

Australian Standard[®]

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

**Part 7: Diagnostic imaging orders and
results**



This Australian Standard® was prepared by Committee IT-014, Health Informatics. It was approved on behalf of the Council of Standards Australia on 2 August 2005.
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Implementation of Health Level Seven (HL7) Version 2.3.1

Part 7: Diagnostic imaging orders and results

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PREFACE

This Standard was prepared by the Australian members 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.

This Standard incorporates Amendment No. 1 (December 2006). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

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

The objective of this Standard is to cover implementation of Health Level Seven (HL7) Version 2.3.1 protocol, for communication between health service providers and diagnostic imaging providers within and between Australian healthcare settings. It also covers referrals between diagnostic imaging providers and communication between diagnostic imaging providers and knowledge bases.

Australia and New Zealand already have an existing base of healthcare 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 United States of America and international HL7 initiatives in countries including Canada, Finland, Germany, India, Japan, the Netherlands, South Africa and the United Kingdom.

The HL7 family of standards specifies 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 this inbuilt flexibility. However, it is also one of its weaknesses. It is open to differences in interpretation in its structure and format. Implementation of the HL7 Version 2.3.1 Standard in the Australian health environment requires a common and consistent approach.

The initiative known as 'Integrating the Healthcare Enterprise' (IHE) is designed to promote the integration of healthcare information systems in modern institutions. The IHE approach is not to define new integration standards, but to employ existing standards in an integrated manner. IHE maintains active links with the HL7 and DICOM groups.

This document utilizes the IHE approach where appropriate.

The intended users of this Standard include health authorities, health service providers, diagnostic imaging providers, health institutions, health information technology vendors, health information technology consultants and the health informatics community.

A1 | Standards Australia wishes to thank the Department of Health and Ageing for their continued financial support in helping us to achieve our aims.

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FOREWORD

This document was prepared by the Collaborative Centre for eHealth, University of Ballarat, in co-operation with members of the health informatics and diagnostic imaging messaging community in Australia.

Preparation of this Standard has drawn from work undertaken by the Department of Health Services, South Australia and the Western Victoria Division of General Practice.

The aim of the document is to advise on the methods for implementation of report messages and order entry messages, utilizing appropriate international and national Standards.

HL7 is a healthcare 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 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.

The HL7 Version 2.3.1 protocol covers a wide range of data interchange functions. However, this document focuses on the diagnostic imaging orders and results for HL7 messages. An order entry message is analogous to a diagnostic imaging request. An observational report message is analogous to the printed diagnostic imaging report.

All efforts have been made to minimize divergence from the HL7 protocol to ensure maximum compatibility with future versions.

STANDARDS AUSTRALIA

Australian Standard

Implementation of Health Level Seven (HL7) Version 2.3.1

Part 7: Diagnostic imaging orders and results

1 SCOPE

This Standard covers implementation of diagnostic imaging orders and results using HL7 Version 2.3.1 protocol, for communication between health service providers and diagnostic imaging providers, within and between Australian healthcare settings. It 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, as well as use cases. 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 Royal Australian and New Zealand College of Radiologists (RANZCR) and the Integrating the Healthcare Enterprise (IHE) initiative. The content covers the description and usage of placer order management; that is, a new order from an order placer and order cancellation by an order placer. It goes on to describe the filler order management.

2 APPLICATION

Australia already has an existing base of healthcare 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 differences in interpretation in structure and format. 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, diagnostic imaging 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.

3 REFERENCED AND RELATED DOCUMENTS

3.1 Referenced documents

The following documents are referred to in this Standard:

AS	
4700	Implementation of Health Level Seven (HL7) Version 2.3.1
4700.1	Part 1: Patient administration
5017	Health Care Client Identification
HB 262	Pathology electronic messaging—Guidelines for pathology messaging between pathology providers and health service providers—Implementation guide

ISO/IEC 8072	Information technology—Open systems interconnection—Transport service definition
HL7 V2.3.1	Health Level Seven Standard Version 2.3.1: Health Level Seven Inc., Ann Arbor 1999 www.hl7.org
LOINC	Logical Observation Identifier Names and Codes, Users Guide: Regenstrief Institute, Indianapolis, 2003 www.loinc.org
NHDD	National Health Data Dictionary Version 11.0. National Health Data Committee, Canberra: Australian Institute of Health and Welfare, 2002
IHE RTF	Integrating the Healthcare Enterprise, Radiology Technical Framework, Revision 5.5, 20 November 2003 www.rsna.org/IHE

3.2 Related documents

Attention is drawn to the following related documents:

AS 4590	Interchange of client information
AS ISO 15489	Records management
15489.1	Part 1: General
15489.2	Part 2: Guidelines
AS/NZS 4360	Risk management
4700	Implementation of Health Level Seven (HL7) Version 2.3.1
4700.3	Part 3: Electronic messages for exchange of information on drug prescription

4 DEFINITIONS

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

4.1 Filler

The application responding to a request for services (orders) or producing an observation. The filler can also originate requests for services (new orders), add additional services to existing orders, replace existing orders, put an order on hold, discontinue an order, release a held order, reject an order or cancel existing orders.

4.2 Full text result

An electronic representation of a diagnostic imaging report, or part thereof, as if it were typed on paper.

4.3 Observation report

An electronic representation of observations and results of diagnostic studies.

4.4 Order

A request for diagnostic imaging services for a specified patient.

4.5 Placer

The application or individual originating a request for services (orders).

4.6 Placer order group

A list of associated orders coming from a single location regarding a specific patient.

4.7 Report

A report is a set of one or more results and any associated interpretation usually generated in response to a request for diagnostic imaging. A report may include results previously reported and in some instances results from another request.

4.8 Self determined test

A test automatically performed by the filler without it being specifically requested.

4.9 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 OVERVIEW

5.1 General

Within Australian diagnostic imaging messaging there are several issues that must be managed to provide for regulatory and operational differences. They do not form part of the HL7 standard but are included to provide information about situations, which must be managed so that a degree of commonality may be achieved across systems.

5.2 Patient identification

The HL7 PID segment permits transmission of all known patient identifiers. The transmission and use of identifiers should take into account the requirements of the privacy regulation.

- A1 | For further information about patient identification and business processes, see AS 5017 (particularly the Section on data matching) and see AS 4700.1—2001.

NOTE: Patient identifiers may not necessarily be unique.

5.3 Site identification

Placer and filler site are specified uniquely by a code contained in the last three components of ORC-2-Placer Order Number and ORC-3-Filler Order Number (These components of the EI data type are the equivalent of the 3 components of the HD data type). Since there is no officially recognized way of uniquely identifying sites in Australia, the following guidance is provided as an interim solution. The second component of the EI data type (first component of the HD data type) can be populated with a composite identifier. Generally, unique identifiers should be chosen from a controlled namespace. The namespace IDs are listed in User-defined table 0300 – Namespace ID, see usage notes against ORC-2-Placer Order Number in Table 7. It is suggested that for local use, a composite identifier comprise sub-components separated by dots.

The first sub-component should indicate the identifier. The second sub-component indicates controlled namespace.

The list below shows examples how site identification is used.

- (a) Recognized national namespaces should be identified by a code starting with 'AUS' (e.g. AUSHIC), preceded by the identifier.
Example: 'Sussex Radiology^LSPN99^AUSHIC'
- (b) Local namespace should be identified by a code starting with 'LOC', preceded by the identifier.
Example: 'QML.LOCRAD', 'RPA.LOCHOSP', '37284.LOCMDW'
- (c) Further specification of the local site code can be performed using the dot notation.
Example: 'EMERG.RPA.LOCHOSP'

- (d) Internet domain names are a suitable controlled namespace identifier where available. Their usage is defined in HL7 V2.3.1 Clause 2.8.20.3.

Example: 'auslab.com.au'

All Australian namespaces shall be coded as 'local' in HL7 terms, unless they are part of an internationally recognized namespace.

5.4 Lower layer protocols

- A1 | The HL7 Encoding Rules are substantially different from the Abstract Syntax Notation 1 (ASN.1) Basic Encoding Rules (BER) documented in CCITT X.409 and X.209 and ISO 8825 or those employed in LU6.2 or RPC.

This is because:

- (a) By definition, the HL7 encoding rules (which include the notation chosen to document the message formats) will be applied where the environment does not include software to do encoding. Without such software, the burden on applications programmers to develop messaging software that conforms to those encoding rules is onerous.
- (b) The encoding rules of these protocols depend on the assumption that lower level protocols provide transparency (i.e., all character codes can be transmitted without being changed by any of the lower levels). This assumption is often not met in the communications environments that must serve HL7 for the interim. The techniques that might be used to implement transparency in the Lower Level Protocol are difficult to implement in some present-day applications environments.

Contrary to other high level communications environments, there is no notion of association separate from the sending of the message from client to server and the response. This seems appropriate to the client-server model.

- A1 | Whenever HL7 is applied in a networking environment, addressing will be an issue. This is equally true when it is applied in ISO/IEC 8072 or proprietary networks. Although the Standard does not specify how this addressing will occur, it does provide certain data fields that will be of value in determining addresses. The fields *MSH-5-receiving application*, *MSH-6-receiving facility*, and *MSH-11-processing ID*, are located in the header of all HL7 messages. *MSH-6-receiving facility* is intended for environments where multiple occurrences of the same application are being run on the same computer system or on the same network on behalf of different institutions or other organizational entities. *MSH-11-processing ID* is used where various versions of essentially the same application may reside on the same computer for different purposes. See *HL7 table 0103-Processing ID* for recommended values.

HL7 does not standardize all values for *MSH-5-receiving application* and *MSH-6-receiving facility* at this time because there are so many variations in place in existing systems and because different kinds of environments (e.g., different countries) may have different required code sets. This Standard strongly encourages the use of the HL7 suggested code sets where they are defined and recognizes that movement toward more standardized codes is essential for seamless communications.

5.5 Batch protocol

Under some circumstances it may be more viable to send messages batched into a file. It is probable that the transmission mechanism being used may lend itself to batched files rather than single messages.

In this case a file naming convention should be adopted to ensure that messages from different sources do not overwrite each other at the receiving site. HB 262 gives further advice about the methodology, processes, reasons, traps and potential problems.

Regardless of the file naming convention that is adopted it is only a high level methodology. The receiving system should use the data values within the message to direct processing of the message.

5.6 Diagnostic imaging order management

5.6.1 General

Each requested test should be ordered using a single (ORC, OBR) segment pair. Orders required for a single request should be sent within one message i.e. under a single MSH segment.

Each ordered test will be identified by a unique Placer Order Number (contained in both the ORC and OBR segments).

The request should be identified by a Placer Group Number (contained in the ORC segment only).

5.6.2 Use Of Order Numbers And Group Numbers

Placer Order Number, Placer Group Number and Filler Order Number should be used in a clearly defined way. To minimize the amount of site-specific negotiation, the recommended methodology is described below. This methodology provides a consistent mechanism to match results to orders where a one-for-one relationship between requested tests and test results is not possible. There are numerous circumstances where this occurs. The method remains consistent when one-to-one relationships do exist.

5.6.3 Placer Group Number

ORC-4-Placer Group Number is used to identify a particular diagnostic imaging request and to link all tests that comprise that request (this is equivalent to a diagnostic imaging request identifier). All tests from a particular request should have the same Placer Group Number, including self-determined tests and department-generated investigation requests.

5.6.4 Placer Order Number

The Placer Order Number is the order reference number generated by the placer site (surgery, hospital, etc.) when ordering diagnostic imaging testing. It is a multi-component field comprising a number and the Placer site to ensure that the request does not duplicate a request from another site. A separate Placer Order Number should be used for each test in the request. This allows each item in the order to be individually referenced especially in situations where part of the order is to be cancelled.

The suggested method for generating a Placer Order Number is to concatenate the Placer Group Number with a 'counter' for each test in the request.

5.6.5 Filler Order Number

The Filler Order Number is essentially an 'acceptance or receipt number' from the diagnostic imaging department to acknowledge that an order has been received and accepted. It may be sent when returning results to the placer. It should not be used to link results to orders, as there are instances where more than one Filler Order Number could be generated in response to a single request.

5.6.6 Episode And Result Identifiers

Historically, results have been identified by the accession number. However, in HL7 (Order Entry/Results Reporting) the diagnostic imaging department number is not available until the patient presents for examination, which will generally be some time after the order has been submitted. The Order and the Collection are usually two disparate events separated by time and distance.

When the department receives an electronic request it must send an acknowledgement with a Filler Order Number. If several tests are received on the same request (same Placer Group Number) then an equivalent number of test acknowledgements will be sent.

The department may adopt one of two positions:

- (a) It may respond immediately to the order with a 'receipt reference' as the Filler Order Number.

When the patient eventually presents for examination they are allocated a number by the department. On reaching the department the patient and the paperwork are linked to the original order and the department number is entered against the order and the order is activated.

- (b) It may hold the order and not respond until the patient presents and a department number is assigned to the request and use this as the Filler Order Number.

The order is activated when the department number is entered and an order response can then be sent to the placer using the department number as the Filler Order Number.

In an electronic environment, the department number is not required by the requestor to link results to an order; the Placer order number/Placer group number/Filler order number should be used for this purpose.

5.6.7 Self-determined tests

Self-determined tests are generally not ordered by the placer, they are self-determined by the radiologist. They will be associated with the original order by Placer Group Number but may not have a Placer Order Number. Placer applications shall be able to receive reports for which there is no Placer Order Number.

5.7 Placer order management

NOTE: This Clause corresponds to Transaction 2 of the IHE Technical Framework. Transaction 2 is used by the Order Placer and Department System Scheduler/Order Filler actors. Only Order Control Codes as specified by IHE are supported. The other control codes included in HL7 V2.3.1 are not.

5.7.1 General

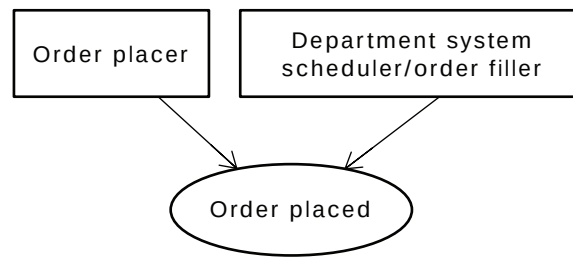
This transaction is used by the Order Placer to place a new order with the Order Filler. It also allows the Order Placer to cancel the order. To change order information, the Order Placer would cancel the initial order and place the new one. If used, the support of recurring orders and panel orders is the subject of agreement between the Order Placer and the Department System Scheduler/Order filler.

Recurring order: An order with a performance frequency greater than one. For example, portable chest X-ray at 6:00 am for the next seven days.

Panel order: A service item with more than one observation component. For example, a nuclear cardiac study that has a cardiology component and a diagnostic imaging component that are usually reported on separately.

5.7.2 Use case roles

Figure 1 represents the 'Order Placed' use case.



Actor	Role
Order Placer	Places orders. Cancels orders as necessary
Department System Scheduler/Order Filler	Receives and processes (fills) orders. Receives order cancellations

FIGURE 1 ORDER PLACED

5.7.3 Referenced Standards

Refer to HL7 V2.3.1 Chapter 4 and IHE Radiology Technical Framework, vol. II: Transactions for placer order management.

5.7.4 Order management—New order from order placer

NOTE: Figure 2 represents the 'New Order from Order Placer' use case.

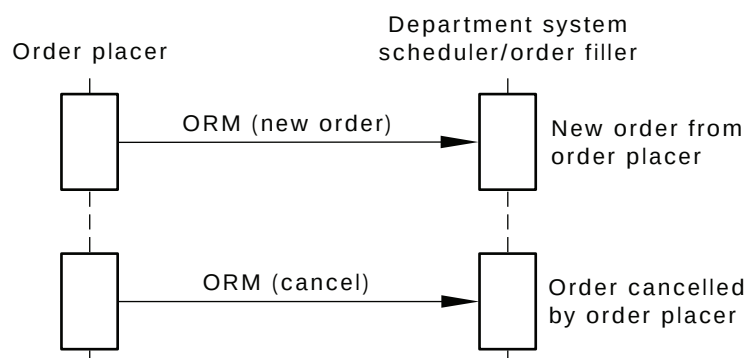


FIGURE 2 NEW ORDER FROM ORDER PLACER

5.7.4.1 Trigger events

ORM — The Order Placer places a new order for the Department System Scheduler/Order Filler.

5.7.4.2 Message semantics

HL7 V2.3.1 Chapter 4 ORM message. Refer to HL7 Standard for general message semantics.

The order start date/time or exam date/time are required in the 'Quantity/Timing' field of both the ORC and OBR segments (ORC-7.4; OBR-27.4).

5.7.5 Order management—Order cancelled by order placer

5.7.5.1 Trigger events

ORM — Order Placer cancels an order (control code = CA).

ORM — Order Placer discontinues (attempts to stop) an ongoing order (control code = DC).

5.7.5.2 Message semantics

HL7 V2.3.1 Chapter 4 ORM message. Refer to HL7 standard for general message semantics. Refer to vol. II, sec. 4.2.4.1.2 above for detailed requirements of the ORM message.

5.8 Filler order management

NOTE: This Clause corresponds to Transaction 3 of the IHE Technical Framework. Transaction 3 is used by the Order Placer and Department System Scheduler/Order Filler actors.

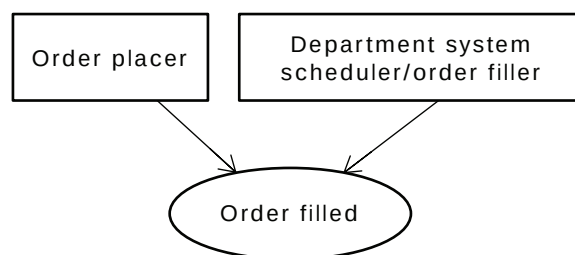
5.8.1 General

This transaction is used by the Order Filler to inform the Order Placer about the orders it creates and cancels, including the status of the orders it is fulfilling. If the Order Filler needs to change an order, it has to do so as a combination of Order Cancel followed by New Order.

A 1:1 relationship between Order Placer and Order should be maintained before the Order Filler creates new orders.

5.8.2 Use case roles

Figure 3 represents the ‘Order Filled’ use case.



Actor	Role
Order Placer	Receives new order and order cancellation requests from Order Filler. Receives Order Status updates from Order Filler.
Department System Scheduler/Order Filler	Creates new or cancels existing orders; sends notifications of order status to the Order Placer.

FIGURE 3 ORDER FILLED

5.8.3 Referenced Standards

Refer to HL7 V2.3.1 Chapter 4 and RTF.

5.8.4 Filler order management—New order from order filler

5.8.4.1 General

Figure 4 represents the ‘New Order from Order Filler’ use case.

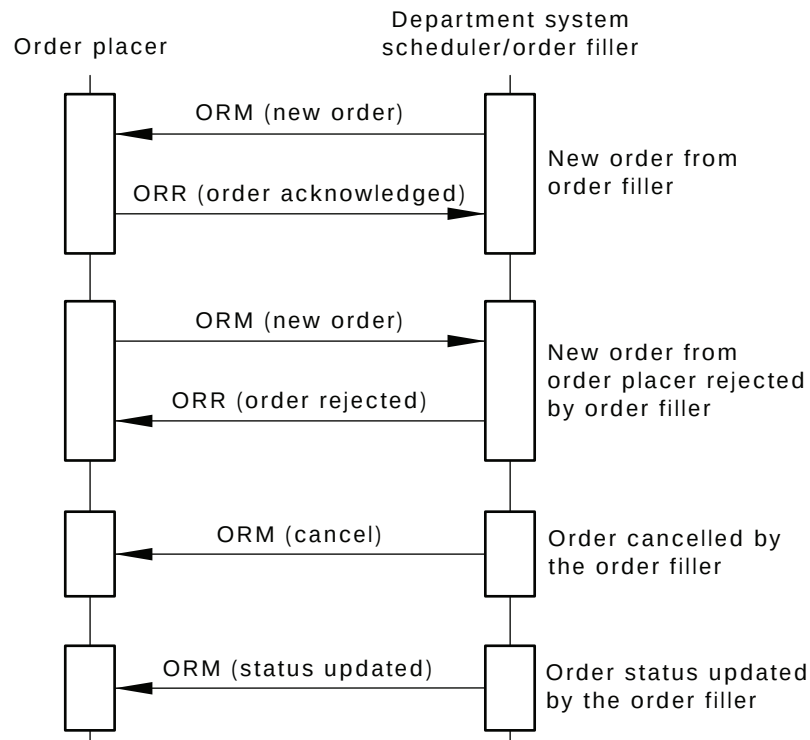


FIGURE 4 NEW ORDER FROM ORDER FILLER

5.8.4.2 Trigger events

ORM — Department System Scheduler/Order Filler places an order (control code = SN).

ORR — Order Placer replies (control code = NA).

5.8.4.3 Message semantics

HL7 V2.3.1 Chapter 4 ORM message. Refer to HL7 Standard for general message semantics.

HL7 V2.3.1 Chapter 4 ORR message. Refer to HL7 Standard for general message semantics.

5.8.5 Filler order management—Order rejected by the order filler**5.8.5.1 Trigger events**

ORR—Department System Scheduler/Order Filler rejects the order received from Order Placer.

If the Order Filler is unable to process an order, an ORR message will be sent to the Order Placer with an explanation/reason in ORC-16.

5.8.5.2 Message semantics

HL7 V2.3.1 Chapter 4 ORM message. Refer to HL7 standard for general message semantics.

5.8.6 Filler order management—Order status update**5.8.6.1 General**

The Order Status Update Message is used by the DSS/Order Filler to notify the Order Placer about changes in the status of the order as it is being fulfilled by the DSS/Order Filler.

5.8.6.2 *Trigger events*

ORM — Department System Scheduler/Order Filler updates an order status (control code = SC).

5.8.6.3 *Message semantics*

HL7 V2.3.1 Chapter 4 ORM message. Refer to HL7 Version Standard for general message semantics.

5.8.7 *Filler order management—Order cancelled by the order filler***5.8.7.1** *Trigger events*

ORM—Department System Scheduler/Order Filler cancels the order previously received from

Order Placer (control code = OC).

5.8.7.2 *Message semantics*

HL7 V2.3.1 Chapter 4 ORM message. Refer to HL7 standard for general message semantics.

5.9 **Billing information****5.9.1** *Funding source*

NHDD 000632 'Funding source for hospital patient' lists the following codes:

01 Australian Health Care Agreements (in the community setting, this can be used to indicate Medicare funding)

ALERT: Variance to NHDD version 10.

02 Private health insurance

03 Self-funded

04 Worker's compensation

05 Motor vehicle third party personal claim

06 Other compensation (e.g. public liability, common law, medical negligence)

07 Department of Veterans' Affairs

08 Department of Defence

09 Correctional facility

10 Other hospital or public authority (contracted care)

11 Reciprocal health care agreements (with other countries)

12 Other

99 Not known

Funding source is specified in *PV1-20 — Financial Class*.

Further information on the billable party can be sent in various segments, depending on funding source. See Table 1 for billing codes.

TABLE 1
FUNDING SOURCE

Code	Funding source details
01	Medicare number is sent in <i>PID-3 — Patient Identifier List</i>
02	Private fund details sent in IN1 segment
03	Patient or guarantor details in GT1 segment. If the patient is the payer, their details are included in the GT1 segment
04	Organizational guarantor details are sent in the GT1 segment
05	Third party claims are usually billed to another party in the first instance. If a known guarantor is identified, their details can be sent in GT1 segment.
06	Other compensation claims are usually billed to another party in the first instance. If a known guarantor is identified, their details can be sent in GT1 segment.
07	DVA File number is sent in <i>PID-3 — Patient Identifier List</i>
08	Dept of Defence file number is sent in <i>PID-3 — Patient Identifier List</i>
09	Occupants of a correctional facility will usually be covered by Medicare. Medicare number is sent in <i>PID-3 — Patient Identifier List</i>
10	Contract details are sent in <i>PV1-24 — Contract Code</i> . Organizational guarantor details are sent in the GT1 segment
11	Organizational guarantor details are sent in the GT1 segment
12	Guarantor details are sent in the GT1 segment
99	Undefined or not known

5.9.2 Billing category

Currently, there is no agreed controlled vocabulary for billing category. As an interim solution, it is recommended that the following be used.

(a) Agreed Australian billing category codes:

AUSM85 85% of Medicare schedule fee.

AUSM75 75% of Medicare schedule fee.

AUSM100 Medicare scheduled fee.

AUSAMA Australian Medical Association (AMA) recommended fee.

(b) Local codes:

The BLG segment is used to provide billing information on the ordered service, to the filling application. By site-specific agreement, local billing codes may be used. It is recommended that these be prefixed with 'LB_' (as per HL7 V2.3.1 table 0396 'Coding System') to indicate the local domain of the code list. The next 3 characters identify the originator of the code. For example: LB_QMLxxxx.

Billing category is sent in *PV1-21— Charge price indicator*.

5.10 Display format for results

HL7 messages provide results data in an atomic format; i.e., there is no inherent formatting or any dependency between the data in the OBX segments of a results message except in the sequence of the OBX segments (and that is accidental and should not be relied upon to provide any relationship whatsoever.)

Therefore, in order to ensure the display integrity of results transmitted using the HL7 protocol, filler systems should —

- (a) send atomic results; and preferably
- (b) send a rendering in a standard format as AUSPDI display types in the last segment.

Preferred formats are —

Plain text (txt)	(FT)
HTML	(FT)
RTF	(ED)
PDF	(ED)
JPEG	(ED)
TIFF	(ED)

Receiving systems should render either of the following:

- (i) Atomic results in the form expected by the filler taking account of the format of:
 - (A) Single reports.
 - (B) Graphs.
 - (C) Graphs from multiple fillers.
 - (D) Patient demographics.
 - (E) Results.
 - (F) Abnormal flags.
 - (G) Reference ranges.
 - (H) Comments.
- (ii) Render from the AUSPDI (last OBX) segment.

This is an important area for the maintenance of the integrity of the transfer of the information and may have medico—legal implications.

The filler system sends a display form of the report. Where a result is sent to be displayed which is in addition to atomic results it should be indicated using the following convention:

OBX||FT|HTML^Display format in HTML^AUSPDI||...

OBX||FT|TXT^Display format in text^AUSPDI||...

OBX||ED|RTF^Display format in RTF^AUSPDI||... **

OBX||ED|PDF^Display format in PDF^AUSPDI||... *

OBX||ED|JPG^Display format in JPG^AUSPDI||... *

If the receiving software is not able to show the display format sent by the filler then it is the receiving system's responsibility to render the results accurately. This could only be done with site negotiation and conformance testing.

NOTE: The AUSPDI segment is not where radiological images are to be included in messages. These images should be transmitted in previous OBX segments using the ED data type.

5.11 Correlation of order and result messages

Practical implementation of diagnostic imaging information systems demonstrates that direct one-to-one alignment of orders and results will not always occur. The use of a one-to-one relationship between Placer Order Numbers and requested tests provides a robust mechanism for determining whether a particular order has been filled. This does not depend on any correlation between ordering test codes and result codes.