HealthSMART Design Authority

health

# IHI Pre-Implementation Project

## IHI Technical Design

State Government Victoria

nehta

Authorised by the Victoria Government, Melbourne.

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# Table of Contents


**1. Document Overview ..... 5**

1.1 Purpose ..... 5
1.2 Intended Audience ..... 5
1.3 References ..... 5

**2. Introduction ..... 7**

2.1 Background ..... 7
2.2 Aims and Objectives ..... 7
2.3 Approach to the Technical Design ..... 8

**3. System Configuration Settings ..... 9**

**4. Use Case List ..... 11**

4.1 IHI BATCH Loading ..... 11
4.2 Queue Management use cases ..... 11
4.3 HL7 Message Processing (automated) ..... 11
4.4 HL7 Requests for HI Services ..... 11
4.5 Security Use Cases ..... 12
4.6 Reporting Use Cases ..... 12
4.7 Service Request Management Use Cases ..... 12
4.8 Data Management Use Cases ..... 12
4.9 Actor(s): ..... 12

**5. IHI Batch Loading ..... 14**

5.1 UC100 : Allocate batch ID ..... 14
5.2 UC101 : Extract Data for HI Service Submission ..... 14
5.3 UC102 : Prepare Data for HI service submission ..... 15
5.4 UC103 : Manage batch submissions ..... 16

**6. Interface Management Use cases ..... 17**

6.1 UC110 : Suspend single HI Service Request queue ..... 18
6.2 UC111 : Suspend all HI Service Request queues ..... 19
6.3 UC112 : Resume Single HI Service Request Queue ..... 20
6.4 UC113 : Resume all HI Service Request queues ..... 21
6.5 UC114 : Lodge HI Service scheduled outage ..... 22

**7. HL7 Message Processing (automated) ..... 23**

7.1 UC120 : Receive A04, A05 or A28 HL7 message ..... 23
7.2 UC121 : Receive A08 or A31 HL7 message ..... 23
7.3 UC122 : Receive A40 HL7 message ..... 24
7.4 UC123 : Receive I12, I13 or I14 HL7 message ..... 25
7.5 UC124 : Receive HL7 message with PID segment ..... 26

**8. HL7 Requests for HI Services ..... 27**

8.1 UC130 : Request IHI Search via HL7 ..... 27
8.2 UC131: Request IHI Check via HL7 ..... 28
8.3 UC132 : Return HI Service Exception Response via HL7 ..... 30
8.4 UC133 : Send IHI Request in HSIE ..... 31
8.5 UC134 : Send Unverified IHI Request via HL7 ..... 33
8.6 UC135 : Send IHI Update Request via HL7 ..... 37
8.7 UC136 : Send Merge Request via HL7 ..... 41
8.8 UC137 : Send Provisional IHI Request via HL7 ..... 43
8.9 UC138 : Send Provisional IHI Update Request via HL7 ..... 45
8.10 UC139 : Send Provisional to Unverified Resolution Request via HL7 ..... 47
8.11 UC140 : Send Medicare Service Request via HL7 or XML ..... 50
8.12 UC141 : Send Duplicate or Replica IHI Notification via HL7 ..... 51

**9. Security use cases ..... 54**

9.1 UC150 : Register User to access HPOS/MSO ..... 54
9.2 UC151 : Deregister User with access to HPOS/MSO ..... 55
9.3 UC152 : Maintain Organisation Credentials ..... 56

**10. Reporting use cases ..... 57**

10.1 UC160 : Queue Monitoring ..... 57
10.2 UC161 : Queue Log Data ETL ..... 57
10.3 UC162 : Queue Analysis Report ..... 58
10.4 UC163 : Queue Detail Report ..... 59
10.5 UC164 : Queue Trend Report ..... 60
10.6 UC165 : Patient IHI List Report ..... 61

**11. Service Request Management Use cases ..... 66**

11.1 UC170 : Maintain Service Requests ..... 66
11.2 UC171 : Generate Service Request Report ..... 69

**12. Data Management Use cases ..... 71**

12.1 UC180 : Archive Audit Data ..... 71
12.2 UC181 : Retrieve Audit Data ..... 73
12.3 UC182 : Delete Archived Audit Data ..... 75

**13. Glossary ..... 77**

# 1. Document Overview

## 1.1 Purpose

The purpose of the document is to support the IHI Functional Design by defining key elements of the Technical Design. This document should be read in conjunction with the IHI Functional Design, and the IHI Integration Architecture.

## 1.2 Intended Audience

The intended audience of this document includes:

- Victorian Department of Health Project Sponsor
- Victorian Department of Health Project Staff
- Victorian IHI Workshop attendees
- Victorian health services
- other jurisdictional Health Departments
- health services in other States and Territories
- vendors of health IT systems, and
- NEHTA staff.

## 1.3 References

- NEHTA HI Service Concept of Operations v 1.0 FINAL Nov 2009
- NEHTA Individual Healthcare Identifiers Business Requirements v 1.0 FINAL Nov 2009
- NEHTA HI Security and Access framework v 1.0 FINAL Nov 2009
- NEHTA HI Business Use Case Catalogue v 1.0 FINAL Nov 2009
- NEHTA HI Service Catalogue v 1.0 Final Nov 2009
- NEHTA HI Service Glossary v 1.0 DRAFT Nov 2009
- Vic IHI Integration Simplified Functional Design v2.1
- Medicare Australia HI Service - Technical Services Catalogue R3A v3.0.2.doc
- Medicare Australia TECH.SIS.HI.01 - SIS - Common Document for SIS v3.0.2.doc
- Medicare Australia TECH.SIS.HI.02- SIS - Common field processing reference document for SIS v3.0.2.doc
- Medicare Australia TECH.SIS.HI.03 - Update Provisional IHI via B2B v3.0.2.doc
- Medicare Australia TECH.SIS.HI.05 - Update IHI via B2B v3.0.2.doc
- Medicare Australia TECH.SIS.HI.06 - IHI Inquiry Search via B2B v3.0.2.doc
- Medicare Australia TECH.SIS.HI.08 - Resolve Provisional IHI- Merge Records via B2B v3.0.2.doc
- Medicare Australia TECH.SIS.HI.09 - Resolve Provisional IHI- Create Unverified IHI via B2B v3.0.2.doc
- Medicare Australia TECH.SIS.HI.10 - Create Provisional IHI via B2B v3.0.2.doc
- Medicare Australia TECH.SIS.HI.11 - Create Unverified IHI via B2B v3.0.2.doc
- Medicare Australia TECH.SIS.HI.12 - IHI Batch Searching v3.0.2.doc

- FR.SVI.SPEC.01.232 Notify Duplicate Replica IHI via_B2B v3.25 (R3b).doc
- Medicare Australia HI Service - IHI Searching Guide v0.3 Draft.doc
- Vic IHI Integration Best Practice Guide (Draft)
- Healthcare Identifiers Act 2010
- NHS Number Standard for Secondary Care (England), Full Operational Information Standard 1.0, published on 20/12/2008
- NHS Number Programme Implementation Guidance, To Support the NHS Number Operational Information Standards, 1.0, published on 31/12/2008

# 2. Introduction

## 2.1 Background

The Victorian IHI Pre-Implementation Project is responsible for identifying and documenting processes that will enable the rollout of IHIs to all Victorians with patient records in HealthSMART health services, and all operational processes that support the use and maintenance of the IHI over time.

Victorian health services operate largely independently, due to the nature of the enabling legislation, with each health service owning and maintaining a dedicated patient register. Victorian HealthSMART health services collectively store over 50 million individual patient records.

A key element of the IHI integration design for the IHI Pre Implementation Project is to understand each "problem" and requirement, so that effective and workable solutions can be defined. The deliverables for the IHI Pre-Implementation Project include a Best Practice Guide for health services capturing and utilising the IHI. For the initial load of IHI data, given the Victorian data volumes, a reasonably high match ratio is essential to overall success.

While the focus of the project is upon HealthSMART health services, this deliverable is intended to be used by all health services, Health departments, and vendors looking to integrate the IHI into their systems and processes.

## 2.2 Aims and Objectives

The aim of the project is to produce artefacts that will support successful implementation of IHI, including a Solution Architecture Design, Business Requirements, Business practice Guides and a sample Business Case. See the Project Brief for more details.

It will achieve these aims through meeting the following objectives:

- Define and incorporate reference solution designs and principles for the integration of Individual Healthcare Identifiers into the Health*SMART* solution architecture.
- Defining an architecture, or architectures, that supports other models for patient administration, eg EMPI based.
- Use the reference solution design & principles to identify requirements and validate enhancements to Victorian Health IT environments and applications utilising NEHTA services (both Health*SMART* and non-Health*SMART*):
- Document requirements, functional specifications and technical specifications for IHI integration with a nominated and agreed PAS product.
- Based on this experience and knowledge gained recommend any proposed changes to the national IHI implementation approach in consultation with other jurisdictions and NEHTA reference groups.
- Leverage the NEHTA architecture and engagement teams capabilities to best use in the Victorian implementation/s, etc.

The aim of this deliverable is to present the key components of the Technical Design that are required to support the functional design.

## 2.3 Approach to the Technical Design

This document uses system level use cases to describe the technical design, and is intended to complement the IHI Functional Design. For a purely PAS based IHI implementation, the detailed functional design documents should be the primary reference.

The technical design caters in most part for an architecture that employs a messaging solution to enable data integration between disparate systems, and which also supports messaging to external parties.

The Technical Design covers the following.

1. Proposed system configuration items and settings.
2. Use cases expanding the reporting functions documented in the Functional Design. These are in addition to the functional use cases, and do not replace them.
3. High level use cases covering IHI support functions of the Responsible Officer or Organisation Maintenance Officer. These are largely access and security focussed.
4. Use cases to support transmitting IHIs between systems for an architecture that uses an EAI tool to interface to the HI Service, rather than the PAS itself.
5. Additionally, use cases are defined that provide support to EAI based acquisition of the IHI, in a situation where the PAS may not yet have implemented IHI support. These use cases support a transitional architecture state, in which an EAI tool, such as the Victorian Health*SMART* Integration Engine, could be used to interface to the HI Service and insert IHIs into discharge summaries or referrals, for example.
6. Use cases to support ongoing management of the HI Service interfaces, including providing input to capacity planning activities.

This is the initial release of the IHI Technical Design, and it is more aligned with the Victorian Health*SMART* architecture, than other IHI Pre-Implementation Project deliverables. In keeping with project objectives the broader audience has been considered in the development of the technical design.

A technical design, by definition, would normally be system and architecture specific, so this document should be regarded as a collection of design artefacts which health IT system vendors and integrators may build upon as they progress towards integrating the IHI into their systems.

# 3. System Configuration Settings

There are a number of system configuration settings that are required to support the functional design, as described in the table below.

Many of these settings reflect health service, or possibly jurisdictional policies, which must be determined as part of the system implementation planning phase.

| Item | Description | Settings |
|---|---|---|
| IHI Interface Component | Selects the system component that implements the interfaces to the HI Service. For the HSIE component HL7 will be used to exchange IHI related information between the PAS and the HSIE.<br>The HSIE setting may be relevant for use in an EMPI implementation. | PAS, HSIE, other (TBA) |
| Check IHI Frequency | This value is used to determine the frequency of checking for IHIs stored within the PAS, for patients that have not presented recently.<br>This is important as the HI Service does not broadcast IHI updates. | 3 months, 6 months, 12 months, 24 months, never. |
| Check IHI validity period | This setting applies when a patient's IHI is in operational use, i.e. the patient is receiving care, and an Order, Referral or similar is being sent.<br>If the IHI has been confirmed within the specified period the IHI will not be checked again prior to sending the Order, Referral, etc.<br>The "always" setting means that the IHI will always be checked prior to the Order, Referral, etc being sent. | 1 day, 2 days, 7 days, always. |
| Create Provisional IHIs | Some health services may wish to prevent the creation of Provisional IHIs within their network. This setting supports that requirement. | Yes / No |
| Create Unverified IHIs | Some health services may wish to prevent the creation of Unverified IHIs within their network. This setting supports that requirement. | Yes / No |
| Incorporate Historical flag | This setting controls the use of the HI Service historical flag when searching for an IHI.<br>The "System" setting enables the application to determine whether to use the historical flag. | Yes / No / System |
| HI Service Tx timeout setting | This setting enables control over the period that the system will wait for a response to be returned from the HI Service, for a transactional request. It should be aligned with the HI Service timeout setting. | 30 seconds, 60 seconds, 90 seconds, 120 seconds |
| HI Service batch timeout setting | This setting enables control over the period that the system will wait for a response to be returned from the HI Service, for an online batch request. It should be aligned with the HI Service timeout setting. | No SLA established for this service as yet.<br>5 minutes, 10 minutes, 15 minutes |
| Max Retries | This value establishes the maximum number of times that a call to the HI Service should be retried before the HI Service interface is suspended. See UC110 And UC111. | 3, 5 or another numeric value as deemed appropriate |
| Retry Interval | The period between successive retries to the HI Service interface in the event of a failure | 30 s, 60 s, 120 s, 300 s, or another period is |

| | | |
|---|---|---|
| | | seconds. |
| Failures Before Suspension | This setting establishes the number of successive transactional failures that occurs before an interface to the HI Service is suspended. | 3, 5, 10, or another numeric value.<br>High values are not recommended. |
| Delay between Requests | This value represents the system delay, between requests submitted to the HI Service for high volumes of transactions, for example in the event of an HI Service outage, with a large number of queued requests. | 1 s, 2 s, 5 s, 10 s, 20 s or another period. |
| Enable HI Service Notifications | Controls the sending of notifications to the HI Service, to report on duplicated or replicated IHIs.<br>The HI Service currently only supports notification for duplicate or replica IHIs (in Release 3b). | Yes / No |
| Enable other HI Service notifications | Controls the sending of other notifications to the HI Service, such as to report on HI Service errors, local merge notifications, data errors other than duplicate or replica IHIs. | Yes / No |
| Enable Service Requests | Enable automated service requests to the HI Service operator via the web services channel. This function supports the automation of requests that would otherwise be made to a Medicare Service Operator (MSO), i.e. the HI Service help desk.<br>This function is not currently available in the HI Service, but has been requested. | Yes / No |
| Scan for Anomalies frequency | This setting controls the frequency of the Scan for Patient Anomalies use case.<br>If the “manual” setting is used the use case must be initiated by an authorised user. | 1 day, 7 days, 30 days, 90 days, manual |
| Transactional Search limit | This setting identifies the maximum number of IHI searches and/or IHI Checks that may be submitted using either a transactional method, or the online batch.<br>This is to present a direct data extract alternative to sending large volumes of IHI requests via HL7 messages. | Any number, suggest 100, 200, 500, 1000, 2000, 5000. |

# 4. Use Case List

## 4.1 IHI BATCH Loading


| ID | Name | Page |
|---|---|---|
| UC100 | Allocate Batch ID | 14 |
| UC101 | Extract data for HI Service submission | 14 |
| UC102 | Prepare data for HI Service submission | 15 |
| UC103 | Manage Batch Submissions | 16 |


## 4.2 Queue Management use cases


| ID | Name | Page |
|---|---|---|
| UC110 | Suspend Single HI Service Request Queue | 18 |
| UC111 | Suspend All HI Service Request Queues | 19 |
| UC112 | Resume Single HI Service Request Queue | 20 |
| UC113 | Resume all HI Service Request Queues | 21 |
| UC114 | Lodge HI Service Planned Outage | 22 |


## 4.3 HL7 Message Processing (automated)


| ID | Name | Page |
|---|---|---|
| UC120 | Receive A04, A05 or A28 HL7 Message | 23 |
| UC121 | Receive A08 or A31 HL7 Message | 23 |
| UC122 | Receive A40 HL7 Message | 24 |
| UC123 | Receive I12, I13 or I14 HL7 Message | 25 |
| UC124 | Receive HL7 Message with PID segment | 26 |


## 4.4 HL7 Requests for HI Services


| ID | Name | Page |
|---|---|---|
| UC130 | Request IHI Search via HL7 | 27 |
| UC131 | Request IHI Check via HL7 | 28 |
| UC132 | Request New Provisional IHI via HL7 | 30 |
| UC133 | Request New Unverified IHI via HL7 | 31 |
| UC134 | Request Provisional IHI Update via HL7 | 33 |
| UC135 | Request IHI Update via HL7 | 37 |
| UC136 | Request IHI Merge Resolution via HL7 | 41 |
| UC137 | Request IHI Create Unverified Resolution via HL7 | 43 |
| UC138 | Request Multi-record IHI Search via HL7 | 45 |
| UC139 | Submit HI Service Request via HL7 | 47 |
| UC140 | Send Medicare Service Request via HL7 | 50 |

| ID | Name | Page |
|---|---|---|
| UC141 | Send Duplicate or Replica IHI Notification via HL7 | 51 |


## 4.5 Security Use Cases


| ID | Name | Page |
|---|---|---|
| UC150 | Register User to access HPOS / MSO | 54 |
| UC151 | Deregister User to access HPOS / MSO | 55 |
| UC152 | Maintain Organisation Credentials | 56 |


## 4.6 Reporting Use Cases


| ID | Name | Page |
|---|---|---|
| UC160 | Queue Monitoring | 57 |
| UC161 | Queue Log Data ETL | 57 |
| UC162 | Queue Analysis Report | 58 |
| UC163 | Queue Detail Report | 59 |
| UC164 | Queue Trend Report | 60 |
| UC165 | Patient IHI List Report | 61 |


## 4.7 Service Request Management Use Cases


| ID | Name | Page |
|---|---|---|
| UC170 | Maintain Service Requests | 66 |
| UC171 | Generate Service Request Report | 69 |


## 4.8 Data Management Use Cases


| ID | Name | Page |
|---|---|---|
| UC180 | Archive Audit Data | 71 |
| UC181 | Retrieve Audit Data | 73 |
| UC182 | Delete Archived Audit Data | 75 |


## 4.9 Actor(s):

The following table identifies the relevant Actors for the System.

| ID | Name | Aliases |
|---|---|---|
| ACT1 | The PAS System | Patient Management System, Clinical Information System, Patient and Client Management System, Community Management System – any system that is responsible for patient records management. |
| ACT2 | HealthSMART Integration Engine (HSIE) | Any equivalent EAI/ESB application<br>Any messaging component used to interface to the |

| ID | Name | Aliases |
|---|---|---|
| | | HI Service. |
| ACT3 | PAS Administrator | |
| ACT4 | HSIE Administrator | EAI/ESB administrator.<br>System Administrator |
| ACT5 | System Administrator | |

# 5. IHI Batch Loading

## 5.1 UC100 : Allocate batch ID

| | |
|---|---|
| **Actors** | The System |
| **Overview** | This is a system function to allocate a unique identifier to every offline batch to be submitted to the HI Service. This will facilitate processing of the returned data.<br>For a large batch submission, containing multiple files of 2000 records, the unique batch id will be supplemented by a unique File ID, to facilitate tracking of the request and subsequent reloading of the data.<br>Note that it is currently unclear whether the HI Service supports a health service generated batch ID. |
| **Pre Condition** | An offline batch is being prepared for submission to the HI Service, |
| **Process** | 1. The system will allocate a unique identifier to the batch as a whole.<br>2. The system will then allocate a unique identifier to each file within the batch, incrementing the identifier as each file is processed. |
| **Post Condition** | Every file within the offline batch submission has the batch identifier and a unique file identifier imbedded within it.<br>The batch identifier and file identifier indices are incremented. |
| **Circumstances of Use** | This use case applies when an offline batch is to be submitted to the HI Service, and there are one or more files, each of 2000 records, that require a unique identifier. |
| **Quality Criteria** | The offline batch is expected to be used primarily for Initial data Load purposes, though there may be instances where its use is required to support large volume IHI Searches or IHI Checks. |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1001 | The batch identifier and a unique file identifier must be allocated to every file in a batch submission to the HI Service. |
| RU1002 | Batch identifiers must not be reused within the required audit retention period (may be 25 years) |
| RU1003 | File identifiers may be reused between batches, i.e. the combination of batch id and file id provides the unique reference. |
| RU1004 | Note: File names on the USB stick must also be unique, and should incorporate the file id. |

## 5.2 UC101 : Extract Data for HI Service Submission

| | |
|---|---|
| **Actors** | The PAS |
| **Overview** | This use case enables extraction of high volumes of patient demographic data from the PAS for submission to the HI Service to search for a patient's IHI, or to check an IHI already allocated.<br>Note that no other HI Service functions are currently supported by the batch processes. |
| **Pre Conditions** | A user has selected the records to be submitted, or these have been identified through rules established within the system<br>A high volume of patient records without IHIs are ready to be submitted to the HI |

| | |
|---|---|
| | Service to obtain IHIs.<br>A high volume of patient records with IHIs are ready to be submitted to the HI Service for IHI checking. |
| **Process** | The system extracts data from the PAS based on the record selection criteria, and on compliance with HI Service data rules. |
| **Post Condition** | The data is extracted from the PAS and stored in the appropriate XML format on a file system, ready for further processing. |
| **Circumstances of Use** | This use case will be used when the volume of data for submission to the HI Service warrants it, and would be used typically in the initial data load process. |
| **Quality Criteria** | The extract must be performed at a time when user perceivable system performance will not be impacted. |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1010 | There must be a minimum of 5000 (configurable setting) IHI searches and/or IHI checks to be submitted to the HI Service. |

## 5.3 UC102 : Prepare Data for HI service submission

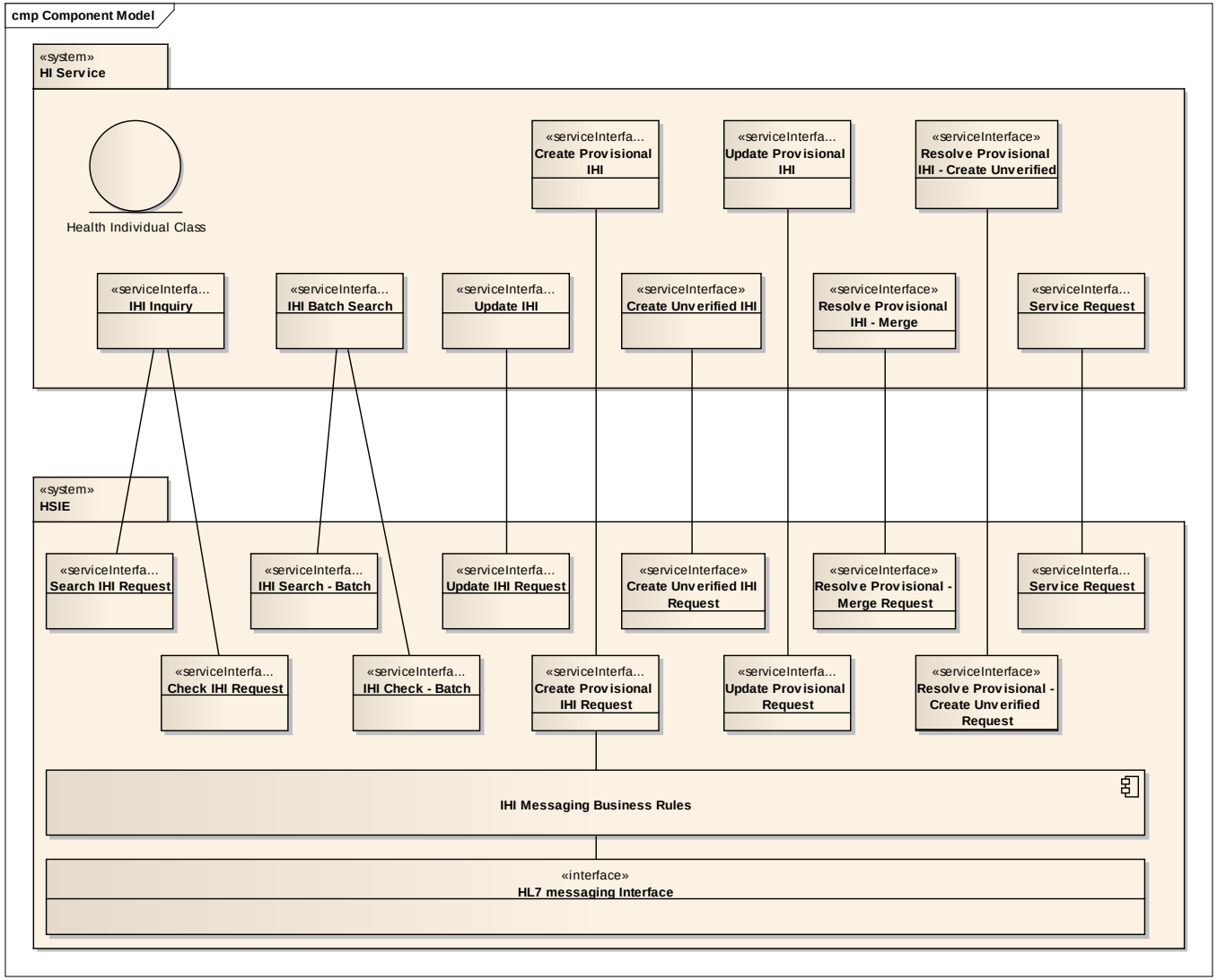
| | |
|---|---|
| **Actors** | The PAS<br>The HSIE |
| **Overview** | Takes the data extracted in the previous use case and prepares it for submission to the HI Service. |
| **Pre Condition** | Patient demographic data for IHI Searching or Checking has been successfully extracted from the PAS and stored in the nominated file system location. |
| **Process** | 1. The extracted data is parsed to detect data that is not be compliant with the HI Service data rules, and that data is excluded (exclusion file to be created).<br>2. The data is read sequentially and allocated to separate files each of no more than 2000 records.<br>3. The HI Service required WSDL format is applied to each file, including the system information, a batch identifier and unique file identifier, the organisation certificate and an identifier for the user requesting the searches/checks. |
| **Post Condition** | The data is segmented into files each containing 2000 IHI searches/checks, and stored in an accessible location, ready to be copied to the secure USB key.<br>The data is formatted in accordance with the HI Service specifications (WSDL).<br>Unique identifiers have been associated with each file. |
| **Circumstances of Use** | This use case will be used when the volume of data for submission to the HI Service warrants it, and would be used typically in the initial data load process. |
| **Quality Criteria** | The process must not adversely impact user perceivable system performance. |

## 5.4 UC103 : Manage batch submissions

| | |
|---|---|
| **Actors** | System Administrator<br>PAS Administrator |
| **Overview** | Provides a means to manage batch submissions to the HI Service. This is largely intended to be used to support the offline IHI Search and IHI Check batch facility. |
| **Pre Condition** | Offline batch submissions are ready to be sent to the HI Service operator, or have already been sent, or the offline response has been received. |
| **Process** | The user is presented with a user interface that shows the offline batch submissions and their current status.<br>The data should be structured as a tree and list view. The fields to be included at the batch level include:<br>• Created date / time<br>• Received date / time (if notification is possible)<br>• Batch id (parent)<br>• User creating/requesting<br>• Number of files<br>• Number of records<br>• Status (request sent, response received, error/exception)<br>• Exception type<br>This list should be able to be filtered, on all of the fields above except “Number of files” and “Number of records”.<br>Clicking on the parent batch in the Tree view will show the files in the batch in the List view. Attributes to be displayed include:<br>• Created date / time<br>• Received date / time (if notification is possible)<br>• Batch id (parent)<br>• Batch id (file)<br>• User creating/requesting<br>• Number of records<br>• Status (request sent, response received, error/exception)<br>• Exception type<br>Optionally, clicking on the file item in the Tree view will show all records in the file, with one record per line. |
| **Post Condition** | The user has been able to examine the status of offline batch based submissions to the HI Service, and is able to undertake further actions as required. |
| **Circumstances of Use** | Whenever a user needs to review offline batch submissions to the HI Service. |
| **Quality Criteria** | NA |

# 6. Interface Management Use cases

The diagram below shows the proposed relationship between the services implemented by Medicare Australia in the HI Service (the top layer) and those defined in the Victorian IHI Integration Design (here shown in the HSIE layer). Each HSIE service interface would be supported by a message queue.



## 6.1 UC110 : Suspend single HI Service Request queue

| | |
|---|---|
| **Actors** | PAS (system)<br>HSIE |
| **Overview** | Suspends the sending of requests to the HI Service for a single queue. Does not apply to the offline batch facility. |
| **Pre Condition** | A single request type has been rejected more than x times (configurable) in succession by the HI service (may be an infrastructure, data or message problem).<br>A single request type is resulting in successive “Service unavailable” or equivalent message, while other request types are continuing to be processed (a failure in a single web service).<br>A notification has been received that an individual HI Service interface will be unavailable for a period, as a scheduled outage.<br>A notification has been received that an individual HI Service interface will be unavailable for a period, as an unscheduled outage. |
| **Process** | 1. The system identifies that a number (configurable) of successive HI Service requests to a single interface have failed.<br>2. The queue, or outward web service interface, is suspended from operation.<br>3. An exception report is raised to the responsible local support group.<br>4. An outage notification is sent to the HI Service operator automatically.<br>5. Exception messages are returned to the originating system (or user), stating that the service is unavailable<br>6. Future requests are queued or persisted and users notified.<br>7. A process of retrying a call to the HI Service interface is initiated. This is to ascertain when the service is available for use once again. |
| **Post Condition** | All calls to the individual HI Service interface are halted, and persisted for later sending.<br>Appropriate notifications and/or error messages are transmitted.<br>The system will “ping” the HI Service interface to determine when it is again available. |
| **Circumstances of Use** | This use case applies when Web Services calls to a single HI Service interface are failing. This may be for a number of reasons, including:<br>• An error in the local interface to the HI Service, requiring local resolution:<br>• An error in the message or data format, which may be either a local or a HI Service problem;<br>• The HI Service interface is unavailable or in an error condition, requiring resolution by the HI Service Operator. |
| **Quality Criteria** | The system must prevent the submissions of large numbers of failing calls to the HI Service, and hence respond rapidly to any outage.<br>The system will enable users to continue working as normal, though they will be notified of the unavailability of the particular HI Service request interface, should they be undertaking tasks that rely upon it.<br>All requests to the HI Service will be persisted for subsequent processing when the HI Service interface becomes available. |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1100 | The following list identifies the HI Service interfaces that will be managed as separate queues within the local environment:<br>**Local Queue** — **HI Service interface**<br>1. IHI Check — IHI Inquiry Search via B2B<br>2. IHI Search using TDS identifier — IHI Inquiry Search via B2B<br>3. IHI Search (demographic – simple) — IHI Inquiry Search via B2B<br>4. IHI Search (demographic – complex) — IHI Inquiry Search via B2B<br>5. IHI Online Batch Search — IHI Batch Search (online)<br>6. Create Provisional IHI — Create Provisional IHI via B2B<br>7. Create Unverified IHI — Create Unverified IHI via B2B<br>8. Update Provisional IHI — Update Provisional IHI via B2B<br>9. Update IHI — Update IHI via B2B<br>10. Resolve Provisional – Merge — Resolve Prov'l – Merge via B2B<br>11. Resolve Prov'l – Create Unverified — Resolve Prov'l – Create Unverified via B2B<br>12. Duplicate/replica Notification — Duplicate/replica notification via B2B<br><br>And a service that is not currently available, but which our functional design relies upon:<br>13. Service Request / Notification — Service Request / Notification via B2B |
| RU1101 | In the event of a service unavailability or timeout error for any of the local queues supporting "IHI Inquiry Search via B2B", all 4 local queues must be suspended. |

## 6.2 UC111 : Suspend all HI Service Request queues

| | |
|---|---|
| **Actors** | PAS (system)<br>HSIE |
| **Overview** | Suspends the sending of all requests to the HI Service for a single queue. Does not apply to the offline batch facility. |
| **Pre Condition** | All requests to the HI Service are failing, based on at least x transactions across multiple request types.<br>A notification has been received that the HI Service B2B interface will be unavailable for a period (scheduled outage).<br>A notification has been received that the HI Service B2B interface will be unavailable for a period (unscheduled outage). |
| **Process** | 1. The system identifies that a number (configurable) of successive HI Service requests to any HI Service interfaces have failed.<br>2. All HI Service request queues, or outward web service interfaces, are suspended from operation.<br>3. An exception report is raised to the responsible local support group.<br>4. An outage notification is sent to the HI Service operator automatically.<br>5. Exception messages are returned to the originating system (or user), stating that the service is unavailable<br>6. Future requests are queued or persisted and users notified.<br>7. A process of retrying a call to the HI Service interface is initiated. This is to ascertain when the service is available for use once again. |
| **Post Condition** | All calls to the HI Service B2B channel are halted, and messages are persisted for later sending.<br>Appropriate notifications and/or error messages are transmitted.<br>The system will "ping" the HI Service on a selected interface to determine when it is again available. |
| **Circumstances of Use** | This use case applies when Web Services calls all HI Service B2b interfaces are failing. This may be for a number of reasons, including: |

| | |
|---|---|
| | • An error in the local infrastructure supporting the interface to the HI Service, requiring local resolution:<br>• Network or connectivity issues (local or remote resolution);<br>• An HI Service B2B channel scheduled outage is underway;<br>• The HI Service B2B channel is unavailable or in an error condition, requiring resolution by the HI Service Operator (unscheduled outage). |
| **Quality Criteria** | The system must prevent the submissions of large numbers of failing calls to the HI Service, and hence respond rapidly to any outage.<br><br>The system will enable users to continue working as normal, though they will be notified of the unavailability of the HI Service B2B channel, should they be undertaking tasks that rely upon it.<br><br>All requests to the HI Service will be persisted for subsequent processing when the HI Service B2B channel becomes available.<br><br>In the event of a long term outage, alternate channels may need to be employed. |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1110 | The following list identifies the HI Service interfaces and the local queues that will need to be suspended from operation in the event of the HI Service becoming unavailable:<br>**Local Queue** — **HI Service interface**<br>1. IHI Check — IHI Inquiry Search via B2B<br>2. IHI Search using TDS identifier — IHI Inquiry Search via B2B<br>3. IHI Search (demographic – simple) — IHI Inquiry Search via B2B<br>4. IHI Search (demographic – complex) — IHI Inquiry Search via B2B<br>5. IHI Online Batch Search — IHI Batch Search (online)<br>6. Create Provisional IHI — Create Provisional IHI via B2B<br>7. Create Unverified IHI — Create Unverified IHI via B2B<br>8. Update Provisional IHI — Update Provisional IHI via B2B<br>9. Update IHI — Update IHI via B2B<br>10. Resolve Provisional – Merge — Resolve Prov'l – Merge via B2B<br>11. Resolve Prov'l – Create Unverified — Resolve Prov'l – Create Unverified via B2B<br>12. Duplicate/replica Notification — Duplicate/replica notification via B2B<br><br>And a service that is not currently available, but which our functional design relies upon:<br>13. Service Request / Notification — Service Request / Notification via B2B |

## 6.3 UC112 : Resume Single HI Service Request Queue

| | |
|---|---|
| **Actors** | PAS (system)<br>HSIE |
| **Overview** | Resumes the sending of requests to the HI Service B2B channel for a single queue or interface. Does not apply to the offline batch facility. |
| **Pre Condition** | The system has determined that the HI Service B2B interface is now available for use (via a "ping" mechanism).<br>A scheduled outage for a single HI Service B2B interface has been completed.<br>A notification has been received that a previously unavailable HI Service B2B interface is now available for use. |
| **Process** | 1. The system analyses the number of transactions queued, and determines the optimum means for submitting them (requests may be submitted via an online or offline batch if required) |

| | |
|---|---|
| | a. Default is to stream the requests over the transactional HI Service B2B interface with a time delay between each one.<br>2. The queue is resumed and requests sent to the HI Service.<br>3. Users are notified that the HI Service interface is now operational, where applicable.<br>4. A notification is sent to the local support group notifying of the extent of the outage and the queue resumption.<br>5. A similar notification is sent to the HI Service. |
| **Post Condition** | The local queue for requests to the affected HI Service B2B interface is now resumed.<br>Requests stored during the outage period are being processed.<br>Relevant parties are notified. |
| **Circumstances of Use** | This use case applies when a previous outage to a single HI Service B2B interface is resolved. |
| **Quality Criteria** | The system must prevent high frequency streaming of HI Service requests saved during the outage period, and hence must insert a delay (configurable) between each request. This is because every other health service, with HI Service access, across Australia will be performing a similar process. |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1120 | Only stored requests that relate to the IHI Inquiry Search interface may be submitted via online or offline batch. |
| | |

## 6.4 UC113 : Resume all HI Service Request queues

| | |
|---|---|
| **Actors** | PAS (system)<br>HSIE |
| **Overview** | Resumes the sending of requests to the HI Service B2B channel for all local HI Service B2B queues / interfaces. Does not apply to the offline batch facility. |
| **Pre Condition** | The system has determined that the HI Service B2B interfaces are now available for use (via a “ping” mechanism).<br>A scheduled outage for the HI Service B2B channel (all interfaces) has been completed.<br>A notification has been received that the HI Service B2B channel is now available for use. |
| **Process** | 1. The system analyses the types of transactions queued, and determines the optimum order of resuming the queues, based on the numbers of transactions within each queue:<br>a. Empty queues to be resumed first;<br>b. Queues then resumed in decreasing order of number of stored transactions (most first).<br>2. For the IHI Inquiry Search based local queues, the system will analyse the number of transactions queued, and determine the optimum means for submitting them (requests may be submitted via an online or offline batch if required)<br>a. Default is to stream the requests over the transactional HI Service |

| | |
|---|---|
| | B2B interface with a time delay between each one<br>3. Once the processing of a queue is complete the next queue may be resumed.<br>4. Users are notified that the HI Service B2B channel is now operational, where applicable.<br>5. A notification is sent to the local support group notifying of the extent of the outage and the queue resumption.<br>6. A similar notification is sent to the HI Service. |
| **Post Condition** | All local queues to the HI Service B2B interfaces are resumed.<br>Requests stored during the outage period are being processed.<br>Relevant parties are notified. |
| **Circumstances of Use** | This use case applies when a previous HI Service B2B channel outage is resolved. |
| **Quality Criteria** | The system must prevent high frequency streaming of HI Service requests saved during the outage period, and hence must insert a delay (configurable) between each request. This is because every other health service, with HI Service access, across Australia will be performing a similar process. |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1023 | Only stored requests that relate to the IHI Inquiry Search interface may be submitted via online or offline batch. |
| | |

## 6.5 UC114 : Lodge HI Service scheduled outage

| | |
|---|---|
| **Actors** | System Administrator<br>PAS Administrator<br>HSIE Administrator |
| **Overview** | This enables the recording of a scheduled outage to the HI Service B2B channel within the local system, enabling all local queues to the HI Service to be suspended for the outage period. |
| **Pre Condition** | A notification has been received from the HI Service operator for a scheduled outage to the HI Service B2B channel.<br>A scheduled outage to the local infrastructure, used to send requests to the HI Service, has been approved. |
| **Process** | 1. The outage is recorded in the system.<br>2. The local queue / interface manager schedules suspension of the affected HI Service B2B interface queues prior to the outage start time, and queue resumption 5 minutes after outage end time. |
| **Post Condition** | The system is configured to suspend HI Service requests for the declared outage window. |
| **Circumstances of Use** | Whenever a scheduled outage notification is received from the HI Service operator, for one or more interfaces in the HI Service B2B channel. |
| **Quality Criteria** | None identified. |

# 7. HL7 Message Processing (automated)

This section describes some optional use cases that remove much of the IHI processing from the PAS and place it in the system component that will interface to the HI Service. Note the inherent risks in removing expert human involvement from the process, and the continuing liability of the health service for misallocation of an IHI.

These use cases are especially suited to the Health*SMART* architecture, in which patient registrations, updates and merge messages are distributed to other Health*SMART* and health service systems via HL7 and the HSIE. It is also well suited to e-health messages leaving the organisation, such as e-Referrals and Discharge Summaries.

The use cases below may also be relevant when an Enterprise Master Patient Index solution is being used.

## 7.1 UC120 : Receive A04, A05 or A28 HL7 message

| | |
|---|---|
| **Actors** | HSIE |
| **Overview** | When an A04 Register a Patient, A05 Pre-Admit a Patient or A28 Add Patient Details HL7 message is sent by the PAS (source of truth for patient demographic data) and received by the HSIE, the HSIE will automatically search for an IHI or check the IHI that is included in the HL7 message.<br>Functionality is inherited from the Use Cases related to UC8 : Obtain IHI in the Functional Design. |
| | An A04 Patient Registration HL7 message has been received.<br>An A28 Add Patient Details HL7 message has been received. |
| **Process** | Similar to the Obtain IHI process, and including:<br>1. The system (HSIE) forwards the original update message as originally requested.<br>2. If no IHI is included in the A04 or A28 HL7 message, the system sends an IHI search request to the HI Service, using the available demographic data and Medicare number or DVA number.<br>3. If an IHI is included in the A04 or A28 HL7 message the system automatically checks the IHI against the HI Service.<br>4. The system logs the transaction.<br>5. The system (HSIE) returns the IHI or the Check confirmation to the application / user that originally registered the patient, using the A31 Update Person Information HL7 message. |
| **Alternate flows** | Exception processing is as for the Obtain IHI use case, with the system (HSIE) returning the exception to the originating application and user via HL7. |
| **Post Condition** | The IHI, its statuses, and the last checked date are stored within the PAS. |
| **Circumstances of Use** | Whenever an A04 Register a Patient message is received by the HSIE.<br>Whenever an A05 Pre-Admit a Patient message is received by the HSIE.<br>Whenever an A28 Add Patient Details message is received by the HSIE. |
| **Quality Criteria** | The transmission of the A04, A05 or A28 messages to downstream systems must not be delayed in any way or otherwise impacted, i.e. this process should be triggered, but occur asynchronously. |

## 7.2 UC121 : Receive A08 or A31 HL7 message

| | |
|---|---|
| **Actors** | HSIE |
| **Overview** | When an A08 Update Patient Information HL7 message or A31 Update Person Information HL7 message is sent from the master PAS and received by the HSIE, the HSIE will automatically search for an IHI or check the IHI that is included in the HL7 message.<br>Functionality is effectively inherited from the Obtain IHI use case in the Functional Design. |
| **Pre Condition** | An A08 Update Patient Information HL7 message has been received.<br>An A31 Update Person Information HL7 message has been received. |
| **Process** | Similar to the Obtain IHI process, and including:<br>1. The system (HSIE) forwards the original update message as originally requested.<br>2. If no IHI is included in the A08 or A31 HL7 message, the system sends an IHI search request to the HI Service, using the available demographic data and Medicare number or DVA number.<br>3. If an IHI is included in the A08 or A31 HL7 message the system automatically checks the IHI against the HI Service.<br>4. The system logs the transaction.<br>5. The system (HSIE) returns the IHI or the Check confirmation to the application / user that originally registered the patient, using the A31 Update Person Information HL7 message. |
| **Alternate flows** | Exception processing is as for the Obtain IHI use case, with the system (HSIE) returning the exception to the originating application and user via HL7. |
| **Post Condition** | The IHI, its statuses, and the last checked date are stored within the PAS. |
| **Circumstances of Use** | Whenever an A08 Update Patient Information HL7 message is received by the HSIE, or equivalent.<br>Whenever an A31 Update Person Information HL7 message is received by the HSIE, or equivalent. |
| **Quality Criteria** | The transmission of the A08 or A31 messages to downstream systems should not be delayed in any way or otherwise impacted, i.e. this process should be triggered, but occur asynchronously. |

## 7.3 UC122 : Receive A40 HL7 message

| | |
|---|---|
| **Actors** | HSIE |
| **Overview** | When an A40 Merge Patient HL7 message is sent from the master PAS and received by the HSIE, the HSIE will automatically search for an IHI or check the IHI for each PID segment included in the Merge request.<br>Based on the results obtained the HI Service may submit either a merge request or a merge notification to the HI Service. |
| **Pre Condition** | An A40 Merge Patient HL7 message has been received. |
| **Process** | Similar to the Obtain IHI process, and including:<br>1. The system (HSIE) forwards the original update message as originally requested.<br>2. If no IHI is included in the A04 HL7 message, the system sends an IHI search request to the HI Service, using the available demographic data and Medicare number or DVA number.<br>3. If an IHI is included in the A04 HL7 message the system |

| | |
|---|---|
| | automatically checks the IHI against the HI Service.<br>4. The system logs the HI Service transaction.<br>5. The system (HSIE) returns the IHI or the Check confirmation to the application / user that originally registered the patient, using the A31 Update Person Information HL7 message. |
| **Alternate flows** | Exception processing is as for the Obtain IHI use case, with the system (HSIE) returning the exception to the originating application and user via HL7. |
| **Post Condition** | The IHI, its statuses, and the last checked date are stored within the PAS. |
| **Circumstances of Use** | Whenever an A04 Register a Patient message is received by the HSIE, or equivalent. |
| **Quality Criteria** | The transmission of the A04 Register a Patient to downstream systems must not be delayed in any way or otherwise impacted, i.e. this process should be triggered, but occur asynchronously. |

## 7.4 UC123 : Receive I12, I13 or I14 HL7 message

| | |
|---|---|
| **Actors** | HSIE |
| **Overview** | When an I12 Referral or Discharge summary message , the I13 referral update, or the I14 Referral cancellation message is sent from the master PAS or the Clinical System and received by the HSIE, the HSIE will automatically search for an IHI or check the IHI that is included in the HL7 message.<br>Functionality is effectively inherited from the Obtain IHI use case in the Functional Design. |
| **Pre Condition** | An I12 Referral or Discharge Summary HL7 message has been received.<br>An I13 Referral or Discharge Summary HL7 message has been received.<br>An I14 Referral or Discharge Summary HL7 message has been received. |
| **Process** | Similar to the Obtain IHI process, and including:<br>1. The system (HSIE) persists the message as received.<br>2. If no IHI is included in the incoming message, the system sends an IHI search request to the HI Service, using the available demographic data and Medicare number or DVA number.<br>3. If an IHI is included in the I12, I13 or I14 message the system automatically checks the IHI against the HI Service.<br>4. The system logs the HI Service transaction.<br>5. The system (HSIE) returns the IHI or the Check confirmation to the application / user that originally registered the patient, using the A31 Update Person Information HL7 message. |
| **Alternate flows** | Exception processing is as for the Obtain IHI use case, with the system (HSIE) returning the exception to the originating application and user via HL7. |
| **Post Condition** | The IHI, its statuses, and the last checked date are stored (ideally within the PAS). |
| **Circumstances of Use** | Whenever a referral or discharge summary message, is being transmitted within a health service or from the originating health service to another.<br>Whenever a Referral Update or Referral Cancellation message, is being transmitted within a health service or from the originating health service to another. |

| | |
|---|---|
| **Quality Criteria** | |

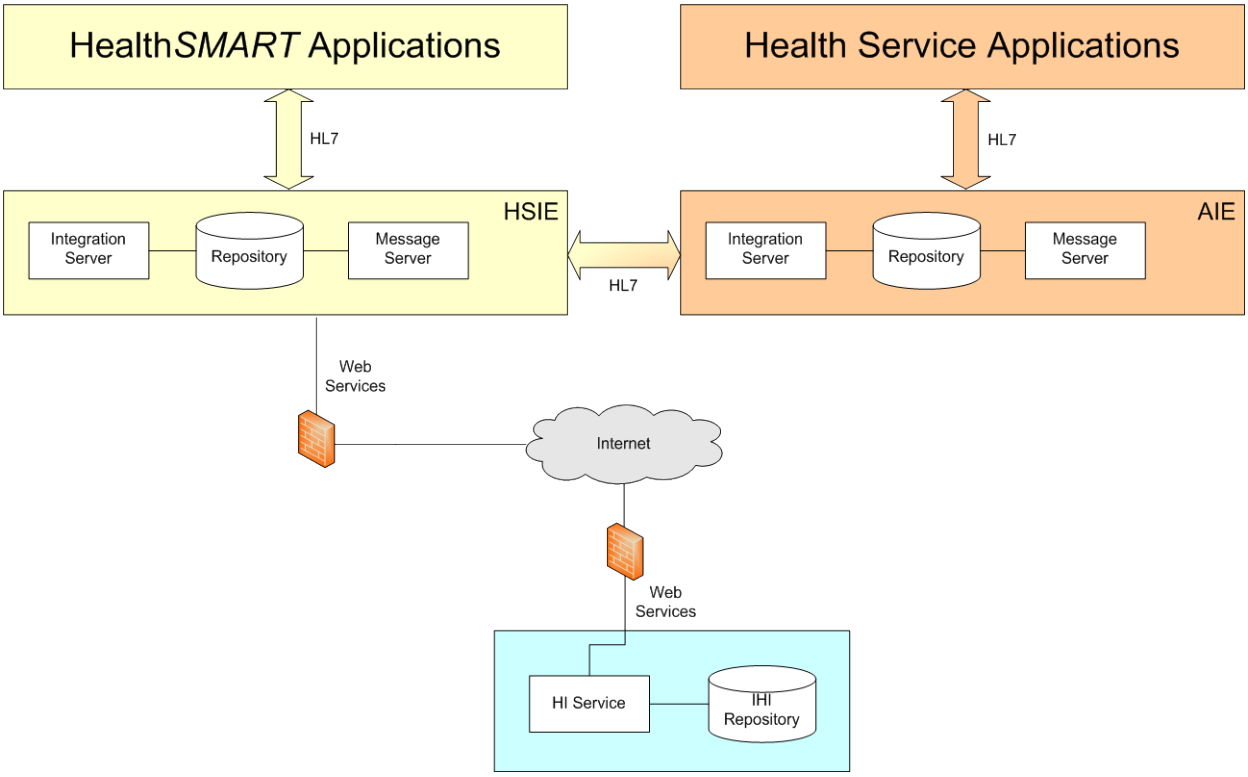
## 7.5 UC124 : Receive HL7 message with PID segment

| | |
|---|---|
| **Actors** | HSIE, or equivalent |
| **Overview** | As with the Use Cases above, this Use Case provides a common, and optional, approach to handling any type of HL7 message with a PID segment. This use case should only be used for external HL7 messages, ie those with a destination outside the health service and Health*SMART*. |
| **Pre Condition** | Any HL7 message containing a PID segment has been received by the HSIE. |
| **Process** | Similar to the Obtain IHI process, and including:<br>1. If no IHI is included in the PID segment of the HL7 message, the system sends an IHI search request to the HI Service, using the available demographic data and Medicare number or DVA number.<br>2. If an IHI is included in the PID Segment of the HL7 message the system automatically checks the IHI against the HI Service.<br>3. The system (HSIE) returns the IHI or the Check confirmation to the application / user that originally registered the patient, using the A31 Update Person Information HL7 message.<br>4. The system (HSIE) forwards the message with a checked or updated IHI.<br>5. The system logs the HI Service transaction. |
| **Alternate flows** | Exception processing is as for the Obtain IHI use case, with the system (HSIE) returning the exception to the originating application and user via HL7.<br>The original message will be sent as originally requested. |
| **Post Condition** | The IHI, its statuses, and the last checked date are stored within the PAS. |
| **Circumstances of Use** | Whenever an HL7 message containing a PID segment is received by the HSIE, or equivalent. |
| **Quality Criteria** | |

# 8. HL7 Requests for HI Services

This section relates specifically to an architecture in which the Patient Administration System does not communicate directly with the HI Service to acquire and manage IHIs, but rather requests are made to a specialised enterprise application integration solution, such as the HealthSMART Integration Engine, which then creates, sends and manages requests to the HI Service. This is the preferred HI Service integration architecture within HealthSMART.

This is shown at a very high level in the diagram below.




## 8.1 UC130 : Request IHI Search via HL7

| | |
|---|---|
| **Actors** | The Patient Administration System<br>The HSIE, or equivalent |
| **Overview** | This is an explicit request from the PAS to the HSIE for an IHI search to be conducted, based on currently available messaging standards. In HealthSMART this is HL7 v2.4 HS.<br>This use case inherits functionality from UC7 : Search for IHI in the IHI Functional Design, and follows the same flow, except that the implementation is in the HSIE, rather than the PAS.<br>The PAS application, which is the “source of truth” for patient demographic information, should use the HL7 A19 query message as the more commonly used broadcast messages are not suitable.<br>HL7 messaging exceptions will supplement exceptions already identified in UC7 : Search for IHI. |
| **Pre Condition** | The PAS has forwarded a request to the HSIE for an IHI Search to be conducted for a patient. |

| | |
|---|---|
| | The patient does not currently have an IHI recorded in the PAS, and there is no IHI in the A19 message.. |
| **Process** | 1. The PAS application forms the HL7 A19 message, including relevant patient demographic information, including Medicare number, DVA file number, patient aliases and alternate addresses.<br>2. The PAS sends the A19 message to the HSIE.<br>3. The HSIE receives and persists the message.<br>4. The HSIE follows UC7 : Search for IHI, from the Vic IHI Integration Functional Design.<br>a. The HSIE will iterate through all available search options until an IHI match is found, using rules defined in UC7 : Search for IHI.<br>5. The HSIE sends the A19 response to the PAS included the acquired IHI, and its statuses. |
| **Alternate flows** | In the event of an error occurring, the Exception will be returned to the PAS. |
| **Post Condition** | The IHI number and statuses have been returned to the PAS for subsequent processing. |
| **Circumstances of Use** | This Use Case will be used to support the architecture defined previously, and when it is necessary to obtain an IHI for a patient, as identified within the PAS using UC8 : Obtain IHI. |
| **Quality Criteria** | |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1300 | All demographic and other data required for an IHI search must be included in the HL7 A19 message from the PAS to the HSIE, including:<br>• TDS identifier (Medicare number, DVA file number)<br>• Family Name (Mandatory)<br>• Given Name (Optional)<br>• Aliases<br>• Alternate addresses<br>• Sex (Mandatory)<br>• Date of Birth (Mandatory)<br>• Address Fields (TBC: Suburb, Postcode, State, Country combination) |
| RU1301 | If the A19 PID segment does not contain an IHI number an IHI Search will be conducted. |

## 8.2 UC131: Request IHI Check via HL7

| | |
|---|---|
| **Actors** | The Patient Administration System<br>The HSIE, or equivalent |
| **Overview** | This is an explicit request from the PAS to the HSIE for an IHI Check to be conducted, based on currently available messaging standards. In Health*SMART* this is HL7 v2.4 HS.<br>This use case inherits functionality from UC9 : Check IHI in the IHI Functional Design, and follows the same flow, except that the implementation is in the HSIE, rather than the PAS.<br>The PAS application, which is the “source of truth” for patient demographic |

| | |
|---|---|
| | information, should use the HL7 A19 query message as the broadcast messages are not suitable.<br>HL7 messaging exceptions will supplement exceptions already identified in UC9 : Check IHI. |
| **Pre Condition** | The patient record has an IHI allocated, and the system (PAS) has determined that the IHI requires checking. |
| **Process** | 1. The PAS application forms the HL7 A19 message, including relevant patient demographic information, including the IHI number, the patient's name, DOB and aliases.<br>2. The PAS sends the A19 message to the HSIE.<br>3. The HSIE receives and persists the message.<br>4. The HSIE follows UC9 : Check IHI, from the Vic IHI Integration Functional Design.<br>a. The HSIE will iterate through all available search options until the IHI check is successful or all options are exhausted, using rules defined in UC9 : Check IHI.<br>b. The HSIE implements UC15: Send IHI Request from the Vic IHI Integration Functional Design<br>5. The HSIE sends the A19 response to the PAS included the acquired IHI, and its statuses. |
| **Post Conditions** | The IHI has been checked and a new last checked date returned to the PAS, or<br>A different IHI has been returned from the HI Service and this new information is returned to the PAS.<br>An exception is returned to the PAS. |
| **Alternate Flow** | NA |
| **Circumstances of Use** | Whenever the PAS, the PAS user, another system or user requires an IHI to be checked. |
| **quality Criteria** | |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1310 | All demographic and other data required for an IHI search must be included in the HL7 A19 message from the PAS to the HSIE, including:<br>• IHI Number<br>• Family Name (Mandatory)<br>• Given Name (Optional)<br>• Aliases<br>• Sex (Mandatory)<br>• Date of Birth (Mandatory) |
| RU1311 | If the A19 PID segment contains an IHI number the Check IHI will be conducted. |

## 8.3 UC132 : Return HI Service Exception Response via HL7

| | |
|---|---|
| **Actors** | The HSIE |
| **Overview** | The System generates a task for human follow-up when an IHI issue occurs. Different Exception Levels will be routed to different audiences for follow up, with differing expected response times. |
| **Pre Condition** | An exception has occurred in IHI processing. |
| **Post Condition** | The exception has been raised.<br>Subsequent actions can be taken in response to specific exception conditions, eg suspending processing if the HI Service is offline. |
| **Circumstances of Use** | Whenever an exception occurs in any aspect of obtaining, checking or processing an IHI. |
| **Quality Criteria** | |

**BASIC FLOW:**

| # | Description | Requirement/ Include |
|---|---|---|
| **1** | The System creates an IHI Exception with the following fields:<br>• Exception ID<br>• Parent Exception ID (populated when exception has been raised from attempt to resolve another exception)<br>• Batch ID (if raised from Batch process)<br>• Exception Date<br>• Exception Type<br>• Error Code<br>• Primary IHI<br>• Secondary IHI (if applicable)<br>• Secondary URN (if applicable)<br>• Exception Status = "Created"<br>• processing stage = "Before Presentation" or "After Presentation" depending on whether this exception was generated prior to the patient presenting or once they have presented to the health service.<br>• Resolution Description = blank<br>• Resolution Date = blank<br>• Resolver ID = blank | |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1320 | When raising exceptions, the System must differentiate between exceptions raised prior to a patient presenting, and exceptions raised once a patient has presented and confirmed their details. |
| RU1321 | Exceptions Types are:<br>• No Match<br>• No Match on Check IHI<br>• Incomplete Request Criteria |

| ID | Business Rule |
|---|---|
| | • PAS Duplicate<br>• Status Integrity<br>• System Failure<br>• Provisional IHI<br>• Returned IHI PAS Duplicate<br>• Potential Deceased<br>• Data Error<br>• Multiple Matches<br>• Multiple Matches on Check IHI<br>• Retired or Expired<br>• HI Duplicate Data<br>• Unknown<br>• Business Rule Violation<br>• HI Merge Failure<br>• Inconsistent Referral IHI<br>• Current Patient IHI Anomaly<br><br>HI Service Processing |
| RU1322 | IHI Exception States are:<br><br>• Created<br>• Open (when Exception is viewed)<br>• Pending<br>• Suspended<br>• Closed |
| RU1323 | The System will not re-raise IHI Exceptions for paired non-Duplicates. |

## 8.4 UC133 : Send IHI Request in HSIE

| | |
|---|---|
| **Actors** | The HSIE |
| **Overview** | The System prepares and sends an IHI Search request to the HI Service, and awaits the response.<br>This use implements functionality from UC15 : Send IHI Request in the IHI Integration Functional Design. |
| **Pre Condition** | Mandatory fields for at least one of the HI Service IHI searches (TDS excluding the IHI, basic demographic search, and full demographic search) are available. |
| **Post Condition** | A response is received from the HI Service for subsequent processing. |
| **Circumstances of Use** | An HL7 message has been received requesting an IHI be obtained from the HI Service. |
| **Included In (Other Use Cases)** | UC7: Search for IHI from the IHI Integration Functional Design<br>28 |
| **Business Processes** | None – See “Included in” Use Cases above. |

**BASIC FLOW:**

| # | Description | Requirement/ Include |
|---|---|---|
| 1 | The System sends a request to the HI Service with the criteria set. | RU136 RU137 |
| 2 | The HI Service determines that the request message is valid. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 1: The HI Service determines that the request message is invalid. **[Goal:** Respond with error.**]** | |
| IE 2: The HI Service responds, indicating a data level business error. **[Goal:** Respond with error.**]** | |
| IE 3: The HI Service responds, indicating that additional fields were found in the request. **[Goal:** Respond with error.**]** | |

| | | |
|---|---|---|
| 3 | The HI Service responds with one matching record. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 4: The HI Service responds, indicating it found more than one matching record. **[Goal:** Respond with error.**]** | |
| IE 5: The HI Service does not respond within the specified timeout period and subsequent retries have failed. **[Goal:** Handle timeout**]** | |
| IE 6: The HI Service responds, indicating no matching Healthcare Individual records were found. **[Goal:** Respond with information message.**]** | |
| IE 7: The HI Service responds with an Unknown error. **[Goal:** Respond with error.**]** | |
| IE 8: The matching record is expired. **[Goal:** Raise exception**]**<br>**Alternate Flow(s):**<br>• IE 8.1: The System determines that this request is for a current patient. **[Goal:** Skip raise of exception**]** | 4 |
| IE 9: The matching record is retired. **[Goal:** Raise exception**]**<br>**Alternate Flow(s):**<br>• IE 9.1: The System determines that this request is for a current patient. **[Goal:** Skip raise of exception**]** | |

| | | |
|---|---|---|
| 4 | The HI Service returns the IHI status and record status. | RU223 RU224 RU225 RU226 |
| 5 | The matching record has no exception conditions. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 10: The matching record has a date of death. **[Goal:** Respond with information message.**]** | |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1330 | The following details are included in a TDS Search:<br><br>• Medicare Number or DVA File Number (one is Mandatory)<br>• Family Name (Mandatory)<br>• Given Name (Optional)<br>• Sex (Mandatory)<br>• Date of Birth (Mandatory)<br>• Health Service Reference ID<br>• IRN is optional (and only used with Medicare Number searches) |
| RU1331 | The following details are included in a non-TDS Search:<br><br>• Family Name (Mandatory)<br>• Given Name (Optional)<br>• Sex (Mandatory)<br>• Date of Birth (Mandatory)<br>• Address Fields (TBC: Suburb, Postcode, State, Country combination)<br>• Health Service Reference ID |

## 8.5 UC134 : Send Unverified IHI Request via HL7

| | |
|---|---|
| **Actors** | The PAS System<br>The HSIE |
| **Overview** | The use case supports the creation of an Unverified IHI, based on an HL7 message from the PAS to the HSIE, and implementation of the required HI Service interface in the HSIE.<br>This use case inherits functionality from UC16 : Send Unverified IHI Request in the IHI Integration Functional Design<br>**Note that Victorian Health*SMART* health services cannot currently make use of this function as current systems do not support address data in the required format.** |
| **Pre Condition** | An HL7 message has been sent from the PAS to the HSIE containing an explicit request for creation of an Unverified IHI. |
| **Post Condition** | The Unverified IHI is generated and returned to the HSIE. The HSIE will return the Unverified IHI to the requesting application. |
| **Circumstances of Use** | Whenever there is a (user determined) need to create an Unverified IHI for a patient. |
| **Included In (Other Use** | UC36: Add Exception Resolution |

| | |
|---|---|
| **Cases)** | |
| **Business Processes** | None – See “Included in” Use Cases above. |

**BASIC FLOW:**

| # | Description | Requirement/ Include |
|---|---|---|
| 1 | The System determines that it has all the required information to submit a Create Unverified IHI Request. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 1: The System determines that it does not have all the required information to submit a Create Unverified IHI Request. **[Goal:** Stop request from proceeding.**]** | |

| | | |
|---|---|---|
| 2 | The System sends a request to the HI Service with the criteria set. | RU228 |
| 3 | The HI Service determines that the request message is valid. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 2: The HI Service responds, indicating a data level business error. **[Goal:** Respond with error.**]** | |
| IE 3: The HI Service determines that the request message is invalid. **[Goal:** Respond with error.**]** | |

| | | |
|---|---|---|
| 4 | The HI Service determines that there are no existing Verified or Unverified IHI records with the same details. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 4: The HI Service determines that there is an existing Verified or Unverified IHI record with the same details. **[Goal:** Respond with error.**]** | |
| IE 5: The HI Service responds with an Unknown error. **[Goal:** Respond with error.**]** | |

| | | |
|---|---|---|
| 5 | The HI Service responds with the newly created record. | RU268 IM346 |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 6: The HI Service does not respond within the specified timeout period and subsequent retries have failed. **[Goal:** Handle timeout**]** | |

| | | |
|---|---|---|
| 6 | The System determines that there is no international address held in the PAS. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|

| | |
|---|---|
| | IE 7: The System determines that there is an international address held in the PAS. **[Goal:** Upload International Address**]** 7 |
| **7** | The System retains the Unverified IHI record details for later use. |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1340 | The following details are included in an Unverified IHI Request, and must be included in the HL7 message requesting the creation of an Unverified IHI:<br><br>• Health Service Reference ID<br><br>Individual Healthcare Identification Entity<br><br>• Sex (Mandatory)<br>• Date of Birth (Mandatory)<br>• Date of Birth Accuracy Indicator (Mandatory)<br>• Birth Plurality (Conditional)<br>• Birth Order (Conditional)<br>• Date of Death (Optional)<br>• Date of Death Accuracy Indicator (Conditional)<br>• Source of Death Notification (Conditional)<br><br>Name Entity (more than one may be provided)<br><br>• Name Title (Optional)<br>• Family Name (Mandatory)<br>• Given Name (Optional, 0 to 2 instances)<br>• Name Suffix (Optional)<br>• Usage (Mandatory)<br>• Conditional Use (Optional)<br><br>Address Entity, 0 to 2 instances:<br><br>• Australian Street Address (Optional)<br>o State (conditional mandatory)<br>o Postcode (conditional mandatory)<br>o Suburb (conditional mandatory)<br>o Address Site Name (Optional)<br>o Unit Group (Optional)<br>▪ Unit Type (conditional mandatory)<br>▪ Unit Number (Optional)<br>o Level Group (Optional)<br>▪ Level Type (conditional mandatory)<br>▪ Level Number (Optional)<br>o Lot Number (Optional)<br>o Street Number (Optional)<br>o Street Name (conditional mandatory)<br>o Street Type (Optional)<br>o Street Suffix (Optional)<br><br>• Australian Postal Address (Optional)<br><br>o State (conditional mandatory)<br>o Postcode (conditional mandatory)<br>o Suburb (conditional mandatory) |

| ID | Business Rule |
|---|---|
| | o Postal Delivery Group (conditional mandatory)<br>▪ Postal Delivery Type<br>▪ Postal Delivery Number (conditional mandatory)<br><br>• International Address (Optional)<br><br>o International State/Province (conditional mandatory)<br>o International Address Line (conditional mandatory)<br>o International Postcode (conditional mandatory)<br>o Country (conditional mandatory)<br><br>• Purpose (conditional mandatory)<br>• Preferred (conditional mandatory)<br><br>Electronic Communications Entity (0 to many instances)<br><br>• Electronic Communication Medium (conditional mandatory)<br>• Electronic Communication Usage Code (conditional mandatory)<br>• Electronic Communication Detail (conditional mandatory)<br>• Preferred (optional) |
| RU1341 | An unverified IHI record cannot be created with exactly the same details as an existing unverified or verified IHI record. |
| RU1342 | The patient's demographic details required for creation of an Unverified IHI must be included in the HL7 message. |

## 8.6 UC135 : Send IHI Update Request via HL7

| | |
|---|---|
| **Actors** | The PAS System<br>The HSIE |
| **Overview** | The use case supports the updating of records in the HI Service, based on an HL7 message from the PAS to the HSIE, and implementation of the required HI Service interface in the HSIE.<br>This use case inherits functionality from UC14 : Send IHI Update Request in the IHI Integration Functional Design<br>• Record updates catered for in this use case include:update a record with an Unverified IHI, or<br>• update a record with a Verified IHI with date of death information only.<br>This may be implemented as a fully automated use case, based on receipt of an A08 or A31 HL7 message. |
| **Pre Condition** | 1. An explicit HL7 based request from the PAS has been received by the HSIE to update data associated with an Unverified or Verified record in the HI Service.<br>2. An HL7 A08 or A31 message has been received by the HSIE containing:<br>a. A date of death for a Verified patient record having a verified IHI, or<br>b. An update to fields held by the HI Service for a patient having an Unverified IHI. |

| | |
|---|---|
| | The specific update request should not have been sent to the HI Service previously. |
| **Post Condition** | The updated patient details have been sent to the HI Service, and a confirmation message received in response. |
| **Circumstances of Use** | 1. An update has been applied to a patient record in the PAS having an Unverified IHI (and the update affects data fields stored in the HI Service).<br>2. A date of death has been recorded in a patient record having a Verified IHI. |
| **Included In (Other Use Cases)** | UC51: Process Patient Details Update<br>UC16: Send Unverified IHI Request |
| **Business Processes** | BP4: Patient Death Registration |

**BASIC FLOW:**

| # | Description | Requirement/ Include |
|---|---|---|
| **1** | The System sends an update request to the HI Service with the criteria set. | RU505 |
| **2** | The HI Service determines that the request message is valid. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 1: The HI Service determines that the request message is invalid. **[Goal:** Respond with error.**]** | |
| IE 2: The HI Service responds, indicating a data level business error. **[Goal:** Respond with error.**]** | |

| | | |
|---|---|---|
| **3** | The HI Service determines that there are no existing Verified or Unverified IHI records with the same details. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 3: The HI Service determines that there is an existing Verified or Unverified IHI record with the same details. **[Goal:** Respond with error.**]** | |
| IE 4: The HI Service determines that IHI to be Updated is Retired or Expired and is for current patient. **[Goal:** Respond with error.**]** | |
| IE 5: The HI Service responds with an Unknown error. **[Goal:** Respond with error.**]** | |
| IE 6: The HI Service determines that some death details already exist from Birth, Deaths & Marriages. **[Goal:** Don't raise error**]** | |

| | | |
|---|---|---|
| **4** | The HI Service responds, confirming the update. | IM591 |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 7: The HI Service determined that the Update includes non-death details and the IHI has a Record Status of Verified. **[Goal:** Respond with error.**]** | |
| IE 8: The HI Service does not respond within the specified timeout period and subsequent retries have failed. **[Goal:** Handle timeout**]** | |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1340 | The following details are included in an Update IHI Request:<br><br>• IHI<br>• Health Service Reference ID<br><br>Individual Healthcare Identification Entity<br><br>• Sex (Mandatory)<br>• Date of Birth (Optional)<br>• Date of Birth Accuracy Indicator (Conditional)<br>• Birth Plurality (Conditional)<br>• Birth Order (Conditional)<br>• Date of Death (Conditional)<br>• Date of Death Accuracy Indicator (Conditional)<br>• Source of Death Notification (Conditional)<br><br>Name Entity (0 to many instances)<br><br>• Name Title (optional)<br>• Family Name (mandatory)<br>• Given Name (optional, 0 to 2 instances)<br>• Name Suffix (optional)<br>• Usage (mandatory)<br>• Preferred (mandatory)<br>• Conditional Use (Optional)<br><br>Address Entity, 0 to 2 instances:<br><br>• Australian Street Address (Optional)<br><br>o State (conditional mandatory)<br>o Postcode (conditional mandatory)<br>o Suburb (conditional mandatory)<br>o Address Site Name (Optional)<br>o Unit Group (Optional)<br>▪ Unit Type (conditional mandatory)<br>▪ Unit Number (Optional)<br>o Level Group (Optional)<br>▪ Level Type (conditional mandatory)<br>▪ Level Number (Optional)<br>o Lot Number (Optional)<br>o Street Number (Optional)<br>o Street Name (conditional mandatory)<br>o Street Type (Optional)<br>o Street Suffix (Optional)<br><br>• Australian Postal Address (Optional)<br><br>o State (conditional mandatory)<br>o Postcode (conditional mandatory)<br>o Suburb (conditional mandatory)<br>o Postal Delivery Group (conditional mandatory)<br>▪ Postal Delivery Type<br>▪ Postal Delivery Number (conditional mandatory) |

| ID | Business Rule |
|---|---|
| | • International Address (Optional)<br><br>o International State/Province (conditional mandatory)<br>o International Address Line (conditional mandatory)<br>o International Postcode (conditional mandatory)<br>o Country (conditional mandatory)<br><br>• Purpose (conditional mandatory)<br>• Preferred (conditional mandatory)<br><br>Electronic Communications Entity (0 to many instances)<br><br>• Electronic Communication Medium<br>• Electronic Communication Usage Code<br>• Electronic Communication Detail<br>• Preferred (optional) |

## 8.7 UC136 : Send Merge Request via HL7

| | |
|---|---|
| **Actors** | The PAS System<br><br>The HSIE |
| **Overview** | The use case supports the merging of records in the HI Service, following the local merging of those records within the PAS. This use case is also based on an HL7 A40 message being sent from the PAS to the HSIE, and implementation of the required HI Service interface in the HSIE.<br><br>This use case inherits functionality from UC43 : Send Merge Request in the IHI Integration Functional Design<br><br>This use case relies upon the HI Service function “Resolve Provisional IHI - Merge Records via B2B”. |
| **Pre Condition** | Two patient records have been merged (successfully) in the local PAS, and one of the records has a Provisional IHI, and the other record has either an Unverified IHI or a Verified IHI.<br><br>An HL7 A40 message has been sent from the PAS and received by the HSIE. |
| **Post Condition** | The Provisional record in the HI Service is merged with the Unverified or Verified record, and is marked as resolved. |
| **Circumstances of Use** | This use case applies when a patient has presented, perhaps to ED, and they are not able to be identified so a Quick Registration has been used and (based on health service policy) a Provisional IHI requested and assigned.<br><br>Subsequently, the patient’s details are obtained, and an existing record is located within the PAS. The user then uses the PAS’ merge function to combine the records, with the anonymous record becoming the secondary.<br><br>On successful completion of the PAS merge, and subject to the primary record having an IHI, the merge request will be sent to the HI Service. |
| **Included In (Other Use Cases)** | UC51: Process Patient Details Update<br><br>UC55: Reset Merge<br><br>UC28: Merge Patient Records |
| **Business Processes** | None – See “Included in” Use Cases above. |

**BASIC FLOW:**

| # | Description | Requirement/ Include |
|---|---|---|
| **1** | The System sends a merge request to the HI Service with the criteria set. | RU607 |
| **2** | The HI Service determines that the request message is valid. | |

### Alternate Flow(s):

| Condition | Return Step |
|---|---|
| IE 1: The HI Service determines that the request message is invalid. **[Goal:** Respond with error.**]** | |
| IE 2: The HI Service responds, indicating a data level business error. **[Goal:** Respond with error.**]** | |

| | | |
|---|---|---|
| **3** | The HI Service responds, confirming the merge. | IM601 |

### Alternate Flow(s):

| Condition | Return Step |
|---|---|
| IE 3: The HI Service responds, indicating a business error. **[Goal:** Respond with error.**]** | |
| IE 4: The HI Service does not respond within the specified timeout period and subsequent retries have failed. **[Goal:** Handle timeout**]** | |
| IE 5: The HI Service responds with an Unknown error. **[Goal:** Respond with error.**]** | |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1360 | The following details are included in a Merge Request:<br>• Provisional IHI (Mandatory)<br>• Existing (Unverified or Verified) IHI (Mandatory) |

## 8.8 UC137 : Send Provisional IHI Request via HL7

| | |
|---|---|
| **Actors** | The PAS System |
| **Overview** | This use case can only occur in circumstances where the health service has established a policy to enable the use of Provisional IHIs.<br><br>The use case will send anonymous data to the HI Service and request the creation of a Provisional IHI. The HI Service will return the created IHI.<br><br>Note that there is no uniqueness check in the HI Service for Provisional IHI creation requests (based on Name, DOB and gender data), and that Provisional IHIs expire after 90 days of no activity. |
| **Pre Condition** | The system and user have determined that the creation of a Provisional IHI is required, and the required demographic data (albeit anonymous) has been entered into the system. |
| **Post Condition** | The Provisional IHI is returned from the HI Service, and saved in the patient record. |
| **Circumstances of Use** | This use case will apply when the health service has established a policy of requesting Provisional IHIs when patients present and cannot be identified, ie they may be unconscious. |
| **Included In (Other Use Cases)** | None. |
| **Business Processes** | BP2: Unreferred Patient Presentation |

**BASIC FLOW:**

| # | Description | Requirement/ Include |
|---|---|---|
| **1** | The System determines that it has all the required information to submit a Create Provisional IHI Request. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 1: The System determines that it does not have all the required information to submit a Create Provisional IHI Request. **[Goal:** Stop request from proceeding.**]** | |

| | | |
|---|---|---|
| **2** | The System sends a provisional IHI request to the HI Service with the criteria set. | |
| **3** | The HI Service determines that the request message is valid. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 2: The HI Service determines that the request message is invalid. **[Goal:** Respond with error.**]** | |

| | | |
|---|---|---|
| **4** | The HI Service responds, with the provisional IHI. | RU344 IM345 |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 3: The HI Service responds, indicating a data level business error. **[Goal:** Respond with error.**]** | |
| IE 4: The HI Service does not respond within the specified timeout period and subsequent retries have failed. **[Goal:** Handle timeout**]** | |
| IE 5: The HI Service responds with an Unknown error. **[Goal:** Respond with error.**]** | |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1370 | The following details are included in a Create Provisional HI Request:<br>• Family Name (mandatory)<br>• Given Name 1 (optional)<br>• Sex (mandatory)<br>• Date of Birth (mandatory)<br>• Date of Birth Accuracy Indicator (Mandatory) |

| ID | Business Rule |
|---|---|
| | • Date of Death (optional)<br>• Date of Death Accuracy Indicator (optional)<br>• Source of Death Notification (optional) |
| RU1371 | No evidence of identity (EOI) is required for the creation of a Provisional IHI record. |
| RU1372 | A Provisional IHI record will be expired by the Service Operator after a parameter set period of inactivity on the record (currently set to 90 days). Activity is classed as any update to the Provisional IHI record. After this time the IHI Record status will remain as Provisional and the IHI status will be set to Expired. |

## 8.9 UC138 : Send Provisional IHI Update Request via HL7

| | |
|---|---|
| **Actors** | The PAS System |
| **Overview** | This use case enables the updating of data in the HI Service, when name, DOB or gender information is updated in a local (PAS) patient record with a Provisional IHI. |
| **Pre Condition** | The user has updated Name, DOB or Gender information in a local patient record with a Provisional IHI.<br>The user has added date of death information to a local patient record with a Provisional IHI. |
| **Post Condition** | The updated patient information has been sent to the HI Service. |
| **Circumstances of Use** | This use case will apply when an anonymous record has been created in the PAS, and a Provisional IHI allocated, and subsequently selected patient details are updated by the user.<br>The use of this function will be driven by State/territory or health service policy, given the inherent risks in updating the details of a Provisional IHI (no health service who has received the Provisional IHI will be able to check it if the demographic details are changed without notification). |
| **Included In (Other Use Cases)** | UC51: Process Patient Details Update |
| **Business Processes** | None – See “Included in” Use Cases above. |

**BASIC FLOW:**

| # | Description | Requirement/ Include |
|---|---|---|
| 1 | The System sends an update request to the HI Service with the criteria set. | RU610 |
| 2 | The HI Service determines that the request message is valid. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 1: The HI Service determines that the request message is invalid. **[Goal:** Respond with error.**]** | |
| IE 2: The HI Service responds, indicating a data level business error. **[Goal:** Respond with error.**]** | |

| | | |
|---|---|---|
| 3 | The HI Service responds, confirming the update. | IM591 |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 3: The HI Service responds, indicating no match was found **[Goal:** Respond with error.**]** | |
| IE 4: The HI Service does not respond within the specified timeout period and subsequent retries have failed. **[Goal:** Handle timeout**]** | |
| IE 5: The HI Service responds with an Unknown error. **[Goal:** Respond with error.**]** | |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1380 | The following details are included in an Update Provisional HI Request:<br>• IHI (Mandatory)<br>• Family Name (Mandatory)<br>• Given Name (Optional)<br>• Sex (Mandatory)<br>• Date of Birth (Mandatory)<br>• Date of Birth Accuracy Indicator (Mandatory)<br>• Date of Death (Optional)<br>• Date of Death Accuracy Indicator (Conditional)<br>• Source of Death Notification (Conditional) |

## 8.10 UC139 : Send Provisional to Unverified Resolution Request via HL7

| | |
|---|---|
| **Actors** | The PAS System |
| **Overview** | This use case supports the “promotion” of a Provisional IHI to an Unverified IHI, with the same IHI number being preserved. |
| **Pre Condition** | A patient record with a Provisional IHI exists in the PAS, and sufficient accurate information has been entered into the local patient record to enable the promotion.<br>The system and/or user have determined that the patient is not Medicare or DVA eligible, and nor to they have an allocated Verified IHI. |
| **Post Condition** | The resolution request is sent to the HI Service and a response received.<br>The new IHI status is saved within the PAS |
| **Circumstances of Use** | A patient record with a Provisional IHI exists in the PAS, and sufficient accurate information has been entered into the local patient record to enable the promotion (name, DOB, gender, address). |
| **Included In (Other Use Cases)** | UC36: Add Exception Resolution |
| **Business Processes** | None – See “Included in” Use Cases above. |

**BASIC FLOW:**

| # | Description | Requirement/ Include |
|---|---|---|
| **1** | The System sends a request to the HI Service to promote the Provisional IHI to an Unverified IHI. | RU608 |
| **2** | The HI Service determines that the request message is valid. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 1: The HI Service determines that the request message is invalid. **[Goal:** Respond with error.**]** | |
| IE 2: The HI Service responds, indicating a data level business error. **[Goal:** Respond with error.**]** | |

| | | |
|---|---|---|
| **3** | The HI Service responds, confirming the request was successful. | IM609 |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 3: The HI Service responds, indicating a business error. **[Goal:** Respond with error.**]** | |
| IE 4: The HI Service does not respond within the specified timeout period and subsequent retries have failed. **[Goal:** Handle timeout**]** | |
| IE 5: The HI Service responds with an Unknown error. **[Goal:** Respond with error.**]** | |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1390 | The following details are included in an Unverified IHI Request:<br>• IHI (Mandatory)<br>• Health Service Reference ID<br><br>Individual Healthcare Identification Entity<br>• Sex (Mandatory)<br>• Date of Birth (Mandatory)<br>• Date of Birth Accuracy Indicator (Mandatory)<br>• Birth Plurality (Conditional)<br>• Birth Order (Conditional)<br>• Date of Death (Optional)<br>• Date of Death Accuracy Indicator (Conditional) |

| ID | Business Rule |
|---|---|
| | • Source of Death Notification (Conditional)<br><br>Name Entity (more than one may be provided)<br><br>• Name Title (Optional)<br>• Family Name (Mandatory)<br>• Given Name (Optional, 0 to 2 instances)<br>• Name Suffix (Optional)<br>• Usage (Mandatory)<br>• Conditional Use (Optional)<br><br>Address Entity, 0 to 1 instances:<br><br>• Australian Street Address (Optional)<br>o State (conditional mandatory)<br>o Postcode (conditional mandatory)<br>o Suburb (conditional mandatory)<br>o Address Site Name (Optional)<br>o Unit Group (Optional)<br>▪ Unit Type (conditional mandatory)<br>▪ Unit Number (Optional)<br>o Level Group (Optional)<br>▪ Level Type (conditional mandatory)<br>▪ Level Number (Optional)<br>o Lot Number (Optional)<br>o Street Number (Optional)<br>o Street Name (conditional mandatory)<br>o Street Type (Optional)<br>o Street Suffix (Optional)<br><br>• Australian Postal Address (Optional)<br><br>o State (conditional mandatory)<br>o Postcode (conditional mandatory)<br>o Suburb (conditional mandatory)<br>o Postal Delivery Group (conditional mandatory)<br>▪ Postal Delivery Type<br>▪ Postal Delivery Number (conditional mandatory)<br><br>• International Address (Optional)<br><br>o International State/Province (conditional mandatory)<br>o International Address Line (conditional mandatory)<br>o International Postcode (conditional mandatory)<br>o Country (conditional mandatory)<br><br>• Purpose (conditional mandatory)<br>• Preferred (conditional mandatory)<br><br>Electronic Communications Entity (0 to many instances)<br><br>• Electronic Communication Medium (conditional mandatory)<br>• Electronic Communication Usage Code (conditional mandatory)<br>• Electronic Communication Detail (conditional mandatory)<br>• Preferred (optional) |

## 8.11 UC140 : Send Medicare Service Request via HL7 or XML

| | |
|---|---|
| **Actors** | The PAS System<br>Service Request management system |
| **Overview** | This use case enables the automated creation and transmission of a Service Request to the HI Service Operator (Medicare). This replaces the current process of lodging a request with Medicare over the telephone, or potentially through the HI Service user portal (the functional profile of the portal is unclear).<br>This use case supports a broad range of service requests and notifications to Medicare, and enables streamlining of the request process. The ability of HL7 to support this type of request message requires further investigation, with an XML formatted message being the most obvious alternative.<br>The service request design is tightly integrated into the Exception Management component of the Victorian IHI Integration design, and functionality would logically be implemented within the PAS application. An alternative would be to implement the Service Request component in a specialised Service Request Management solution, with this tool then sending the request to the HI Service.<br>Manual entry of service requests into the HPOS channel, should the HPOS support this functionality, and service request management practices (for monitoring and reporting) are not documented in this functional design. This is a use case not currently supported by the HI Service, though it has become an essential element of the Victorian IHI Integration design. |
| **Pre Condition** | A condition has arisen that requires a Service Request be submitted to the HI Service operator (Medicare Australia) |
| **Post Condition** | The Service Request has been sent to the HI Service, and a reference number returned. |
| **Circumstances of Use** | The uses of this function are many and varied, but include requests for the HI Service operator to:<br>1. Assist with resolving a failed IHI Search where the patient has a Medicare/DVA card and all details appear correct.<br>2. Assist with resolving a failed IHI check where the information held locally appears correct.<br>3. Exception notifications where these exceptions are deemed to be related to the functioning of the HI Service (e.g. an outage).<br>4. Lodge notifications (based on information gathered from the patient), that HI Service stored patient information may be incorrect.<br>5. Lodge record unmerge requests.<br>6. Lodge incorrect date of death notification (e.g. for an HI Service record with deceased status, but the patient has presented at the health service).<br>7. Lodge incorrect retired notification (e.g. for an HI Service record with retired status, but the patient has presented at the health service). |
| **Included In (Other Use Cases)** | UC55: Reset Merge<br>UC36: Add Exception Resolution<br>UC29: Unmerge Patient Records |
| **Business Processes** | None – See “Included in” Use Cases above. |

**BASIC FLOW:**

| # | Description | Requirement/ Include |
|---|---|---|
| 1 | The System sends a request to the HI Service to create a Service Request. | |
| 2 | The HI Service determines that the request message is valid. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 1: The HI Service determines that the request message is invalid. **[Goal:** Respond with error.**]** | |

| | | |
|---|---|---|
| 3 | The HI Service responds, confirming the Service request has been created. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 2: The HI Service responds, indicating a business error. **[Goal:** Respond with error.**]** | |
| IE 3: The HI Service does not respond within the specified timeout period and subsequent retries have failed. **[Goal:** Handle timeout**]** | |

## 8.12 UC141 : Send Duplicate or Replica IHI Notification via HL7

| | |
|---|---|
| **Actors** | The PAS System |
| **Overview** | This use case automates the merge processing of patient records with patient records with Unverified or Verified IHIs.<br>This will only occur as a result of a patient merge in the local PAS. |
| **Pre Condition** | A duplicate or replica pair has been identified, where neither IHIs have a status of provisional. |
| **Post Condition** | The notification has been sent to the HI Service, and a response received. |
| **Circumstances of Use** | This use case applies when a local (PAS) patient record merges involving any combination of records with Unverified and Verified IHIs (neither are Provisional). |
| **Included In (Other Use Cases)** | UC36: Add Exception Resolution<br>UC28: Merge Patient Records |
| **Business** | None – See “Included in” Use Cases above. |

| Processes | |
|---|---|

**BASIC FLOW:**

| # | Description | Requirement/ Include |
|---|---|---|
| 1 | The System sends a merge request to the HI Service with the criteria set. | |
| 2 | The HI Service determines that the request message is valid. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 1: The HI Service determines that the request message is invalid. **[Goal:** Respond with error.**]** | |
| IE 2: The HI Service responds, indicating a data level business error. **[Goal:** Respond with error.**]** | |

| | | |
|---|---|---|
| 3 | The HI Service responds, confirming the notification. | IM635 IM636 |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 3: The HI Service does not respond within the specified timeout period and subsequent retries have failed. **[Goal:** Handle timeout**]** | |
| IE 4: The HI Service responds with an Unknown error. **[Goal:** Respond with error.**]** | |
| IE 5: The HI Service responds, indicating no match was found **[Goal:** Respond with error.**]** | |
| IE 6: The HI Service responds, indicating an existing flag. **[Goal:** Respond with error.**]** | |
| IE 7: The HI Service responds, indicating a retired status. **[Goal:** Respond with error.**]** | |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1410 | The following details are included in an Duplicate/Replica Notification:<br>• IHI (Mandatory) (First IHI in Duplicate Pair)<br>• IHI (Mandatory) (Second IHI in Duplicate Pair)<br>• Comments (Mandatory) - populated from Resolution Comments |

| ID | Business Rule |
|---|---|
| RU1411 | The following details are included in an Duplicate/Replica Notification:<br><br>• IHI (Mandatory)<br>• Comments (Mandatory) - populated from Resolution Comments |
| RU1412 | **Records with a "Retired" status cannot be flagged as a potential Duplicate or Replica via the B2B channel.** |
| RU1413 | Existing Flags on Notified IHIs are not allowed?<br><br>**More detail is required on this rule from the HI Service Operator. |

# 9. Security use cases

This section addresses a number of use cases that the project team has assumed will be required to enable health service workers who are not entitled to an HPI-I to gain access to the HI Service online portal (HPOS) and to the HI Service telephone support line, to support their patient data management responsibilities.

This section does not address the various responsibilities of the Registered Officer, the Organisational Management Officer, or their registration with the HI Service Operator.

The project team has also elected not to document an explicit request to register a health service employee for HI Service B2B channel access, as this is catered for within the message data. This is consistent with advice from NEHTA and Medicare Australia.

## 9.1 UC150 : Register User to access HPOS/MSO

| | |
|---|---|
| **Actors** | Registered Officer<br>Organisation Maintenance Officer<br>PAS Administrator under delegated authority<br>Directory Service Administrator under delegated authority<br>ITIL based service requests management application user, under possibly under delegated authority. |
| **Overview** | Registers an employee (may be a contractor or a member of a service provider's organisation) of the health service with the HI Service operator, to enable the employee to access the HI Service HPOS and telephone support channels.<br>This use case leverages functionality in UC48 : Send Medicare Service Request, in the IHI Integration Functional Design, to automate the process.<br>This use case may be implemented in a number of systems, including the PAS or a user provisioning system, or a directory service implementation, such as Microsoft Active Directory.<br>As the user registration is via a service request, if the implementing organisation has a service request management application (perhaps as part of a service desk), then the service request preparation component may be implemented in this application. |
| **Pre Condition** | A health service employee has been provisioned within internal systems and has access to the PAS. Their role within the health service requires that they be authorised to access the HI Service HPOS and telephone support channels.<br>Given the PAS access, the employee has been informed of their obligations under the Act. |
| **Process** | The RO or OMO has approved the employee's access to the HI Service HPOS and/or telephone support channels.<br>The RO or OMO, or a delegate (?), completes a provisioning request for the HI Service operator, including access to the HPOS and telephone support channels.<br>The system sends the request to the HI Service. |
| **Post Condition** | A service request is sent to the HI Service operator notifying them of the employee access required, and a return confirmation of the request is received.<br>Upon completion of the user provisioning in the HI Service, the health service will be notified of the employee's access having been granted. |
| **Circumstances** | An employee of a health service requires access to the HI Service HPOS and/or |

| | |
|---|---|
| **of Use** | telephone support channels in order to perform their duties. |
| **Quality Criteria** | None identified |

## 9.2 UC151 : Deregister User with access to HPOS/MSO

| | |
|---|---|
| **Actors** | Registered Officer<br>Organisation Maintenance Officer<br>PAS Administrator under delegated authority<br>Directory Service Administrator under delegated authority |
| **Overview** | Deregisters an employee (may be a contractor or a member of a service provider's organisation) of the health service, previously authorised to access the HI Service HPOS and telephone support channels, with the HI Service operator.<br>This use case leverages functionality in UC48 : Send Medicare Service Request, in the Victorian IHI Integration Functional Design, to automate the process.<br>This use case may be implemented in a number of systems, including the PAS or a user provisioning system, or a directory service implementation, such as Microsoft Active Directory.<br>As the user deregistration is via a service request, if the implementing organisation has a service request management application (perhaps as part of a service desk), then the service request preparation component may be implemented in this application. |
| **Pre Condition** | A health service employee, who is currently provisioned with access to the HI Service HPOS and telephone support channels, no longer requires access.<br>The RO or OMO has approved the removal of the employee's access to the HI Service HPOS and/or telephone support channels. |
| **Process** | 1. The employee, the health service department in which they worked, HR or the health service security group notify the RO or OMO that the employee no longer requires access to the HPOS and telephone support channels.<br>2. The RO or OMO authorise removal of the employee's access to the HPOS and telephone support channels.<br>3. The RO or OMO, or a delegate (?), completes a service request for the HI Service operator, asking that the employee's access be revoked.<br>4. The system sends the request to the HI Service. |
| **Post Condition** | A service request is sent to the HI Service operator notifying them of the employee access revocation, and a return confirmation of the request is received.<br>Subsequently, a notification of the employee's access revocation will be sent to the health service. |
| **Circumstances of Use** | An employee of a health service no longer requires access to the HI Service HPOS and/or telephone support channels, due to:<br>1. The employee's role has changed and they no longer require this type of access.<br>2. The employee has left the organisation. |

| | |
|---|---|
| | |
| **Quality Criteria** | None identified |

## 9.3 UC152 : Maintain Organisation Credentials

| | |
|---|---|
| **Actors** | Registered Officer<br>Organisation Maintenance Officer<br>Technical/security support specialist |
| **Overview** | This use case focuses exclusively on maintaining the currency of the organisation's information and PKI certificate or certificates, as these play an important role in enabling communications with the HI Service. |
| **Pre Condition** | The organisation has a seed HPI-O and may have networked HPI-O's.<br>A new organisational PKI certificate is required or an existing one requires replacement. |
| **Process** | 1. The RO or OMO identify that a new or replacement organisational PKI digital certificate is required. This must include a certificate that supports TLS.<br>2. The RO or OMO requests an update to their organisational certificate(s) through the appropriate mechanism (? NASH service operator).<br>3. The RO or OMO download the PKI digiital certificate(s) (organisations are provided with soft certificates).<br>4. The RO or OMO provide the soft cert to their technical implementers for deployment.<br>5. The technical implementers deploy the soft cert into the required environments. |
| **Post Condition** | A new organisational PKI certificate is requested, obtained, tested and deployed into the relevant infrastructure. |
| **Circumstances of Use** | Whenever:<br>1. An existing organisational PKI certificate is nearing expiry;<br>2. A new organisational PKI certificate is required (eg a new networked organisation).<br>3. Whenever the organisation changes its (HI Service) registered details. |
| **Quality Criteria** | Will occur extremely rarely, with a certificate refresh required every 3 to 5 years. |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1520 | Any change to an organisational seed PKI certificate means that all certificates for networked organisations must also be changed. |
| RU1521 | Once a new organisational PKI certificate is created, the old certificate will be expired. |

# 10. Reporting use cases

## 10.1 UC160 : Queue Monitoring

| | |
|---|---|
| **Actors** | The HSIE<br>HSIE Administrator |
| **Overview** | This use case is optional, and provides the ability to analyse all web services based transactions with the HI Service.<br>Queue monitoring serves a number of ends, including exception reporting, volumetric reporting, and HI Service response reporting.<br>Multiple levels of monitoring should be enabled, with exceptions and transaction logs maintained at all times. Response time monitoring should be disabled by default, with either a scheduler based activation, or a user controlled activation (15 minutes minimum).<br>Response time monitoring may be activated for any combination of queues, including all of them.<br>Queue monitoring should only be implemented if the impact on performance of the system can be managed and if there is a reason for the monitoring. |
| **Pre Condition** | The system that implements the web services interfaces to the HI Service has an integrated monitoring capability, or the monitoring capability has been constructed specifically. A scheduler is available for use.<br>Storage for logs has been allocated.<br>System performance impacts have been evaluated prior to activation of any complex monitoring components. |
| **Process** | 1. The user sets the monitoring configuration<br>2. The system activates queue monitoring accordingly to the monitoring configuration file:<br>i. Exception logging is always on<br>ii. Transaction logging is always on<br>iii. Response monitoring is off by default.<br>3. Monitor logs are written by the system. |
| **Post Condition** | Queue monitoring logs are available for system reporting and exception management. |
| **Circumstances of Use** | For monitoring of interfaces to the HI Service. |
| **Quality Criteria** | Queue monitoring must not have a significant adverse impact on the performance or behaviour of the system. |

## 10.2 UC161 : Queue Log Data ETL

| | |
|---|---|
| **Actors** | The HSIE<br>HSIE Administrator |
| **Overview** | This use case involves extracting data from the queue monitoring logs and loading it into a RDBMS, to enable a comprehensive reporting solution, and minimise any impacts on the logging process.<br>This process should be fully automated within the system, and may be triggered |

| | |
|---|---|
| | through the scheduler. |
| **Pre Condition** | Data exists in one or more queue monitoring logs.<br>A queue reporting database has been created.<br>Any required data selection and transformation processes have been implemented. |
| **Process** | 1. The ETL process is triggered by the scheduler or by a user<br>2. The system identifies the first queue monitor log to process and extracts data not previously copied to the reporting database<br>3. Data transformation is applied as required<br>4. The data is loaded into the queue reporting database<br>5. The system processes all remaining logs, following a process equivalent to the above.<br>6. The ETL process closes. |
| **Post Condition** | Queue monitor data is loaded into the reporting database and available for users to report upon. |
| **Circumstances of Use** | Whenever it is necessary to load data from the monitor logs into the reporting database. |
| **Quality Criteria** | Transferring queue log data between systems must not have a significant adverse impact on the performance or behaviour of the system. |

## 10.3 UC162 : Queue Analysis Report

| | |
|---|---|
| **Actors** | HSIE Administrator<br>System Administrator |
| **Overview** | The queue analysis report generates reports based upon the logs captured by the system monitor function, in a summary format, ie counts. The user filters the reporting data using search criteria, such as:<br>• Start Time<br>• End time<br>• Log type (exception, transaction volume, queue size, response time, etc)<br>• Queue name<br>• Type of report<br>The reports may be viewed and printed. |
| **Pre Condition** | Queue monitoring has been activated for a period and data is stored in the logs.<br>The user has selected to view a report. |
| **Process** | See below |
| **Post Condition** | The user has viewed the report and optionally printed it. |
| **Circumstances of Use** | On a regular basis as part of standard system monitoring and reporting practice.<br>Periodically, or as required, to report on HI Service response times and outages.<br>To assist in exception resolution and other systems management tasks. |
| **Quality Criteria** | None identified |

**BASIC FLOW:**

| # | Description | Requirement/ Include |
|---|---|---|
| 1 | The user selects the type of report that they wish to view. | |
| 2 | The user enters data selection criteria and selects to proceed. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 1: The system determines that there is no data matching the search criteria for the report type. **[Goal:** Respond with "No data found" error.**]** | 1 |

| | | |
|---|---|---|
| 3 | The system displays the report to the user, who may optionally print the report. | |

## 10.4 UC163 : Queue Detail Report

| | |
|---|---|
| **Actors** | HSIE Administrator<br>System Administrator |
| **Overview** | The queue detail report generates reports based upon the logs captured by the system monitor function, in a list format with a row in the logs being rendered as a row in the report. This is a supplementary reporting function to the standard log viewer.<br>The user filters the reporting data using search criteria, such as:<br>• Start Time<br>• End time<br>• Log type (exception, transaction volume, queue size, response time, etc)<br>• Queue name<br>• Type of report<br>The reports may be viewed and printed. |
| **Pre Condition** | Queue monitoring has been activated for a period and data is stored in the logs.<br>The user has selected to view a report. |
| **Process** | See below |
| **Post Condition** | The user has viewed the report and optionally printed it. |
| **Circumstances of Use** | On a regular basis as part of standard system monitoring and reporting practice.<br>Periodically, or as required, to report on HI Service response times and outages.<br>To assist in exception resolution and other systems management tasks. |

| | |
|---|---|
| **Quality Criteria** | None identified |

**BASIC FLOW:**

| # | Description | Requirement/ Include |
|---|---|---|
| **1** | The user selects the type of report that they wish to view. | |
| **2** | The user enters data selection criteria and selects to proceed. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 1: The system determines that there is no data matching the search criteria for the report type. **[Goal:** Respond with "No data found" error.**]** | 1 |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 2: The system determines that there are more than 200 rows that meet the selection criteria for the report type. **[Goal:** Respond with "Please confirm that you wish to proceed?" dialog box.**]** | 3 |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 3: The system determines that there are more than 1000 rows that meet the selection criteria for the report type. **[Goal:** Respond with "Please refine your search" error.**]** | 1 |

| | | |
|---|---|---|
| 3 | The system displays the report to the user, who may optionally print the report. | |

## 10.5 UC164 : Queue Trend Report

| | |
|---|---|
| **Actors** | HSIE Administrator |
| **Overview** | The use case represents a special instance of the Queue Analysis report use case above, in which a trend analysis is performed for the criteria entered.<br>Analyses that may be built into the report includes:<br>• Traffic volumes over time, by queue type<br>• Exception rates over time, by queue type<br>• Response time trends, where data is available<br>• Outage / non-availability hours over time. |

| | |
|---|---|
| | This will assist in capacity planning, and may be of relevance when reporting on adoption of the national e-health core services. |
| **Pre Condition** | Queue monitoring has been activated for a period and data is stored in the logs.<br>The user has selected to view a trend report. |
| **Process** | See below. |
| **Post Condition** | The user has viewed the report and optionally printed it. |
| **Circumstances of Use** | On a regular basis as part of standard system monitoring and reporting practice.<br>Periodically, or as required, to report on trends for HI Service calls.<br>To assist in capacity planning, HI Service adoption reporting, and other tasks. |
| **Quality Criteria** | None identified. |

**BASIC FLOW:**

| # | Description | Requirement/ Include |
|---|---|---|
| **1** | The user selects the type of trend report that they wish to view. | |
| **2** | The user enters data selection criteria and trend intervals and selects to proceed. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 1: The system determines that there is insufficient or no data matching the search criteria for the report type. **[Goal:** Respond with "Insufficient data available for trend report" error.**]** | 1 |

| | | |
|---|---|---|
| **3** | The system displays the report to the user, who may optionally print the report. | |

# 10.6 UC165 : Patient IHI List Report

| | |
|---|---|
| **Actors** | PAS User<br>PAS Clerk<br>PAS Administrator<br>System Administrator |
| **Overview** | This use case supplements the reporting functions available in the IHI Integration Functional Design, by providing a list based reporting facility.<br>This will assist in patient data problem analysis, determining required data management activities, and general reporting. |

| | |
|---|---|
| | Reports available include:<br>• Patient IHI Reports<br>i. Patients with the same IHI<br>ii. Patients with an Unverified IHI<br>iii. Patients with a Provisional IHI<br>iv. Patients with an Deceased IHI<br>v. Patients with an Expired IHI<br>vi. Patients with a Retired IHI<br>vii. Patients with a Medicare/DVA number, but without an IHI<br>viii. Patients without a Medicare/DVA number, and without an IHI<br>ix. Patients with Verified IHIs, but without Medicare/DVA entitlement<br>• Multiple patient records that satisfy the same IHI Search criteria (for all 3 levels of IHI Search)<br>• Patient Scheduling Reports<br>i. Patients without an IHI attending in the next period<br>ii. Patients with a Provisional IHI attending in the next period<br>iii. Patients with an Unverified IHI attending in the next period<br>iv. Patients with Deceased, Expired or Retired IHI attending in the next period<br>• Patient Attendance Reports<br>i. Patients without an IHI who attended in the previous period<br>ii. Patients with a Provisional IHI who attended in the previous period<br>iii. Patients with an Unverified IHI who attended in the previous period<br>iv. Patients with Deceased, Expired or Retired IHIs who attended in the previous period<br>• Patient Waiting List Reports<br>i. Patients on a waiting list without an IHI<br>ii. Patients on a waiting list with a Provisional IHI<br>iii. Patients on a waiting list with an Unverified IHI<br>iv. Patients on a waiting list with Deceased, Expired or Retired IHIs<br>• Incoming Service Request IHI Reporting<br>i. Patients referred without an IHI<br>ii. Patients referred with a Verified IHI<br>iii. Patients referred with an Unverified IHI<br>iv. Patients referred with a Provisional IHI<br>v. Patients referred with a Deceased, Retired or Expired IHI<br>vi. Patients referred with an IHI but with insufficient data to check the IHI<br>• Outgoing Service Request IHI Reporting<br>i. Patients referred on / discharged without an IHI<br>ii. Patients referred on / discharged with a Verified IHI<br>iii. Patients referred on / discharged with an Unverified IHI |

| | |
|---|---|
| | iv. Patients referred on / discharged with a Provisional IHI<br>v. Patients referred on / discharged with a Deceased, Retired or Expired IHI |
| **Pre Condition** | Patient data exists in the system, and includes the ability to store IHI number, IHI Record Status and IHI Status information. |
| **Process** | 1. The user selects the type of report that they wish to view.<br>2. The user enters data selection criteria<br>3. The system displays the report<br>4. The user may optionally print the report. |
| **Post Condition** | The report is displayed and optionally printed |
| **Circumstances of Use** | As selected by the user. |
| **Quality Criteria** | User level reporting must not have an significant adverse impact on the performance or behaviour of the system. |

**BASIC FLOW:**

| # | Description | Requirement/ Include |
|---|---|---|
| **1** | The user selects the type of report that they wish to view. | |
| **2** | The user enters data selection criteria and selects to proceed. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 1: The system determines that there is no data matching the search criteria for the report type. **[Goal:** Respond with "No data found" error.**]** | 1 |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 2: The system determines that there are more than 200 rows that meet the selection criteria for the report type. **[Goal:** Respond with "Please confirm that you wish to proceed?" dialog box.**]** | 3 |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 3: The system determines that there are more than 1000 rows that meet the selection criteria for the report type. **[Goal:** Respond with "Please refine your search" error.**]** | 1 |

| | | |
|---|---|---|
| **3** | The system displays the report to the user, who may optionally print the report. | |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1650 | Patient data displayed to the user should minimally include:<br>• Patient's URN<br>• Patient's name<br>• Patient's address<br>• Patient's telephone<br>• Patient's Medicare Number<br>• Patient last presentation date<br>• Patient next presentation date<br>• Patient's status (referred, waiting list, appointment scheduled, in care, |

| ID | Business Rule |
|---|---|
| | admitted)<br>• Patient IHI<br>• Patient IHI Record Status<br>• Patient IHI Status<br>• Patient IHI Last Checked Date<br>• Referring / Managing practitioner<br>• Referring / Managing practitioner's telephone |

# 11. Service Request Management Use cases

This section focuses on tools to be used within a health service to support management of all service requests made to the HI Service operator.

Note that service requests will be raised automatically by the systems, and are also available to assist in exception resolution.

Where the organisation has a separate service request management application (ITIL based), or an equivalent, this system should be used to manage all service requests. In this case, the system raising the service requests will be required to interface to the service requests management application.

## 11.1 UC170 : Maintain Service Requests

| | |
|---|---|
| **Actors** | PAS User<br>PAS Administrator<br>Registered Officer (or delegate)<br>Organisational Management Officer (or delegate) |
| **Overview** | The Maintain Service Requests use case provides authorised users with the ability to review and update all service requests made to the HI Service operator.<br>The use case provides the user with the ability to:<br>• Search for a service request and select it from a list<br>• Review the service request detail<br>• Update selected service request information, such as the activity record<br>• Record a response to a service request<br>• Close the service request.<br>The user may search for a service request by:<br>• Service Request Type<br>• Exception type, where the service request is Exception focussed<br>• Service Request Status<br>• Service Request date<br>• Service request response overdue<br>• Raised by (person / userid).<br><br>Service requests to the HI Service operator may take a number of forms, including a notification of Replica or Duplicate (separate HI Service functions), or a generic service request for:<br>• User access to the HPOS or telephone support channels<br>• User access revocation for the HPOS or telephone support channels<br>• Assistance in locating an IHI for a patient<br>• Assistance in resolving data anomalies or Exceptions as defined within the Victorian IHI Functional Design.<br>• Notification of a local patient record merge<br>o Notification of two Unverified IHIs that refer to the same person<br>o For records one or both of which have an IHI Status of Expired or Retired<br>• Notification of possibly incorrect patient data held in the HI Service<br>• Notification of HI Service errors / exceptions / periods of unavailability |

| | |
|---|---|
| **Pre Condition** | Service requests to the HI Service Operator have been recorded in the system. |
| **Process** | See below |
| **Post Condition** | The user has completed their service request management tasks. |
| **Circumstances of Use** | On a regular basis as part of standard service request management practice. |
| **Quality Criteria** | None identified. |

**BASIC FLOW:**

| # | Description | Requirement/ Include |
|---|---|---|
| **1** | The user enters service request selection criteria, and selects to proceed. | |
| **2** | The user enters data selection criteria and selects to proceed. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 1: The system determines that there is no data matching the search criteria. **[Goal:** Respond with "No data found" error.**]** | 1 |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 2: The system determines that there are more than 200 rows that meet the selection criteria. **[Goal:** Respond with "Please confirm that you wish to proceed?" dialog box.**]** | 3 |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 3: The system determines that there are more than 1000 rows that meet the selection criteria for the report type. **[Goal:** Respond with "Please refine your search" error.**]** | 1 |

| | | |
|---|---|---|
| **3** | The system displays the records that satisfy the search criteria to the user. | |
| **4** | The user selects a service request to view / update, and the systems displays the service request detail screen, populated with the applicable data. | |
| **5** | The user may update the service request, add an action to the service request, or record closure / resolution of the service request. | |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1700 | Allowed Service Requests statuses include Raised, Pending, Rejected and Closed. |
| RU1701 | A service request acknowledged and accepted by by the HI Service Operator will be automatically updated to a Pending state. |
| RU1702 | A service request rejected by the HI Service operator will be automatically updated to a Rejected state. |
| RU1703 | Follow up actions with respect to each service request should be recorded within the system. |
| RU1704 | Service request responses must be recorded against the original service request. |
| RU1705 | Service requests may only be closed through a user action. |

## 11.2 UC171 : Generate Service Request Report

| | |
|---|---|
| **Actors** | PAS User<br>PAS Administrator<br>Registered Officer (or delegate)<br>Organisational Management Officer (or delegate) |
| **Overview** | The service request report generates a list of service requests that have been submitted to the HI Service operator.<br>The user filters the reporting data using search criteria, such as:<br>• Service Request Type<br>• Exception Type, where relevant<br>• Service Request Status<br>• Service Request date<br>• Overdue service requests<br>• Raised by (name / userid)<br>The report may be viewed and printed. |
| **Pre Condition** | Service requests to the HI Service Operator have been recorded in the system. |
| **Process** | See below |
| **Post Condition** | The user has viewed the report and optionally printed it. |
| **Circumstances of Use** | On a regular basis as part of standard service request management practice. |
| **Quality Criteria** | Will be used infrequently, eg fortnightly or monthly, and by a limited number of users. |

**BASIC FLOW:**

| # | Description | Requirement/ Include |
|---|---|---|
| **1** | The user selects the type of report that they wish to view. | |
| **2** | The user enters data selection criteria and selects to proceed. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 1: The system determines that there is no data matching the search criteria for the report type. **[Goal:** Respond with “No data found” error.**]** | 1 |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 2: The system determines that there are more than 200 rows that meet the selection criteria for the report type. **[Goal:** Respond with “Please confirm that you wish to proceed?” dialog box.**]** | 3 |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 3: The system determines that there are more than 1000 rows that meet the selection criteria for the report type. **[Goal:** Respond with “Please refine your search” error.**]** | 1 |

| | | |
|---|---|---|
| **3** | The system displays the report to the user, who may optionally print the report. | |

# 12. Data Management Use cases

This section focuses largely on data archival processes, with one use case that support the management of service requests to the HI Service Operator.

The reason for including these use cases is that audit requirements specified within the Healthcare Identifiers Act 2010, and the supporting regulations, may result in health services being required to retain audit and other logs for extended periods (eg 50+ years). While compliance with the legislation must be maintained, the audit data does not all have to be immediately visible to a user.

## 12.1 UC180 : Archive Audit Data

| | |
|---|---|
| **Actors** | The PAS<br>PAS Administrator<br>The HSIE<br>HSIE Administrator<br>System Administrator |
| **Overview** | This use case describes the process and rules for archiving audit type data that relates to HI Service calls and IHI processing, including:<br>1. Message logs for calls to and responses from the HI Service<br>2. IHI historical records<br>3. IHI Exceptions and resolutions<br>4. Internal (HL7) messages related to IHI management.<br>5. IHI Service Requests<br><br>This use case This use case does not cover the deletion of audit data. |
| **Pre Condition** | HI Service and IHI related audit and similar data exists within one or more systems. |
| **Process** | See below. |
| **Post Condition** | HI Service and IHI related audit, exception, history and other data is moved from the source system to an archive, based on established data archival business rules. |
| **Circumstances of Use** | For periodic and scheduled data archiving. |
| **Quality criteria** | This use case will occur infrequently, but on a scheduled basis eg monthly. |

**BASIC FLOW:**

| # | Description | Requirement/ Include |
|---|---|---|
| **1** | The user or the system (via the scheduler) initiates the IHI audit data archival process. | |
| **2** | The System examines the audit data and identifies data to be archived. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 1: The system determines that no audit data requiring archival exists. **[Goal:** Terminate process**]** | 5 |

| | |
|---|---|
| **3** | The system extracts the audit data for archival. |
| **4** | The system writes the audit data to the archive data store |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 2: The writing of audit data to the archive data store fails. [Goal: Raise "Archive data write error" error and terminate processing] | 5 |

| | |
|---|---|
| **4** | The System deletes data extracted in step 3 from the source system. |
| **5** | The System writes the audit data archive log. |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1800 | IHI History data must not be archived while the patient is a "current patient". |
| RU1801 | Exception data must not be archived while the exception is outstanding, in a pending state, or while the patient is a "current patient". |
| RU1802 | Archived data must remain fully resolvable, ie the patient concerned should be identifiable, and the user requesting information from the HI Service should be identifiable. |
| RU1803 | For an employee authorised to interact with the HI Service to obtain and manage patient IHIs, the HI Service and IHI related audit logs must be retained for at least 7 years following the resignation of the employee from the health service. |
| RU1804 | Normal statute of limitations on patient record data retention applies. |
| RU1805 | Data archived should be indexed on, and searchable by, transaction/record date, user, and patient URN/IHI/name at a minimum. |
| | |

## 12.2 UC181 : Retrieve Audit Data

| | |
|---|---|
| **Actors** | PAS Administrator<br>HSIE Administrator<br>System Administrator<br>Health Information Manager |
| **Overview** | This use case describes the retrieval of data that was previously archived.<br>This may be in response to a number of circumstances, including (list is not exhaustive):<br>1. To resolve a possible anomaly with a patient record, or records<br>2. A request from the HI Service Operator.<br>3. An enquiry from the patient<br>4. A medico-legal matter. |
| **Pre Condition** | HI Service and IHI related audit, exception, history or other data has been archived. |
| **Process** | See below. |
| **Post Condition** | Previously archived HI Service and IHI related audit type data is available to be used in a report, or has been reloaded back into the primary system(s). |
| **Circumstances of Use** | Whenever it is necessary to check archived IHI audit data for any of the reasons provided above. |
| **Quality Criteria** | This use case will occur infrequently (current estimate is monthly), and subject to a lodged request. |

**BASIC FLOW:**

| # | Description | Requirement/ Include |
|---|---|---|
| **1** | The user initiates the data retrieval process for archived IHI audit type data. | |
| **2** | The user enters the search criteria, and a date range if applicable. | |
| **3** | The System queries the archive and assembles the data matching the entered criteria. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 1: The system determines that no data matches the criteria, and generates a message to that effect. **[Goal:** Include explicit "no data found" message on report.**]** | 4 |

| | | |
|---|---|---|
| **4** | The system displays the selected archive data to the user. | |
| **5** | The user optional selects to print the report | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 2: The user may select to reload the data into the source system(s), which requires that the data be extracted, and a job scheduled to reload the data. [Goal: Reload data into source system using UC172: Reload Archived Audit Data.] | |

**BUSINESS RULES:**

| ID | Business Rule |
|---|---|
| RU1800 | An explicit message must be provided to the user in the event that no data is found that matches the archive search criteria. This message must be able to be printed on a report. |
| | |

## 12.3 UC182 : Delete Archived Audit Data

| | |
|---|---|
| **Actors** | PAS Administrator<br>HSIE Administrator<br>System Administrator |
| **Overview** | This use case describes the process and rules for permanently deleting data from the IHI audit data archive. The types of data included in the archive are:<br>1. Message logs for calls to and responses from the HI Service<br>2. IHI historical records<br>3. IHI Exceptions and resolutions<br>4. Internal (HL7) messages related to IHI management. |
| **Pre Condition** | HI Service and IHI related audit and similar data exists within the IHI data archive. |
| **Process** | See below. |
| **Post Condition** | Selected IHI audit type data is permanently removed from the archive store. |
| **Circumstances of Use** | As a scheduled activity, or as initiated by a user. |
| **Quality Criteria** | None identified |

**BASIC FLOW:**

| # | Description | Requirement/ Include |
|---|---|---|
| **1** | The user or the system (via the scheduler) initiates the IHI audit data archival process. | |
| **2** | The System examines the audit data and identifies data to be archived. | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 1: The system determines that no audit data requiring archival exists. **[Goal:** Terminate process**]** | 5 |

| | | |
|---|---|---|
| **3** | The system extracts the audit data for archival. | |
| **4** | The system writes the audit data to the archive data store | |

**Alternate Flow(s):**

| Condition | Return Step |
|---|---|
| IE 2: The writing of audit data to the archive data store fails. [Goal: Raise "Archive data write error" error and terminate processing] | 5 |

| | | |
|---|---|---|
| **4** | The System deletes data extracted in step 3 from the source system. | |
| **5** | The System writes the audit data archive log. | |

# 13. Glossary

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

| Term | Description |
|---|---|
| IEC | International Electrotechnical Commission, an international standards body which focuses on electrical, electronic and related technologies. |
| IHI | The Individual Healthcare Identifier, which Medicare Australia allocated to every active Medicare and DVA enrolee, on the 1st July 2010. |
| IHI Record Status | There are three record statuses of IHIs:<br>• Verified<br>• Unverified<br>• Provisional |
| IHI Status | There are five IHI Statuses of IHIs:<br>• Active<br>• Deceased<br>• Retired<br>• Expired<br>• Resolved |
| IIN | Issuer Identification Number |
| IP | Inpatient |
| IRN | Individual Reference Number, used on the Medicare card to identify each individual whose name appears on the card. |
| ISO | International Standards Organisation |
| MSO | Medicare Service Operator |
| NASH | The National Authentication Service for Health (NASH) project being delivered through NEHTA will deliver the first nationwide security service to enable healthcare organisations and individuals to exchange e-health information. |
| NEHTA | National eHealth Transition Authority |
| NOK | Next of Kin |
| OID | Object Identifier |
| OMO | Organisational Maintenance Officer |
| OP | Outpatient |
| OPD | Outpatient Department |
| P&CMS | Patient and Client Management System, also abbreviated to PCMS. |
| PAS | Patient Administration System – a system used for the recording of patient and provider information to support management and coordination of service provision. Within Health*SMART* this functionality is provided by either a consolidated Patient and Client Management System (P&CMS) through the iSOFT iPM application, or Community Management System through the Trak application for stand-alone metropolitan community health centres. |
| PKI | Public Key Infrastructure |
| Referral | A referral is defined within the Australian standard as “the communication with the intention of initiating patient/client care transfer, from the provider making the referral (the originator) to the provider expected to act on the referral (the destination)."<br><br>In the context of this document a referral is used as a representative health service request or report, and the reader should consider Orders (pathology, diagnostic imaging, etc), discharge summaries, etc. |
| RO | Responsible Officer |
| SLA | Service Level Agreement, a contractual agreement that defines the required levels of services required from a vendor/supplier. For example, a common SLA |

| Term | Description |
|---|---|
| | may define that the system be available 98% of the time, and 100% of the time during working hours. |
| TDS | Trusted Data Source, which refers to Medicare Australia and the Commonwealth Department of Veterans' Affairs in the initial allocation of IHIs within the HI Service.<br><br>In the context of the IHI Pre-Implementation project, an organisation participating in e-health messaging, who has met the compliance/accreditation criteria, is also referred to as a trusted data source. |
| UC | Use case, part of the UML standard used to document tasks or business process steps. |
| UML | Unified Modelling Language. An international standard for documenting the design of an application. |
| URN | Unit Record Number |
| VPHS | Victorian Public Healthcare Sector |