



**HIPS UI Release 1.0.0**

**Assisted Registration**

**PCEHR Web Viewer Web Design Specification**

17 February 2014

Approved for external use

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# Document Information

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## Document Version History

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Version	Date	Release comments
1.0.0	17 February 2014	Updates for Release 1.0.0

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# 1. Introduction

## 1.1 Context

Assisted Registration is a nationally funded NEHTA PCEHR project. The solution will interface with the Enterprise Service Bus (ESB) or other clinical systems to allow the fast and easy registration of patients to the PCEHR.

## 1.2 Purpose

This document will:

- Specify and agree the requirements for the HIPS-UI capabilities required to support the "PCEHR Web Viewer" feature of the HIPS Assisted Registration project, specifically with regard to the Web components of the HIPS-UI product (referred to as HIPS-UI Web).
- Capture the high-level functional and technical design anticipated to realise these requirements.

## 1.3 Scope

The web application will allow some customisation of functionality and style to occur within the implementation or hospital that it is installed in. The security of the web application is not dictated by the application but will work with any form of security allowed within Internet Information Server (IIS). Whilst some default security mechanisms will be defined as part of the release it will be the responsibility of the implementers to select, install and test the final security system in each implementation/hospital.

The web application will be created based on the following:

- Provide the ability to register adults (over 14 years of age) and dependants (under 18 years of age) with the PCEHR. Individuals between 14 and 18 may be registered as an adult or a dependant.
- Allow all or a selection of Identity Verification Methods to be used.
- Provide a list of patients with an IHI but without a PCEHR by retrieving this information from HIPS. Or provide a list of patients with an IHI but without a PCEHR by retrieving this information from an external system based on the same protocol defined by the HIPS patient list. When using a list from an external system it must contain a recently verified IHI.
- Optionally allow a person's demographics to be entered and validated instead of selecting a patient from a list.
- Must follow national best practice for collection of patient information including Indigenous Status.
- Allow the use of standard security systems that can be integrated with IIS. For example this could be Active Directory through Windows Authentication or using the ASP.Net membership provider security system provided by Microsoft.
- Must meet all CCA mandatory tests.

## 1.4 Related Resources

ID	Document	Description
RR-1	NEHTA Assisted Registration Requirements 1.0	Defines high-level project scope, deliverables and schedule.
RR-2	Clinical Information Systems	Lists the amendments to the Use Cases document for Clinical Information Systems

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	Connecting to the PCEHR System Use Cases v1.1 Amendment 1: Assisted Registration	connecting to the PCEHR System, version 1.1, 6 September 2012 to cover assisted registration of an eHealth record for an adult and child.
RR-3	Clinical Information Systems Connecting to the PCEHR System Conformance Requirements v1.5 Amendment 1: Assisted Registration	Lists the amendments to the Conformance Requirement document for Clinical Information Systems Connecting to the PCEHR System, version 1.5, 6 September 2012 to cover assisted registration of an eHealth record for an adult and child.

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## 2. Requirements

### 2.1 Functional Requirements

#### 2.1.1 In Scope

The HIPS-UI Web product will be extended with the following capabilities as part of the implementation of the Assisted Registration feature provided by the HIPS Assisted Registration project.

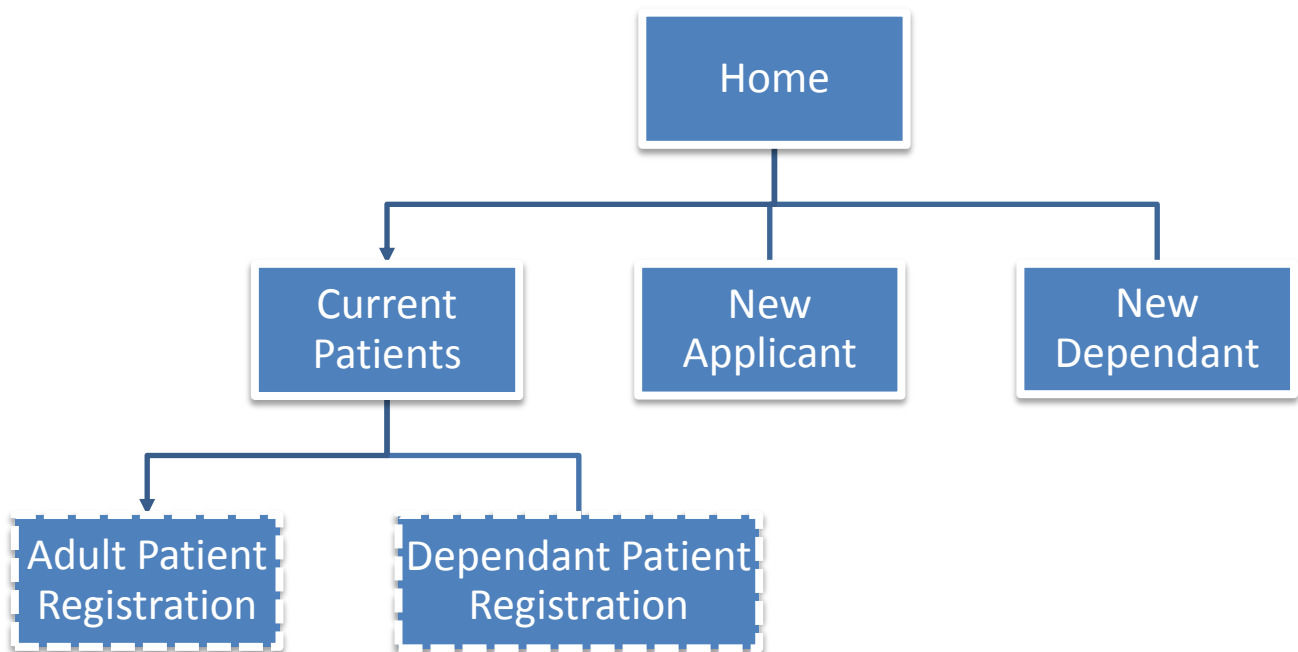
ID	Description
FR-1	<b>"Current Patients"</b> Accessed from the "Assisted Registration" menu item. Provides a searchable list of patients with an IHI who are currently resident in hospital. Allows selection of a patient to register.
FR-2	<b>"Adult Patient Registration"</b> Accessed from the "Current Patient" screen for all patients over 14 years of age. Allows registration of a patient after collection of additional information from the patient.
FR-3	<b>"Dependant Patient Registration"</b> Accessed from the "Current Patient" screen for all patients under 18 years of age. Allows registration of a patient after collection of additional information from the patient's authorised representative. The authorised representative must have parental responsibility for the dependant and must appear on the same Medicare card.
FR-3	<b>"New Applicant"</b> Accessed from the "Assisted Registration" menu item. Allows registration of an applicant, who is over 14 years of age and is not a current inpatient, after collection of additional information from the applicant.
FR-4	<b>"New Dependant"</b> Accessed from the "Assisted Registration" menu item. Allows registration of a dependant, who is under 18 years of age and is not a current inpatient, after collection of additional information from the dependant's authorised representative. The authorised representative must have parental responsibility for the dependant and must appear on the same Medicare card.

### 3. Design

#### 3.1 Functional Design

##### 3.1.1 Navigation Workflow

The diagram below illustrates the navigation workflow between the screens implemented as part of the Assisted Registration feature of HIPS-UI.

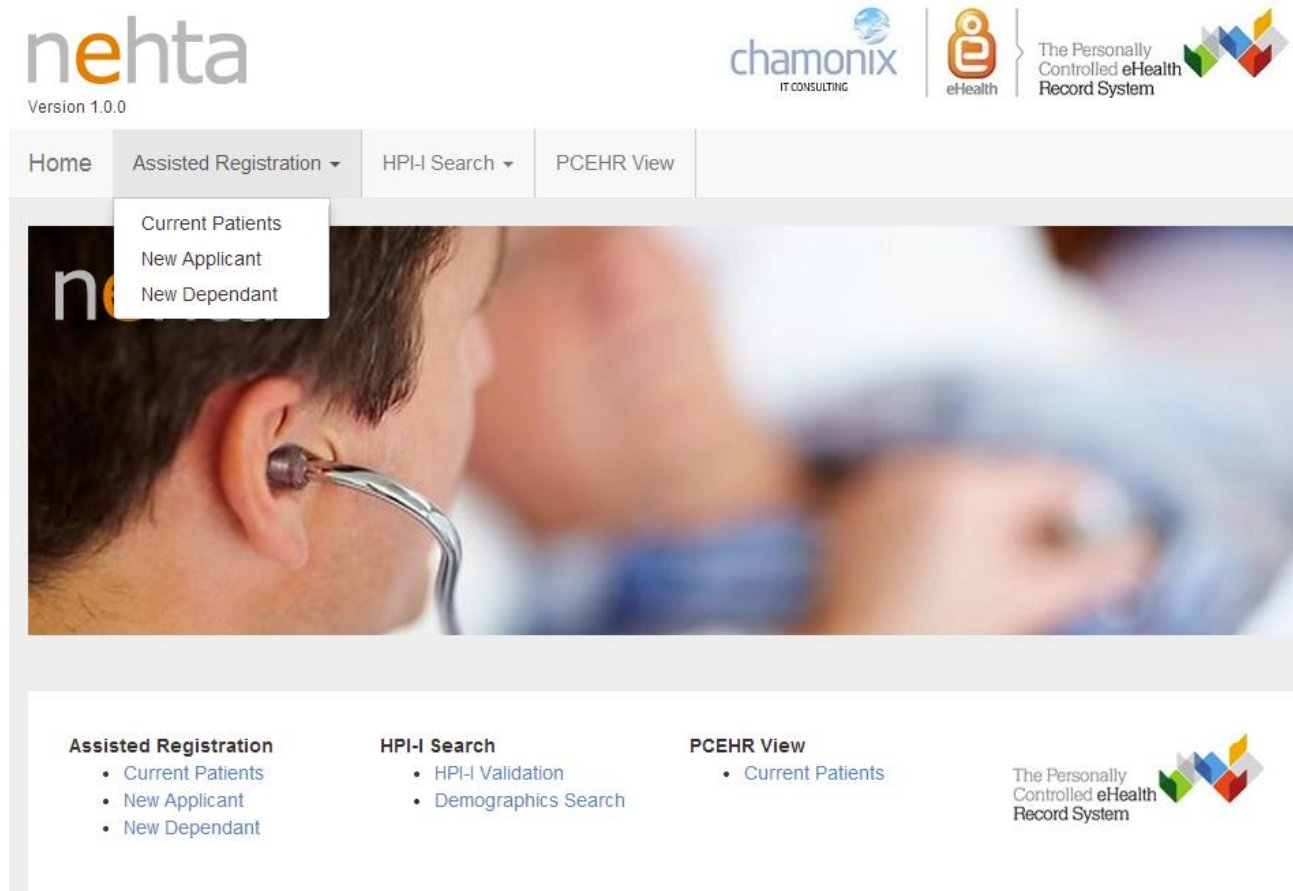


Each of these screens is described further in the sections that follow.



### 3.1.2 Home

The “Home” screen is the entry point into the HIPS-UI Web product. It provides an “Assisted Registration” menu item to access the Assisted Registration features.



### 3.1.3 Current Patient List

The annotated image below illustrates the functional design for the "Current Patients" screen accessed via the "Assisted Registration" menu item on the "Home" screen.

**Patients without a PCEHR**

Title to be "Patients without a PCEHR".

**Hospital**

Royal Chamonix Hospital

Filter to select hospital facility.















**Search** Type to search...

Filtering based on partial match of contents of any text-based column in results.

Sorting of results (ascending and descending). Default sort: Name

Results to display: Name, Date of Birth, Location (Ward : Room : Bed), IHI (groups of 4 digits)

Results contain patients who have an active verified IHI but do not have a PCEHR.

Name	Date of Birth	Location	IHI	Actions
BARR, Augustus	18/04/1998	TestWard2::	8003 6085 0004 3112	 
BATES, Layla	13/02/1968	TestWard1::	8003 6085 0004 2858	
BLACKWELL, Heather	19/05/1998	TestWard1::	8003 6083 3337 6531	 
COOK, Cilly	26/02/1997	TestWard1::	8003 6083 3337 6366	 
HAMPTON, Rick	21/12/1963	TestWard1::	8003 6083 3337 6309	
HARDY, Lindsay	27/02/1994	TestWard2::	8003 6086 6670 8979	
HINTON, Glynn	21/04/1993	TestWard2::	8003 6081 6670 8636	
MONTGOMERY, Alex	14/04/2006	TestWard1::	8003 6083 3337 6739	 
PARKER, Winola	18/10/2004	W1:R3:B4	8003 6045 6877 7139	 
Name	Date of Birth	Location	IHI	Actions

"Register" button displays "Adult Patient Registration" screen for selected patient.

"Register as Dependant" button displays "Dependant Patient Registration" screen for selected patient.

Paging of results. Page size: 10.

Showing 1 to 9 of 9 entries

First Previous 1 Next Last

### 3.1.4 Adult Patient Registration

The annotated image below illustrates the functional design for the “Adult Patient Registration” screen accessed via the “Register” button on the “Current Patients” screen for a selected patient.

**Title to be “PCEHR Assisted Registration”.**

**Display the name of the currently selected Hospital.**

**Displays the selected patient’s details: Name, sex, date of birth, Medicare card number or DVA File Number.**

**Allows selection of which information will be accessible in the PCEHR.**

**Allows selection of the identity verification method used.**

**Allow selection of the indigenous status of the patient.**

**PCEHR Assisted Registration**

**Registering Hospital**  
Hospital  
Flinders Medical Centre

**Applicant's Details**

**Family Name \***  
BATES

**Given Name \***  
Layla

**Sex**  
Female

**Date of Birth \***  
13/02/1968

**Medicare Card Number**  
2950724051

**Is the individual of Aboriginal or Torres Strait Islander origin? \***

- ☐ No
- ☐ Yes, Aboriginal
- ☐ Yes, Torres Strait Islander
- ☐ Yes, Aboriginal and Torres Strait Islander
- ☐ Not Stated

**Accessing Medicare Information via PCEHR (Optional)**

Medicare information will not be accessible via the PCEHR, **UNLESS** the individual chooses the following:

☐ All Medicare Information will be available

**OR**, only the following types of Medicare information which the individual nominates will be accessible via the PCEHR:

- ☐ Medicare Benefits Schedule (MBS)
  - ☐ AND details of any past claims for Medicare Benefits
- ☐ Pharmaceutical Benefits Scheme (PBS)
  - ☐ AND details of any past claims for Pharmaceutical
- ☐ Australian Organ Donor Register (AODR)
- ☐ Australian Childhood Immunisation Register (ACIR)

**Application Form and Assertions**

**Identity Verification Method \***

Please Select... ▼

## Identity Verification Code Delivery

To access the individual's eHealth record online, the individual will need an Identity Verification Code (IVC). No IVC will be issued during registration UNLESS the individual chooses ONE of the following options to select their preferred method for receiving the IVC. The user/operator is responsible for ensuring the accuracy of IVC delivery address submitted via the application.

Allows the entry of the IVC code delivery method for the patient.

☐ Display the IVC

☐ Send the IVC by SMS to:

☐ Send the IVC by Email to:

☐ Do not retrieve the IVC

Collection of the patient's acceptance of the terms and conditions.

## Apply to Register

- ☐ The individual declares that the information in this application is correct and any supporting evidence submitted by the individual is correct. The individual consents to records containing their health information being uploaded to the eHealth record system by registered healthcare provider organisations involved in the individual's care, subject to any express advice the individual gives to their healthcare providers not to upload a particular record, a specified class of records, or any records.

Send the PCEHR registration to HIPS for processing.

**Submit Application**

### 3.1.5 Dependant Patient Registration

The annotated image below illustrates the functional design for the “Dependant Patient Registration” screen accessed via the “Register as Dependant” button on the “Current Patients” screen for a selected patient.

The image shows a web form titled "PCEHR Assisted Registration (Dependant)". The form is divided into several sections: "Registering Hospital", "Applicant's Details", "Parent or Legal Guardian Representative", and "Medicare Card Number". Annotations in yellow boxes provide additional context for the form fields.

**Title to be "PCEHR Assisted Registration (Dependant)".**

**Registering Hospital**

**Hospital**  
Royal Chamonix Hospital

**Applicant's Details**

**Family Name \***  
BARR

**Given Name \***  
Augustus

**Sex**  
Male

**Date of Birth \***  
18/04/1998

**Medicare Card Number**  
2950736481

**Is the individual of Aboriginal or Torres Strait Islander origin? \***

- ☐ No
- ☐ Yes, Aboriginal
- ☐ Yes, Torres Strait Islander
- ☐ Yes, Aboriginal and Torres Strait Islander
- ☐ Not Stated

**Parent or Legal Guardian Representative**

**Family Name \***  
Family Name

**Given Name \***  
Given Name

**Sex \***  
Please Select...

**Date of Birth \***

**Individual Identifier \***

**Medicare Card Number**

**Annotations:**

- Display the name of the currently selected Hospital.
- Display the selected patient's details: Name, sex, date of birth, Medicare card number.
- Allow selection of the indigenous status of the patient.
- Allow entry of the authorised representative's family name, given name, sex and date of birth. The representative must be at least 14 years older than the dependant.
- Allow entry of the authorised representative's Medicare card number and IRN. The Medicare card number must be the same as the dependant's.

Allow selection of which information will be accessible in the new PCEHR.

## Accessing Medicare Information via PCEHR (Optional)

Medicare information will not be accessible via the PCEHR, **UNLESS** the individual chooses the following:

☐ All Medicare Information will be available

**OR**, only the following types of Medicare information which the individual nominates will be accessible via the PCEHR:

- ☐ Medicare Benefits Schedule (MBS)
  - ☐ AND details of any past claims for Medicare Benefits
- ☐ Pharmaceutical Benefits Scheme (PBS)
  - ☐ AND details of any past claims for Pharmaceutical
- ☐ Australian Organ Donor Register (AODR)
- ☐ Australian Childhood Immunisation Register (ACIR)

Allow selection of the identity verification method used.

## Application Form and Assertions

Identity Verification Method \*

Please Select...

Allow the entry of a delivery method for an IVC that the authorised representative can use to access the dependant's PCEHR online.

## Identity Verification Code Delivery

To access the dependant's eHealth record online, the authorised representative will need an Identity Verification Code (IVC). No IVC will be issued during registration **UNLESS** the authorised representative chooses **ONE** of the following options to select their preferred method for receiving the IVC. The user/operator is responsible for ensuring the accuracy of IVC delivery address submitted via the application.

☐ Display the IVC

☐ Send the IVC by SMS to:

☐ Send the IVC by Email to:

☐ Do not retrieve the IVC

Collect the authorised representative's declaration of parental responsibility and consent for the dependant's health information to be uploaded to the PCEHR.

## Apply to Register

☐ The authorised representative declares that the information in this application is correct and any supporting evidence submitted by the authorised representative is correct.

The authorised representative declares that they have parental responsibility for the dependant and would like the System Operator to use the fact that they both appear on the same Medicare card as evidence of this relationship.

The authorised representative consents to records containing the dependant's health information being uploaded to the eHealth record system by registered healthcare provider organisations involved in the dependant's care, subject to any express advice the dependant or their authorised representatives give to their healthcare providers not to upload a particular record, a specified class of records, or any records.

Send the PCEHR registration to HIPS for processing.

Submit Application

### 3.1.6 New Applicant Registration

The annotated image below illustrates the functional design for the “New Applicant” screen accessed via the “New Applicant” button on the “Home” screen. This screen is based on the “Adult Patient Registration” screen with additional fields as required.

**☑ PCEHR Assisted Registration**

**Registering Hospital**

**Hospital \***

Please Select ▼

**Applicant's Details**

**Family Name \***

Family Name

**Given Name \***

Given Name

**Sex \***

Please Select... ▼

**Date of Birth \***

**Is the individual of Aboriginal or Torres Strait Islander origin? \***

☐ No  
☐ Yes, Aboriginal  
☐ Yes, Torres Strait Islander  
☐ Yes, Aboriginal and Torres Strait Islander  
☐ Not Stated

**Individual Identifier \***

**Medicare Card Number**

**DVA File Number**

**Accessing Medicare Information via PCEHR (Optional)**

Medicare information will not be accessible via the PCEHR, **UNLESS** the individual chooses the following:

☐ All Medicare Information will be available

**OR, only the following types of Medicare information which the individual nominates will be accessible via the PCEHR:**

☐ Medicare Benefits Schedule (MBS)  
☐ AND details of any past claims for Medicare Benefits

☐ Pharmaceutical Benefits Scheme (PBS)  
☐ AND details of any past claims for Pharmaceutical

☐ Australian Organ Donor Register (AODR)

☐ Australian Childhood Immunisation Register (ACIR)

Title to be “PCEHR Assisted Registration”.

Allows selection of the hospital where the person is being registered.

Collection of the person's details: Name, Sex, Date of Birth, Medicare Number with IRN or DVA file number.

Allow selection of the indigenous status of the person.

Allow selection of which information will be accessible in the new PCEHR.

## Application Form and Assertions

Allows selection of the identity verification method used.

### Identity Verification Method \*

Please Select...

## Identity Verification Code Delivery

To access the individual's eHealth record online, the individual will need an Identity Verification Code (IVC). No IVC will be issued during registration UNLESS the individual chooses ONE of the following options to select their preferred method for receiving the IVC. The user/operator is responsible for ensuring the accuracy of IVC delivery address submitted via the application.

Allows the entry of the IVC code delivery method for the person.

☐ Display the IVC

☐ Send the IVC by SMS to:

☐ Send the IVC by Email to:

☐ Do not retrieve the IVC

Collection of the person's acceptance of the terms and conditions and consent for their health information to be uploaded to the PCEHR.

## Apply to Register

☐ The individual declares that the information in this application is correct and any supporting evidence submitted by the individual is correct. The individual consents to records containing their health information being uploaded to the eHealth record system by registered healthcare provider organisations involved in the individual's care, subject to any express advice the individual gives to their healthcare providers not to upload a particular record, a specified class of records, or any records.

Send the PCEHR registration to HIPS for processing.

Submit Application



### 3.1.7 New Dependant Registration

The annotated image below illustrates the functional design for the “New Dependant Registration” screen accessed via the “New Dependant” button on the “Home” screen.

**Title to be “PCEHR Assisted Registration (Dependant)”.**

**Registering Hospital**

**Hospital \***

Please Select ▼

**Applicant's Details**

**Family Name \***

Family Name

**Given Name \***

Given Name

**Sex \***

Please Select... ▼

**Date of Birth \***

**Is the individual of Aboriginal or Torres Strait Islander origin? \***

- ☐ No
- ☐ Yes, Aboriginal
- ☐ Yes, Torres Strait Islander
- ☐ Yes, Aboriginal and Torres Strait Islander
- ☐ Not Stated

**Individual Identifier \***

**Medicare Card Number**

Allow entry of the dependant's Medicare card number and IRN. The Medicare card number must be the same as the authorised representative's.

**Collection of the dependant's details: Family Name, Given Name, Sex and Date of Birth.**

**Allows selection of the hospital where the person is being registered.**

**Allow selection of the indigenous status of the dependant.**

## Parent or Legal Guardian Representative

Allow entry of the authorised representative's family name, given name, sex and date of birth. The representative must be at least 14 years older than the dependant.

**Family Name \***

Family Name

**Given Name \***

Given Name

**Sex \***

Please Select...

**Date of Birth \***

**Individual Identifier \***

**Medicare Card Number**

Allow entry of the authorised representative's Medicare card number and IRN. The Medicare card number must be the same as the dependant's.

## Accessing Medicare Information via PCEHR (Optional)

Medicare information will not be accessible via the PCEHR, **UNLESS** the individual chooses the following:

Allow selection of which information will be accessible in the new PCEHR.

☐ All Medicare Information will be available

**OR**, only the following types of Medicare information which the individual nominates will be accessible via the PCEHR:

- ☐ Medicare Benefits Schedule (MBS)
  - ☐ AND details of any past claims for Medicare Benefits
- ☐ Pharmaceutical Benefits Scheme (PBS)
  - ☐ AND details of any past claims for Pharmaceutical
- ☐ Australian Organ Donor Register (AODR)
- ☐ Australian Childhood Immunisation Register (ACIR)

## Application Form and Assertions

**Identity Verification Method \***

Please Select...

Allow selection of the identity verification method used.

Allow the entry of a delivery method for an IVC that the authorised representative can use to access the dependant's PCEHR online.

## Identity Verification Code Delivery

To access the dependant's eHealth record online, the authorised representative will need an Identity Verification Code (IVC). No IVC will be issued during registration UNLESS the authorised representative chooses ONE of the following options to select their preferred method for receiving the IVC. The user/operator is responsible for ensuring the accuracy of IVC delivery address submitted via the application.

- ☐ Display the IVC
- ☐ Send the IVC by SMS to:
- ☐ Send the IVC by Email to:
- ☐ Do not retrieve the IVC

Collect the authorised representative's declaration of parental responsibility and consent for the dependant's health information to be uploaded to the PCEHR.

## Apply to Register

- ☐ The authorised representative declares that the information in this application is correct and any supporting evidence submitted by the authorised representative is correct.

The authorised representative declares that they have parental responsibility for the dependant and would like the System Operator to use the fact that they both appear on the same Medicare card as evidence of this relationship.

The authorised representative consents to records containing the dependant's health information being uploaded to the eHealth record system by registered healthcare provider organisations involved in the dependant's care, subject to any express advice the dependant or their authorised representatives give to their healthcare providers not to upload a particular record, a specified class of records, or any records.

Send the PCEHR registration to HIPS for processing.

**Submit Application**

### 3.1.8 Registration Response

For a successful response the "Registration Response" screen will display.

The screenshot shows the 'PCEHR Assisted Registration' header with a checkmark icon. Below it, the title 'PCEHR Registration Successful' is displayed. The main message states: 'The PCEHR Assisted Registration was successful. Your IVC code is **PnfQ93D** and it expires on **16/01/2014**'. Two yellow callout boxes provide additional context: one on the left says 'Confirmation of successful registration.' and one on the right says 'IVC code for the patient if requested to be displayed.'

**PCEHR Assisted Registration**

**PCEHR Registration Successful**

The PCEHR Assisted Registration was successful.  
Your IVC code is **PnfQ93D** and it expires on **16/01/2014**

Confirmation of successful registration.

IVC code for the patient if requested to be displayed.

For an unsuccessful registration an error message will display:

The screenshot shows a red error message box with the text: '• Medicare Number must be a valid Medicare Card Number.' A yellow callout box on the left says 'Displays the reason for the unsuccessful registration.'

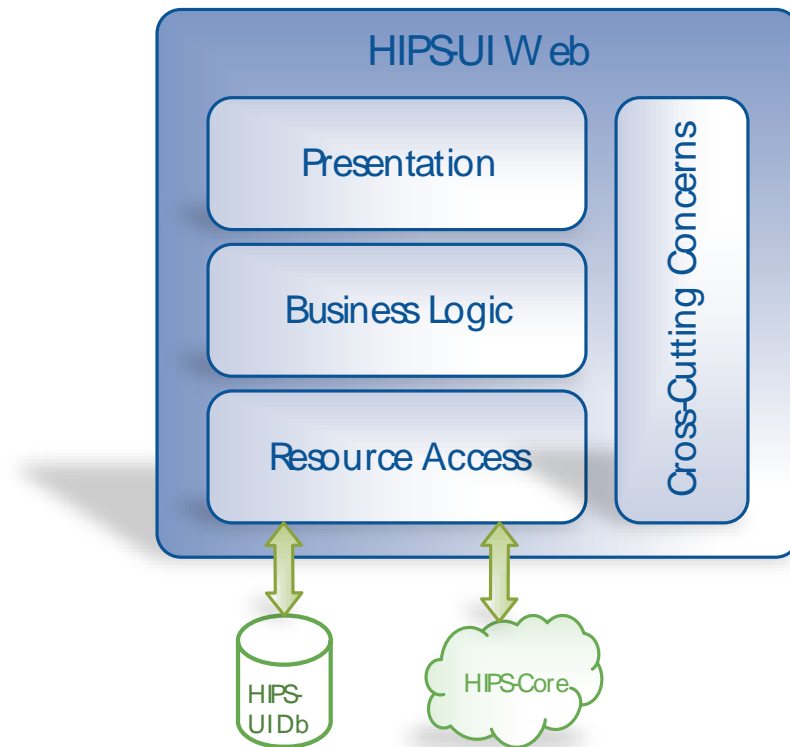
• Medicare Number must be a valid Medicare Card Number.

Displays the reason for the unsuccessful registration.

## 3.2 Technical Design

### 3.2.1 Architecture Overview

The HIPS-UI Web product is architected as a layered web application built with Microsoft technologies, illustrated below.



The layers in the application architecture are:

Layer	Description
Presentation	Provides a web browser based graphical user interface with which users of the application interact.
Business Logic	Encapsulates the business rules, validation, and business processes for the application.
Resource Access	Provides access to external resources such as databases and web services.
Cross-Cutting Concerns	Supports elements of the application architecture that are common requirements across application layers and tiers.
Resources	External resources such as databases and web services with which the application interacts.

The HIPS-UI Web product is built upon the following technology platform:

Role	Technology
<b>Core</b>	
Presentation	ASP.NET MVC 4.0 HTML 5.0 CSS 3.0 Javascript, JSON <a href="#">Bootstrap</a> <a href="#">DataTables</a> <a href="#">jQuery</a>
Business Logic	.NET Framework 4.5
Resource Access	Entity Framework 5.0 (database) WCF 4.5 (web services)
<b>Cross-Cutting Concerns</b>	
Caching	System.Runtime.Caching.MemoryCache System.Web.Caching.OutputCache
Validation	System.ComponentModel.DataAnnotations <sup>1</sup>
Object Mapping	<a href="#">AutoMapper</a>
Dependency Injection	Ninject
Unit Testing	Visual Studio Unit Test projects <a href="#">Moj</a>
Shared Logic	.NET Framework 4.5

### 3.2.2 Component Model

The layers in the HIPS-UI Web application architecture are realised by the following components (as Visual Studio projects that generate .NET assemblies):

Layer	Component / Project	Description
Presentation	HIPS.Web.UI	ASP.NET MVC project providing the web-based user interface for the application.
Business Logic	HIPS.Web.ModelInterface	Class Library project providing interfaces to resource repositories for the features provided by the application.
Business Logic	HIPS.Web.Model	Class Library project providing domain models specific to the application.
Business Logic	HIPS.Web.BusinessLogic	Class Library project providing business logic specific to the features provided by the application.
Resource Access	HIPS.Web.Data.Hips	Class Library project providing implementation of repository interfaces for interaction with the HIPS-Core web services.
Resource Access	HIPS.Web.Data.WebsiteDb	Class Library project providing

<sup>1</sup> Extend with Microsoft Enterprise Library Validation Application Block?

Layer	Component / Project	Description
		implementation of repository interfaces for interaction with the HIPS-UI database.
Cross-Cutting Concerns (Shared Logic)	HIPS.Web.Components	Class Library project providing shared logic required across application layers.