nehta

Use of Healthcare Identifiers in Health Software Systems

Software Conformance Requirements

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Approved

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Version control

Date	Version	Comments
11/3/2011	1.0.0	Released for public comment
22/10/2012	2.0	Consolidation of six amendments
24/02/2014	3.0	Added use cases UC.131 and UC.306. Added requirements 23502, 23503, 23504. Made some requirements generic.

Table of contents

1 Preface

1.1 Document purpose

This document lists mandatory, conditional and recommended software conformance requirements applicable to the HI implementation of business use cases as listed in Appendix A for the use of Healthcare Identifiers in health software systems. These requirements are to be applied by the developers of such systems so healthcare identifiers are used in a manner that minimises risks to clinical safety, privacy and information security and maximises the benefits associated with their usage.

1.2 Intended audience

The intended audience includes:

- Solution architects, business analysts and software designers: To understand the service specifications to incorporate them into their designs;
- Developers: To implement the design so that it conforms to the service specifications; Developers may include both vendors and health jurisdictions and
- Testers: To evaluate whether an HI implementation conforms to the service.

1.3 Related documents

The following documents are at various stages of development and will be published along with the HI software conformance requirements, it is anticipated the guidelines for use of the HI will inform some business processes regarding the use of Healthcare Identifiers. This document is concerned with how the software is configured to use healthcare identifiers:

- HI Business Use Cases – business use cases for the use of healthcare identifiers by health software systems [NEHTA2011a];
- HI Conformance Assessment Scheme [NEHTA2011b]; and
- HI Conformance Test Cases [NEHTA2011c].

1.4 Development of these requirements

This version of the HI software conformance requirements has been developed in a series of workshops of the Healthcare Identifiers working group commencing in late 2010. This was initiated in response to the need to assure the clinically safe use of the national healthcare identifiers.

The publication of this document is overseen by the eHealth Compliance, Conformance and Accreditation (CCA) Governance Group which has a representative of the following bodies. Department of Human Services - Medicare Australia, the Department of Health and Ageing, the Medical Software Industry Association (MSIA), Australian Information Industry Association (AIIA) and Aged Care IT Vendors Association (ACIVA), National Association of Testing Authorities (NATA), NEHTA and Standards Australia.

1.5 Acknowledgements

Contributions to this document are acknowledged by NEHTA. Members of the healthcare identifiers working group include Department of Human Services - Medicare Australia, Department of Health and Ageing, Medical Software Industry Association, Australian Information Industry Association, Aged Care IT Vendors Association, Tasmanian Department of Health and Human Services, Victorian Department of Health, Victorian Royal Women's Hospital, ACT Department of Health and NT Department of Health. Contributors during the public comment period include other health jurisdictions, vendors and government authorities.

1.6 Questions and feedback

Any comments or feedback should be sent to **help@nehta.gov.au**.

2 Scope and General

2.1 Scope

This software conformance requirements specification has been developed to support the safe use of healthcare identifiers in health software systems. The conformance requirements listed in this document apply to one or more business use cases, where each business use case describes a scenario in which healthcare identifiers are used.

Correct handling of healthcare identifiers by health software systems will assist in the reduction of errors and increase efficiency in managing patient information, potentially leading to improvements in the quality of patient healthcare.

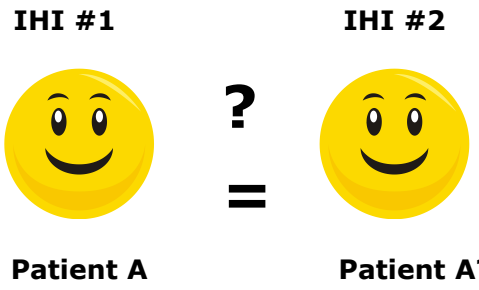
2.2 Healthcare identifier standards

It is intended that standards will be developed in the near future that will form the basis of CCA for the HI Service and will be included in subsequent revisions to this document as they become available. The Standards Australia IT-014-02 working group is including in project 8101 of its 2011/12 work program the enhancement of the existing Australian standards for healthcare clients (recipients) [AS5017], healthcare providers [AS4846] and the handbook [HB222], to incorporate ISO standard work (specifically Subject of Care Identification [ISO22220] and Provider Identification [ISO27527]), HL7 messaging requirements and to harmonise with NEHTA HI activities. These standards contain conformance requirements that are not included in this HI software conformance requirements document. As IT-014 will be updating these standards to include healthcare identifiers from the HI Service, developers of health software are encouraged to design their software to conform to these Australian and international standards as well as the software conformance requirements listed in this document. Developers should note that while conformance to these standards is encouraged, it is the requirements in section 3 of this document that will be used when testing the conformance of health software.

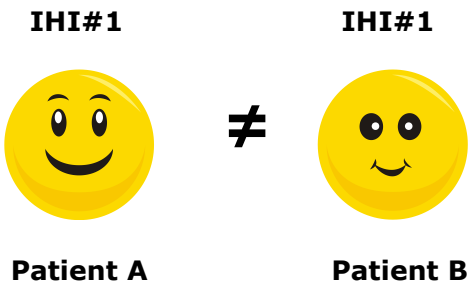
2.3 Glossary

For the purpose of this document, the following definitions apply.

Term	Definition and Usage
Active IHI number status	An IHI has an active status when it does not have a date of death on the record, the age is not greater than 130 years and the number status is not expired, retired, resolved or deceased.
Alert	An electronic notification of an exception or event with immediate action required. An alert may be displayed on a user interface and/or communicated to a responsible party through other means, eg via a pager, email or mobile phone. An alert will persist until the underlying exception or event is acknowledged and/or addressed, or the operator explicitly cancels the alert. An unresolved alert persists until the initial error condition for that alert has been addressed. Acknowledging an alert is not resolving an alert. An action or event must take place to address the initial reason for the alert.
B2B	Business-to-business. B2B refers to the web services channel used by software to access the HI Service.
Background process	Any technique that manages computer resources so that selected system activities are transparent and non-obtrusive to the local operator.
Conformance requirements	Requirements, indicated by the word 'shall' or 'shall not', which are mandatory for conformance with this specification and recommendations, indicated by the word 'should' or 'should not', which provide best practice solutions but are not mandatory.
Deceased IHI number status	A deceased status is an indication that another healthcare provider has reason to believe the individual to whom an IHI is assigned has died. An IHI has a deceased status when there is a date of death present on the record but it has not yet been matched with Fact of Death Data from Births, Deaths and Marriages Registries and age is not greater than 130 years.

Duplicate IHI	When a patient record has been assigned two different IHIs, the IHIs are referred to as duplicates. This represents an error condition requiring active management. The diagram depicts potential duplicate IHIs.  This definition of 'duplicate IHI' is the same definition used by the HI Service. For the purpose of this document, a duplicate IHI is not a replica IHI.
Exception	Any error or anomalous condition that occurs within a software system, or application. An exception alters the normal flow of a program. Exceptions shall be logged and may be categorised into severities. An exception is transactional in its nature and hence is always retained. An exception may however be resolved. Some exceptions may be configured to cause an alert or a warning to be raised. An unresolved exception persists until the initial error condition for that exception has been addressed. Acknowledging an exception is not resolving an exception. An action or event must take place to address the initial reason for the exception.
Expired IHI number status	The expired status indicates when a record is no longer active. An IHI has an expired status where it is provisional and there has been no activity on the record for 90 days, or where it is unverified and has reached an age of 130 years.
Family name	That part of a name a person usually has in common with some other members of his/her family, as distinguished from his/her given names [AS5017]. Surname and last name are synonyms of family name. Health software systems may store the preferred family name and/or the registered/legal family name. If more than one family name is stored, the system will typically distinguish between the different family names through the use of alias names or name usage indicators.

Given Name	A person's identifying name(s) within the family group or by which the person is uniquely socially identified [AS5017]. First name, middle name, second name and forename are synonyms of given name.
Healthcare identifier	An identifier assigned to a healthcare provider (individual or organisation) or a healthcare recipient as defined in the Healthcare Identifiers Act [HIACT2010]. Note: this term is used generally in healthcare to refer to any healthcare identifier including local numbers, but in this document is restricted to mean only the national healthcare identifier context.
HI implementation	A health software system that manages and uses local copies of healthcare identifiers.
IHI number status	The IHI number status may be Active, Deceased, Retired, Expired or Resolved. This attribute of the IHI is referred to as 'IHI status' in the system interface specifications published by the HI Service operator, Medicare Australia.
IHI record status	The status of the record in the HI Service of an individual healthcare recipient. The IHI record status may be Provisional, Unverified or Verified.
IEC	International Electrotechnical Commission.
IRN	Individual Reference Number. The number on the Medicare Card located beside each person's name.
ISO	International Organisation for Standardisation.
Local healthcare provider individuals	Local healthcare provider individuals designate those healthcare provider individuals that provide healthcare on behalf of the local healthcare provider organisations.
Local healthcare provider organisations	Local healthcare provider organisations designate those organisations that are responsible for the governance of the local system.
OCR	Optical character recognition; the mechanical or electronic translation of scanned images of handwritten, typewritten or printed text into machine-encoded text.
Organisation Maintenance Officer	An employee nominated by the Responsible Officer to act on behalf of the seed healthcare organisation or a network (subordinate of the seed) organisation to manage the security and access controls for authorised employees of the healthcare organisation. The Organisation Maintenance Officer is required to obtain consent from all healthcare providers before professional and business information can be published in the HI Service Healthcare Provider Directory (HPD).

Patient Record	An electronic record containing sufficient patient demographic information to identify a patient. There may be more than one patient record for the same patient. The Australian standard for Health Care Client Identification (AS5017) provides guidance for achieving unique identification.
Provisional IHI	When an IHI record is provisional it means the identifier was created at a healthcare facility when the healthcare recipient was not able to be identified.
Replica IHI	One IHI assigned to two or more patient records in the health software system. This represents an error condition requiring active management. The diagram depicts potential replica IHIs.  This definition of 'replica IHI' is the same definition used by the HI Service. For the purpose of this document, a replica IHI is not a duplicate IHI.
Resolved IHI number status	An IHI has a resolved status when it has been linked with another record as part of resolving a provisional record or resolving a duplicate record, or end dated as part of the replica resolution process. If an IHI number search returns a message indicating that the submitted IHI has been resolved, the replacement IHI assigned to the healthcare recipient by the HI Service operator will also be included in the response from the HI Service. The replacement IHI is the correct IHI for the HI implementation to use for the healthcare recipient and the IHI used in the IHI number search is to be recorded in the HI implementation as the healthcare recipient's previous IHI.
Responsible Officer	Only one Responsible Officer is appointed by the healthcare organisation. The Responsible Officer nominates the organisation maintenance officer(s), the networks associated with the seed organisation, the assignment or retirement of healthcare identifiers for the healthcare organisation, mergers and reconfigurations of the organisation.

Retired IHI number status	An IHI has a retired status when there is a date of death present on the record and either it has been matched with Fact of Death Data from Births, Deaths and Marriages Registries and has had no activity for 90 days or has reached an age of 130 years (verified IHI records only).
Shall	The terms 'shall' and 'shall not' may appear in a conformance requirement to indicate a mandatory requirement in accordance with guidelines published by Standards Australia. Its negative form 'shall not' indicates a prohibition.
Should	The term 'should' and 'should not' may appear in a conformance requirement to indicate a recommendation in accordance with guidelines published by Standards Australia. Its negative form 'should not' indicates an option that should not be supported.
Third-party healthcare provider	A healthcare provider organisation that is outside the governance boundary of the first healthcare provider organisation. For example, a healthcare provider organisation that is not owned, managed or governed by the primary provider organisation could be considered a third-party healthcare provider.
Unverified IHI	When an IHI record is unverified it means the identifier was created by a healthcare organisation and the healthcare individual has not contacted Medicare Australia to verify the IHI by providing Evidence of Identity.
Verified IHI	When an IHI record is verified it means the person is a known customer of Medicare Australia or the Department of Veterans Affairs or has provided Evidence of Identity information that has been recorded in the HI Service to establish the identity of the healthcare individual.
Warning	Electronic notification of an exception or event that may require user attention. A warning will typically be displayed on the user interface and acknowledged by the operator. The software system shall allow the user to cancel a warning.

2.4 Acronyms and abbreviations

Acronym/abbreviation	Explanation
CSP	Contracted Service Provider
HI	Healthcare Identifiers (meaning national healthcare identifier of the HI service)
IHI	Individual Healthcare Identifier (meaning national healthcare identifier of the HI service)
HPD	HI Service Healthcare Provider Directory
HPI	Healthcare Provider Identifier
HPI-I	Healthcare Provider Identifier for Individuals
HPI-O	Healthcare Provider Identifier for Organisations
ID	Identity
OMO	Organisation Maintenance Officer
RO	Responsible Officer
wsdl	Web services description language

2.5 Achievement of conformance

This document contains conformance requirements for a set of business use cases.

Each business use case (UC) is identified by the notation UC.nnn. Each business use case has conformance requirements and each conformance requirement lists the business use case(s) to which it applies.

Business process models describe the workflow, tasks and decisions for each business use case. They are only intended as a guide for developers of HI implementations and aspects of a business use case that must be supported by HI implementations are explicitly stated as conformance requirements within this document.

HI implementations must conform to the mandatory and any relevant conditional conformance requirements of business use cases they support and not implement any prohibited capabilities for these business use cases. The developer of an HI implementation may select the business use cases applicable to their software and need not support all business use cases.

2.6 Conformance to the HI service interface

A HI implementation may obtain access to the HI Service either:

- Directly, through web services included in the HI Service interface; or
- Indirectly, through third-party software or another health software system that accesses the HI Service.

If the HI implementation accesses the HI Service directly then it must conform to the system interface specifications for the HI Service. These specifications describe web services to access the HI Service and data exchanged between an HI implementation and the HI Service.

If the HI implementation does not access the HI Service directly but does so indirectly via another software system then the HI implementation does not need to conform to the web services but the developer may need to review the specifications to obtain information about the data associated with healthcare identifiers.

The system interface specifications for the HI Service may be obtained from the Department of Human Services - Medicare Australia website. Note that an accepted Licence Agreement - Use of the Healthcare Identifiers Licensed Material for Notice of Connection with Medicare Australia is required to gain access to the HI Licensed Material which includes the system interface specifications.

Conformance requirements associated with HI Service web services relate to the versions outlined in the table below.

TECH.SIS	Web Service	Supported Version	
		N	N-1
3	Update Provisional IHI via B2B	v3.0	n/a
5	Update IHI via B2B	v3.2.0	v3.0.2
6	IHI Inquiry –Search via B2b	v3.0	n/a
8	Resolve Provisional IHI – Merge record via B2B	v3.0	n/a
9	Resolve Provisional IHI – Create Unverified IHI via B2B	v3.0.2	n/a
10	Create Provisional IHI via B2B	v3.0	n/a
11	Create Unverified IHI via B2B	v3.0.2	n/a
12	Consumer Search IHI Batch Synchronous	v3.0	n/a
13	Manage Provider or Administrative Individual Details	v3.2.0	n/a
14	Manage Provider Organisation Details	v3.2.0	n/a
15	Read Provider or Administrative Individual Details	v3.2.0	n/a
16	Read Provider Organisation Details	v3.2.0	n/a
17	Healthcare Provider Directory - Search for Individual Provider Directory Entry	v3.2.0	n/a
18	Healthcare Provider Directory - Search for Organisation Provider Directory Entry	v3.2.0	n/a
19	Healthcare Provider Directory - Manage Provider Directory Entry	v3.2.0	n/a
22	Read Reference Data	v3.2.0	n/a
24	Notify of Duplicate IHI via B2B	v3.2.0	n/a
25	Notify of Replica IHI via B2B	v3.2.0	n/a
30	Consumer Search IHI Batch Asynchonous	v3.0	n/a

31	Search for Provider Individual Details	v5.0.0	n/a
32	Search for Provider Organisation Details	v5.0.0	n/a
33	Search for Provider Individual Batch Async	v5.1.0	n/a
34	Search for Provider Organisation Batch Async	v5.1.0	n/a

The following web services have no corresponding software conformance requirements:

TECH.SIS	**Web Service**
13	Manage Provider or Administrative Individual Details
14	Manage Provider Organisation Details
15	Read Provider or Administrative Individual Details
16	Read Provider Organisation Details
22	Read Reference Data

2.7 Healthcare Identifiers Business Use Cases Summary

BUC	BUC description
UC.005	Search for patient health record
UC.010	Register patient
UC.015	Update patient health record
UC.025	Bulk update of IHI details
UC.035	Merge patient health records
UC.040	Split patient health record
UC.045	Individual logon
UC.070	Register Seed HPI-O
UC.075	Request digital credential for Seed HPI-O
UC.080	Maintain HPI-O Details
UC.100	Maintain RO Details
UC.105	Maintain RO or Seed OMO
UC.120	Software system audit log enquiries
UC.125	Maintain OMO details
UC.130	Validate HPI-I
UC.131	Search for HPI-Is in the HI Service
UC.135	Publish HPI-O to HI Service HPD
UC.145	Remove HPI-O to HPI-I Link
UC.150	Register network HPI-O
UC.155	Request digital credential for network HPI-O
UC.160	Register OMO for network HPI-O
UC.175	Link HPI-I to HPI-O
UC.185	HI Service audit log enquiries
UC.200	Register a HPI-I directly through the HI Service
UC.205	Request digital credential for HPI-I
UC.215	Maintain HPI-I details
UC.225	Publish HPI-I to HI Service HPD
UC.235	Remove HPI-I to HPI-O Link
UC.240	Search for HPI-Is in HI Service HPD
UC.241	Search for HPI-Os in HI Service HPD
UC.290	Retire HPI-O
UC.295	Deactivate or reactivate HPI-O
UC.305	Validate HPI-O
UC.306	Get HPI-O status
UC.320	Request electronic clinical document
UC.325	Receive patient health information electronically

UC.330	Send patient health information electronically

The following Business Use Cases have no software conformance requirements:

BUC	**BUC Description**
UC.040	Split patient health record
UC.070	Register Seed HPI-O
UC.075	Request digital credential for Seed HPI-O
UC.100	Maintain RO Details
UC.105	Maintain RO or Seed OMO
UC.120	Software system audit log enquiries
UC.125	Maintain OMO details
UC.135	Publish HPI-O to HI Service HPD
UC.145	Remove HPI-O to HPI-I Link
UC.155	Request digital credential for network HPI-O
UC.160	Register OMO for network HPI-O
UC.175	Link HPI-I to HPI-O
UC.185	HI Service audit log enquiries
UC.200	Register a HPI-I directly through the HI Service
UC.205	Request digital credential for HPI-I
UC.215	Maintain HPI-I details
UC.225	Publish HPI-I to HI Service HPD
UC.235	Remove HPI-I to HPI-O Link
UC.290	Retire HPI-O
UC.295	Deactivate or reactivate HPI-O

2.8 IHI search technique

When there is no IHI associated with the patient record, the permitted search types shall be restricted to the six described below.

Any health software searching for an IHI in the HI Service using the B2B channel shall use no other IHI search types. An HI implementation need not support all the allowed search types. Note that this requirement does not apply to searches containing an IHI as a search parameter (e.g. searches to validate an IHI).

The search types are:

1. Medicare card search with Medicare card number, IRN, Family name, Given name, Date of birth, and Sex;
2. Medicare card search with Medicare card number, IRN, Family name, Date of birth, and Sex;
3. Medicare card search with Medicare card number, Family name, Given name, Date of birth, and Sex;
4. DVA file number search with DVA file number, Family name, Given name, Date of birth, and Sex;
5. DVA file number search with DVA file number, Family name, Date of birth and Sex; and
6. Address search with Family name, Given name, Date of birth, Sex and Address.

Within each search type the listed data elements are mandatory. Search types 2 and 5 may only be used when the patient has only one name, and the software has the capability of indicating this.

Software may indicate a patient has only one name by different means, for example, a flag, tick box, indicator, specific text, or other. Recording the surname in place of the given name or by leaving the given name blank is not considered an acceptable method of recording the patient has only one name. Storing an easily distinguished text/phrase in place of the given name, for example "no given name" may be considered an acceptable method of indicating the patient has no given name.

The software will need to demonstrate during testing that a specified text/phrase stored as the given name will result in a one-name search against the HI Service being submitted.

More than one search may be performed of each search type. For example search type (4) could be performed with one Given name and if this fails the search type may be repeated with a second Given name for that patient record.

If the health software automatically applies one search after another, then the search iteration shall not continue after a matching IHI has been found.

Health software shall not support any other search types when searching for an IHI in the HI Service. A healthcare provider that needs to perform another search type will do so using another channel to the HI Service, such as the HI Service Team.

The search types may be performed using historical data (e.g. using a person's maiden name for the Family name) subject to the condition that historical data shall be used only if the IHI searches using current data fail to find a matching IHI.

The allowed set of search types listed above is more restrictive than the search types allowed by the HI Service. Software is required to conform to these search types as they have been found to increase the likelihood that a correct IHI is returned.

2.9 Contracted Service Providers

Contracted Service Providers (CSPs) must conform to the requirements that apply for the Use Cases the CSP implements but are not required to meet any additional CSP related conformance requirements.

2.10 Generating and receiving electronic health messages

The HI software conformance scope includes requirements associated with the business use cases for sending an eHealth message (UC.330), receiving an eHealth message (UC.325) and requesting an electronic clinical document (from a repository) (UC.320).

The scope of these requirements is in the exchange of patient health information between third-party healthcare providers as well as repositories.

Conformance requirements for generating and receiving electronic health messages include those for validating IHIs, HPI-Is and HPI-Os via the HI Service B2B channel. Implementers should note that limitations of the HPI-O validation against the HI Service as described by tech.sis.hi.32 and tech.sis.hi.34 make this method of HPI-O validation inappropriate to use in a messaging context. Some messaging conformance requirements in this document intentionally prohibit the use of these two web services in some circumstances for this reason.

The implementation of tech.sis.hi.31 and tech.sis.hi.33, where a HPI-I may be validated against the HI Service rather than the HPD also make tech.sis.hi.15 suitable for use in the messaging context, even though tech.sis.hi.15 may only be used by an RO or OMO. This is reflected in this document and in the test cases.

Adding a timestamp in the message/document along with the healthcare identifier, indicating the date and time the healthcare identifier was last validated, may also absolve the receiver from having to revalidate the healthcare identifier against the HI Service, on the basis that the sender's validation of the healthcare identifier occurred within the previous 24 hour period.

References to HPI-Is or HPI-Os refer to those identifiers that relate to sending or receiving organisations and not to provider identifiers that are embedded in the clinical content of an eHealth message/document – unless stated otherwise in the conformation requirements.

Software that receives an eHealth message/document may create or update a patient record.

Requirements for UC.330, UC.325 and UC.320 are based on the assumption that the sending and receiving health software is connected to the HI Service. The requirements for the business use case of receiving an eHealth message/document (UC.325) mandate that the successfully received eHealth message/document is stored in a local system.

Health software storing patient records but not connected to the HI Service is encouraged to conform to the requirements for UC.330, UC.325 and UC.320 though this is not mandated. Health software not designed to store patient records has no need to connect to the HI Service and does not need to meet the requirements listed here.

The HI Service does not support point in time validation of HPI-I's and HPI-O's and hence validating those identifiers within documents may fail as the documents age, however it would be reasonable and recommended for the same checks of identifiers to be applied as are specified here for sending and receiving systems. This would minimise message/document rejection.

2.11 Use of exceptions, alerts and warnings

Some software conformance requirements make references to exceptions, alerts and/or warnings. These definitions are defined in section 2.3 of this document, titled "Glossary". The tables below outline the requirements that refer to these types of notifications. These requirements might be mandatory, conditional or recommended and might be related to any of the HI Use Cases.

Alert
5839, 5875, 16832, 16835, 17571, 17573, 17943, 17944, 18884, 5801, 5807, 10038, 10040, 10809, 17946, 17947, 16813, 16814, 16837, 16840, 16838

Warning or Alert
16815, 16839, 17421, 23502, 23504

2.12 Use of unverified and provisional IHIs in messages/ehealth documents

Many of the requirements in this document involve conditional processing of Unverified and Provisional IHIs, including for the messaging use cases UC.320 and UC.330. This is for the sake of completeness and avoidance of future CCA rework. The decision on whether a healthcare provider organisation will use Provisional and/or Unverified IHIs, and in what context, rests with the organisation itself.

With particular regard to the use of Provisional and Unverified IHIs in messaging, the requirements herein should not be seen as a CCA recommendation, or a requirement, for their use in this context, as there remain doubts over the effectiveness and safety of this practice.

3 Conformance Requirements

This section lists mandatory, conditional and recommended software conformance requirements applicable to software implementing the acquisition of healthcare identifiers from the HI Service, storage and usage of these healthcare identifiers.

3.1 Mandatory Requirements

This section lists the mandatory software conformance requirements associated with the use of healthcare identifiers.

Requirements listed as mandatory are mandatory within the context of the related business use cases. Health software that implements a business use case must conform to the mandatory requirements for that business use case.

Req No	5805	**Priority**	Mandatory

Maximum name length

When interacting with the HI Service the software shall be able to send no more than 40 characters for a patient's family name and send no more than 40 characters for each of a patient's given names. The given and family names shall be stored in full in the software system. If the HI Service returns a shortened patient name then the local system shall ensure the shortened name does not replace the full length patient name.

Related Business Use Cases	UC.010, UC.015, UC.025, UC.035
Additional Information	The HI Service uses only the first 40 characters of a family name and any given name.

Req No	5808	**Priority**	Mandatory

Capture and storage of date of birth

The software shall allow for the capture and storage of a patient's full date of birth inclusive of day, month and four-digit year.

Related Business Use Cases	UC.005, UC.010, UC.015
Additional Information	Date of birth is a required IHI Search parameter as described in the HI Service system interface specifications [TECH.SIS.HI.06 and TECH.SIS.HI.12]. The full date of birth needs to be stored using the day, month and 4-digit year. The accuracy of the birth date may also be indicated (refer requirement #5915).

Req No	5817	**Priority**	Mandatory

Allow a patient record without an IHI

The software shall allow the creation and storage of a patient's record without an IHI unless there is a legislative requirement that an IHI is mandated.

Related Business Use Cases	UC.010
Additional Information	The provision of healthcare services is not dependent upon having an IHI number for a patient. An example of a legislative requirement is the draft PCEHR Act, which states that a (Verified) IHI is required to create or access a patient's PCEHR.

Req No	5820	**Priority**	Mandatory

Recording of IHI details upon IHI assignment and update

When assigning a new IHI or updating IHI details in a patient record, the software shall store the following:

- the IHI number;

- the IHI number status (Active/Deceased/Retired/Expired/Resolved);

- the date and time of the assignment/update (the assignment time shall be stored in hours and minutes unless the system is capable of more precision).

- the IHI record status (Verified/Unverified/Provisional).

Related Business Use Cases	UC.010, UC.015, UC.025, UC.035
Additional Information	Knowledge of the IHI number status, IHI record status, and date of assignment/update is used in the ongoing maintenance of an IHI in a patient record. The software shall retain previously assigned IHIs, including their number status and record status, in the patient records for historical purposes (see requirement 5847).

Req No	5839	Priority	Mandatory

Alert raised when the same IHI is assigned to records of more than one patient.

The software shall raise an alert whenever an IHI is assigned to a patient record and the same IHI has already been assigned to one or more other records of patients in the local system.

Related Business Use Cases	UC.010, UC.015, UC.025
Additional Information	Creating an alert when the same IHI has been assigned to two or more patients in the local system allows the operator to resolve local record issues or to report the IHI to the HI Service as a potential replica. The HI Service may be notified of a potential replica by the Notify of Replica IHI by B2B web service [TECH.SIS.HI.25] or by contacting the HI Service operator.

Req No	5843	Priority	Mandatory

Display of IHI Number Status and IHI Record Status

The software shall have the capability to display the IHI number assigned to a patient, the IHI number status and the IHI record status.

Related Business Use Cases	UC.010, UC.015, UC.035
Additional Information	Having the capacity to display the IHI number status and record status together with the IHI will enable the operator to make informed decisions regarding the validity of the IHI and any need to re-validate it. Software may include patient records held in a patient administration system, administrative, clinical or master patient index systems used to store the IHI.

Req No	5847	**Priority**	Mandatory

Storage of a patient's previous IHI details

The software shall store previously assigned IHIs, including their number status (if known) and record status (if known), in the patient records for historical and audit purposes.

Related Business Use Cases	UC.010, UC.015, UC.025, UC.035
Additional Information	The capacity for systems to be able to retain previously used IHIs would greatly assist with auditing, in ascertaining the identity of a patient and ensuring that the records maintained over time are assigned to the correct patient record. An IHI that is immediately validated against the HI Service and determined to be resolved or of a different record status in the HI Service is to be retained as a historical IHI. See the glossary for information about how an IHI may become resolved. Patient information used when registering a patient (UC.010) may include an IHI. During the process of patient registration the software may find that the IHI has become resolved. The resolved IHI is to be treated as a previously assigned IHI.

Req No	5872	**Priority**	Mandatory

Revalidation of individual IHIs

The software shall allow for the revalidation of individual IHI numbers, IHI number statuses and IHI record statuses, using either the IHI Inquiry Search via B2B or the IHI Batch Searching via B2B web service described in the HI Service system interface specifications [TECH.SIS.HI.06 and TECH.SIS.HI.12 respectively], regardless of the IHI record status.

Related Business Use Cases	UC.015
Additional Information	This requirement ensures that the most current IHI, IHI number status and IHI record status can be assigned to the patient's record in the software. The revalidation can be performed by operator request or is scheduled on a periodic basis or is triggered by a system event. An operator request may be performed by generating a message from an interactive system to the HI connected software.

Req No	5873	Priority	Mandatory

Creation of error log for all errors

The software shall create an error log for all error messages received from the HI Service including those that are resolved automatically. The log shall include the error date/time, in hours and minutes unless the system is capable of more precision, the error number, the error message and message ID reported by the HI Service.

Related Business Use Cases	UC.010, UC.015, UC.025, UC.035, UC.080, UC.130, UC.131, UC.240, UC.241 UC.305, UC.306, UC.320, UC.325, UC.330
Additional Information	If the software is unable to complete a transaction with the HI Service then manual intervention may be required. By recording the error in a log a local operator will be able to review the error and take appropriate action.

Req No	5875	Priority	Mandatory

Assignment of IHIs

If an IHI with a supported record status is returned from the HI Service for a patient, the software shall have the capacity to assign that IHI to the patient's record and raise an alert if the search criteria used matches another patient's demographic data from the same registration source.

If an alert is raised, the system shall either discard the IHI or store it against the target patient record and flag the records as potentially conflicting.

Related Business Use Cases	UC.010, UC.015, UC.025, UC.035
Additional Information	Storing an IHI with a patient record assists with the realisation of the clinical safety benefits of the HI Service. Enterprise Master Patient Indexes (EMPI) such as those used by state and territory health jurisdictions are populated with multiple registration sources e.g. hospital patient administration systems. They contain multiple records from different registration sources that identify the same person. It is desirable that these multiple records from different sources that identify the same person contain the same IHI value. This contributes to the process of linking these records across sources to manage patient identification across institution boundaries. Requirement 5875 seeks to address the exposure of fragmented patient records due to duplicate registration records within a single registration source/institution. Requirement 5839 may apply if the operator determines that the patient records possessing the same IHI are for different patients.

Req No	5906	**Priority**	Mandatory

IHI assignment for merged patient health record in the local system

When merging two patient records in the local system, the software shall use either the IHI Inquiry Search via B2B [TECH.SIS.HI.06] or the IHI Batch Searching via B2B [TECH.SIS.HI.12], as outlined in section 2.8, to obtain the IHI, the IHI number status and IHI record status for the surviving or final merged patient record.

Related Business Use Cases	UC.035
Additional Information	The IHI Inquiry Search via B2B is to be performed even if the original patient records both possessed the same IHI. Contacting the HI Service to obtain the IHI ensures the most recent status information is obtained.

Req No	6077	**Priority**	Mandatory

Only one IHI shall be assigned to a patient's record

The software shall ensure that only one IHI can be assigned to a patient record.

Related Business Use Cases	UC.010, UC.015, UC.025, UC.035
Additional Information	Note that this requirement does not prevent the retention in a patient record of previously assigned IHIs. The IHI is the healthcare identifier that shall be used in the communication of a patient's health information to other healthcare providers. This presence of one only IHI in the patient record will assist the consistency and reliability in patient related health communications, and ensuring common understanding between the two healthcare providers. Previous IHIs associated with a patient shall be stored by the software (see requirement #5847).

Req No	6105	**Priority**	Mandatory

Capability to request the revalidation of verified IHIs upon update of core demographic details in the local system

When core demographic details associated with a verified IHI in a patient's record are updated the software shall provide the operator with the capacity to request the revalidation of that IHI, using either the IHI Inquiry Search via B2B web service [TECH.SIS.HI.06] or the IHI Batch Searching via B2B web service [TECH.SIS.HI.12] to get the most up-to-date information.

Related Business Use Cases	UC.015
Additional Information	Care should be exercised when a patient, whose record is currently associated with a verified IHI, advises healthcare providers of new or changed core demographic details upon presentation if they have not yet advised the HI Service operator. This is because the update of core demographic details and subsequent revalidation of the IHI, that would then be triggered, may result in no IHI being found by the HI Service. The capacity to revalidate IHIs upon update of core demographic details may be a configurable option. Core demographic details consist of: - Family name; - Sex; - Date of birth. Note that the HI Service does not record a history of changes made to a person's date of birth or sex.

Req No	8028	**Priority**	Mandatory

Record audit trail of each healthcare identifier disclosed by the HI Service

The software shall have the ability to record an audit trail of all healthcare identifiers disclosed by the HI Service regardless of type. The audit trail shall be retrievable.

The audit trail shall record at least the following items:

- The healthcare identifier disclosed by the HI Service
- Any associated local record identifier(s)
- Identifying information of the operator or responsible officer, including their HPI-I if applicable and known, that initiated access to the HI Service
- The healthcare identifier (HPI-O) of the healthcare provider organisation that initiated the request to the HI Service
- The contracted service provider (if applicable)
- The HI Service operation (web service name) that disclosed the healthcare identifier
- System date and time (time in hours and minutes unless the system is capable of more precision)
- The HI Service message ID as documented by [TECH.SIS.HI.01]
- The batch ID (if applicable)
- The version of the HI Service web service

Related Business Use Cases	UC.010, UC.015, UC.025, UC.035, UC.130, UC.131, UC.150, UC.240, UC.241, UC.305, UC.306
Additional Information	The capacity to capture and report on activities (e.g. search/check/update/refresh/edit) against healthcare identifiers will assist in meeting the HI regulations [HIREG2010]. The HI regulations specify logs must be kept for 7 years starting on the day after the operator ceased to be authorised. In the case of a batch operation the operator may be the name of the Responsible Officer.

Req No	8526	**Priority**	Mandatory

Mandatory search technique and search types

The software shall use the search technique and search types stated in section 2.8 for all the IHI searches it conducts using the B2B channel which do not use the IHI number as a search criteria.

Related Business Use Cases	UC.010, UC.015, UC.025, UC.035
Additional Information	The IHI search technique and search types outlined in section 2.8 reduce the risk of returning an incorrect IHI match.

Req No	10041	**Priority**	Mandatory

Search for an individual healthcare provider

The software shall be capable of validating HPI-Is described in the HI Service system interface specification TECH.SIS.HI.15, 17, 31 or 33.

Related Business Use Cases	UC.130, UC.131, UC.320, UC.325, UC.330
Additional Information	Conformance with this requirement helps provide assurance that the HPI-I is current and the individual’s demographic information is correct.

Req No	10042	**Priority**	Mandatory

Search for an organisation healthcare provider

The software shall be capable of validating HPI-Os via the web service described in the HI Service system interface specification, TECH.SIS.HI. 16 or 18.

Related Business Use Cases	UC.150, UC.305, UC.320, UC.325, UC.330
Additional Information	Conformance with this requirement helps provide assurance that the HPI-O is correctly associated with the organisation's demographic information. Implementers should note that failure to retrieve a match via the B2B channel does not necessarily mean that no healthcare provider identifier record exists in the HI Service for the provider organisation. Inclusion in the HPD occurs only where healthcare provider organisations have given explicit consent to opt-in. Only those healthcare provider identifiers which have an 'active' number status can be retrieved via the B2B channel.

Req No	010613	**Priority**	Mandatory

Inclusion of a healthcare identifier in an eHealth message/document with an unresolved exception or alert

The software shall not include a healthcare identifier (IHI, HPI-O, HPI-I) in an eHealth message/document if an unresolved exception or alert exists for that identifier in the local system.

Related Business Use Cases	UC.320, UC.330
Additional Information	If an exception or alert has been raised in relation to a healthcare identifier, then this indicates that an abnormal condition exists with the healthcare identifier. Therefore it is potentially unsafe to use that healthcare identifier in communication with a third-party healthcare provider until the exception or alert has been resolved.

Req No	010618	Priority	Mandatory

Inclusion of patient's demographic data in an eHealth message/document

The software shall include the patient's demographic data used to obtain or validate the IHI in the eHealth message/document.

Related Business Use Cases	UC.320, UC.330
Additional Information	The inclusion of the patient's demographic data will provide a level of surety that the receiving software will be able to validate the IHI in the eHealth message/document. The patient's preferred name(s) should be additionally provided within the eHealth message/document where available/possible.

Req No	016813	Priority	Mandatory

Actions for when validation of a verified IHI returns a 'resolved' information message and a different IHI number

When a verified IHI is validated and the HI Service returns a 'resolved' information message and a different IHI number, the software shall not store that new IHI unless it can also be validated with the existing patient demographics in the local system.

If the new IHI cannot be validated with the local patient demographic data then an alert shall be raised so an operator can determine what action should be taken.

The new IHI number, IHI status and IHI record status shall be stored in the patient record if the IHI number can be validated using local patient demographic data.

The old IHI shall be moved to the patient record history with a resolved status regardless of the validity of the new IHI.

Related Business Use Cases	UC.015, UC.025, UC.035, UC.320, UC.330
Additional Information	The HI Service will return a new IHI number in addition to a message stating that the previous IHI has been resolved. This may occur if the HI Service operator has determined that the patient record is a duplicate and has merged the two patient records. The new IHI number will be returned with the patient demographic data used in the original IHI search and this may not reflect the data stored against the new IHI record.

Req No	016814	**Priority**	Mandatory

Rules for when the validation of an active and verified IHI returns the same IHI number but with an IHI record status of unverified

When an active, verified IHI is validated and the HI Service returns the same IHI number but with a record status of unverified the software shall raise an alert.

Related Business Use Cases	UC.015, UC.025, UC.035, UC.320, UC.330
Additional Information	When an IHI is validated the HI Service would not be expected to return an IHI record status that is 'lower' than the locally stored record status. If this does occur an alert is raised and the new record status may or may not be stored in the local patient record, depending on the design of the software or local policy. The alert requires operator intervention to confirm that the change is legitimate, most likely involving a query to the HI Service operator. The design of the HI Service prevents the return of a provisional IHI so the conformance requirement does not consider this possibility.

Req No	016815	**Priority**	Mandatory

Rules for when the validation of an active and verified IHI returns the same IHI number and same IHI record status but with a different IHI status

When an active and verified IHI is validated and the HI Service returns the same verified IHI number but with a different IHI status, the software shall either store the new IHI status in the patient record, or raise a warning or alert according to the following table.

Status of the verified IHI returned from the HI Service			
Active	**Deceased**	**Retired**	**Expired**
No change	A warning may be raised	The new status shall be stored and a warning shall be raised.	An alert shall be raised (should not happen with the HI Service)

Related Business Use Cases	UC.015, UC.025, UC.035, UC.320, UC.330
Additional Information	When the HI Service returns a deceased status the patient's death is not confirmed by the Registry of birth/death/marriages. Depending on the software design or local policy, the locally stored status may change to deceased or remain active until the HI Service returns a retired status, which is confirmation the patient is deceased. The expired status should not occur for a verified IHI.

Req No	16832	Priority	Mandatory

Validation of an IHI before inclusion in a new eHealth message/document

An IHI shall be validated by using either the IHI Inquiry Search via B2B web service [TECH.SIS.HI.06] or the IHI Batch Searching via B2B [TECH.SIS.HI.12] prior to inclusion in a new eHealth message/document. If the IHI cannot be validated then it shall not be included in the eHealth message/document and an alert shall be raised. Validation shall have occurred within the previous 24 hours.

Related Business Use Cases	UC.320, UC.330
Additional Information	Validating an IHI immediately prior (or within 24 hours) to it being sent to a recipient(s) ensures the IHI is valid for that patient at the time of sending. Successful HI validation within the 24 hour period prior to generation of the message / document represents an acceptable approach in the inclusion of IHIs in eHealth messages/documents. The 24 hour validity period is proposed as a balanced risk approach to revalidation of healthcare identifiers. Local policy may specify more frequent validation, such as at time of document transmission, regardless of when the IHI was last validated. A resolved IHI is not considered a valid IHI. The new IHI returned should be validated against the HI Service using local demographic data. If the new IHI can be validated it may be included in an ehealth message/document.

Req No	016835	Priority	Mandatory

Negative application-level acknowledgements or raise alert when receiving invalid eHealth message/document

When the receiving software determines any healthcare identifier in an incoming eHealth message/document is invalid, the software shall initiate a negative application-level acknowledgement to the sender of the eHealth message/document and/or alert an operator.

Related Business Use Cases	UC.320, UC.325
Additional Information	The ability to initiate a negative application-level acknowledgement to the sending system provides the opportunity for the sending system and healthcare provider to investigate possible errors. An invalid identifier is an identifier that fails validation. If the validation procedure returns a status of resolved then the identifier is only invalid if the resolved IHI cannot be validated against the local patient demographic data.

Req No 017421 **Priority** Mandatory

Rules for when the validation of a deceased verified IHI returns the same IHI number and same IHI record status but with a different IHI status

When a deceased verified IHI is validated and the HI Service returns the same IHI number but with a different IHI status, the software shall perform the actions listed in the following table.

Status of the verified IHI returned from the HI Service			
Active	**Deceased**	**Retired**	**Expired**
An alert shall be raised	No change	The new status shall be stored and a warning shall be raised	An alert shall be raised (should never happen with the HI Service)

Related Business Use Cases UC.015, UC.025, UC.035, UC.320, UC.330

Additional Information When the HI Service returns a deceased status the patient's death is not confirmed by the Registry of birth/death/marriages. When the patient's death is confirmed the IHI status is changed to retired. If the deceased status was created in error the IHI status would change from deceased back to active. Local operator intervention is required to manage the status change in the local software, so an alert should be raised. This alert is potentially serious, and according to local policies may require a warning to be raised.

Req No	023502	**Priority**	Mandatory

Raise an alert or warning when a Healthcare Provider identifier is found to be resolved or not active

When the software attempts to validate a healthcare provider individual identifier (HPI-I) via the HI Service, and the HI Service indicates the identifier is resolved or not active (e.g. retired, resolved, deactivated), the software shall perform the actions listed in the following table.

Status of the HPI-I			
Active	**Retired**	**Deactivated**	**Resolved**
No action	Raise a warning	Raise a warning	Alert or warning (see below

When a healthcare provider individual identifier is validated and the HI Service returns a 'resolved' status and a different healthcare provider individual identifier, the software shall not store that new healthcare provider identifier unless it can also be validated with the existing healthcare provider individual identifier demographic data in the local software.

If the new healthcare provider individual identifier cannot be validated with the local healthcare provider individual identifier demographic data then an alert shall be raised so an operator can determine what action should be taken.

The new healthcare provider individual identifier number and healthcare provider identifier status shall be stored in the healthcare provider record if the healthcare provider individual identifier can be validated using local healthcare provider demographic data.

Related Business Use Cases UC.131

Req No	017571	**Priority**	Mandatory

Validation of the recipient's healthcare provider identifiers before inclusion in an eHealth message/document

The healthcare provider identifiers for individuals and organisations (i.e. HPI-Is and HPI-Os) of the healthcare provider receiving an eHealth message/document shall be validated prior to inclusion in an eHealth message/document. The validation shall be performed against:

- the HI Service via TECH.SIS.HI.15, 31 or TECH.SIS.HI.33; or

- the Healthcare Provider Directory (HPD) via TECH.SIS.HI.17 or TECH.SIS.HI.18; or

- a local copy of the identifiers if the identifier was previously validated within the last 24 hours

Validation shall be immediately prior to the eHealth message/document being sent unless the identifier was validated within the last 24 hours. If a HPI-I or HPI-O cannot be validated then it shall not be included in the eHealth message/document and an alert shall be raised.

Validation of the recipient's HPI-I only applies where the HPI-I is included in the message / document.

Related Business Use Cases	UC.330
Additional Information	Validating the recipient's HPI-Is and HPI-Os immediately prior to it being sent to a third-party healthcare provider ensures the identifiers are valid for that healthcare provider at the time of sending. Validation of the HPI-O with the organisational metadata provides a level of assurance that the destination of the message / document is correct. Validation of the HPI-I, when included, ensures that the receiving practitioner has been correctly identified and that they have an active HPI-I. Successful HI validation within the 24 hour period prior to generation of the message /document represents an acceptable approach to ensuring that only valid HIs are included in eHealth messages/documents. Use of the web service described by TECH.SIS.HI.32 and TECH.SIS.HI.34 is not permitted in this instance as these web services cannot ascertain the organisation details are correct for the HPI-O.

Req No	017573	**Priority**	Mandatory

Validating senders Healthcare Provider Identifiers in an incoming eHealth message/document

When receiving an eHealth message/document the software shall validate the incoming HPI-O/HPI-Is of the sender against:

- the HI Service via TECH.SIS.HI.15, 31or TECH.SIS.HI.33; or

- the Healthcare Provider Directory (HPD) via TECH.SIS.HI.17 or TECH.SIS.HI.18; or

- a local copy of the identifier if the identifier was previously validated within the last 24 hours

If a HPI-I or HPI-O cannot be validated then the eHealth message/document shall not be stored against any patient record, the HPIs shall not be stored outside of the eHealth message/document and an alert shall be raised for operator intervention.

Related Business Use Cases	UC.320, UC.325
Additional Information	Validating the sender's HPIs provides assurance the document was authored and transmitted by a healthcare provider recognised by the HI Service. It may be possible in the future to validate these identifiers against the HI service. Use of the web service described by TECH.SIS.HI.32 and TECH.SIS.HI.34 is not permitted in this context as these web services cannot ascertain the organisation details are correct for the HPI-O.

Req No	017942	**Priority**	Mandatory

Validation when incoming information matches a local patient record

When a matching local patient record has been found and the incoming IHI and demographic data matches the IHI and demographic data in a local patient record, the local IHI shall be validated with the local demographic data against the HI Service unless the IHI and demographic data in that local patient record has been validated against the HI Service within the last 24 hours.

In situations where it is expected there will be a time delay between receipt of the eHealth message/document and its processing, the IHI on the message shall be validated at the time of receipt. The message/document should be processed as soon as possible after receipt.

Related Business Use Cases	UC.320, UC.325
Additional Information	Non-urgent messages/documents that might be processed days or weeks after receipt (intake queues or waiting lists) require the IHI to be validated immediately upon receipt as a deferred validation of identifiers raises the risk that validation may fail, once the time come for the message to be processed. When incoming data matches that in the local system it doesn't matter which data set is used to validate the IHI but it is important to ensure the information contained in the local system is accurate. When the incoming information does NOT match a patient record then requirement 17944 applies.

Req No	017943	**Priority**	Mandatory

Validation when incoming demographic data matches a local patient record and the local IHI is absent

When a matching local patient record has been found and the incoming demographic data matches the demographic data in a local patient record and the local IHI in the patient record is absent then the software shall try to obtain the IHI, using local patient demographics, from the HI Service and store this in the local patient record.

If the IHI retrieved from the HI Service does not match with the incoming IHI the system shall raise an alert.

Related Business Use Cases	UC.320, UC.325
Additional Information	When incoming patient information does match the local patient record and the local IHI in the patient record is absent then it is important to determine if the local patient record is correct. Alerting the local operator provides an opportunity to ensure the local patient information is correct.

Req No	017944	**Priority**	Mandatory

When the incoming IHI/demographic data does not match any local patient record

When the incoming demographic data or the incoming IHI does not match any local patient record then the incoming eHealth message/document shall not be stored against the patient record without local operator intervention and an alert shall be raised. The software shall try to validate the local IHI and the local demographics against the HI Service.

Related Business Use Cases	UC.325
Additional Information	When incoming patient information does not exactly match the local patient record then it is important to determine if the local patient record is correct. Alerting the local operator provides an opportunity to ensure the local patient information is correct. A missing or absent IHI in the local system is not considered a 'mismatched' IHI (see requirement 17943). Validating the incoming IHI as close as possible to the time of receipt offers the highest chance of validating the incoming IHI.

Req No	018884	**Priority**	Mandatory

Validation of the authors healthcare provider identifiers before inclusion in a new eHealth message/document

The HPI-I and HPI-O of the author of the eHealth message/document shall be validated prior to inclusion in an eHealth message/document. The validation shall be performed against:

- the HI Service or

- the Healthcare Provider Directory (HPD) or - a local copy of the identifiers if the identifier was previously validated within the last 24 hours.

Validation shall be immediately prior to the eHealth message/document being sent unless the identifier was validated within the last 24 hours. If a HPI-I or HPI-O cannot be validated then it shall not be included in the eHealth message/document and an alert shall be raised.

Related Business Use Cases	UC.330
Additional Information	Validating the authors HPI-Is and HPI-Os immediately prior to them being sent to a third-party healthcare provider ensures the identifiers are valid for the authoring healthcare provider at the time of transmission. Successful HI validation within the 24 hour period prior to generation of the message / document represents an acceptable approach to ensure that only valid HIs are included in eHealth messages/documents.

Req No	23503	**Priority**	Mandatory

HPI-I name change

If the name associated with a HPI-I is changed then the software shall revalidate the HPI-I with the new demographic data. If the validation fails then the software shall raise an alert against the HPI-I.

Related Business Use Cases	UC.131

Req No	23504	**Priority**	Mandatory

Not active HPI-Os

When the software attempts to validate a healthcare provider organisation identifier (HPI-O) via the HI Service, and the HI Service indicates the identifier is resolved or not active (e.g. retired, resolved, deactivated), the software shall perform the actions listed in the following table.

Status of HPI-O

Status of the HPI-O			
Active	**Retired**	**Deactivated**	**Resolved**
No action	Raise a warning	Raise a warning	Raise a warning

Related Business Use Cases	UC.306
Additional Information	It is important the local operator is warned about the status of healthcare identifiers that are not active when the status of those identifiers is retrieved.

Req No	23543	**Priority**	Mandatory

Validating HPI-Os

The software shall be capable of validating HPI-Os via the web services described in the HI Service system interface specification, TECH.SIS.HI.16, 18, 32 or 34.

Related Business Use Cases	UC.306
Additional Information	Conformance with this requirement helps provide assurance that the HPI-O is correctly associated with the organisation's demographic information.

3.2 Conditional Requirements

This section lists the conditional software conformance requirements associated with the use of healthcare identifiers.

Requirements listed as conditional are conditional within the context of the related business use cases. Support for conditional requirements associated with a business use case is mandatory, subject to the condition.

Req No	5801	**Priority**	Conditional

Individual Healthcare Identifier (IHI) check digit verification upon manual or OCR input

If the software supports the capture of IHIs via manual or OCR input then the software shall ensure that whenever an IHI is captured using manual or OCR input all sixteen digits are included, the identifier is stored as 16 continuous digits (no spaces) and the identifier is validated using the Luhn check digit algorithm (See appendix B). If the IHI does not include sixteen continuous digits or fails the Luhn check digit algorithm the IHI shall not be stored and an operator will be alerted.

Related Business Use Cases	UC.010, UC.015, UC.035
Additional Information	Performing these checks on an IHI entered manually or by OCR will assist with ensuring the IHI has not been corrupted, modified or contain errors.

Req No	5807	**Priority**	Conditional

Check digit validation of swiped Medicare cards or manually input Medicare card numbers

If the software supports the swiping of Medicare cards or the manual entry of Medicare card numbers, the software shall record the Medicare card number only if it is validated using the check digit algorithm described in Appendix C, otherwise the operator will be alerted of the error.

Related Business Use Cases	UC.005, UC.010, UC.015
Additional Information	Searching by the Medicare card number is considered one of the most reliable means of finding a patient's IHI.

Req No	5810	Priority	Conditional

Provisional IHI Configuration Options

If the software supports provisional IHIs the software shall support the following configuration options to control the creation and usage of provisional IHIs within the local system:

- Provisional IHIs are never created and are never associated with patient records;

- Provisional IHIs are associated with patient records and may also be created at the discretion of an operator.

Related Business Use Cases	UC.010, UC.015, UC.025, UC.035
Additional Information	The configuration options ensure the healthcare provider has control over the creation of provisional IHIs.

Req No	5811	Priority	Conditional

Unverified IHIs Configuration Options

If the software supports unverified IHIs , the software shall support the following configuration options to control the creation and usage of unverified IHIs within the local system:

- Unverified IHIs are never created and are never associated with patient records;

- Unverified IHIs are associated with patient records and may also be created at the discretion of an operator.

Related Business Use Cases	UC.010, UC.015, UC.025, UC.035
Additional Information	The configuration options ensure the healthcare provider has control over the creation of unverified IHIs.

Req No	5819	Priority	Conditional

Validation of manually-entered IHIs

If the software supports the manual or OCR input of IHIs, the software shall validate any IHI which is either manually input or input via optical character recognition technology through a call to the HI Service using either

- the IHI Inquiry Search via B2B web service [TECH.SIS.HI.06] or
- the IHI Batch Searching via B2B [TECH.SIS.HI.12] for a single request in synchronous mode using the HI_ConsumerSearchIHIBatchSync.wsdl web service.

The software shall validate the IHI immediately upon entry and shall alert the local operator if the IHI is assessed as invalid. The software shall discard the IHI if it cannot be validated.

Related Business Use Cases	UC.010, UC.015, UC.035
Additional Information	Any IHI which is associated with a patient record through either manual or OCR input does not provide any assurance of validity until such time it has been successfully validated with the HI Service. Until this has occurred, any manually/OCR input IHI should not be used in any internal or external communication about the patient's healthcare.

Req No	5836	Priority	Conditional

Prohibition of uncontrolled system-initiated creation of provisional and unverified IHIs

If the software supports unverified or provisional IHIs the software shall create a provisional or unverified IHI only by the request of the local operator. The software shall not support automatic creation of a provisional or unverified IHI.

Related Business Use Cases	UC.010, UC.015
Additional Information	Uncontrolled creation of unverified and provisional IHIs will erode the utility of provisional and unverified IHIs.

Req No	5842	Priority	Conditional

Printing of unverified IHIs

If the software supports unverified IHIs, when the unverified IHI is created, the software shall print the IHI number, the IHI number status, the IHI record status and the patient demographic information used to create the IHI and supporting documentation.

Related Business Use Cases	UC.010, UC.015
Additional Information	Providing the unverified IHI and associated identification information to the patient allows them to resolve the record status of the IHI with the HI Service operator or to present IHI related documentation to other healthcare providers.

Req No	5845	Priority	Conditional

Format for printing an IHI

If the software prints an IHI it shall print the IHI as 4*4*4*4 split string.

Related Business Use Cases	UC.010, UC.015, UC.035
Additional Information	Printing the 16-digit IHI string in an easy to read and already accepted and used format reduces the risk of transcription errors.

Req No	5874	Priority	Conditional

Transmission of demographic updates for unverified IHIs

If the software supports unverified IHIs and the patient record is associated with an Unverified IHI and the patient's demographic details are updated, the software shall have the ability to transmit the updated demographic details to the HI Service using the Update IHI via B2B web service [TECH.SIS.HI.05].

Related Business Use Cases	UC.015, UC.035
Additional Information	Healthcare providers may search for a patient's IHI using his/her demographic information, and so it is important to update the HI Service of any changes to this information so that a search for an IHI is more likely to find a patient's healthcare identifier.

Req No	5902	Priority	Conditional

Notification of resolved provisional IHI

If the software supports provisional IHIs, it shall notify the HI Service of the resolution of a provisional IHI by doing one of the following:

- for resolution of a provisional IHI by creation of an unverified IHI, the software shall notify the HI Service via the B2B channel using the Resolve Provisional IHI - Create Unverified IHI via B2B web service [TECH.SIS.HI.09];

- for resolution of a provisional IHI by merge with an existing verified or unverified IHI, the software shall notify the HI Service via the B2B channel using the Resolve Provisional IHI - Merge Records via B2B web service [TECH.SIS.HI.08].

Related Business Use Cases	UC.035
Additional Information	Notifying the HI Service via the B2B channel is the most effective way of resolving a provisional IHI. The timely notification of resolved provisional IHIs also enhances data quality within the HI Service.

Req No	5915	Priority	Conditional

Capture of date of birth accuracy indicator

If the software supports unverified or provisional IHIs, the software shall capture and store the date of birth accuracy indicator as detailed in HI Service system interface specification [TECH.SIS.HI.02].

Related Business Use Cases	UC.010
Additional Information	The software should allow for the capture and storage of a patient's date of birth accuracy indicator in a format which complies with HI Service system interface specification [TECH.SIS.HI.02]. The storing of date of birth accuracy indicators is a requirement to generate provisional or unverified IHIs.

Req No	6104	**Priority**	Conditional

Enforce search before creation of unverified IHIs

If the software supports the creation of unverified IHIs, the software shall request the HI Service to create an unverified IHI for a patient only after performing an IHI search as outlined in section 2.8, and obtaining no match.

Related Business Use Cases	UC.010, UC.015
Additional Information	The benefits of using healthcare identifiers are obtained through the use of patients' existing IHIs. The uncontrolled proliferation of unverified IHIs may undermine the realisation of the benefits derived from the usage of verified IHIs. The HI Service will prevent the creation of an unverified IHI if the unverified demographic details match a person whose demographic details are already stored in the HI Service.

Req No	8218	**Priority**	Conditional

Non-support for provisional IHIs

If the software does not support provisional IHIs then the software shall not store any IHI provided by the HI Service with a provisional record status. In addition, the software shall raise an alert if an IHI is received with a provisional record status.

Related Business Use Cases	UC.010, UC.015, UC.035

Req No	8219	**Priority**	Conditional

Non-support for unverified IHIs

If the software does not support unverified IHIs, then the software shall not store any IHI provided by the HI Service with an unverified record status. In addition, the software shall raise an alert if an IHI is received with an unverified record status.

Related Business Use Cases	UC.010, UC.015, UC.025, UC.035

Req No	10038	**Priority**	Conditional

Validation of manually/OCR-input HPI-I and HPI-Os

If the software supports the manual or OCR input of healthcare provider identifiers (individual and organisation), the software shall ensure that:

- All sixteen digits are included;
- The identifier is stored as sixteen continuous digits (no spaces);
- The identifier is validated using the Luhn check digit algorithm; and
- The sixth digit of the identifier equals the value below:
    - '1' for HPI-I, or
    - '2' for HPI-O.

If the healthcare provider identifier fails any of the above checks, the software shall disallow its storage/use in the local system and alert the operator.

Related Business Use Cases	UC.080, UC.130, UC.131, UC.150, UC.305, UC.306
Additional Information	This requirement mitigates the risk of transcription errors when obtaining HPI-Is and HPI-Os from channels other than B2B or an electronic message/CDA document containing these identifiers. Conformance with this requirement does not however provide any assurance that a correctly input healthcare provider identifier has been associated with the *right* healthcare provider individual/organisation in the local system, which can only be achieved by validating the healthcare provider identifier with the HI Service, as described in requirement 10040. Implementers should note that the sixth digit of the identifier is different from the above for IHIs and the CSP registration numbers : • '0' for IHIs, and • '3' for CSP registration numbers.

Req No	10040	**Priority**	Conditional

Validation of healthcare provider identifiers with the HI Service

If the software supports the manual or OCR input of individual/organisation healthcare provider identifiers, the software shall validate any individual/organisation healthcare provider identifier thus input through a call to the HI Service using one or more of the following web services, prior to the identifier being stored and/or used in the local system:

- The Search for Individual Provider Directory Entry web service, HI_ProviderDirectorySearchIndividual.wsdl, described in the HI Service system interface specification, TECH.SIS.HI.17 for HPI-Is or
- The Search for Organisation Provider Directory Entry web service, HI_ProviderDirectorySearchOrganisation.wsdl, described in the HI Service system interface specification, TECH.SIS.HI.18 for HPI-Os or
- The Search for Provider Individual Details web service described in the HI Service system interface specification, TECH.SIS.HI.15 or 31 for HPI-Is or
- The Search for Provider Organisation Details web service described in the HI Service system interface specification, TECH.SIS.HI.16 or 32 for HPI-Os or
- The Search for Provider Individual Batch Asynchronous web service described in the HI Service system interface specification, TECH.SIS.HI.33 for HPI-Is or
- The Search for Provider Organisation Batch Asynchronous web service described in the HI Service system interface specification, TECH.SIS.HI.34 for HPI-Os.

If the HI Service returns no match or returns any warning or error, the software shall alert the local operator and disallow the storage/use of the input identifier in the local system.

Related Business Use Cases	UC.080, UC.130, UC.131, UC.150, UC.240, UC.241, UC.305, UC.306
Additional Information	This requirement provides assurance that the HPI is associated with the organisation’s or the individual’s demographic information.

Req No	10044	Priority	Conditional

Minimum healthcare provider individual identifier details

If the software maintains a record for one or more local healthcare provider individuals in the local system, the software shall be able to capture and store the following minimum HPI-I details for each local healthcare provider individual for whom it maintains a record:

- HPI-I number (16-digit number);
- Healthcare Provider Individual's Family Name;
- Healthcare Provider Individual's Given Name (if available);
- Any local healthcare provider ID

Related Business Use Cases	UC.130, UC.131
Additional Information	This requirement will assist healthcare provider organisations in including the necessary individual healthcare provider details in any exchange of patient health information with external healthcare providers.

Req No	010809	Priority	Conditional

Matching IHI with local patient demographics

When the software automatically matches an incoming eHealth message/document to a local patient record the software shall not use the incoming IHI as the sole matching parameter to determine whether a matching patient record exists in the local system. The software shall use the incoming IHI as an additional parameter to the incoming patient demographic details to find a matching local patient record.

When a matching patient record is not found the software shall alert an operator.

Related Business Use Cases	UC.320, UC.325
Additional Information	Matching the incoming IHI and incoming patient demographics together against local patient records assists in ensuring the incoming eHealth message/document is associated with the correct local patient record. Alerting an operator of no match in the local system may result in the creation of a new patient record; some systems may have a semi-automated process for a new patient record creation via the receipt of an incoming ehealth message/document.

Req No	016837	**Priority**	Conditional

Actions for when validation of an unverified or provisional IHI returns a resolved information message and a different IHI

If the software stores unverified or provisional IHIs and an unverified or provisional IHI is validated and the HI Service returns a resolved message and a different IHI, the software shall not store that new IHI unless it can also be validated with the existing patient demographics in the local system.

If the new IHI cannot be validated with the local patient demographic data then an alert shall be raised so that an operator can determine what action should be taken.

The new IHI number, IHI status and IHI record status shall be stored in the patient record if the IHI number can be validated using local patient demographic data. The old IHI shall be moved to the patient record history with a resolved status regardless the validity of the new IHI.

Related Business Use Cases	UC.015, UC.025, UC.035
Additional Information	The HI Service will return a new IHI in addition to a message stating that the previous IHI has been resolved. This may occur if the HI Service operator has determined that the IHI is either a duplicate or replica. The new IHI will be returned with the patient demographic data used in the original IHI search and this may not reflect the data stored against the new IHI record. The return of a provisional IHI that differs from an original provisional IHI should never occur and would require resolution via the HI Service operator. The receipt of a new IHI triggers the HI software conformance requirements that apply to the inclusion of an IHI in a patient record. There remain unanswered questions about the application of provisional and unverified IHIs in messaging and documents. Messaging use cases have been excluded from this requirement accordingly.

Req No 016839 **Priority** Conditional

Rules for when the validation of an active unverified or provisional IHI returns the same IHI number and same IHI record status but with a different IHI status

If the software stores unverified or provisional IHIs and either an active unverified or provisional IHI is validated and the HI Service returns the same IHI number but with a different IHI status, the software shall either store the new status in the patient record or raise a warning or alert, according to the following table.

	IHI Status returned from the HI Service			
IHI Record Status of the original active IHI	**Active**	**Deceased**	**Retired**	**Expired**
Unverified	No change	A warning shall be raised	The new status shall be stored and a warning shall be raised	The new status shall be stored
Provisional	No change	A warning shall be raised	An alert shall be raised (should never happen with the HI Service)	The new status shall be stored

Related Business Use Cases UC.015, UC.025, UC.035, UC.320, UC.330

Additional Information When the HI Service returns a deceased IHI status the patient's death is not confirmed by the Registry of births/deaths/marriages. Depending on the local policy and software design, the locally stored status may change to deceased or remain active until the HI Service returns a retired status, which is confirmation the patient is deceased.

A retired status should not occur for a provisional IHI and would require contacting the HI Service operator. A system retrieving an expired provisional IHI may immediately create a new IHI after storing the expired IHI status on the old IHI.

Req No 016840 **Priority** Conditional

Rules for when the validation of a deceased unverified or provisional IHI returns the same IHI number and same record status but with a different IHI status

If the software stores unverified or provisional IHIs and the validation of a deceased IHI returns the same IHI but with a different number status, the software shall either store the new status in the patient record or an alert shall be raised, according to the following table.

	Status of the IHI returned from the HI Service			
Status of the original deceased IHI	**Active**	**Deceased**	**Retired**	**Expired**
Unverified	An alert shall be raised	No change	The new status shall be stored	The new status shall be stored
Provisional	An alert shall be raised	No change	An alert shall be raised (should never happen with the HI Service)	The new status shall be stored

Related Business Use Cases UC.015, UC.025, UC.035, UC.320, UC.330

Additional Information When the HI Service returns a deceased status the patient's death is not confirmed by the Registry of birth/death/marriages. When the patient's death is confirmed the IHI status is changed to retired. If the deceased status was created in error the IHI status would change from deceased back to active. Local operator intervention is required to manage the status change in the local software, so an alert should be raised. This alert should be regarded as serious and requiring attention in the short term.

3.3 Recommended Requirements

This section lists the recommended software conformance requirements associated with the use of healthcare identifiers.

Requirements listed as recommended are recommended within the context of the related business use cases. Health software that implements a business use case should conform to the recommended requirements for that business use case, even though conformance to these requirements is not mandated.

Req No	5802	**Priority**	Recommended

Manual entry of an IHI

If the software permits the capture of a patient demographic record, the software should permit the manual entry of an IHI.

Related Business Use Cases	UC.005, UC.010, UC.015, UC.035
Additional Information	An IHI may be obtained from the HI Service through other channels such as HPOS or HI Service operator's HI Service Team or may be provided on an IHI token. This will require the manual entry of the IHI into the software.

Req No	5804	**Priority**	Recommended

Identification of a patient's given and family name

Where multiple names are recorded for a patient, the software should identify which of the names recorded is the patient's given and family name. The software should also indicate which name(s) are associated with the IHI by the HI Service.

Related Business Use Cases	UC.005, UC.010, UC.015
Additional Information	Identification of the given and family name is important as queries to the HI Service for an IHI should be made using the patient's given and family name. If the patient has a Medicare card the name on the Medicare card should be used. Indicating which name(s) are associated with the IHI by the HI Service assists with revalidation of the IHI.

Req No	5809	Priority	Recommended

Capture and storage of one or more other name(s) for a patient

The software should allow for the capture and storage of one or more other name for a patient.

Related Business Use Cases	UC.010, UC.015, UC.035
Additional Information	The ability of the software to store at least another name, in addition to the given and family name, for the patient, is likely to increase the probability of successfully retrieving the patient's IHI from the HI Service. A patient's other name does not mean a patient's previous name.

Req No	5812	Priority	Recommended

IHI Number search

The software should be able to conduct an IHI Number search using either the IHI Inquiry Search via B2B web service [TECH.SIS.HI.06] or the IHI Batch Searching via B2B [TECH.SIS.HI.12].

Related Business Use Cases	UC.010, UC.015
Additional Information	The ability to search by IHI number significantly increases the likelihood of finding a successful match.

Req No	5813	Priority	Recommended

Medicare card search

The software should be able to conduct a search by Medicare card number using the IHI Inquiry Search via B2B web service [TECH.SIS.HI.06] or the IHI Batch Searching via B2B [TECH.SIS.HI.12] as outlined in section 2.8.

Related Business Use Cases	UC.010, UC.015
Additional Information	Using the Medicare card number in an IHI search is the most successful way of finding a matching record.

Req No	5814	Priority	Recommended

DVA File number search

The software should have the ability to conduct a search by DVA File number and supporting patient demographic information using the IHI Inquiry Search via B2B web service described in the HI Service system interface specification [TECH.SIS.HI.06] or the IHI Batch Searching via B2B [TECH.SIS.HI.12] as outlined in section 2.8.

Related Business Use Cases	UC.010, UC.015
Additional Information	The IHI Inquiry Search via B2B and the IHI Batch Searching via B2B system interface specifications outline the different types of searches that can be conducted to retrieve an IHI. The ability to search by DVA File number would significantly increase the likelihood of finding a successful match.

Req No	5815	Priority	Recommended

Address search

The software should be able to conduct an Address search which includes the Recommended supply of address search parameters using either the IHI Inquiry Search via B2B or the IHI Batch Searching via B2B web service described in the HI Service system interface specifications [TECH.SIS.HI.06 and TECH.SIS.HI.12] as outlined in section 2.8.

Related Business Use Cases	UC.010, UC.015
Additional Information	The IHI Inquiry Search via B2B and the IHI Batch Searching via B2B system interface specifications outline the detailed search that can be conducted to retrieve an IHI. The ability to search by parameters other than the IHI number, Medicare Card number and DVA File number would provide additional flexibility in conducting IHI searches and increase the likelihood of locating a successful match.

Req No	5818	Priority	Recommended

Resubmit search with modified search criteria

The software should allow the resubmission of the search with amended details when the initial search, as outlined in section 2.8, for an IHI returns no match.

Related Business Use Cases	UC.010, UC.015, UC.035
Additional Information	Software will be more successful in finding a matching record in the HI Service if a new search is submitted with a different combination of patient details.

Req No	5824	Priority	Recommended

Retention of patient's previous names

The software should retain a patient's previous name (family, given and other name) in the patient record history when a new name is recorded for the patient.

Related Business Use Cases	UC.015, UC.035
Additional Information	Retaining a patient's previous name assists healthcare providers to conduct successful IHI searches where the patient's name may have changed over time such as in cases of marriage, legal name change and patient presenting under other identities. A patient's previous name does not mean a patient's other name.

Req No	5830	Priority	Recommended

Storage of different types of identifiers

The software should be able to store identifiers of different types in a patient's record. The usage of each identifier should be clear and unambiguous.

Related Business Use Cases	UC.010, UC.015, UC.035
Additional Information	Patients may present to a healthcare provider using different identifiers such as an IHI, Medicare card numbers/IRNs, and DVA file numbers over time. The storage of these identifiers would greatly assist in ascertaining the identity of a patient. Systems may also need local and regional identifiers and though these are not used in the HI service, they are required for local use and should be consistently maintained to support quality identification practices.

Req No	5831	Priority	Recommended

Automated reading of Medicare and DVA cards

The software should support the entry of a Medicare or DVA card via a card reader.

Related Business Use Cases	UC.005, UC.015
Additional Information	An automated card reader eliminates the need to manually enter card/token numbers, thereby reducing the likelihood of transcription errors and misidentification of healthcare recipients.

Req No	5832	Priority	Recommended

Background process IHI search

When invoking the HI Service B2B channel, the software should do so as a background process.

Related Business Use Cases	UC.010
Additional Information	Using background processes enables the software to be used by an operator while the software concurrently accesses the HI Service. This prevents delays in accessing the HI Service from affecting the delivery of healthcare.

Req No	5844	Priority	Recommended

IHI printed as barcode

If an IHI is printed out the software should print the IHI as a barcode using the international standard for barcode symbology [ISO24723]. The specific barcode symbology is yet to be defined.

Related Business Use Cases	UC.010, UC.015
Additional Information	Entering an IHI by scanning a barcode is preferred rather than manually entering an IHI, as scanning reduces the risk of transcription errors.

Req No	5848	Priority	Recommended

Pre-populate first 6 digits of the healthcare identifier

The software should enable the display of the first 5 digits of the healthcare identifier remain the same for all healthcare identifiers in Australia – 8003 6 – and the sixth digit varies depending on the type of healthcare identifier as follows:

- '0' for IHIs,
- '1' for HPI-Is,
- '2' for HPI-Os.

CSP registration numbers share the same characteristics as the HI Service healthcare identifiers but the sixth digit is '3'.

Related Business Use Cases	UC.010, UC.015, UC.080, UC.130, UC.131, UC.150, UC.240, UC.241, UC.305, UC.306
Additional Information	The first 6 digits of the IHI remain the same for all IHIs in Australia.

Req No	5877	**Priority**	Recommended

Batch refresh

The software should allow for a refresh of IHIs on a batch basis.

Related Business Use Cases	UC.025
Additional Information	Refreshing IHIs on a batch basis is an important mechanism for maintaining data quality as it permits the retrieval of the latest IHI number status and IHI record status.

Req No	5884	**Priority**	Recommended

Identification of operators in the local system

User account information stored by the software should include the ability to record the full name of the operator.

Related Business Use Cases	UC.045
Additional Information	Storing the full name of the operator and assists a healthcare provider to comply with clause 8 of the HI regulations [HIREG2010].

Req No	5901	**Priority**	Recommended

Record potential duplicate IHIs

The software should produce a record of potential duplicate IHIs.

Related Business Use Cases	UC.035
Additional Information	The ability of the software to automatically generate records of potential duplicate IHIs would greatly assist in the prompt investigation and resolution of duplicates.

Req No	5903	Priority	Recommended

Notification of date of death

The software should use the B2B channel to notify the HI Service of the patient's date of death by the using one of the following web services:

- Update Provisional IHI via B2B [TECH.SIS.HI.03] if the patient's record was associated with a provisional IHI in the local system or

- Update IHI via B2B [TECH.SIS.HI.05] if the patient's record was associated with a verified or unverified IHI in the local system.

Related Business Use Cases	UC.015
Additional Information	Department of Human Services - Medicare Australia receives regular data feeds from the States and Territories' Registries of births, deaths and marriages after the facts of death have been established and as such, the notification of death to Medicare Australia is not contingent on healthcare providers notifying the agency. A condition of the federal funding of private healthcare facilities is that these must advise Medicare Australia of their patients' date of death.

Req No	5917	Priority	Recommended

Record of operator

The software should keep a retrievable record of each operator who accessed a healthcare identifier from the HI Service; where the identifier may have been accessed from a B2B interface.

Related Business Use Cases	UC.010, UC.015, UC.025
Additional Information	The requirement assists healthcare providers in complying with clause 8.1 and clause 8.2 of the HI regulations [HIREG2010]. The intent of this requirement is for the software to retain enough traceability information to enable the verification that only Authorised Employees access the HI service.

Req No	8167	**Priority**	Recommended

Recording IHI source upon IHI assignment and update

When an IHI is stored or updated the software should record the source of the IHI as being one of:

- HI Service B2B channel
- Electronic message
- Manual entry (including OCR)

Related Business Use Cases	UC.010, UC.015, UC.025, UC.035
Additional Information	An IHI obtained directly from the HI Service is more likely to be trusted than an IHI received in an electronic message from another healthcare provider, which is more likely to be trusted than an IHI entered either manually or via OCR. Knowing the source of an IHI allows an operator to make decisions about the need for validating an IHI. A batch assignment of IHI's is considered to use the B2B channel.

Req No	10039	**Priority**	Recommended

Manual entry of healthcare provider identifiers

The software should support the manual entry of all types of healthcare provider identifiers (HPI-Is, HPI-Os).

Related Business Use Cases	UC.130, UC.131, UC.305
Additional Information	Automated input of healthcare identifiers in local systems is the preferred method. However, in the early stages of HI implementations, some HPI-Os and HPI-Is will be captured manually until vendors transition to automated processes for all types of healthcare identifiers.

Req No	10043	**Priority**	Recommended

Ability to disallow use of healthcare provider identifiers from a point in time

If the software maintains a system record or a system setting for the local healthcare provider identifier organisation(s), HPI-O(s), and the links between the HPI-O(s) and the local healthcare provider identifier individual(s), HPI-I(s), the software should be able to disallow the use by the local system from a present or future point in time of:

- One or many specific local organisation healthcare provider identifiers (HPI-Os) and/or
- One or many specific local individual healthcare provider identifier (HPI-I)/local organisation healthcare provider identifier (HPI-O) links.

Retrospective references to healthcare provider identifiers which were valid at the time of their use by the local system should not be impeded by the fact that the HPI-O(s) and/or the HPI-O and HPI-I link(s) were subsequently disallowed from use.

Related Business Use Cases	UC.080, UC.130, UC.131, UC.150
Additional Information	Local healthcare provider organisations designate those organisations that are responsible for the governance of the local system. Local healthcare provider individuals designate those healthcare provider individuals that provide healthcare on behalf of the local healthcare provider organisations. The business scenarios that may prompt the activation of the functionality described in this requirement include: • A change in the organisational structure of a healthcare provider group of organisations due to merger and/or acquisition, demerger etc…; • Resignation or retirement of a local healthcare provider individual. This requirement assists healthcare provider organisations in ensuring that any e-health messages and/or clinical documents include only those identifiers that are valid and current when these e-health messages/clinical documents are generated.

Req No	10089	**Priority**	Recommended

Support of searches for healthcare provider identifiers in the HI Service

If the software supports the search for Individual and Organisation Provider Directory Entries via the B2B channel using the HI_ProviderDirectorySeachIndividual.wsdl or the HI_ProviderDirectorySearchOrganisation.wsdl respectively, described in the HI Service system interface specifications (TECH.SIS.HI.17/18), the software should be able to:

- Display all the matches returned in the HI Service response;
- Enable the selection of a single HPI-I/HPI-O record by the operator when multiple matches have been returned in the HI Service response; and
- Resubmit the search with modified search criteria.

Related Business Use Cases	UC.240, UC.241
Additional Information	Inclusion in the HPD occurs only where healthcare provider organisations/individuals have given explicit consent to opt-in. Only those healthcare provider identifiers which have an 'active' number status can be retrieved via the B2B channel. A search for a HPI-I and HPI-O may return up to 50 matches.

Req No	16836	**Priority**	Recommended

Minimum healthcare provider organisation identifier details

If the software maintains a record of organisational hierarchy in the local system for one or more local seed and/or network healthcare provider organisations, the software should be able to capture and store the following minimum HPI-O details for each local healthcare provider organisation record:

- HPI-O number (16-digit number);
- Healthcare Provider organisation name associated with the HPI-O;
- An address

Related Business Use Cases	UC.150
Additional Information	Storing the HI Service field level identifiers in addition to the minimum HPI-O details above, will assist in updating the HI service HPI-O records in the future. Refer to TECH.SIS.14 and TECH.SIS.16 for further information. Consideration should be given to also storing a start date and end date on a per service basis to facilitate localised validation of local provider organisations.

Req No	016838	**Priority**	Recommended

Rules for when the validation of an active, unverified or provisional IHI returns the same IHI number but with a different IHI record status

If the software stores unverified or provisional IHIs and either an active unverified or provisional IHI is validated and the HI Service returns the same IHI number but with a different IHI record status, either the new IHI record status and IHI status should be stored in the patient record or an alert should be raised, according to the following table.

	Record status of the IHI returned from the HI Service		
Record status of the original IHI	**Verified**	**Unverified**	**Provisional**
Unverified	The new record status shall be stored	No change	An alert shall be raised (should never happen with the HI Service)
Provisional	The new record status shall be stored	The new record status shall be stored	No change

Related Business Use Cases UC.015, UC.025, UC.035, UC.320, UC.330

Additional Information

When an IHI is validated the HI Service would not be expected to return a record status that is 'lower' than the locally stored record status. If this does occur an alert is raised and the new record status may or may not be stored in the local patient record, depending on the design of the software or local policy. The alert requires operator intervention to confirm that the change is legitimate, most likely involving a query to the HI Service operator.

A changed record status may result when the software invokes the following functions:

- Resolve Provisional IHI - Merge Records via B2B web service [TECH.SIS.HI.08];
- Resolve Provisional IHI –Create Unverified [TECH.SIS.HI 09].

A changed record status may apply on Update IHI via B2B [TECH.SIS.HI.05] for an unverified IHI where the HI Service returns an information message rejecting the update on the basis of a match in the HI service.

Req No	017946	Priority	Recommended

Validating recipients Healthcare Provider Organisation information in an incoming eHealth message/document

When the recipients HPI-O is provided within the eHealth message/document the receiving software should ensure the eHealth message/document contains a HPI-O that is relevant to the receiving organisation.

If the recipient's HPI-O does not match the recipient HPI-O in the eHealth message/document then the eHealth message/document should not be stored against any patient record, the HPIs should not be stored outside of the eHealth message/document and an alert should be raised for operator intervention.

Related Business Use Cases	UC.325
Additional Information	Ensuring the eHealth message/document has been sent to the correct recipient allows for timely correction of misaddressed eHealth message/documents.

Req No	017947	Priority	Recommended

Ensuring the recipient's HPI-I(s) is associated with the recipient's HPI-O in an incoming eHealth message/document

When the recipients HPI-I(s) are provided within the eHealth message/document the software should ensure the recipients HPI-I(s) are associated with the recipients HPI-O.

If the recipients HPI-Is contained within the eHealth message/document are not associated with the recipients HPI-O then the eHealth message/document should not be automatically stored against any patient record, the HPI-I(s) should not be stored outside of the eHealth message/document and an alert should be raised for operator intervention.

Related Business Use Cases	UC.325
Additional Information	Ensuring the eHealth message/document has been sent to the correct recipient allows for timely correction of misaddressed eHealth message/documents. Operator Intervention may be required to ascertain if the ehealth message/document is meant for a specific clinician and should be referred on, or whether it is for a service and the clinician identified is not necessarily relevant even though supplied.

Req No	018885	**Priority**	Recommended

Inclusion of IHI status information in an eHealth message/document

The software should include the IHI Record Status and IHI Status in the eHealth message/document wherever possible.

Related Business Use Cases	UC.320, UC.330
Additional Information	The inclusion of the IHI status information defines the IHI, as originally transmitted and understood by the sender, for the recipient and serves to improve understanding of the identifier between the message sender and receiver. This information may also be used as a check for the eHealth message/document (e.g. requesting a prescription for a deceased person may highlight a problem), and to facilitate data quality management and improvement across healthcare organisations. Including this information also furthers cross organisational understanding where one organisation does not yet have a connection to the HI Service. The current specifications for CDA documents and HL7 messages do not support this functionality.

Req No	018886	**Priority**	Recommended

Inclusion of healthcare identifiers date last validated information in an eHealth message/document

The software should include the date and time when the healthcare identifier was last validated in the eHealth message/document wherever possible.

Related Business Use Cases	UC.320, UC.330
Additional Information	The inclusion of a date/time stamp for the most recent IHI validation provides predictability to the message receiver in terms of the sender's processes and rigour. The current specifications for CDA documents and HL7 messages do not support this functionality.

Appendix A: Business use cases and associated conformance requirements

The table below lists the healthcare identifiers business use cases being covered by this document and the applicable mandatory, conditional and recommended conformance requirements.

Support for conditional requirements is mandatory, subject to a stated condition.

Business Use Case No	Business Use Case Description	Mandatory Conformance Requirements	Conditional Conformance Requirements	Recommended Conformance Requirements
UC.005	Search for patient health record	5808	5807	5802, 5804, 5831
UC.010	Register patient	5805, 5808, 5817, 5820, 5839, 5843, 5847, 5873, 5875, 6077, 8028, 8526	5801, 5807, 5810, 5811, 5819, 5836, 5842, 5845, 5915, 6104, 8218, 8219	5802, 5804, 5809, 5812, 5813, 5814, 5815, 5818, 5830, 5832, 5844, 5848, 5917, 8167
UC.015	Update patient health record	5805, 5808, 5820, 5839, 5843, 5847, 5872, 5873, 5875, 6077, 6105, 8028, 8526, 16813, 16814, 16815, 17421	5801, 5807, 5810, 5811, 5819, 5836, 5842, 5845, 5874, 6104, 8218, 8219, 16837, 16839, 16840	5802, 5804, 5809, 5812, 5813, 5814, 5815, 5818, 5824, 5830, 5831, 5844, 5848, 5903, 5917, 8167, 16838
UC.025	Bulk update of IHI details	5805, 5820, 5839, 5847, 5873, 5875, 6077, 8028, 8526, 16813, 16814, 16815, 17421	5810, 5811, 8219, 16837,16839, 16840	5877, 5917, 8167, 16838
UC.035	Merge patient health records	5805, 5820, 5843, 5847, 5873, 5875, 5906, 6077, 8028, 8526, 16813, 16814, 16815, 17421	5801, 5810, 5811, 5819, 5845, 5874, 5902, 8218, 8219, 16837, 16839, 16840	5802, 5809, 5818, 5824, 5830, 5901, 8167, 16838
UC.045	Logon to software system	None	None	5884
UC.080	Maintain HPI-O details	5873	10038, 10040	5848, 10043
UC.130	Validate HPI-I	5873, 8028, 10041	10038, 10040, 10044	5848, 10039, 10043
UC.131	Validate HPI-I via the HI Service	5873, 8028, 10041, 23502, 23503	10038, 10040, 10044	5848, 10039, 10043
UC.150	Register Network HPI-O	8028, 10042	10038, 10040	5848, 10043, 16836

UC.240	Search for HPI-Is in HI Service HPD	5873, 8028	10040	5848, 10089
UC.241	Search for HPI-Os in HI Service HPD	5873, 8028	10040	5848, 10089
UC.305	Validate HPI-O	5873, 8028, 10042	10038,10040	5848,10039
UC.306	Get HPI-O status	5873, 8028, 23504, 23543	10038, 10040	5848
UC.320	Requesting an electronic clinical document	5873, 10041, 10042, 10613, 10618, 16813, 16814, 16815, 16832, 16835, 17421, 17573, 17942, 17943	10809, 16839, 16840	16838, 18885, 18886
UC.325	Receiving an eHealth message	5873, 10041, 10042, 16835, 17573, 17942, 17943, 17944	10809	17946, 17947
UC.330	Sending an eHealth message	5873, 10041, 10042, 10613, 10618, 16813, 16814, 16815, 16832, 17421, 17571, 18884	16839, 16840	16838, 18885, 18886

Appendix B: HI Service web services

The table below lists HI Service web services and the use cases software must conform to before access to the respective web service is granted. Software needs to conform to one or more use cases for each target web service.

SIS	HI Service web service	Related business use case(s)
Tech.sis.HI.5	Update IHI via B2B	UC.015, UC.035
Tech.sis.HI.6	IHI Inquiry Search via B2B	UC.010, UC.015, UC.035
Tech.sis.HI.12	Consumer Search IHI Batch Synchronous	UC.010, UC.015, UC.025, UC.035
Tech.sis.HI.13	Manage Provider or Administrative Individual Details	N/A
Tech.sis.HI.14	Manage Provider Organisation Details	N/A
Tech.sis.HI.15	Read Provider or Administrative Individual Details	N/A
Tech.sis.HI.16	Read Provider Organisation Details	N/A
Tech.sis.HI.17	Healthcare Provider Directory - Search for Individual Provider Directory Entry	UC.130, UC.240
Tech.sis.HI.18	Healthcare Provider Directory - Search for Organisation Provider Directory Entry	UC.241, UC.305
Tech.sis.HI.19	Healthcare Provider Directory - Manage Provider Directory Entry	UC.080, UC.150
Tech.sis.HI.22	Read Reference Data	N/A
Tech.sis.HI.24	Notify of Duplicate IHI via B2B	UC.010, UC.015, UC.035
Tech.sis.HI.25	Notify of Replica IHI via B2B	UC.010, UC.015, UC.035
Tech.sis.HI.30	Consumer Search IHI Batch Asynchronous	UC.010, UC.015, UC.025, UC.035
Tech.sis.HI.31	Search for Provider Individual	UC.131
Tech.sis.HI.33	Search Provider Individual Batch Async	UC.131
Tech.sis.HI.32	Search for Organisation Details	UC.306
Tech.sis.HI.34	Search for Provider Organisation batch Async	UC.306

The need to conform to the above use cases is in addition to any notice of connection tests required by the HI Service operator.

Appendix C: Use Case applications

The table below lists the HI CCA use cases that have conformance requirements and the typical application of each use case.

Management of Individual Healthcare Identifiers (IHI)

UC.005 - Search for a patient health record

UC.010 - Register patient

UC.011 - Request verified IHI for newborn

UC.015 - Update patient health record

UC.025 - Bulk update of IHI details

UC.035 - Merge patient health records

UC.045 - Logon to software system

Management of Healthcare Provider Identifiers (HPI-I/HPI-O)

UC.080 – Maintain HPI-O details

UC.130 – Validate HPI-I

UC.131 - Validate HPI-I via the HI Service

UC.150 – Register network HPI-O

UC.240 – Search for HPI-Is in HI Service HPD

UC.241 – Search for HPI-Os in HI Service HPD

UC.305 – Validate HPI-O

UC.306 - Get HPI-O status

Identifiers used in a point-to-point and point-to-share messaging context

UC.320 – Request an electronic clinical document

UC.325 – Receive an electronic clinical document

UC.330 – Send an electronic clinical document

Appendix D: Luhn check algorithm

The Luhn formula for computing modulus-10 "double-add-double" check digits is described in Annex B of the standard for identification card numbering system [ISO7812-1].

The check digit is calculated on all of the digits of the HI.

The following steps are involved in this calculation:

1. Step 1: Double the value of alternate digits beginning with the first right-hand digit (low order).
2. Step 2: Add the individual digits comprising the products obtained in Step 1 to each of the unaffected digits in the original number.
3. Step 3: Subtract the total obtained in Step 2 from the next higher number ending in 0 (this is the equivalent of calculating the "tens complement" of the low-order digit (unit digit) of the total). If the total obtained in Step 2 is a number ending in zero (30, 40, etc.), the check digit is 0.

EXAMPLE

Personal Identifier without check digit: 612345 123456789

Identifier:	6	1	2	3	4	5	1	2	3	4	5	6	7	8	9
Double alternate digits:	X2		X2		X2		X2		X2		X2		X2		X2
	12	1	4	3	8	5	2	2	6	4	10	6	14	8	18
Add individual digits:	1+2	+1	+4	+3	+8	+5	+2	+2	+6	+4	+1+0	+6	+1+4	+8	+1+8

Total = 67

Next higher number ending in 0 = 70

70 – 67 = 3

Check digit = 3

Personal Identifier with check digit: 612345 123456789 3

Appendix E: Medicare card number check algorithm

Medicare card number format

The Medicare card number comprises:

- Eight digits;
- A check digit (one digit); and
- An issue number (one digit).

Note: the first digit of the Medicare card number should be in the range 2 to 6.

Medicare card number check digit calculation

1. Calculate the sum of: ((digit 1) + (digit 2 * 3) + (digit 3 * 7) + (digit 4 * 9) + (digit 5) + (digit 6 * 3) + (digit 7 * 7) + (digit 8 * 9)),

where digit 1 is the highest place value digit of the Medicare card number and digit 8 is the lowest place value digit of the Medicare card number.

Example: for Medicare card number '2123 45670 1', digit 1 is 2 and digit 8 is 7.

1. Divide the calculated sum by 10.
2. The check digit is the remainder.

Example: For Medicare card number 2123 4567.

1. (2) + (1 * 3) + (2 * 7) + (3 * 9) + (4) + (5 * 3) + (6 * 7) + (7 * 9) = 170
2. Divide 170 by 10. The remainder is 0.
3. The check digit for this Medicare number is 0.

Appendix F: References

This appendix lists specifications and other documents that provide information for or about this document. At the time of publication, the document versions listed below were valid. However, as all documents are subject to revision, readers are encouraged to use the most recent versions of these documents.

Reference	Description
AS4846	Health Care Provider Identification, AS 4846—2006, AS 4846—2006, Standards Australia, 2006
AS5017	Health Care Client Identification, AS 5017—2006, Standards Australia, 2006
HB222	Australian Health Care Client and Provider Identification Handbook, HB 222—2006, Standards Australia, 2006
ISO22220	International Technical Specification Health Informatics: Subject of Care Identification, ISO/TS 22220:2008
ISO27527	International Technical Specification Health Informatics Healthcare Provider Identification, ISO/TS 27527:2010
HIACT2010	Healthcare Identifiers Act 2010, 1 November 2010
HIREG2010	Healthcare Identifiers Regulations 2010, Select Legislative Instrument 2010 No. 190, Commonwealth of Australia, 29 June 2010 http://www.comlaw.gov.au/ComLaw/Legislation/LegislativeInstrument1.nsf/0/46BC494EFB02B570CA257752002B3C3E/$file/1002658A100624EV.pdf Last accessed 01/12/2010
ISO24723	ISO/IEC 24723:2010 Information Technology – Automatic identification and data capture techniques – GS1 Composite bar code symbology specification. International Organisation for Standardization, 2010
ISO7812-1	ISO/IEC 7812-1 Identification cards – Identification of issuers – Part 1: numbering system, International Organization for Standardization, 2006

[NEHTA2011a] Use of Healthcare Identifiers in Health Software Systems - Business Use Cases v2.3, NEHTA, 17 August 2012

[NEHTA2011b] Healthcare Identifiers Software – Conformance Assessment Scheme version 3.0, NEHTA, 3 May 2011

[NEHTA2011c] Use of Healthcare Identifiers in Health Information Systems: Conformance Test Specifications, version 2.0, NEHTA, 22 October 2012

TECH.SIS.HI.01 Healthcare Identifiers (HI) Service, System Interface Specification (SIS), B2B Common Functionality Document, TECH.SIS.HI.01, Medicare Australia, June 2011.

TECH.SIS.HI.02 Healthcare Identifiers (HI) Service, System Interface Specification (SIS)
Common Field Processing Reference Document, TECH.SIS.HI.02, Medicare Australia, December 2011.

TECH.SIS.HI.03 Healthcare Identifiers (HI) Service, System Interface Specification (SIS) Update Provisional IHI via B2B v4.0, TECH.SIS.HI.03, Medicare Australia, 25 June 2011

TECH.SIS.HI.05 Healthcare Identifiers (HI) Service, System Interface Specification (SIS) Update IHI via B2B V4, TECH.SIS.HI.05, Medicare Australia, 25 June 2011.

TECH.SIS.HI.06 Healthcare Identifiers (HI) Service, System Interface Specification (SIS) SIS- IHI Inquiry Search via B2B V5.0, TECH.SIS.HI.06, Medicare Australia, Q3 2011.

TECH.SIS.HI.08 Healthcare Identifiers (HI) Service, System Interface Specification (SIS) Resolve Provisional IHI – Merge Records via B2B v4.0, TECH.SIS.HI.08, Medicare Australia, 25 June 2011.

TECH.SIS.HI.09 Healthcare Identifiers (HI) Service, System Interface Specification (SIS) Resolve Provisional IHI – Create Unverified IHI via B2B v4.0, TECH.SIS.HI.09, Medicare Australia, 25 June 2011.

TECH.SIS.HI.12 Healthcare Identifiers (HI) Service, System Interface Specification (SIS) SIS- IHI Batch Searching V5.0, TECH.SIS.HI.06, Medicare Australia, Q3 2011.

TECH.SIS.HI.13 Healthcare Identifiers (HI) Service, System Interface Specification (SIS), Manage Provider or Administrative Individual Details, TECH.SIS.HI.13, Medicare Australia, Q3 2011.

TECH.SIS.HI.14 Healthcare Identifiers (HI) Service, System Interface Specification (SIS), Manage Provider Organisation Details, TECH.SIS.HI.14, Medicare Australia, Q3 2011.

TECH.SIS.HI.15 Healthcare Identifiers (HI) Service, System Interface Specification (SIS), Read Provider or Administrative Individual Details, TECH.SIS.HI.15, Medicare Australia, Q3 2011.

TECH.SIS.HI.16	Healthcare Identifiers (HI) Service, System Interface Specification (SIS), Read Provider Organisation Details, TECH.SIS.HI.16, Medicare Australia, Q3 2011.
TECH.SIS.HI.17	Healthcare Identifiers (HI) Service, System Interface Specification (SIS), Healthcare Provider Directory - Search for Individual Provider Directory Entry, TECH.SIS.HI.17, Medicare Australia, Q3 2011.
TECH.SIS.HI.18	Healthcare Identifiers (HI) Service, System Interface Specification (SIS), Healthcare Provider Directory - Search for Organisation Provider Directory Entry, TECH.SIS.HI.18, Medicare Australia, Q3 2011.
TECH.SIS.HI.19	Healthcare Identifiers (HI) Service, System Interface Specification (SIS), Healthcare Provider Directory – Manage Provider Directory Entry, TECH.SIS.HI.19, Medicare Australia, Q3 2011.
TECH.SIS.HI.22	Healthcare Identifiers (HI) Service, System Interface Specification (SIS), Healthcare Provider Directory – Read Reference Data, TECH.SIS.HI.22, Medicare Australia, Q3 2011.
TECH.SIS.HI.24	Healthcare Identifiers (HI) Service, System Interface Specification (SIS) Notify of Duplicate IHI via B2B V4, TECH.SIS.HI.24, Medicare Australia, 25 June 2011.
TECH.SIS.HI.25	Healthcare Identifiers (HI) Service, System Interface Specification (SIS) Notify of Replica IHI via B2B V4.0, TECH.SIS.HI.25, Medicare Australia, 25 June 2011.
TECH.SIS.HI.26	Healthcare Identifiers (HI) Service, System Interface Specification (SIS) Create Verified IHI for Newborns, TECH.SIS.HI.26, Department of Human Services, April 2013.
TECH.SIS.HI.31	Healthcare Identifiers (HI) Service, System Interface Specification (SIS), Search for Provider Individual Details, TECH.SIS.HI.31, Department of Human Services, June 2013.
TECH.SIS.HI.32	Healthcare Identifiers (HI) Service, System Interface Specification (SIS), Search for Provider Organisation Details, TECH.SIS.HI.32, Department of Human Services, May 2013.
TECH.SIS.HI.33	Healthcare Identifiers (HI) Service, System Interface Specification (SIS), Search for Provider Individual Batch Asynchronous, TECH.SIS.HI.33, Department of Human Services, June 2013.
TECH.SIS.HI.34	Healthcare Identifiers (HI) Service, System Interface Specification (SIS), Search for Provider Organisation batch Asynchronous, TECH.SIS. HI.34, Department of Human Services, June 2013.