that defines the values for the data element. These values should be followed unless otherwise indicated.

(g) ID number (Item#)

This is the small integer that uniquely identifies the HL7 V2.3.1 data element.

(h) Element name

This is the descriptive name for the data element.

(i) Usage notes

Usage notes are provided for data elements to assist health institutions and health information technology vendors with data element interpretation, use and implementation in the Australian health information technology environment.

6.2 Referral information (RF1) segment

The following applies:

(a) Function

The RF1 segment is used to transmit data elements that describe the nature of the referral or discharge. It may be used in the patient referral (REF) and referral response (RRI) messages.

(b) Data elements and usage notes

See Table 1.

TABLE 1
REFERRAL INFORMATION (RF1) SEGMENT

Seq	Len	DT	Opt	Rp#	Tbl#	Item#	Element name	Usage notes
1	250	ID	R		0283	01137	Referral status	
2	250	EI	C		0280	01138	Referral priority	
3	250	CE	C		0281	01139	Referral type	Extend Tbl 0281: General referral = 'GRF' Discharge referral = 'DRF' Shared care update = 'SCU' Notification = 'NOT' Shared EHR update = 'SEU' Decision support system update = 'DSU'

(continued)

TABLE 1 (continued)

Seq	Len	DT	Opt	Rp#	Tbl#	Item#	Element name	Usage notes
4	250	CE	O	Y	0282	01140	Referral disposition	This is what is expected of the receiver. Table values: Send written report = 'WR' Return patient after evaluation = 'RP' Assume management = 'AM' Second opinion = 'SO' NOTE: 'SO' = Provide second, third or other opinion. Additional Australian table values: Discharge summary = 'DS' Update care plan = 'UCP' Update health record = 'UHR' Case conference = 'CC' Notification – no further action = 'FI'
5	250	CE	O		0284	01141	Referral category	
6	30	EI	R			01142	Originating referral identifier	
7	26	TS	O			01143	Effective date	
8	26	TS	O			01144	Expiration date	
9	26	TS	O			01145	Process date	
10	250	CE	O	Y	0336	01228	Referral reason	This indicates administrative and workflow (i.e. non-clinical) reasons for the referral. Table values: Second opinion = 'S' Patient preference = 'P' Provider ordered = 'O' Work load = 'W' 'S' = Provide second, third or other opinion Additional table values: Notification (FYI) = 'F' Event summary = 'E'
11	30	EI	O	Y		01300	External referral identifier	May be used to send the referred to providers referral identifier.

6.3 Provider data (PRD) segment

The following applies:

(a) Function

The PRD segment is used to transmit information specific to the health providers involved in the discharge or referral.

As more than one provider is usually involved with a discharge or referral, multiple instances of this segment can occur in a REF message.

(b) Provider is taken to mean providing person (not necessarily a health provider). It is the person involved in the referral.

(c) Other parties also represented by this segment:

(i) Responsible parties.

(ii) Copy to persons (excluding the patient—covered by PID).

(iii) Document authors.

(iv) Authors of contained synopses.

(v) Parties responsible for contained synopses, assessments, and described treatments.

(vi) Nominated care team members.

(d) Data elements and usage notes:

See Table 2.

TABLE 2
PROVIDER DATA (PRD) SEGMENT

Seq	Len	DT	Opt	Rp#	Tbl#	Item#	Element name	Usage notes
1	250	CE	R	Y	0286	01155	Provider role	Relevant role codes: Consulting provider = 'CP' General provider/Primary provider = 'PP' Discharging/Referring provider = 'RP' Discharged to / Referred to provider = 'RT'
2	250	XPN	O	Y		01156	Provider name	
3	250	XAD	O	Y		01157	Provider address	Refer to AS 5017
4	60	PL	O			01158	Provider location	
5	250	XTN	O	Y		01159	Provider communication information	Holds phone numbers, mobile numbers, pager numbers as well as e-mail addresses. Refer to AS 5017
6	250	CE	O		0185	00684	Preferred method of contact	
7	100	CM	O	Y		01162	Provider identifiers	
8	26	TS	O			01163	Effective start date of provider role	
9	26	TS	O			01164	Effective end date of provider role	

6.4 Diagnosis (DG1) segment

The following applies:

(a) Function

The DGI segment is used to transmit diagnosis information.

(b) Data elements and usage notes

For data elements and usage notes, see Table 3.

TABLE 3
DIAGNOSIS (DG1) SEGMENT

Seq	Len	DT	Opt	Rp#	Tbl#	Item#	Element name	Usage notes
1	4	SI	R			00375	Set ID - DG1	
2	2	ID	B		0053	00376	Diagnosis coding method	Obsolete. Do not use.
3	250	CE	O		0051	00377	Diagnosis code – DG1	
4	40	ST	B			00378	Diagnosis description	Obsolete. Do not use.
5	26	TS	O			00379	Diagnosis date/time	
6	2	IS	R		0052	00380	Diagnosis type	
7	250	CE	B		0118	00381	Major diagnostic category	Obsolete. Do not use.
8	250	CE	B		0055	00382	Diagnostic related group	Obsolete. Do not use.
9	1	ID	B		0136	00383	DRG approval indicator	Obsolete. Do not use.
10	2	IS	B		0056	00384	DRG grouper review code	Obsolete. Do not use.
11	250	CE	B		0083	00385	Outlier type	Obsolete. Do not use.
12	3	NM	B			00386	Outlier days	Obsolete. Do not use.
13	12	CP	B			00387	Outlier cost	Obsolete. Do not use.
14	4	ST	B			00388	Grouper version and type	Obsolete. Do not use.
15	2	ID	O		0359	00389	Diagnosis priority	1: Principal Dx 0: Secondary Dx
16	250	XCN	O	Y		00390	Diagnosing clinician	
17	3	IS	O		0228	00766	Diagnosis classification	
18	1	ID	O		0136	00767	Confidential indicator	
19	26	TS	O			00768	Attestation date/time	

6.5 Detail problem (PRB) segment

The following applies:

(a) Function

The PRB segment is used to transmit problem information (in the context of problems, goals and pathways).

(a) Data elements and usage notes

See Table 4.

TABLE 4
DETAIL PROBLEM (PRB) SEGMENT

Seq	Len	DT	Opt	Rp#	Tbl#	Item#	Element name	Usage notes
1	2	ID	R		0287	00816	Action code	
2	26	TS	R			00817	Action date/time	
3	250	CE	R			00838	Problem ID	
4	60	EI	R			00839	Problem instance ID	
5	60	EI	O			00820	Episode of care ID	
6	60	NM	O			00841	Problem list priority	
7	26	TS	O			00842	Problem established date/time	
8	26	TS	O			00843	Anticipated problem resolution date/time	
9	26	TS	O			00844	Actual problem resolution date/time	
10	250	CE	O			00845	Problem classification	
11	250	CE	O	Y		00846	Problem management discipline	
12	250	CE	O			00847	Problem persistence	
13	250	CE	O			00848	Problem confirmation status	
14	250	CE	O			00849	Problem life cycle status	
15	26	TS	O			00850	Problem life cycle status date/time	
16	26	TS	O			00851	Problem date of onset	
17	80	ST	O			00852	Problem onset text	
18	250	CE	O			00853	Problem ranking	
19	250	CE	O			00854	Certainty of problem	

(continued)

TABLE 4 (continued)

Seq	Len	DT	Opt	Rp#	Tbl#	Item#	Element name	Usage notes
20	5	NM	O			00855	Probability of problem (0-1)	
21	250	CE	O			00856	Individual awareness of problem	
22	250	CE	O			00857	Problem prognosis	
23	250	CE	O			00858	Individual awareness of prognosis	
24	200	ST	O			00859	Family/significant other awareness of problem/prognosis	
25	250	CE	O			00823	Security/sensitivity	

6.6 Detail goal (GOL) segment

The following applies:

(a) Function

The GOL segment is used to transmit goal information (in the context of problems, goals and pathways).

(b) Data elements and usage notes

See Table 5.

TABLE 5
DETAIL GOAL (GOL) SEGMENT

Seq	Len	DT	Opt	Rp#	Tbl#	Item#	Element name	Usage notes
1	2	ID	R		0287	00816	Action code	
2	26	TS	R			00817	Action date/time	
3	250	CE	R			00818	Goal ID	
4	60	EI	R			00819	Goal instance ID	
5	60	EI	O			00820	Episode of care ID	
6	60	NM	O			00821	Goal list priority	
7	26	TS	O			00822	Goal established date/time	
8	26	TS	O			00824	Expected goal achieve date/time	
9	250	CE	O			00825	Goal classification	
10	250	CE	O			00826	Goal management discipline	

(continued)

TABLE 5 (continued)

Seq	Len	DT	Opt	Rp#	Tbl#	Item#	Element name	Usage notes
11	250	CE	O			00827	Current goal review status	
12	26	TS	O			00828	Current goal review date/time	
13	26	TS	O			00829	Next goal review date/time	
14	26	TS	O			00830	Previous goal review date/time	
15	200	TQ	O			00831	Goal review interval	
16	250	CE	O			00832	Goal evaluation	
17	300	ST	O	Y		00833	Goal evaluation comment	
18	250	CE	O			00834	Goal life cycle status	
19	26	TS	O			00835	Goal life cycle status date/time	
20	250	CE	O	Y		00836	Goal target type	
21	250	XPN	O	Y		00837	Goal target name	

6.7 Detail pathway (PTH) segment

The following applies:

(a) Function

The PTH segment is used to transmit pathway information (in the context of problems, goals and pathways).

(b) Data elements and usage notes

See Table 6.

TABLE 6**DETAIL PATHWAY (PTH) SEGMENT**

Seq	Len	DT	Opt	Rp#	Tbl#	Item#	Element name	Usage notes
1	2	ID	R		0287	00816	Action code	
2	250	CE	R			01207	Pathway ID	
3	60	EI	R			01208	Pathway instance ID	
4	26	TS	R			01209	Pathway established date/time	
5	250	CE	O			01210	Pathway life cycle status	
6	26	TS	C			01211	Change pathway life cycle status date/time	

6.8 Role (ROL) segment

The following applies:

(a) Function

The ROL segment is used to transmit role information (in the context of problems, goals and pathways).

(b) Data elements and usage notes

See Table 7.

TABLE 7
ROLE (ROL) SEGMENT

Seq	Len	DT	Opt	Rp#	Tbl#	Item#	Element name	Usage notes
1	60	EI	R			01206	Role instance ID	
2	2	ID	R		0287	00816	Action code	
3	80	CE	R			01197	Role-ROL	
4	80	XCN	R	Y		01198	Role person	
5	26	TS	O			01199	Role begin date/time	
6	26	TS	O			01200	Role end date/time	
7	80	CE	O			01201	Role duration	
8	80	CE	O			01205	Role action reason	

6.9 Variance (VAR) segment

The following applies:

(a) Function

The VAR segment is used to transmit variance information (in the context of problems, goals and pathways).

(b) Data elements and usage notes

See Table 8.

TABLE 8
VARIANCE (VAR) SEGMENT

Seq	Len	DT	Opt	Rp#	Tbl #	Item#	Element name	Usage notes
1	60	EI	R			01212	Variance instance ID	
2	26	TS	R			01213	Documented date/time	
3	26	TS	O			01214	Stated variance date/time	
4	80	XCN	O	Y		01215	Variance originator	
5	60	CE	O			01216	Variance classification	
6	512	ST	O	Y		01217	Variance description	

APPENDIX A
 CLINICAL HISTORY REPRESENTATION
 (Informative)

A1 GENERAL

Referral communications usually carry relevant clinical history. This involves:

- (a) History elements at granularity level of grouped segments.
- (b) Element context:
 - (i) Relationships between elements (segments).
 - (ii) Actuality information on the elements (past, future, intended, current, during admission episode, etc.).

A2 CLINICAL HISTORY ELEMENTS

Where not completely represented by specific segments (such as problems, goals, pathways) clinical information is represented by OBX segments, grouped following OBR segments.

The ORC-1 field with a value of 'LI' indicates that the following OBR OBX group are elements of the clinical history. They may be linked to the following goals and pathways. This will distinguish the ORC OBR OBX group from an order.

The nature of the information is specified by coding and text in the OBR-4 field, with further definition (or repetition) in the mandatory OBX-3 field. The actual data value is in the OBX-5 field.

Clinical history elements as represented in OBR OBX grouping and Figure A1 are as follows:

- OBR-4: Heading from clinical LOINC.
- OBX-2: Value type.
- OBX-3: Observation identifier: data type CE. Clinical system (e.g. cardiovascular) if qualification of OBR-4 required.
- OBX-4: Observation sub-ID: data type ST.
- OBX-5: Observation value: OBX-5 may be free text, numerical values, or data structures. Also used for: Content of clinical synopsis, functional status (FIM).
- OBX-16: Provider responsible for this component of service.

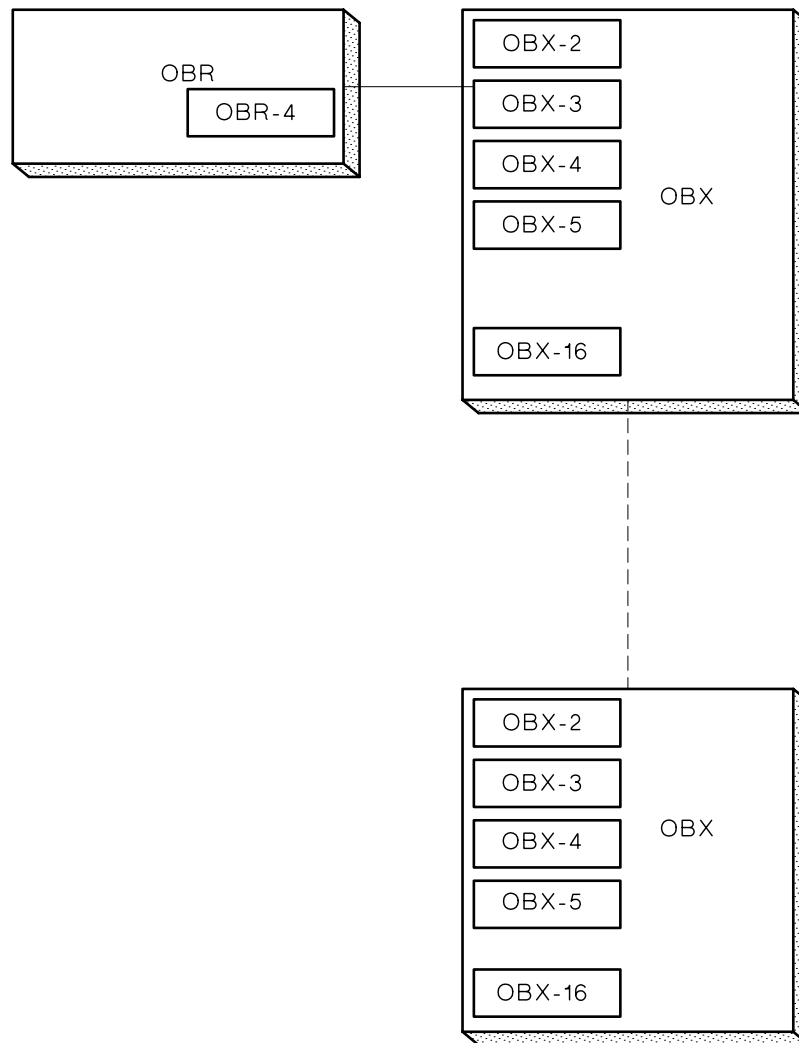


FIGURE A1 OBR-OBX USED FOR CLINICAL HISTORY ELEMENT ENCODING.
(CARDINALITY 1 HEADING to MANY ISSUES)

A3 PROCEDURE REPRESENTATION

The PR1 Segment is not used as it has insufficient clinical expressivity.

Procedures are coded through OBR-4 = LOINC representation of procedure grouping:

ORC-1 = Procedure status / eventuality as in A5 Item (c) below.

OBR-4 = Heading denoting *Procedure(s)*.

OBX-3 = Clinical system (optional).

OBX-5 = Value: Code + description—identifying the procedure.

OBX-14 = Date and time.

OBX-16 = Provider.

A4 FREE-TYPED REPORT SECTIONS AND UNSTRUCTURED NARRATIVE

This type of information is represented in OBX-5 with preceding clinical LOINC Headers in OBR-4 and optionally in OBX-3.

A5 ACTUALITY OF CLINICAL ELEMENTS (SEGMENTS)

HL7 Version 2 does not currently have capacity to represent tenses and moods of the events represented by its segments. This is required in a general clinical message, as there is no way to infer from the trigger whether the event has occurred in the past or during current admission/episode, or whether it is planned, targeted, or risked. These are however implicit in the following:

- (a) Goal.
- (b) Pathway.
- (c) Clinical history segments where it is implicit in the OBR-4 code of the grouping OBR segment (e.g. code for family medical history).

APPENDIX B

SAMPLE CLINICAL INFORMATION IN DISCHARGE REFERRAL

(Informative)

B1 CONTENT REQUIREMENTS FOR DISCHARGE REFERRAL

The discharge referral message is able to transport structured clinical information.

The following content requirements have been identified, by stakeholder representation as well as in Australian and NZ national projects, as desirable in the capability of a discharge referral message.

Demographics and contact details:

Person:

Patient

Person or organization:

Providers—Referrer(s)

Overseeing

Care components

Provider—Referee

Care teams

Authors/Signatories

Main

Sections/synopses

Copy to parties

Funders

Facility location:

Referrer

Referee

Residential care

Nursing home

Community hospital

Rehabilitation

Patient occupation:

Free text only

Intended distribution:

Recipient list

Patient

Providers

Discharge information type:

- Completion status
- Purpose if discharge summary

Problems:

- Presentation/on admission
- During admission/hospitalization episode
- On discharge

Patient awareness of diagnosis**Diagnoses:**

- These include relationships to problems, goals and pathways, other issues
 - Principal
 - Other diagnoses

Complications**Family/associated persons clinical history:**

- Diagnoses
- Severity
- Dates and ages

Relevant patient clinical history:

- Diagnoses
- Severity
- Dates and ages

Procedures:

- Dates and ages

Treatments:

- Dates and durations

Investigations:

- Dates
- Findings

Clinical observations:

Dates
Findings

Social issues:

Dates
Durations
Family and other support

Lifestyle:

Dates
Durations
Substance amounts

Risk factors:

As for **Lifestyle** above

Functional status:

Assessor
Assessment date
Instrument
Results:
 Functional independence measure (FIM)
 Free typed

Legal status:

Community health definitions

Guardianship:

Community health definitions

Outcome of hospitalisation episode**Patient consent information:**

Access control and distribution constraint over contained information

Reason for discharge

Circumstances of discharge
Party who is effecting discharge
 Self discharge against advice

Allergies/adverse reactions:

- Nature
- Severity
- Dates
- Witnesses including roles

Alerts:

- Nature
- Dates
- Duration
- Certainty
- Evidence

Clinical synopses:

- Author
- Providers referenced
- Provider roles/disciplines
- Dates:
 - Referenced services
 - Authoring

Medications:

- Eventuality
 - Pre-admission
 - During admission
 - On discharge
- Written instructions given to patient
- Drug details
 - Code
 - Names: generic and trade
 - Form
 - Strength
 - Dose
 - Units
 - Frequency
 - Route
 - Special instructions
- Reason for use
- Amount supplied
- Treatment duration intent
- Reason for changing from pre-admission
 - New drugs
 - Altered preparation/dose/frequency
- Administration details over 24 hours prior to discharge

Investigations:

Types

Laboratory

Imaging

Other

Date

Summary results

Detailed results

As per content of full reports

Care planning:

Pathway information

Dates

Providers

Services

Types

Dates

Organized

Recommended

Patient instruction

Future appointments

Dates

Service types

Providers

Reason

Care teams:

Provider details

Roles

Contact details

B2 TERMINOLOGY AND CODING STANDARDS FOR DISCHARGE REFERRAL

(a) Coding of headings in B1:

(i) Use clinical LOINC in OBR-4 and optionally in OBX-3.

(ii) Submissions to LOINC required for non-existent codes.

(b) Laboratory requests and results

(i) Use LOINC codes.

(ii) Use ordering and result sets codes as specified by AS 4700.2 and HB 262.

- (c) Data values
 - (i) Used in OBX 5: Code + Code scheme declaration + Free type.
 - (ii) Where coded, options (by site agreement) include but are not limited to:
 - (A) ICPC2.
 - (B) SNOMED CT.
 - (C) DOCLE.
 - (D) ICD10-AM.
- (d) Medication codes:
 - (i) Form, route, strength and substance as per AS/NZS 4700.3.

B3 OTHER APPLICATIONS OF REF MESSAGE

Referral is a special case of a general shared care / clinical system update message.

The differences within these applications are in the expectations on the referee and the degree of care transfer.

Notification of shared EHRs, clinical decision support agents:

Virtual referral

No specific care transfer intended

No defined referee. Encode target service in PRD1 to reflect this.

Code required in RF1-3:

Referral type: CE extension of user-defined Table 0281 to include:

Shared EHR update

Clinical decision support service update

Shared care messaging:

As per normal referral

Code required in RF1-3:

Referral type: CE extension of user-defined Table 0281 to include:

Shared care update

NOTES

NOTES

NOTES

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