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PCEHR B2B Gateway Services

Supplementary Guidance for Implementers v1.0

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Table of contents

1 Introduction

1.1 Purpose

This document is a supplement to NEHTA's PCEHR B2B Gateway Service specifications and provides guidance on areas not covered in these specifications. It is intended to promote usability of software and greater consistency between software products.

The guidance was prepared as part of NEHTA's Clinical Usability Program (CUP) in consultation with clinicians.

1.2 Intended audience

This document is intended for vendors interfacing with the PCEHR system.

1.3 Scope

This document provides guidance on:

- Implementation of the PCEHR status indicator and 'entry point' to other PCEHR related functions.
- How to structure and format document lists drawn from the PCEHR.
- Appropriate use of the Healthcare Facility Type Code when uploading clinical documents to the PCEHR.

It does not add, modify or remove requirements from clinical document specifications or conformance profiles.

2 Locating and accessing PCEHR functions

2.1 Applicability

Applies to GP desktop systems.

2.2 Context

Clinicians have raised concerns about the ease of access to PCEHR-related functions. Some clinicians find it difficult to locate both the current PCEHR status and the mechanism to launch PCEHR functions. There are a variety of methods used by vendors in current implementations of PCEHR access. The recommendations below are intended to consolidate the disparate approaches into a more generally consistent set of functionality to better support clinicians in their use of the PCEHR system.

2.3 Recommendation

1 It is recommended that a PCEHR status indicator ("Does PCEHR Exist" function) is displayed obviously and prominently on the patient chart to provide an immediate visual indication to the user. This could be achieved via the use of words, colours and icons appropriate to the layout of the clinical system.

2 It is further recommended that there should be a single entry point to PCEHR functionality on the patient chart. This PCEHR entry point would allow navigation to PCEHR patient activities, as supported, including:

- View the PCEHR Document List.
- Create and send a Shared Health Summary.
- Create and send an Event Summary.

3 This PCEHR entry point could be implemented in various ways, including:

- In combination with the record status indicator, where clicking the indicator button navigates the user to the PCEHR window.
- A specific PCEHR drop down list of menu items corresponding to the supported PCEHR patient activities.
- A "PCEHR" tab on the patient chart from which PCEHR actions can be accessed.

This can be by direct access to the function or by navigation to a suitable screen where all functions are accessible. The ability to access PCEHR functions directly should not preclude other access points being provided in a clinical system, for example, creation of a new shared health summary from the existing letter writing module.

4 It is recommended that healthcare identifier (HI) checks and PCEHR status checks are made in the background, where possible, to ensure timely patient record open time that will be unaffected by HI and PCEHR service availability and response times. This is recommended for any web service access to prevent the user interface "locking" when services are non-responsive or slow.

3 Displaying PCEHR document lists

3.1 Applicability

Applies to GP desktop systems.

3.2 Context

In the absence of the Health Record Overview, the "getDocumentList" operation, from the *PCEHR View Service – Logical Service Specification*[1] (LSS), provides the main entry point to access information in a PCEHR. By default, when this operation is called by a software application, it returns all clinical documents in the patient's PCEHR, subject to any access controls set by the patient. In addition to the key clinical documents, such as shared health summaries, event summaries and discharge summaries, there may also be large numbers of Medicare documents and prescription and dispense records listed. Vendors have developed a variety of ways to display these document lists. The below recommendation pertains to how the document list should be presented.

3.3 Recommendation

1 It is recommended that software applications give prominence to clinical documents by filtering Medicare documents and prescription and dispense records from the default document list. However the software should give users the option to view these other records.

2 It is recommended that the following columns are displayed to clinical users:

LSS Name	Document Metadata[2]	Presented Name	Comments
Document Creation Time	XDSDocumentEntry.creationTime	Document Date	Display date (dd-mmm-yyyy preferred). Do not display time / timezone (user can get this from the document if needed)
Service Stop Time	XDSDocumentEntry.serviceStopTime	Service Date	Only display if this is on a different date to the document date (except when sorting by this column – see note below)
Document Type Display Name	XDSDocumentEntry.typeCodeDisplayName	Document	Use the PCEHR document type display name. This is a display friendly name corresponding to the clinical document type.
Authoring Organisation	XDSDocumentEntry.authorInstitution	Organisation	Organisation name only
Healthcare Facility Type Name	XDSDocumentEntry.healthcareFacilityTypeCodeDisplayName	Organisation Type	See Section 2 for further guidance on setting this code.

[1] *PCEHR View Service – Logical Service Specification* v1.3, available from https://vendors.nehta.gov.au
[2] *PCEHR Document Exchange Service Using the IHE XDS.b Platform: Technical Service Specification v1.4*, available from https://vendors.nehta.gov.au

3 In addition to these columns, the display should make it clear to the clinician whether a document has been withdrawn and/or superseded. Vendors may elect to do this through various means, such as indicating the status in an additional column or using alternative colours. Irrespective of the method used, the objective is that the document status is unambiguous. In the case of an additional column, this should only be populated if the document is withdrawn or superseded (for example, do not repeat "approved" for every document, as this results in clutter that detracts from readability).

4 There is no benefit to clinical users by displaying additional columns and additional other columns may detract from usability. Vendors may choose to provide administrator or debug views that provide additional columns to assist with troubleshooting, etc. These alternative views should not be the default option for normal use.

Note: In future, as additional document types are added to the PCEHR, the advice in recommendations 1 to 4 may be revised. For example, it will be necessary to provide additional information for diagnostic reports, but NEHTA is not in a position to make a specific recommendation for those documents, as they are not yet specified.

5 *Sorting / Grouping:* A user should be able to sort on all columns, in ascending or descending order. Sorting by the first three columns (Document Date, Service Date, and Document) is recommended.

Note that when the user sorts on Service Date, the sort should be based on the actual date value rather than the display (which is usually empty if the date is the same as the document date – vendors can populate the Service Date column in the document list when sorting by Service Date is preferred).

If sorting by Service Date, the full service date (dd-mmm-yyyy) should be displayed.

For documents that have no service date, they should be sorted by document date.

6 It is recommended that the GP system provides grouping/collapsing. If the system offers grouping functionality, this should only be applied to the column that is currently sorted. For example, the table below illustrates a sort on the Document column, which is also grouped.

Document	Document Date	Service Date	Organisation	Organisation Type
Event Summary				
Event Summary	01-Jan-2013		Main St Clinic	General Practice
Event Summary	13-Feb-2013		Northern Clinic	General Practice
Shared Health Summary				
Shared Health Summary	12-Feb-2013		Northern Clinic	General Practice
Shared Health Summary	30-Apr-2013		Main St Clinic	General Practice
Specialist Letter				
Specialist Letter	03-Jan-2013	02-Jan-2013	Western Clinic	Physiotherapy Services

7 *Filtering:* It is recommended that the following filter capabilities be offered to the user:

- The ability to include/exclude all Medicare documents.
- The ability to only include documents from the last three months.
- The ability to select by clinical document type.
- Current documents only – that is, automatically exclude all withdrawn or superseded documents from the visible list.

8 Filtering may be applied as a parameter to the document list service call and/or in the interface and should be clearly indicated when the list is displayed.

3.4 Server-side document list filtering

This section describes how to limit items in the document list to include only the document types of primary interest to users. In the example below, the default list is limited to display of health summaries, event summaries and discharge summaries.

When invoking the "GetDocumentList" web service, an XDS.b Registry Stored Query findDocument query is performed. This query supports searching by any of the parameters supported by that Registry Stored Query.

The supported parameters can be found in Section 3.18.4.1.2.3.7.1 of *IHE IT Infrastructure Technical Framework Volume 2a.*[3]

Table 3 in the *PCEHR Document Exchange Service Technical Service Specification v1.2* provides the list of TypeCodes and ClassCodes required to be used for PCEHR documents when registered. These codes can be used in the query for the $XDSDocumentEntryClassCode (coded according to the definition in Section 3.18.4.1.2.3.4 of the IHE Volume 2a document referenced above).

Multiple identifiers for different document types may be specified, and the query will return documents which match any of the supplied values (OR logic).

Selecting the appropriate ClassCodes will result in only documents of those types being returned.

Ignoring the rest of the query (the "default" empty structure), the values required to return only shared health summaries, event summaries, discharge summaries and specialist letters would look something this:

```
<Slot name="$XDSDocumentEntryClassCode ">
   <ValueList>
      <Value>('60591-5^^LOINC')</Value>
      <Value>('34133-9^^LOINC')</Value>
      <Value>('18842-5^^LOINC')</Value>
      <Value>('51852-2^^LOINC')</Value>
   </ValueList>
</Slot>
```

[3] Available from http://www.ihe.net/Technical_Framework/upload/IHE_ITI_TF_Rev8-0_Vol2a_FT_2011-08-19.pdf

The following sample code demonstrates document filtering in conjunction with the PCEHR Client sample code (provided on http://www.nehta.gov.au/vendors):

```
// Create a query
AdhocQueryBuilderadhocQueryBuilder = new AdhocQueryBuilder("800360xxxxxxxxxx",
new[] { DocumentStatus.Approved });
if(!chkShowallDocs.Checked)
   adhocQueryBuilder.ClassCode = new[] {
      ClassCodes.DischargeSummary,
      ClassCodes.EventSummary,
      ClassCodes.SpecialistLetter,
      ClassCodes.SharedHealthSummary };
// Combo box allows user to define date period in months - default is 12
months
DateTimestartDate = DateTime.Now.AddMonths(cboMonthRange.SelectedText);
DateTimeendDate = DateTime.Now;
adhocQueryBuilder.CreationTimeFrom = new ISO8601DateTime(startDate);
adhocQueryBuilder.CreationTimeTo = new ISO8601DateTime(endDate);
// Create the request using the query
AdhocQueryRequestqueryRequest = adhocQueryBuilder.BuildRequest();
```

4 Setting Healthcare Facility Type Code

4.1 Applicability

Applies to systems that submit documents to the PCEHR.

4.2 Context

The "Healthcare Facility Type Code" and "Healthcare Facility Type Name" are related elements of document metadata (XDS.b Document Entry) and are defined in the PCEHR Document Exchange Service technical service specification[4] as "A code identifying the type of healthcare facility where the event relating to this document submission request initiated" and "A display friendly name for [this] code", respectively.

It is not always clear what the correct values of these attributes should be.

4.3 Recommendation

The "Healthcare Facility Type Code" should match the Organisation Type recorded in the Healthcare Identifiers Service, Healthcare Provider Directory (HPD):

1 Determine the Organisation Type published in the HPD for the record matching the Authoring Organisation (XDSDocumentEntry.authorInstitution) in the document metadata.

2 Set the Healthcare Facility Type Code (XDSDocumentEntry.healthcareFacilityTypeCode) to this Organisation Type as illustrated in Table 1 below, extracted from the PCEHR Document Exchange technical service specification.[2]

3 Set the Healthcare Facility Type Name (XDSDocumentEntry.healthcareFacilityTypeCodeDisplayName) to the corresponding display name.

If an organisation is not published in the HPD, it is recommended that the "Healthcare Facility Type Code" be inputted manually using the Department of Human Services Organisation Type Reference Guide.[5]

[4] *PCEHR Document Exchange Service Using the IHE XDS.b Platform Technical Service Specification* v1.4, 12 April 2013 (available from https://vendors.nehta.gov.au)
[5] Available from http://www.medicareaustralia.gov.au/provider/health-identifier/files/org-type-reference-guide.pdf

LSS Field	Description	XDS.b Field Name
Document Creation Time	The time the document was created.	XDSDocumentEntry.creationTime
Service Start Time	The datetime the service being performed which caused the document to be created started.	XDSDocumentEntry.serviceStartTime
Service Stop Time	The datetime the service being performed which caused the document to be created stopped. The Service Stop Time may be set to the same value as the Service Start Time in order to indicate the datetime of an event.	XDSDocumentEntry.serviceStopTime
Document Hash	A SHA-1 hash representation of the CDA package. This field is mandatory for ITI-42 document registrations.	XDSDocumentEntry.hash
Keyword	One or more keywords which are related to the document submission. Both these fields must be *excluded* from submission.	XDSDocumentEntry.eventCodeList XDSDocumentEntry.eventCodeListDisplayName
Healthcare Facility Type Code	A code identifying the type of healthcare facility where the event relating to this document submission request initiated.	XDSDocumentEntry.healthcareFacilityTypeCode
Healthcare Facility Type Name	A display friendly name for the above code.	XDSDocumentEntry.healthcareFacilityTypeCodeDisplayName
Clinical Speciality Code	A code identifying the clinical specialty where the event relating to this document submission request initiated.	XDSDocumentEntry.practiceSettingCode
Clinical Specialty Display Name	A display friendly name for the above specialty.	XDSDocumentEntry.practiceSettingCodeDisplayName
N/A	This field is not present in the LSS definition of the Document Metadata as it is in the Common Header. The value from the common header should be replicated into this field.	XDSDocumentEntry.sourcePatientId
N/A	This mandatory XDS.b field is not supported by PCEHR. It shall be set to a value of 'NA'.	XDSDocumentEntry.confidentialityCode
N/A	This field is not required by the Logical Model presented within the LSS but is a mandatory field within XDS. This field shall be set to the same value as that provided in the classCode field.	XDSDocumentEntry.typeCode

Table 1: Document Metadata to XDS.b Document Entry mapping

5 Managing document times

5.1 Applicability

Applies to all systems submitting documents to the PCEHR.

5.2 Context

While the CDA implementation guides fix the values of the various times, there is no guidance specifying the proper values for service start time and service stop time in the PCEHR document metadata (XDS.b Document Entry) for the particular document types.

5.3 Recommendation

The following table identifies the clinically useful service start times, stop times and document title for each document type.

Document Type	Service Start Time	Service Stop Time	Document Title
Shared Health Summary	No useful value	No useful value	Shared Health Summary
e-Referral	No useful value	No useful value	e-Referral
Specialist Letter	No useful value	No useful value	Specialist Letter
PCEHR Prescription Record	No useful value	No useful value	Prescription Record
PCEHR Dispense Record	No useful value	No useful value	Dispense Record
Event Summary	Encounter Start Date	Encounter End Date	Event Summary
Discharge Summary	Admission date/time	Discharge Date/Time	Discharge Summary

1 When submitting documents to the PCEHR, the Service Start Time and Service Stop Time should be set to the values specified in this table. In the metadata, the Service Start Time and Service Stop Time are both required fields, so where there is no useful value identified for the documents in the table above, the document creation time should be used for both the Service Start Time and Service Stop Time.

2 The event summary is a special case. Logically, the Service Start Time and Service Stop Time are the start and stop times of the clinical encounter that the event summary describes. However, practical experience shows that there is no consistent single clinical interpretation for the encounter or its period, and clinicians are wary of what significance should be assigned to the date. As a consequence it is recommended that, unless the clinical context makes the applicable encounter and its time very clear, the encounter period should be set to nullFlavor=”NI” in the actual event summary, and the Service Start Time and Service Stop Time in the metadata should be set to the document creation time.

3 While the semantics of the Document Creation Time are clear at the technical level – it is the time that the document was marked as "created" – it is not clear what this means for clinical users. When a clinician dictates a document which is later transcribed, and then the clinician reviews and approves the document, the time at which the document is considered to be "created" is the last step. Software implementations, CDA document instances, and user interfaces should ensure that the correct interpretation of the Document Creation Time is made clear to the clinical users.

Note that the columns displayed to the user (see Section 3.3, recommendation 2) do not include the document submission time on the basis that there is no clinically significant delay between authoring and uploading. If there is a *clinically significant* period between the authoring and uploading of a document that is relevant to the document, the use case for this should be discussed with the NEHTA Clinical Safety Unit.