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|   Patient Administration System and Interoperability  Digital Health Standard Victoria State Government Department of Health and Human Services  April 2019 |
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| Patient Administration System and Interoperability Digital Health StandardApril 2019 |

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Department of Health

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# Version control and reviews

### Version control

The following table identifies some basic information about this document:

|  |  |  |  |
| --- | --- | --- | --- |
| Version | Issue Date | Author | Comments  |
| 0.2 | 13/08/18 | Health Sector Standards and Advisory (Formerly Health Design Authority) | Re-design & redevelopment of contents into a new template, with new sections and general updates. |
| 0.1 | 10/12/13 | Health Sector Standards and Advisory  | Initial Draft |

### Quality reviews

The following table identifies the reviews conducted prior to the release of this document:

| Version | Date | Name | Action |
| --- | --- | --- | --- |
| 0.2 | Oct. 2018 | Sector Design Standards Reference Groups (SDSRG) | Review and feedback |
| 0.2 | Aug.2018 | Health Sector Standards and Advisory | Review and update |

### Referenced artefacts / publications

The following table identifies the various artefacts/publications referenced or considered in this

document:

| Document Name | Owner /Author | Comments |
| --- | --- | --- |
|  |  |  |

### Endorsements and approvals

This document has been endorsed and approved for publication by the Standards and Advisory, Digital Health, Department of Health and Human Services

# Standards overview

This Standard defines the minimum set of functional requirements for an implementation of Patient Administration System by health services in the Victoria Public Health Sector. They are a base set of interface, terminology and regulatory requirements that enable interoperability within and external to a health service.

The standard will enable integration with national digital health services such as My Health Record, the HI service, national electronic transfer of prescriptions.

Prior to this standard, the department (i.e. DHHS) has spent many years delivering standard and guides to the Victorian Public Health Sector (VPHS) which not only supports interoperability within the state in the current environment, but positions health services to better receive and implement national initiatives, like the My Health Record.

The standard includes both mandatory and optional requirements.

The mandatory requirements cover the categories of Terminology, Interfacing, Australian Digital Health Agency (ADHA), Localisation to Australian and Victorian requirements and Regulatory requirements, while the optional/future requirements cover the categories of ADHA, Terminology, ADHA and Episode management.

# Introduction

## Digital Health Branch

The Digital Health branch led by the Chief Digital Health Officer reports to the Deputy Secretary of Health and Wellbeing. As a branch in the Health and Wellbeing division, Digital Health collaborates closely with a wide range of stakeholders across the department, sector agencies and other jurisdictions to perform the following functions:

* Provides engagement, standards, policy advice, planning and assurance functions across the health sector in the areas of digital health
* Is responsible for the system management required to operationalise health sector reform
* Provides outward-facing whole of health sector leadership in digital health enablement as well as commissioning of digital health and ICT functions
* Maintain a close working relationship with other branches of the division which has the levers, relationships and responsibilities across the health system to ensure digital projects are properly governed, resourced, and ensure all risks are well managed
* Guides health ICT initiatives towards an interoperable future eHealth environment using well-established standards, best practice guides, methodologies and principles

Digital Health utilises the people, process and technology components, with a strong emphasis on transformational change elements when implanting new health systems and workflow processes.

Digital Health focus on four areas:

1. Digital Health strategy, policy and architecture standards for the Victorian health sector.
2. Commissioning of digital health functions within Victorian public health services.
3. Sponsoring digital health programs to implement sector-wide health information sharing platforms including those at a national level (to which Victoria contributes) as well as sector-enabling capabilities sponsored by DHHS.
4. Health service system management function including sector assurance (e.g. major program, operations and cybersecurity).

Digital health program areas include:

* Health Sector Standards and Advisory which provide information on emerging health technologies, feasibility, architecture, design and integration.
* Sector Assurance which provides assurance on all approved health service projects funded or co-funded by the government to ensure health services operate safely, securely and cost-effectively.
* Sector Governance and Reporting which provides governance and reporting on the system manager function and the overall digital health branch function.
* Health Sector Planning which provide planning and pipeline management for the health sector, managing concept proposals, business bases, funding bids and subsequently funding allocation and funding agreements.

Health Sector Standards and Advisory (HSSA) is committed to open, independent and best practice view of healthcare Information and Communication Technology (ICT), application solution principles. HSSA can provide recommendations to the overarching enterprise application design and associated services to integrate healthcare applications. For this guide, HSSA will:

* Deliver guides and advice around interoperability across healthcare applications
* Define messaging standards for Victorian health applications
* Facilitate a higher level of integration knowledge and associated quality processes in the Victorian health sector
* Align innovation, efficiencies and effective use of ICT within health to encourage and drive standards-based approaches that encourage a high level of interoperability

## Background

This document includes a list of high-level principles and representative requirements that should be included in any tender for a PAS, whether the solution is integrated or interfaced with an EMR, Emergency Department System, Queuing System or similar.

The department has also spent many years delivering standards and guides to the Victorian Public Health Sector (VPHS) which not only supports interoperability within the state in the current environment, but positions health services to better receive and implement national initiatives, like My Health Record. It has been well noted by ADHA that the work that Victoria has undertaken over the past five years through the Digital Health branch (Formerly Office of the Chief Information Officer (OCIO)) has provided an excellent foundation for better national interoperability.

Some of these standards and guides include:

* Digital Health Unified Standard[[1]](#footnote-2)
* Solution design architecture documentation
* CIS and EMR Application and Interoperability Standard

More information on ADHA and Victorian digital health standards can be found at:

* <https://www2.health.vic.gov.au/about/publications/policiesandguidelines/digital-design-unified-standard>
* [www.standards.org.au](http://www.standards.org.au)
* <https://www2.health.vic.gov.au/hospitals-and-health-services/data-reporting/health-data-standards-systems>
* <https://www2.health.vic.gov.au/hospitals-and-health-services/planning-infrastructure/health-design-authority>

Health Sector Standards and Advisory (HSSA) is currently engaged to help a number of Victorian public health services looking to implement a new Patient Administration System (PAS), as part of an overall enterprise Electronic Medical Records (EMR) solution, or as a standalone yet interfaced system to a separate EMR. HSSA mandate is to guide health ICT initiatives towards an interoperable future eHealth environment using well-established standards, best practice guides, methodologies and principles.

While health services are highly capable of determining functional requirements for their future PAS solution, they may have had less exposure to the new and future state-wide and national eHealth requirements. HSSA can assist with identifying these requirements for the PAS that will enable integration with national eHealth capabilities such as My Health Record and the HI Service along with support to interface with the health services preferred EMR or clinical information system.

In conjunction with national requirements, this document also provides a minimum set of principles and interoperability standards for the Victorian Public Health Sector (VPHS). This will ensure continued interoperability of data applications across the state and position health services for both current and future state-wide and national eHealth directions.

## Purpose

The purpose of this standard is to specify the current and emerging Victorian and national requirements for the implementation of PAS by health services, to enable integration with national eHealth capabilities such as My Health Record, the HI service and other state solutions such as the State-wide UPI.

Health services should use this standard as a guide and include it as part of their initial requirements to acquire a PAS solution.

## Assumptions

The assumptions for this standard are:

* Health services use the most recent and approved versions related to categories i.e. ICD-10-AM.
* Where Health services are unable to comply with the standard, they will have roadmap for their PAS application to work towards compliance with this standard.
* Applications provided by the department’s Health Technology Solutions i.e. state-wide platforms such as iPM, comply with this standard.

## Scope

### In Scope

This standard includes a base set of specifications for:

* Interfaces
* Clinical terminologies
* EMR functionality that enable interoperability within and external to a health service.

## Audience/Stakeholders

This includes:

* Victoria Public Health Services
* Digital Health branch
* DHHS Health Sector Projects
* DHHS Health Technology Solutions

# Principle and Standards

The following material defines the minimum set of standards that are to be adopted for a PAS implementation. They are a base set of interface, terminology and functions that enable interoperability within and external to a health service. This is a minimum set of functional requirements for any implementation. This standard supports the implementation of the VPHS Reference Architecture in the category of Patient Management – see below:

**Figure 1: VPHS Reference Architecture - Patient Management**



##

## Mandatory

The following have been identified as mandatory requirements when implementing a PAS.

It also includes a column, to indicate level of compliance by each agency. Level of compliance is based on agency’s own judgement and not a universal rating. A guide to the compliance rating is as follows:

**1: None or Low compliance 2: Partial compliance 3: Compliant**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Category** | **Sub Category** | **Description** | **Notes** | **Agency****Compliance Rating****(1 – 3)** |
| Terminology | ICD-10-AM | Must support ICD-10-AM (with incorporated ACHI procedure information) and future ICD versions that are endorsed for use in Victoria. Victoria has a specific adaptation of the Australian Standards ICD-10-AM terminology. Support for the Australian Standard and the Victorian modification is required. | Current Requirement |  |
|  | Diagnosis and Procedure codes | A common national set of diagnosis and procedure terminology is to be used for clinical diagnosis and procedure codification. The accepted national and Victorian standard is ICD10. | Current Requirement |  |
| Provider Management | NHSD | National Health Services Directory (previously the Victorian Human Services Directory). The product must use the content from the NHSD for external general practitioner and specialist information.Process HL7 messaging for automated updates of NHSD information into the PAS, as per HSSA HL7 standards. | Current Requirement |  |
| Interfacing | HL7 Standards for application to application interfacing | Alignment and adoption with the Digital Health HL7 Guidelines and code sets: “Digital Health Unified Implementation Guide”.<http://www.health.vic.gov.au/designauthority/catalogues.htm>Where the HSSA Guidelines do not apply, adherence at a minimum to HL7 v2.4 Australian Standards.This information also provides standard codes and details on Medication Order interfaces and Orders interfaces. | Current Requirement |  |
|  | Outpatient Queue Management | Where the PAS also includes an outpatient booking module, the PAS outpatient module must be capable of receiving inbound HL7 messaging to process a minimal set of standard fields, as defined by the HSSA HL7 standard for queue systems (e.g. attendance status update from the queue management software). In this case, the outpatient system is still the master system for the management of appointment details and the associated distribution of HL7 details. Please contact the HSSA for information on the queuing system specification. | Current Requirement |  |
|  | Patient Registration and details updates | Patient registration details and identifiers are allocated by the PAS system, as the master and recognized authoritative source. Ongoing, bi-directional patient detail updates across applications is not an endorsed practice. The Systems Integration Advisory Committee (SIAC) for Victoria has endorsed emergency department system as a special case for this standard (e.g. for a quick registration process), however, even in this case, the above principle still applies. | Current Requirement |  |
| ADHA | IHI | Individual Healthcare Identifiers specifications. Capability to validate and store the national IHI. An Australian resident that is enrolled with Medicare or holds a Department of Veterans Affairs (DVA) treatment card is automatically allocated an IHI[[2]](#footnote-3). General capability to link and store several national and local patient identifiers.Eclipse Medicare Number validation processes when a patient first presents to assist in IHI matching accuracy into the future.Where IHI management functionality is available within the PAS, this must be utilised. | Current Requirement |  |
| Localisation to Australian and Victorian requirements | Reporting | Victorian regulatory and statutory reporting requirements, where relevant (e.g. VEMD, VAED, VINAH, ESIS) | Current Requirement |  |
| Regulatory | PBS | Must support the capture of information to support Australian PBS regulatory requirements | Current Requirement |  |

## Currently optional / future capability for alignment

The following key minimum requirements have been identified for a PAS as additional capabilities to support enhanced interoperability.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Category** | **Sub Category** | **Description** | **Mandatory/Non** | **Agency****Compliance Rating****(1 – 3)** |
| Australian Digital Health Agency | eReferral | Ability to send and receive ADHA conformant CDA eReferralhttps://www.digitalhealth.gov.au/ | Mandatory future requirement3-4 year adoption timeframe |  |
| Discharge Summary | Discharge summaries are typically generated from an EMR. In the instance where the future direction is to send this information to an external organisation from the PAS, then the following requirement applies:Ability to send and receive ADHA conformant CDA Discharge Summary where the PAS is generating a Discharge Summary. https://www.digitalhealth.gov.au/ | Mandatory future requirement3-4 year adoption timeframe |  |
| IHI | Management of IHI from within the master patient administration application. | Mandatory future requirement1-2 year adoption timeframe |  |
| HPIs | Ability to support the acquisition and management of HPI/Is and HPI/Os. | Future requirement |  |
| Terminology | Alerts and Allergies | The EMR (where present in a health service) must be the designated master for capturing Clinical Alert and Allergy details. Information can be interfaced from the EMR to other applications. The PAS (where an EMR is present) must be the master for administrative alerts details. The PAS, in this case, may reference and display clinical alert and allergy information that has been received from an EMR, e.g. Advanced Care Directives and Senior Decision Makers via HL7. | Mandatory future requirement |  |
| Episode Management | Episodes of Care | The HSSA is currently assessing a number of options associated with multiple episodes of care. In particular, when emergency patients transition from their current location to an inpatient service, multiple episodes are created. Clinicians view these episodes as one elongated episode of care, whilst the PAS and the government reporting systems view these as individual episodes. The PAS system remains the master of patient information and therefore formulates one of the options to bridge the gap between multiple episodes of care and continuity of care associated with medications management. Please contact the HSSA for information on the cross-encounter options paper. | A number of options are available to agencies. Please contact HSSA for further information. |  |
| Interfacing | Admission, Discharge and Notice of Death notifications to GP’s | Move toward implementing automated secure messaging for these notifications.  | Future requirement for new system implementations and datasets. |  |
| Interfacing | Address Standard | The address standard defines a common approach to the management and use of address data within Victorian Government departments and agencies, and sharing between government and external parties, as follows:1. For interchange of address data between systems, storage and release of address data, use Section 5 ‘address details’ of Australian Standard AS 4590[[3]](#footnote-4): Interchange of client information (AS 4590)
2. For physical or street address (e.g. place of residence, business, asset or incident) use:
	1. Geocoded National Address File (G-NAF[[4]](#footnote-5)), or
	2. Vicmap Address[[5]](#footnote-6)
3. For postal address (i.e. mailing or correspondence) use Postal Address (PAF[[6]](#footnote-7))
 | Future requirement for new system implementations and datasets. |  |

## References

Other related standards to this standard include:

* SNOMED-CT-AU
* National Human Services Directory (NHSD – Healthdirect Australia)
* HL7 2.4

## Benefits

Application of this standard to the implementation of PAS by health agencies will ensure continued interoperability of data applications across the state, now, and position health services to exchange data in line with future Victorian initiatives such as state-wide unique patient identification and sector wide shared clinical information whilst enabling connectivity to the national eHealth infrastructure.

# Appendix A – Terms and Definitions

|  |  |
| --- | --- |
| **Term** | **Description** |
| AMT | Australian Medicines Terminology |
| ACHI | Australian Classification of Heath Interventions |
| ADHA | Australian Digital Health Agency |
| CDA | Clinical Document Architecture |
| CIS | Clinical Information System |
| DHHS | Victorian Department of Health & Human Services |
| DH | Digital Health |
| Dose Range Checking | Functional medications administration capability that:* assists pharmacists to validate a patient’s dose based on age, weight and surface area, frequency and route of administration, and other patient criteria
* takes into consideration, dosing interval and duration of therapy
* enables decision support rules across atomic pathology and medication doses to be formed
 |
| EHR | Electronic Healthcare Record |
| ELS | Endpoint Locator Service |
| ESIS | Elective Surgery Information System |
| EMR | Electronic Medical Record |
| eTP | Electronic Transfer of Prescriptions |
| GP | General Practitioner |
| HI Service | Healthcare Identifier Service, a system operated by DHHS to support the use of national healthcare identifiers by the Australian Health sector |
| HPI-I | Healthcare Provider Identifier - Individual |
| HPI-O | Healthcare Provider Identifier - Organisation |
| HSSA | Health Sector Standards and Advisory |
| HSD | Human Services Directory |
| HL7 | Health Level 7, a widely accepted standard to support exchange of medical information, both administrative or clinical |
| ICD-10 | International Classification of Diseases |
| ICT | Information & Communication Technology |
| IHI | Individual Healthcare Identifier, national ADHA patient identifier |
| NASH | National Authentication Service for Health |
| PAS | Patient Administration System – a system used for the recording of patient and provider information to support management and coordination of service provision.  |
| MHR | My Health Record |
| PBS | Pharmaceutical Benefit Scheme |
| SHS | Shared Health Summary |
| SNOMED CT | Systematised Nomenclature of Medicine Clinical Terms |
| VPHS or Health Service Agency | Victorian Public Health SectorOne of the 85 Victorian Public Health Services offering healthcare across the state |
| VEMD | Victorian Emergency Minimum Dataset |
| VAED | Victorian Admitted Episodes Data |
| VINAH | Victorian Integrated Non-Admitted Health dataset |

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1. https://www2.health.vic.gov.au/about/publications/policiesandguidelines/digital-design-unified-standard [↑](#footnote-ref-2)
2. http://www.health.gov.au/internet/main/publishing.nsf/Content/pacd-ehealth-consultation-faqs#q5 [↑](#footnote-ref-3)
3. Australian Standard AS 4590-2006: *Interchange of client information*, 27 October 2006, <https://infostore.saiglobal.com/store/details.aspx?ProductID=316376>, also available via the Victorian Government Library Service at <http://library.intranet.vic.gov.au/> [↑](#footnote-ref-4)
4. G-NAF, PSMA, 2017, <https://www.psma.com.au/products/g-naf> [↑](#footnote-ref-5)
5. Vicmap™ Product data description, Victorian Government, 2017, <http://www.depi.vic.gov.au/forestry-and-land-use/spatial-data-and-resources/vicmap>
Note: Vicmap Address should be used when only Victorian addresses are required, and the update frequency and/or delivery mechanism of G-NAF is not suitable). [↑](#footnote-ref-6)
6. PAF, Australia Post, <https://auspost.com.au/business-solutions/data-marketing-services/improve-your-data/address-data> [↑](#footnote-ref-7)