

Australian Standard<sup>®</sup>

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

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

**STANDARDS**  
Australia



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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Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through public comment period.

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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 'Integration of 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 Reference 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