

Interim Australian Standard[®]

**Implementation of Health Level Seven
(HL7) Version 2.5**

**Part 3: Electronic messages for
exchange of information on drug
prescription**



This Interim Australian Standard® was prepared by Committee IT-014, Health Informatics. It was approved on behalf of the Council of Standards Australia on 24 October 2007. This Interim Standard was published on 23 November 2007.

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- Australian Department of Health and Ageing
- Australian Electrical and Electronic Manufacturers Association
- Australian Information Industry Association
- Australian Institute of Health & Welfare
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Additional Interests:

- ArgusConnect
 - Collaborative Centre for eHealth
 - Department of Veterans' Affairs
 - Health Communication Network
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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.

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PREFACE

This Interim Standard was prepared by the IT-014-06-04, Prescription Messaging Working Group under direction from Standards Australia Committee IT-014, Health Informatics in response to requests from the health informatics community.

It covers implementation of the Health Level Seven (HL7) Version 2.5 protocol, for communication between prescribers, dispensers and their health care trading partners in Australia. It is based on AS 4700.3—2005, the corresponding implementation guide for HL7 Version 2.4, and incorporates differences between HL7 Version 2.4 and HL7 Version 2.5.

Notwithstanding the publication of this document, AS 4700.3—2005, *Implementation of the Health Level Seven (HL7) Version 2.4, Part 3: Electronic messages for exchange of information on drug prescription* remains current in respect of HL7 Version 2.4 implementations, AS/NZS 4700.3:2002 *Implementation of the Health Level Seven (HL7) Version 2.3.1, Part 3: Electronic messages for exchange of information on drug prescription* remains current in respect of HL7 Version 2.3.1 implementations, and AS/NZS 4700.3:1999 *2002 Implementation of the Health Level Seven (HL7) Version 2.3, Part 3: Electronic messages for exchange of information on drug prescription* remains current in respect of HL7 Version 2.3 implementations.

In this document, frequent reference is made to AS 4700.1—2006, *Implementation of Health Level Seven (HL7) Version 2.5, Part 1: Patient administration* which covers the implementation of HL7 Version 2.5 for patient administration within and between Australian health care settings. AS 4700.1 provides an important foundation for the building of most clinical health care messages.

Attention is drawn to the fact that this document is an Interim Standard and may be subject to alterations flowing from further development. It has a currency of two years from its date of publication after which it will be either withdrawn, revised in the light of comments received, superseded by an Australian Standard, or re-issued as an Interim Standard for a further two year period. Persons and organizations concerned with the use of this Interim Standard are invited to submit comments on it to Standards Australia during its period of currency.

Standards Australia wishes to thank the Department of Health and Ageing for their financial support in helping us to produce this Interim Standard.

CONTENTS

	<i>Page</i>
FOREWORD.....	4
1 SCOPE.....	6
2 APPLICATION	6
3 REFERENCED AND RELATED DOCUMENTS.....	6
4 CHANGES IN THIS VERSION	7
5 DEFINITIONS.....	8
6 OVERVIEW	12
7 MESSAGES.....	24
8 MESSAGE SEGMENTS	48

FOREWORD

This version of AS 4700.3 was prepared following a workshop involving a broad spectrum of interested parties to give input into redesigning the way this document has been formed. The previous version of AS 4700.3 was considered by some to be difficult to understand and in particular how HL7 messages were to be used. This version of the standard has used UML diagrams to show the interaction of HL7 messages.

The IT-014-06-04, Prescription Messages Working Group has reviewed and interpreted data segments and data elements that are mandatory (required), conditional (required, based on a condition) or optional and relevant usage notes in the Australian health environment.

In the preparation of this Interim Standard, cognisance was taken of the work being done by other parties with regard to patient confidentiality and adverse drug reactions.

In the initial development of AS/NZS 4700.3:1999, a number of meetings were convened involving representatives from a wide range of organizations in the health sector and from others interested in the health sector. The organizations represented in pharmacy came from State Pharmacy Boards, the Pharmaceutical Society of Australia, Pharmacy Guild, the Society of Hospital Pharmacists, various levels of the pharmaceutical industry, community and Defence pharmacy. The medical profession was represented by clinicians and administrators, and other health professionals were represented at various times. The software industry, business consultancies, academia, the engineering profession and the Consumer Health Forum also participated. A very thorough object model was developed to identify all potential information interchanges between participants, not only directly in the passing of prescriptions, but also in the seeking and providing drug information, reporting adverse drug reactions, and seeking authorization and notifying dispensing of specific drugs.

The purpose of this model was to determine how well HL7 would address Australian needs, which were deliberately ambitious, and then to determine how each identified requirement would be satisfied by HL7.

An arbitrary border was placed around the area of interest, since it is conceivable that every piece of knowledge is in some way related to a medical prescription. It was decided that the manufacturer of drugs lay on the border, and that advising the manufacturer of an adverse drug reaction lay inside the area of interest, but that ordering supplies from a manufacturer lay outside. The purpose of this limitation was to limit the interchanges considered—it in no way limits HL7 usage *per se*.

The previous edition of AS 4700.3 was based on an object-oriented data model that identified the players that needed to communicate with each other in a preferred electronic future. Since then, the Standard has been implemented and its value confirmed.

HL7 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 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 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. 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 such as Canada, Finland, Germany, India, Japan, the Netherlands, South Africa 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, that flexibility 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 2.5 Standard in the Australian health environment requires a common and consistent approach.

STANDARDS AUSTRALIA

Interim Australian Standard Implementation of Health Level Seven (HL7) Version 2.5

Part 3: Electronic messages for exchange of information on drug prescription

1 SCOPE

This Interim Standard covers implementation of electronic messages for exchange of information on drug prescriptions in the community and hospital environment using the Health Level Seven (HL7) Version 2.5 protocol.

This Interim Standard does not deal with commercial transactions with suppliers.

This Interim Standard provides consistent use of data definitions as well as commentary and references to the International Organization for Standardization (ISO) and the National Health Data Dictionary.

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

2 APPLICATION

This Interim Standard is a guide for use by health authorities, health care providers, health care institutions, health information technology vendors, health information technology consultants, the health informatics community and the general public.

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 misinterpretation in structure and format. Implementation of the HL7 Standard in the Australian health environments requires a common and consistent approach.

This is not a stand-alone document. A good understanding and, preferably, working knowledge of HL7 is essential, as this Interim Standard is based on and frequently refers to the HL7 Version 2.5 Protocol.

3 REFERENCED AND RELATED DOCUMENTS

3.1 Referenced documents

The following documents are referred to in this Interim Standard:

AS 4700 4700.1—2006	Implementation of Health Level Seven (HL7) Version 2.5 Part 1: Patient administration
HL7 V2.5	Health Level Seven Standard Version 2.5: Health Level Seven Inc., Ann Arbor, 2003

OTHER DOCUMENTS

NHDD	National Health Data Dictionary Version 13.0: National Health Data Committee, Australian Institute of Health and Welfare, Canberra, 2006
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