

HealthSMART Design Authority

health

IHI Pre-Implementation Project

Requirements Specification

Authorised by the Victoria Government, Melbourne.

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1. Document Overview

1.1 Purpose

The purpose of this document is to define the high level business requirements for the integration of the HI Service Individual Healthcare Identifiers into health IT systems and health services operations. While there is a particular focus is upon the current HealthSMART suite of applications, this document is intended to apply to all sizes and types of health services and all health IT system vendors.

This document seeks to outline:

- High level business requirements for IHI integration for:
 - batch loading of IHIs into a HealthSMART Health Service PAS
 - obtaining IHIs for patient records, as an operational activity (versus the batch item above)
 - operational management of IHIs
 - use of the IHIs to support the provision of healthcare and e-health messaging (e-Referral, e-Discharge Summary, e-Prescribing, etc).
- requirement Constraints, and
- Other requirements.

1.2 Scope

The scope of this document is to define the high level business requirements for the integration of the Individual HealthCare Identifier (IHI) into health information systems and health service operations. The high level business requirements will provide input into:

- detailing of Solution Architecture for the Victorian Health sector HealthSMART program capture and exchange of IHI
- business Requirements and Best Practice Guides for the capture, use and management of the IHI within Patient Administration Systems, and other relevant systems
- specification of requirements to enable the capture and exchange of Individual Healthcare Identifiers
- specification of integration and receiving application requirements for use of IHIs in concert with Patient and Client Management Systems.

1.3 Assumptions

The following assumptions have been made in the preparation of this document:

- All Victorian public health services, not only those that have adopted HealthSMART services, will support the adoption of the IHI.
- The requirements are largely based upon integration of the HI Service and the IHI, as specified by NEHTA and implemented by Medicare Australia, into the HealthSMART environment based on the current design and operational parameters.

1.4 Intended Audience

The key audience for this document includes:

- Victorian Department of Health
- NEHTA

- HealthSMART stakeholders, including health services
- non-HealthSMART health services of all types and sizes
- other jurisdictional health departments
- health IT system vendors.

1.5 References

- NEHTA HI Service Concept of Operations v 1.0 FINAL Nov 2009
- NEHTA Individual Healthcare Identifiers Business Requirements v 1.0 FINAL Nov 2009
- NEHTA HI Security and Access framework v 1.0 FINAL Nov 2009
- NEHTA HI Business Use Case Catalogue v 1.0 FINAL Nov 2009
- NEHTA HI Service Catalogue v 1.0 Final Nov 2009
- NEHTA HI Service Glossary v 1.0 DRAFT Nov 2009
- Vic IHI Integration Simplified Functional Design v2.1
- Medicare Australia HI Service - Technical Services Catalogue R3A v3.0.2.doc
- Medicare Australia TECH.SIS.HI.01 - SIS - Common Document for SIS v3.0.2.doc
- Medicare Australia TECH.SIS.HI.02- SIS - Common field processing reference document for SIS v3.0.2.doc
- Medicare Australia TECH.SIS.HI.03 - Update Provisional IHI via B2B v3.0.2.doc
- Medicare Australia TECH.SIS.HI.05 - Update IHI via B2B v3.0.2.doc
- Medicare Australia TECH.SIS.HI.06 - IHI Inquiry Search via B2B v3.0.2.doc
- Medicare Australia TECH.SIS.HI.08 - Resolve Provisional IHI- Merge Records via B2B v3.0.2.doc
- Medicare Australia TECH.SIS.HI.09 - Resolve Provisional IHI- Create Unverified IHI via B2B v3.0.2.doc
- Medicare Australia TECH.SIS.HI.10 - Create Provisional IHI via B2B v3.0.2.doc
- Medicare Australia TECH.SIS.HI.11 - Create Unverified IHI via B2B v3.0.2.doc
- Medicare Australia TECH.SIS.HI.12 - IHI Batch Searching v3.0.2.doc
- FR.SVI.SPEC.01.232 Notify Duplicate Replica IHI via_B2B v3.25 (R3b).doc
- Medicare Australia HI Service - IHI Searching Guide v0.3 Draft.doc
- Vic IHI Integration Best Practice Guide (Draft)
- Healthcare Identifiers Act 2010
- NHS Number Standard for Secondary Care (England), Full Operational Information Standard 1.0, published on 20/12/2008
- NHS Number Programme Implementation Guidance, To Support the NHS Number Operational Information Standards, 1.0, published on 31/12/2008

2. Introduction

2.1 Context

The HealthSMART initiative being undertaken by Department of Health Victoria is the program implementing Victorias information and communication technology (ICT) strategy to modernise and replace ICT systems throughout the Victorian Public Healthcare Sector (VPHS).

The HealthSMART program is responsible for managing processes to select applications, configuring these applications to reflect statewide requirements (statewide footprint) and then implementing these applications into participating agencies using the statewide footprint as a base.

The IHI reference design will be incorporated into the HealthSMART Solution Architecture, and used as a checkpoint against current and future solutions that are incorporated into the HealthSMART solution design. The HealthSMART IHI design will also consider the anticipated use of the IHI by other health services in Victoria and the common vendors that deliver applications to the sector.

NEHTA will perform a coordinating role in the development of a single build of applications to suit a number of jurisdictions, initially engaging with iSOFT.

NEHTA's role in this pre-implementation project will be to provide a consultancy service in regard to the requirements and architecture for IHI, and contribute to practical support, in order to access and learn from a 'test bed' for implementation of IHI.

2.2 HI Service Summary

The HI Service is one of the core e-health services identified by NEHTA as essential to enabling e-health in Australia.

The HI Service provides functions to support the adoption, use and management of healthcare identifiers for organisations (HPI-O), healthcare professionals (HPI-I) and individuals who may seek healthcare.

The reader should be familiar with the NEHTA HI Service Concept of Operations V2 document, and with the Healthcare Identifiers Act 2010.

For the purposes of the IHI Integration requirements and design, the following services, or functions, available through the HI Service are of primary interest.

2.2.1 Update Provisional IHI via B2B

This function enables the updating of an HI Service record with a Provisional IHI. This function is available to all HI Service users and is intended to be used when more accurate information becomes available for the previously unidentified patient.

There is no uniqueness checking for this update.

2.2.2 Update IHI via B2B

This function supports the updating of both Unverified and Verified records, with only the notification of death available for a record with a Verified IHI. All data in a record with an Unverified IHI may be updated.

All updates are subject to uniqueness checking, within the HI Service.

2.2.3 IHI Inquiry Search via B2B

This function enables health services to search for a patient's IHI, and to check it periodically once the IHI has been obtained. The search relies upon a text string based comparison, so it is vital that the patient information used in the IHI search is of high quality and accuracy.

NEHTA and Medicare Australia recommend using the search with one of the numeric identifiers; either the Medicare number the DVA file number or the IHI for optimum results.

Records with Provisional IHIs may not be searched for without the IHI included in the search criteria.

2.2.4 Resolve Provisional IHI- Merge Records via B2B

This function enables the health service to request that a record with a Provisional IHI be merged with a record having an Unverified or Verified IHI.

This will occur when the previously unidentified individual can be identified and a search using their correct details returns a Verified or Unverified IHI.

The HI Service record with the Provisional IHI has its Status updated to Resolved.

2.2.5 Resolve Provisional IHI- Create Unverified IHI via B2B

This function supports the promotion of a record with a Provisional IHI to a record with an Unverified IHI, following the obtaining of more information about the patient.

In this instance the original provisional IHI number is preserved. A uniqueness check is performed in this instance.

2.2.6 Create Provisional IHI via B2B

This function enables the creation of an HI Service record with a Provisional IHI, and requires minimal information.

There is no HI Service uniqueness check for this function.

2.2.7 Create Unverified IHI via B2B

This function enables the creation of an HI Service record with an Unverified IHI. There is a considerable amount of information that may be included in the creation request, including multiple addresses and contact information.

There is an HI Service uniqueness check for this function.

2.2.8 IHI Batch Searching

This function enables IHI searches to be submitted to the HI Service in a batch mode. The HI Service supports up to 100 searches via the online batch, and up to 2000 per file in the offline batch.

The offline batch employs a secure USB stick and courier or registered email to move the batch between the health service and the HI Service operator.

2.3 IHI Summary

The Individual Healthcare Individual (IHI) is the national identifier for all recipients of healthcare in Australia. It is a 16 digit number, in accordance with international standards. All Australian residents actively enrolled with Medicare and DVA were assigned their identifier on the 1st July, 2010.

There are three types of Individual Healthcare Identifier (IHI), identified by the Record Status field held by the HI Service, and which will be stored with the IHI in a PAS,

A Verified IHI – when an IHI record is Verified it means that the person is a known customer of Medicare Australia or DVA or has provided evidence of identity information that has been recorded in the HI Service by the Service Operator to establish the identity of the Healthcare Individual.

An Unverified IHI – when an IHI record is Unverified it means that the identifier was created at a healthcare facility and the individual has not contacted the HI Service to verify the IHI by providing evidence of identity. Unverified IHI records can be merged to another verified IHI record.

A Provisional IHI – when an IHI record is Provisional it means that the identifier was created at a healthcare facility when the individual was not able to be identified. Provisional records are able to be promoted to an Unverified IHI record or merged with an existing Unverified or Verified IHI record via a healthcare facility or updated to a Verified IHI via the HI Service by providing evidence of identity.

There are five IHI statuses of Individual Healthcare Identifier (IHI):

Active IHI – this is the preferred state of the IHI when considering its use within a health service, and this status indicates that the IHI record is for a person who is actively involved in receiving healthcare, i.e. they are not deceased. Applies to Provisional, Unverified and Verified IHIs.

Deceased IHI – an IHI has a status of Deceased when a health service sends notification of death to the HI Service. This has not yet been matched with Fact of Death Data (FoDD) from Births, Deaths and Marriages Registries.

Retired IHI – an IHI has a status of Retired when the record has been matched with Fact of Death Data from Births, Deaths and Marriages Registries and has had no activity for 90 days; or the has reached an age of 130 years (Verified only).

Expired IHI – an IHI has a status of Expired when it is either Provisional and there has been no activity on the record for 90 days; or Unverified and has reached an age of 130 years.

Resolved IHI – an IHI has a status of Resolved when it is linked with another record which has been identified as the primary record. The Resolved status is only used within the HI Service and will never be seen by health services.

The diagram below presents a view of the possible IHI statuses and the processes that support or enable transition between different statuses.

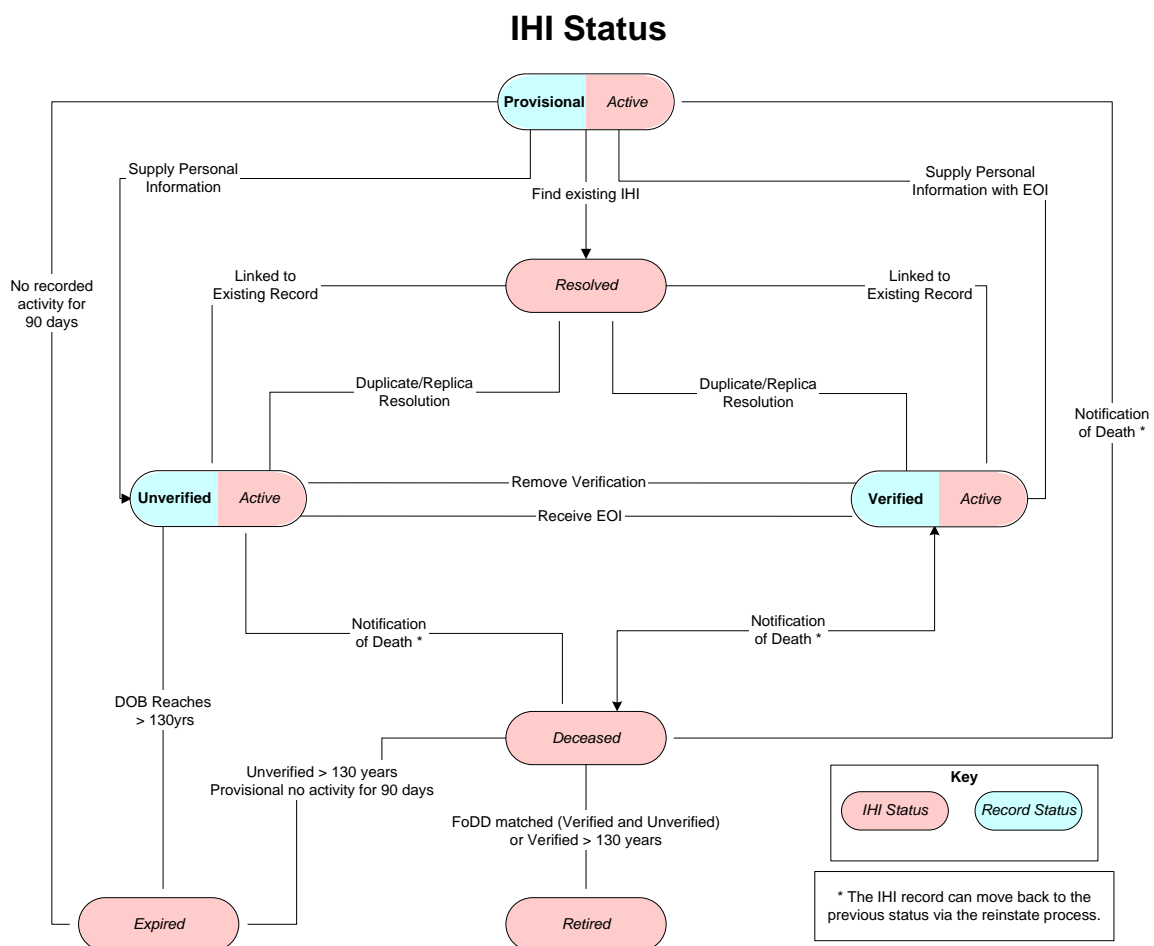


Figure 1: IHI State Diagram, by Medicare Australia, Healthcare Identifiers (HI) Service

IHI Searching Guide DRAFT Version: 0.3 - 20 Sep 2010

2.3.1 Healthcare Identifier Standards¹

The IHI, HPI-I and HPI-O are persistent and unique 16 digit reference numbers that are designed to be machine and human readable and are intended for use on tokens, medical documents, patient wrist bands and other media as appropriate.

ISO 7812 3523.1 Number (HI number)

Issuer Identification Number Assigned by ISO Fixed Length 6 Digits						Individual Account Identification Assigned by Identification Service Variable Length Max. 12 Digits (ISO 7811-3) 9 digits for the healthcare identifier						Check Digit			
N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	N13	N14	N15	N16

Figure 2: Issuer Identification Number (IIN)² as outlined in the Australian (AS 3523-1&2) and International Standards (ISO 7812 3523.1)

Each of the identifiers is made up of three components: issuer identification number, individual account identification number and the check digit.

- The issuer identification number is the first 6 digits of the identifier. This is a constant for each identifier as follows:
 - For all identifiers, the first 5 digits will be '80036'8
 - The 6th digit (N6) will be
 - '0' for an IHI
 - '1' for an HPI-I; or
 - '2' for an HPI-O
- The individual account identification number is the unique reference number.
- The check digit will be calculated using all components of the issuer and individual identification numbers. The check digit is computed using the Luhn formula modulus 10 "double-adddouble" check digit [ISO7812].

A healthcare identifier number format for computer displays and manual data entry should read in the following way:

- visually rendered as four groups of four digits, for example:
(8003 60) 12 0456 7891

A healthcare identifier number will be used to link the patient to an object identifier (OID³) of particular importance when the patient undergoes medical procedures (e.g. implant of a prosthesis):

- an object identifier (OID) has the healthcare identifier embedded and is recorded in the following way:

'1.2.36.1.2001.1003.0.8003.6012.456.7891'

¹ Healthcare Identification HI Service Use of Issuer Identification Numbers Policy, Version 1.6 – 2010

² International Standard ISO/IEC 7812-1 Identification cards – identification of issuers- Part 1 Numbering System

³ Healthcare information interchange standards use OIDs for globally unique identifiers for both individual objects as well as references to code systems and data element dictionaries. An OID format is generally only required and used within an electronic message and should not be used in any human readable context

3. Business Requirements

3.1 General Principles

Principle Number	Item	Comments	Category	Priority
PR_01	The provision of healthcare services is not dependent on a healthcare individual having or disclosing their IHI number.	Health services remain obliged to deliver needed health services to an individual.	Legal	Mandatory
PR_02	Legislative compliance governs the use of Individual Healthcare Identifiers.	The Healthcare Identifiers Act 2010 and the supporting Regulations govern the issuing and use of Healthcare Identifiers. In addition relevant legislation, especially the Health Records Act, and the Victorian and Federal Privacy Acts, must be complied with.	Legal	Mandatory
PR_03	Each Healthcare organisation (HPI-O) registered with the HI Service must explicitly declare its level of compliance with IHI standards and processes.	The mechanism for achieving this is currently unclear, though an attribute of the HPI-O certificate would present one option. A fully compliant organisation is one that can be trusted as a source of e-health messages, the IHI, and other related information.	Security (Trust)	Aspirational
PR_04	Compliance with accepted Australian standards must be achieved and maintained.	Standards enable conformance and convergence, so compliance is a requirement. The word accepted is used intentionally as any given standard may have multiple versions, and some standards are difficult to put into practical use (eg the postal addressing standard).	Compliance	Mandatory
PR_05	Compliance and consistency with NEHTA and other published specifications must be achieved and maintained	This principle applies directly to health related specifications released by NEHTA, or another body, that we must plan to comply with. This may include the eReferrals Package (specification), or the e-Discharge Summary package.	Compliance	Mandatory

4. HI Service Operational Characteristics

This section applies specifically to the design of the HI Service and its operational parameters. It should be noted that Victorian Department of Health staff are working very closely with Medicare Australia and NEHTA staff to resolve any significant issues.

Constraint Number	Item	Comments	Category	Priority
CO_01	A Health service will carry responsibility for the IHI use.	The health service carries responsibility for any adverse events, and hence legal or clinical risks, associated with the incorrect allocation or use of an IHI associated with a patient. Penalties for misuse of the IHI and of the HI Service are defined in legislation and are substantial, in order to deter people and organisations from inappropriate use.	Legal	Not applicable
CO_02	Only Authorised Healthcare providers may access IHI data.	IHIs will only be accessible to appropriately authorised health service staff. Authorisation for health staff without an HPI-I is via explicit notification to the HI Service Operator. The inclusion of the individual Authorised Employees identifying details should be supplied in all transactions with the HI Service:	Legal	Not applicable
CO_03	IHI allocation	An IHI was allocated by the HI Service on the 1 st July 2010 to each individual registered on the Medicare and DVA databases with an active status. No people deceased as of the 1st July 2010, or with inactive Medicare records were allocated an IHI. Non-Medicare eligible (eg overseas visitors) may be issued an IHI of a varying record type.	Operational	Not applicable
CO_04	Unverified IHI unique data restrictions.	For all Unverified IHI creation requests, the information submitted must be unique. This has implications for creation of IHIs for anonymous patients, particularly in terms of future searching and matching capabilities.	Operational	Not applicable
CO_05	Unverified and Provisional IHI demographic data change	Any health service may update or change demographic details against an Unverified or Provisional IHI, without notification to originating source. This has implications for future searching	Operational	Not applicable

Constraint Number	Item	Comments	Category	Priority
	capability.	and matching capabilities.		
CO_06	The HI Service search criteria specification.	A health service application will be required to perform compliant searches to the HI Service, according to specified item inclusions and data standards.	Operational	Not applicable
CO_07	The HI Service supports address in the Australia Standard format.	The HI Service applies AS 4590 Addressing format. This feature affects full searching capability and Unverified IHI creation with address. Current PAS applications do not support this Address format. A Change Request has been proposed to relax the format of addressing accepted for search/creation.	Operational	Not applicable
CO_08	The HI Service does not currently provide an IHI update service (whereby the HI Service would proactively notify the health service of any changes to IHI data).	Should a Health Service wish to maintain their IHI data in a current state, the supporting system(s) will be required to periodically poll the HI service for any IHI changes. Changes may occur in upgrade of Record type or Status, i.e. Provisional to Unverified, Unverified to Verified, and all status changes within a Record type.	Operational	Not applicable
CO_09	Under current provisions, the HI Service operator must be contacted to resolve all IHI related issues such as an inability to retrieve an IHI for a patient with a Medicare card, or managing duplicate records.	The health service must contact the HI Service Operator to notify of potential merges or replicas within the HI database, and request assistance. Currently only HPI-I qualifying individuals can access this channel. There is also no Help Desk log function for such requests online. Changes to allow Authorised Users and online logging have been requested and may be available in the future.	Operational	Not applicable
CO_10	The HI Service individual search response time of 8 seconds.	The service level agreement for an individual search response time from the HI Service is 8 seconds, which only includes time spent within the Medicare environment, i.e. not the Internet or health service systems and networks. This response time may 'delay/interrupt' front office processing of IHI for patients and require queued retrievals at later times.	Non-Functional	Not Applicable
CO_11	The HI Service online Batch	For online batch submissions, a maximum of 100 items for IHI	Operational -	Not applicable

Constraint Number	Item	Comments	Category	Priority
	submission restriction to 100 records.	<p>searching or checks may be included in any one batch. Health services will need to prepare all online batch requests (eg queued daily requests, waiting list, clinic lists, etc) for sending in files with a maximum of 100 records.</p> <p>There are no SLAs covering the turn around time for these items.</p>	batch	
CO_12	The HI Service offline Batch submission restriction to 2000 records.	<p>For offline batch submissions, a maximum of 2000 items for IHI searching or checks may be included in any one batch. Health services wishing to attempt bulk upload of PAS data must partition into 2000 record batches and use a secure USB and regular mail exchange of data.</p> <p>There are currently no SLAs covering the turnaround time for these items.</p>	Operational – batch	Not applicable
CO_13	The HI Service has specified periodic (nightly) planned outages.	Medicare Australia has provided advice that the planned outage will result in the HI Service being totally unavailable; so all Systems that interact with the HI Service will need to cater for this, perhaps through queuing of messages.	Availability	Not applicable

4.1 Recommended Health Service IHI Operating Principles

Principle Number	Item	Comments	Category	Priority
OP_01	Standard IHI allocation and management practices	Health services, and especially HealthSMART health services, will subscribe to the IHI Best Practice Guide, and undertake to follow the recommended processes and rules for IHI adoption and use, where these are applicable to their organisation. The IHI Best Practice Guide suggests a phased implementation through 'transition' to steady state', which may require change of practices over time. ⁴	Operations	Mandatory
OP_02	IHI Adoption	The IHI will be stored against records for all eligible patients. A single IHI is associated with a single individual and included on all (partitioned) records for that individual.	Operations	Mandatory
OP_03	Non replacement of UR number	The IHI will not replace an existing patient identifier, such as the URN, but will augment the patient record as a secondary identifier.	Operations	Mandatory
OP_04	The PAS will be the primary location of the IHI	A health service will use a single master application (PAS) for allocating a patient identifier and associated patient details. The same application will be used to perform relevant administrative processes such as patient merges, etc. Where applicable, the master application will broadcast patient details including the IHI, via HL7, to applications that require this information to be synchronised.	Operations	Mandatory for HealthSMART Health Services.
OP_05	Avoid manual entry if the IHI	Health service staff should avoid entering the IHI manually, to ensure the highest possible data quality.	Operations	Highly desirable
OP_06	Allocation of Unverified IHI	Unverified IHIs will not be requested and allocated if it is apparent that the patient should have a Verified IHI. Unverified IHIs will be used in qualifying circumstances only, including the following examples: <ul style="list-style-type: none"> • Overseas visitors and diplomats • Individuals seeking Anonymity • Newborns (unresolved query on this item) 	Operations	Mandatory

⁴ Transition to steady state is expected where the IHI is not yet fully adopted across the PAS for all active patients. Retrieval and/or checking of IHI against the HI Service is required on presentation. Where 'untrusted' sources of IHI data comes to the health service via referral or other clinical exchange it is recommended that checking occur prior to trusting the incoming IHI. During the transition period it is also recommended that health services check the IHI prior to including it in any clinical information exchange, to ensure development of stable and trusted data.

Principle Number	Item	Comments	Category	Priority
		Local health services policies will be applied regarding their use for these individuals.		
OP_07	Allocation of Provisional IHI	Request and allocation of a Provisional IHI for an individual where demographic details are unobtainable, will be a local health service decision. Provisional IHIs will be “promoted” prior to the HI Service 90 day expiry deadline, wherever possible. Where a Provisional IHI is used in the transfer of a patient an obligation on the receiving health service is for an update to the referral to be sent to the originating referral service upon upgrade of IHI for that patient (electronic update is preferred).	Operations	Mandatory
OP_08	Initial phase IHI Allocation and checking.	During the period of transition to steady state, the IHI and its status will be retrieved or checked on presentation, on inward referral (where an IHI is included), and on all outbound clinical exchange of IHI. This principle will establish consistent and trusted IHI data capture and exchange.	Operations	Mandatory
OP_09	Verified IHI	Except in a very limited number of circumstances, ONLY Verified Active IHIs will be included on requests for services (Orders, Referrals, Discharge Summaries, Prescriptions, etc).	Operations	Mandatory
OP_10	IHI on internal exchange	The IHI and its status will be included on all internal orders and transfers, where it is available.	Operations - use	Mandatory
OP_11	IHI on patient related output information	The IHI and its status, will be included in any instance of patient identification data output. The IHI and its status will be included on all patient related output information, e.g. wristbands, patient labels, letters, referrals, discharges, etc.	Operations - use	Mandatory where feasible
OP_12	IHI initial data load	Individual health services will determine their preferred approach to adopting the IHI, and whether an initial data load will be conducted. Results from the IHI Match Investigation will inform health services’ decision making in this area.	Implementation	Optional

Principle Number	Item	Comments	Category	Priority
OP_13	Date of Death	Health services will provide Date of Death data to the HI Service (HI Service record changes to Deceased status). The HI Service will then obtain confirmation from Births, Deaths and Marriages and change the record state to Retired. Victorian HealthSMART health services will not trust IHIs returned with a Deceased status, but will an IHI returned with Retired status.	Compliance	Optional ⁵
OP_14	Patient Updates (Unverified records)	For all updates made to patient records with Unverified IHIs, the health service will provide updates to the HI Service (changes to the date of birth or gender should be treated with caution). The health service will also send patient data updates to registered third parties, eg the referrer, where this facility exists.	Compliance	Mandatory
OP_15	Patient Updates (Provisional Records)	For all updates made to patient records with Provisional IHIs, the health service will NOT provide updates to the HI Service, but will instead endeavour to identify the patient and obtain a Verified or Unverified IHI. The two records will subsequently be merged.	Compliance	Optional (see Design Decision DD_08)
OP_16	HI Service Access (B2B)	The health service will ensure that legislative compliance is maintained with respect to identifying users accessing the HI Service, and retention of audit records.	Security / compliance	Mandatory
OP_17	HI Service Access (other channels)	The health service will actively manage user access to the HI Service HPOS and MSO (telephone) channels, and will need to notify the HI Service Operator of authorised users if the respective users are not entitled to an HPI-I.	Security / compliance	Mandatory
OP_18	Patient Records Management – merge and unmerge	The state of records held by the HI Service, including the IHIs, will not inhibit a health service specialist from merging or unmerging patient records.	Operations	Not applicable

⁵ As of the publication date of this document there has been no assessment of the Privacy impact associated with health services providing date of death data to Medicare Australia.

Principle Number	Item	Comments	Category	Priority
		The IHI will be used to provide support for both functions.		
OP_19	Management by Exception	Health services will manage the IHI by exception, based on exceptions raised within the local system (PAS). This recommendation supports the system allocating and updating the IHI where this meets established business rules, e.g. an increase in IHI status appropriate to the patient context, eg a record for a 90 year old patient is updated with a Retired IHI.	Operations	Not applicable
OP_20	Use of the IHI	Health services must ensure that they use a patients IHI within the context of the Healthcare Identifiers Act 2010 (Section 24 – note the explicit exclusions).	Compliance	Mandatory

4.2 Functional Requirements

The following table highlights the key business requirements needed to deliver successful integration of Individual Healthcare Identifiers into the HealthSMART program.

Requirement Number	Item	Comments	Category	Priority
FR_01	Systems must support processes and services to acquire, maintain and monitor information essential to acquiring the IHI.	Being able to retrieve an IHI for a patient relies on having the search criteria completed in the PAS and as accurate as possible. Processes and rules within PAS type systems may need to be adjusted to support a more rigorous approach to acquisition and management of the data elements below: <ul style="list-style-type: none"> • Medicare or DVA number • Family Name • Given Name • Date of Birth (DOB) • Gender • Address 	Operations	Mandatory

Requirement Number	Item	Comments	Category	Priority
		Similarly, once the IHI and its statuses are obtained, a high level of rigour must be applied to its ongoing management and maintenance.		
FR_02	Systems must support use of both the existing patient identifier and the IHI within health services, for whatever term is required (short, medium or long).	<p>Health service IT systems must cater for individual health services approach and patient record architecture, and enable medium to long term transition to the IHI as replacement for the UR number (if this is supported by the health services strategy).</p> <p>The IHI should be able to be used wherever a current patient identifier is used (notwithstanding legislative constraints), i.e. for patient identification on a wristband, or for patient searching in the PAS, or any other system.</p>	Operations	Mandatory
FR_03	System must store and display the IHI in correct format.	<p>The system will store and display the IHI in correct format including Record type and status:</p> <p>Three Record types of IHI are provided for:</p> <ul style="list-style-type: none"> • Verified IHI • Unverified IHI • Provisional IHI <p>Each type of IHI may also have a varying record status of Active/Deceased/Retired/Resolved/Expired.</p> <p>The system should record the date captured/retrieved.</p> <p>The system shall ensure that whenever a healthcare identifier is entered, rendered or transacted, all 16 digits are included.</p> <p>The system will correctly display the IHI where any current patient identifying information is included/displayed,</p>	Data Quality	Mandatory
FR_04	Systems will actively support the retrieval and storage of the IHI with limited human intervention required	<p>The system must be able to search for an IHI using either the HI Service TDS Identified search or the demographic search (subject to necessary changes to the address format).</p> <p>On presentation, or registration, where a patient record does not contain an IHI, the system will perform an automated search following entry of mandatory search criteria.</p>	Operations	Mandatory

Requirement Number	Item	Comments	Category	Priority
		<p>On update/change of patient critical demographic data within the PAS and where an IHI is held, the system should automatically perform an IHI Check with the HI Service. Critical data includes Family Name, Sex and Date of Birth, TDS data.</p> <p>The System will iterate through available aliases and/or alternate addresses if the search on the primary name and address do not result in an IHI being returned.</p> <p>The system should queue unmatched responses for later resolution. The system will advise the user where a match is not found and that subsequent searches will be enacted later.</p> <p>The system will not prevent the user continuing through a workflow where a match is not found.</p> <p>The system will include a time out function and supporting exception management.</p> <p>The system will have the capability of responding appropriately to error messages generated by IHI searches. Configurable pathways for exception reporting and processing will be required.</p> <p>See HI Service specification "TECH.SIS.HI.06 - IHI Inquiry Search via B2B".</p>		
FR_05	Applicable IT systems are capable of automatic resolution of IHI Record (types) and statuses.	<p>IHI fields are to be updated automatically when a single match condition is met, including IHI Status and IHI Record Status.</p> <p>Where a variation exists between held IHI Record (type) and status and retrieved IHI Record and/or status, then an automated resolution may be possible according to the agreed business rules.</p> <p>Where an automated resolution is not possible, exceptions will be raised for later manual (human) resolution.</p> <p>Exception reports and processes will be available for authorised users, which may include HIMs.</p> <p>Where a patient's record requires later (human) resolution the</p>	Operations	Mandatory

Requirement Number	Item	Comments	Category	Priority
		user is advised via an alert displayed on the patient record.		
FR_06	Systems must include the IHI and its status on all patient centred communications.	<p>The need to include both IHI statuses with the IHI provides immediate qualification of the number, and may influence user or system behaviours.</p> <p>This requirement includes both internal and external reports/outputs, including all media (print/electronic).</p> <p>For internal messages/reports, includes wristbands, ward notes, Orders, Prescriptions, transfers, patient reports, all HL7 messages that include the PID segment, etc.</p> <p>For external reports, includes Orders, Referrals, Discharge Summaries, Prescriptions, in any form (paper, fax, electronic message, etc).</p> <p>This item should include the ability to be locally configured.</p>	Operations	Highly Desirable ⁶
FR_07	Systems should request an Unverified IHI ONLY for qualifying patients.	<p>An Unverified IHI should not be allocated for a patient who is not eligible for a Verified IHI, unless the patient expressly requires anonymity.</p> <p>The system should support requests for the creation of Unverified IHIs with qualifying information, e.g.</p> <ul style="list-style-type: none"> • Medicare suffix indication of ineligibility • Overseas permanent address and local temporary address • Newborns <p>A journal entry indicating reason for Unverified IHI request should be provided.</p> <p>Creation of Unverified IHI, is subject to the policy of the Healthcare Provider Organisation. The system should allow for local configuration over the creation of Unverified IHI.</p>	Operations	Highly Desirable ⁷

⁶ This item may become mandatory over time.

⁷ Health services may elect to never request Unverified IHI's, hence the "highly desirable" rating. If a health service elects to use Unverified IHI's this functional requirement becomes Mandatory.

Requirement Number	Item	Comments	Category	Priority
		<p>An Unverified IHI record cannot be created with exactly the same details as another Unverified or Verified IHI record. One of the following fields needs to be unique:</p> <ul style="list-style-type: none"> • Family Name (Preferred Name) • First Name (Preferred Name) • Date of Birth • Gender • Address <p>See HI Service specification "TECH.SIS.HI.11 - Create Unverified IHI Via B2B".</p>		
FR_08	The system must be capable of updating an Unverified or Verified IHI.	<p>The following fields can be amended via the B2B channel for Verified IHI records</p> <ul style="list-style-type: none"> • Date of Death • Date of Death Accuracy Indicator • Source of Death Notification <p>All fields can be updated for a record with an Unverified IHI.</p> <p>See HI Service specification "TECH.SIS.HI.06 - Update IHI via B2B".</p>	Operations	Mandatory
FR_09	Systems should request a Provisional IHI ONLY under supported circumstances.	<p>The use of Provisional IHIs will only be supported in situations where the patient is unable to be identified.</p> <p>A Provisional IHI record will be expired after a parameter set period (currently set to 90 days) of inactivity on the record.</p> <p>The system should include a warning of expiry if a health services uses a Provisional IHI to identify a patient.</p> <p>Creation of Provisional IHIs is subject to the policy of the Healthcare Provider Organisation.</p> <p>See HI Service specification "TECH.SIS.HI.10 - Create Provisional IHI Via B2B".</p>	Operations	Mandatory

Requirement Number	Item	Comments	Category	Priority
FR_10	The system must be capable of updating a Provisional IHI.	See the HI Service specification "TECH.SIS.HI.03 - Update Provisional IHI via B2B".	Operations	Mandatory ⁸
FR_11	The system must be capable of requesting a Provisional IHI be converted to an Unverified IHI.	See the HI Service specification "TECH.SIS.HI.09 - Resolve Provisional IHI - Create Unverified IHI via B2B"	Operations	Mandatory
FR_12	The system must be capable of requesting a merge of a Provisional IHI with a Verified or Unverified IHI.	See the HI Service specification "TECH.SIS.HI.08 - Resolve Provisional IHI-Merge record via B2B"	Operations	Mandatory
FR_13	The system must enable the user to view a history of changes to a patients IHI over time.	All IHI related events will be captured and subsequently available for user review. All valid captured IHIs for a patient over time will be searchable.	Operations	Mandatory
FR_14	When allocating an IHI to a patient, the system must raise an exception when the IHI is already allocated to another patient or patients within the PAS.	No automatic IHI allocation to proceed where a potential duplicate IHI allocation is detected. Exception is to be raised to the relevant health service group (configurable), for subsequent resolution. A warning should be placed against all relevant records which are the potential duplicates. The warning to be removed only once resolution is achieved by authorised users.	Systems	Mandatory
FR_15	Applicable systems must be capable of warning the user that multiple PAS records meet the criteria entered for searching or validation.	No automatic IHI search to proceed where multiple records meet the exact search criteria (user has the ability to override). Exception is to be raised to relevant health service group (configurable), for subsequent resolution. A warning should be placed against all relevant records that are the potential duplicates. The warning is to be removed only once resolution is achieved by authorised users.	Systems	Mandatory

⁸ Note that while the system must be able to support updates to HI Service records with Provisional IHI's, the use of this function remains optional (see Design Decision DD_08).

Requirement Number	Item	Comments	Category	Priority
FR_16	Applicable systems must be capable of periodic checks against the HI Service to validate/update the IHI.	<p>The system must support IHI Checks on a periodic basis to confirm the IHI number and statuses are valid. The period between checks should be configurable within the system, IHI checking may occur transactionally or via the available HI Service batch facilities.</p> <p>Local agencies will set parameters for regularity of searches and include different rules for different IHI Record types/status, e.g. rules for checking Provisional and Unverified IHIs may be different from Verified IHI checking rules, or checks based around other non IHI parameters – e.g. a waiting list group.</p>	Operations	Mandatory
FR_17	The system should be capable of accepting Date of Death data from the HI Service.	<p>The system will allow local configuration for ‘acceptance’ of Date of Death information from the HI Service.</p> <p>The HI Service will return both unconfirmed Date of Death and a confirmed Retirement Status (death confirmed by BDM after 90 days from Date of Death notice) against an IHI; receipt of this information may be required to trigger local PAS Death notification processes.</p>	Operations	Requirement to be removed ⁹
FR_18	IHI Exception processing	<p>The System must generate IHI exceptions to allow for follow-up by HIMS, or other nominated staff.</p> <p>Exceptions occur when:</p> <ul style="list-style-type: none"> • Potential PAS duplicates are detected. • Potential HI Service duplicates are detected. • Where validation of IHI cannot be achieved automatically. <p>The system should alert the user to an exception state on the patient record and prevent the output of any IHI information during this exception state. ie the system prevents the printing of IHI data to any report/document output or message, until the IHI resolution is achieved in the record.</p> <p>The system should provide exception reports configurable by</p>	Operations	Mandatory

⁹ Date of death data will no longer be available from the HI Service, as of Release 3.2.0 of the HI Service specification.

Requirement Number	Item	Comments	Category	Priority
		<p>local health services.</p> <p>The system should provide exception management workflows to action exceptions within the system.</p> <p>Workflow screens should enable link functionality to dual or multiple records and dual resolution capability from the one user screen (eg split screen functionality).</p>		
FR_19	The system must provide a comprehensive IHI focussed reporting solution.	<p>A range of IHI reports must be supported, including exceptions reports. Some examples include:</p> <ul style="list-style-type: none"> • Duplicate IHI report • Unverified IHI report • Provisional IHI report • Resolved IHI Report • Records without an IHI allocated • Records with Deceased notification • Government and statutory reporting including IHI data if applicable <p>Locally configurable reporting solutions are required.</p>	Operations	Mandatory
FR_20	The system must support batch file extraction and loading functions for PAS IHI capture.	<p>The system must be capable of extracting data from the PAS for submission to the HI Service for batch file development.</p> <p>The system must be capable of loading a batch of matched IHI data, and reporting exceptions, following the batch submission above.</p> <p>The system must be capable of supporting a Medicare generated 'resolved' IHI report against known PAS held IHI records.</p> <p>The system should support both online or offline batch processes.</p>	Operations (batch)	Mandatory
FR_21	Systems will support multiple PAS search functions including the IHI.	The system will allow a search for patients using IHI alone or in conjunction with other demographic data.	Operations	Mandatory

Requirement Number	Item	Comments	Category	Priority
FR_22	The software shall permit the manual entry of an IHI.	<p>An IHI may be obtained from the HI Service through other channels such as HPOS or Medicare Australia's call centre. This will require the manual entry of the full 16 digit IHI, and its statuses, into the PAS.</p> <p>The system should immediately verify the entered IHI using the Lunh check digit algorithm, and subsequently check the entered IHI against the HI Service.</p>	Operations	Mandatory (though not recommended)

4.3 Non Functional Requirements

Requirement Number	Item	Comments	Category	Priority
NFR_01	Systems will allow IHI fields to remain blank	<p>The IHI field for a patient may remain blank if:</p> <ul style="list-style-type: none"> no match is achieved for an IHI search no IHI is available for the given patient record, i.e. the patient was deceased prior to 1st July, 2010. 	Operations	Mandatory
NFR_02	Systems must support the scanning of Trusted Data source tokens.	The system will support the elimination of manual transcription errors of the Medicare number, the DVA number and IHI card details through the ability to electronically accept information through scanning cards with a magnetic strip, and smartcards.	Data Quality	Highly Desirable
NFR_03	Systems should reproduce the IHI in bar coded format	The system should have the ability to produce bar-coded IHI information in the correct format.	Data Quality	Highly Desirable
NFR_04	Asynchronous processing	Due to the likely end-to-end response times for searching for and checking an IHI, all processing will be configured to be asynchronous, i.e. neither the user nor the system (PAS) will need to wait for the HI Service to respond before proceeding to the next task.	Processing	Highly Desirable

Requirement Number	Item	Comments	Category	Priority
NFR_05	Authorised Users	The system will allow only authorised users to access/action patient and IHI details.	Security	Mandatory
NFR_06	Systems must protect the integrity of patient information by providing a secure service.	All messages incorporating the IHI transmitted over the Internet are to be signed and encrypted. See the HI Service specifications for additional detail.	Security	Mandatory
NFR_07	Systems must log all IHI transactions for audit and traceability.	All requests to the HI Service and responses received, or a record of "no response received" shall be recorded and available for examination/reporting.	Logging & audit	Mandatory
NFR_08	Applicable systems must log all IHI related changes to a patient record.	The system must comply with the requirements of the Healthcare Identifiers Act in regard to logging use and maintaining records which identify users. The system will record date, time, user ID, and action taken against the record in regard to IHI, including all HI service requests enacted. The system should produce a locally configurable Audit log report for IHI activity. See: Healthcare Identifiers Regulations 2010	Logging & audit	Mandatory
NFR_09	Timeout processing.	In the event of a timeout of a request to the HI Service, the request should be suspended for a period of not less than 5 minutes and then resubmitted. In the event of the HI Service becoming unavailable (no requests being processed), the system must suspend processing of HI Service requests. Requests should then be restarted when the HI Service is restored. The system will provide a Time Out message to the user and allow the user to complete a current workflow.	Processing	Highly Desirable

4.4 Design Decisions

Decision Number	Item	Comments	Category	Priority
DD_01	IHI History	All HI Service requests for an IHI and returned information will be retained in the IHI history, which will be associated with the patient record in the PAS.	Not applicable	Not applicable
DD_02	Manual Entry of the IHI	The Victorian design allows for manual entry of the IHI ONLY when resolving an existing exception. The patient management screens in the PAS should not enable the IHI fields for direct editing.	PAS	Not applicable
DD_03	Designing for the use of Provisional and Unverified IHIs	While Victorian health services are not in favour of using Provisional or Unverified IHIs, the functions to create, use and manage these IHIs have been included in this design, for completeness.	Not applicable	Not applicable
DD_04	Notifications to the HI Service (merge)	Notifications will be sent to the HI Service for records merged in the health service PAS, for merges outside the ability of the health service to request (eg two records with different Verified IHIs).	Not applicable	Not applicable
DD_05	Notifications to the HI Service (data errors)	Notifications will be sent to the HI Service when the local PAS, or user, believes that the data in the HI Service may be in error.	Not applicable	Not applicable
DD_06	Notifications to the HI Service (system errors)	Notifications will be sent to the HI Service to report system errors or periods of non-availability.	Not applicable	Not applicable
DD_07	Death notification	When an IHI with deceased IHI Status is retrieved from the HI Service the local system will not record the deceased status in the PAS but will record the IHI Status in the IHI history, and raise an exception / alert. This is to ensure health service workers do not send inappropriate communications.	Not applicable	Not applicable
DD_08	IHI Checking	The only IHIs that will be checked against the HI Service (IHI Inquiry) will have an IHI Status of Active. Once the Retired or Expired IHI Status has been recorded in	Not applicable	Not applicable

Decision Number	Item	Comments	Category	Priority
		<p>the PAS there is no further information available.</p> <p>Health services will never be returned the resolved IHI Status, and the IHI Integration design prevents storing the deceased IHI Status in the PAS.</p>		
DD_09	Updating Provisional IHIs	<p>The IHI Integration design supports the function to update Provisional IHIs though this function is not used within the design, due to the risk of the Provisional record becoming inaccessible.</p>	Not applicable	Not applicable

5. Glossary

Term	Description
After Presentation	A term used to describe when the patient is present in the health service, i.e. on or after presentation. This enables health staff to validate Medicare and demographic details directly with the patient.
AS	Australian Standard
B2B	Business to business, a term used to describe the web service based functions implemented in the HI Service.
BDM	Birth, Deaths & Marriages
Before Presentation	A term to describe the period prior to a patient presenting at the health service, in which a referral may be received, an entry created on a waiting list, and an appointment made, with the appropriate notifications. The patient is not readily available to confirm their Medicare number or demographic details, though this can be done via telephone, email, letter, etc.
CCA	A NEHTA group responsible for Compliance, Conformance and Accreditation.
CMS	Community Management System
DOB	Date of Birth
DoH	Victorian Department of Health
DVA	Commonwealth Department of Veterans' Affairs
ED	Emergency Department
EOI	Evidence of Identity
Episode	A single admission to a health service for a particular condition or conditions, or A period of care for a particular condition, often covered by a single referral (supporting multiple admissions or attendances).
FoI	Freedom of Information
HI	Healthcare Identifier Service
HIM	Health Information Manager, a specialist in the management of health information, including patient records.
HIS	Health Information Service, a department within a health service that provides information management services especially for patient records.
HPI-I	Healthcare Provider Identifier – Individual. A unique number to be assigned to every person involved in healthcare service delivery.
HPI-O	Healthcare Provider Identifier – Organisation, a unique number that will be assigned to all organisations involved in healthcare service delivery
HPOS	Health Professional Online Services, a portal provided by Medicare Australia.
HSD	The Victorian Human Services Directory
HealthSMART	The Victorian Department of Health HealthSMART program is responsible for managing processes to select, configure and implement applications to reflect state wide requirements (state wide footprint) into participating healthcare agencies. Additionally, the HealthSMART program is responsible for establishing and managing the shared ICT infrastructure that is required to support these applications and agencies use of them.
ICT	Information and Communications Technology
ID	Identity or identifier

Term	Description
IEC	International Electrotechnical Commission, an international standards body which focuses on electrical, electronic and related technologies.
IHI	The Individual Healthcare Identifier, which Medicare Australia allocated to every active Medicare and DVA enrollee, on the 1 st July 2010.
IHI Record Status	There are three record statuses of IHIs: <ul style="list-style-type: none"> • Verified • Unverified • Provisional
IHI Status	There are five IHI Statuses of IHIs: <ul style="list-style-type: none"> • Active • Deceased • Retired • Expired • Resolved
IIN	Issuer Identification Number
IP	Inpatient
IRN	Individual Reference Number, used on the Medicare card to identify each individual whose name appears on the card.
ISO	International Standards Organisation
MSO	Medicare Service Operator
NASH	The National Authentication Service for Health (NASH) project being delivered through NEHTA will deliver the first nationwide security service to enable healthcare organisations and individuals to exchange e-health information.
NEHTA	National eHealth Transition Authority
NOK	Next of Kin
OID	Object Identifier
OP	Outpatient
OPD	Outpatient Department
P&CMS	Patient and Client Management System, also abbreviated to PCMS.
PAS	Patient Administration System – a system used for the recording of patient and provider information to support management and coordination of service provision. Within HealthSMART this functionality is provided by either a consolidated Patient and Client Management System (P&CMS) through the iSOFT iPM application, or Community Management System through the Trak application for stand-alone metropolitan community health centres.
PKI	Public Key Infrastructure
Referral	<p>A referral is defined within the Australian standard as “the communication with the intention of initiating patient/client care transfer, from the provider making the referral (the originator) to the provider expected to act on the referral (the destination).”</p> <p>In the context of this document a referral is used as a representative health service request or report, and the reader should consider Orders (pathology, diagnostic imaging, etc), discharge summaries, etc.</p>
SLA	Service Level Agreement, a contractual agreement that defines the required levels of services required from a vendor/supplier. For example, a common SLA may define that the system be available 98% of the time, and 100% of the time during working hours.

Term	Description
TDS	<p>Trusted Data Source, which refers to Medicare Australia and the Commonwealth Department of Veterans' Affairs in the initial allocation of IHIs within the HI Service.</p> <p>In the context of the IHI Pre-Implementation project, an organisation participating in e-health messaging, who has met the compliance/accreditation criteria, is also referred to as a trusted data source.</p>
UC	Use case, part of the UML standard used to document tasks or business process steps.
UML	Unified Modelling Language. An international standard for documenting the design of an application.
URN	Unit Record Number
VPHS	Victorian Public Healthcare Sector