

OSCAR CDX Interoperability User Manual

Introduction

The HL7 Clinical Document Architecture (CDA) is a standard to communicate clinical documents electronically between provider systems.

The Provincial Health Services Authority (PHSA) has partnered with other health authorities to establish CDA-based interoperability between clinical information systems, including primary care EMRs. This initiative uses the Clinical Document eXchange (CDX) communication system (<https://bccdx.ca>). The PHSA has worked with EMR vendors to implement CDX-based interoperability. OSCAR BC has created a first version of OSCAR EMR that is CDX interoperable. This first version is capable of

1. **receiving** and displaying any of the approved types of CDX documents, e.g., eReferrals, Progress Notes, Patient Summaries, Discharge Summaries, General Purpose Notifications, Lab Results, etc.
2. and **sending** eReferral requests to specialists connected to the CDX system.

Administration

Note: The contents of this section is mainly for admin users and OSPs.

Configuration

The connection with the CDX system can be configured and checked using OSCAR's admin panel.

| *Admin → Integration → Clinical Data eXchange (CDX)*

- **OBIB URL** specifies the URL of the Oscar Bidirectional Interoperability Bus (OBIB)
- **Clinic OID** specifies the ID assigned to the clinic by CDX.
- **Automatic Import Enabled/Disabled** specifies whether OSCAR will automatically download new documents.
- **Polling Interval** specifies the time interval between automatic downloads (in minutes)
- **Save** button makes the settings persistent

The **CDX Status** tab indicates whether OSCAR is connected with an OBIB.

Manual document import

The CDX Admin panel allows administrators to manually download documents from the CDX system.

(Note: manual download is used only for testing and to recover from errors.)

Manual download of “new” documents

The CDX document distribution system considers documents as “new”, if and only if they have not yet been downloaded from the CDX system.

OSCAR EMR can be configured to download “new” documents automatically. Hence, manual download of “new” documents is not needed during normal operations. However, it may be useful for testing purposes.

The Admin panel indicates the number of “new” documents waiting for a clinic. They can be downloaded manually using the **import** button (only visible if “new” documents are available).

The screenshot shows the OSCAR EMR Admin panel with a sidebar on the left containing links like User Management, Billing, Labs/Inbox, etc. The main area has two sections: 'CDX Configuration' and 'CDX Status'. In 'CDX Configuration', there are fields for 'OBIB URL' (http://<ip_address>:<port>) and 'Clinic OID' (cdxpostprod-otca), and a section for 'Automatic Import' where 'Disabled' is selected. A 'Polling Interval' field shows 'minutes 2'. A 'Save' button is present. In 'CDX Status', a green bar says 'The OBIB is connected'. Below it, a message states 'There are 1 new documents waiting.' followed by an 'Import' button, and 'There is a total of 122 documents retrievable from the CDX system for this clinic, which are not in the EMR database.'

Manual download of “old” documents

The CDX document distribution system considers documents as “old” if the EMR system has downloaded them already. Still, the CDX system retains downloaded documents for an unspecified time, so that they can be downloaded again.

Why import a document that has already been downloaded?

This should be necessary only in two types of (exceptional) cases:

- 1. Import Errors.** If an error occurred during document import, the document is considered delivered (“old”) from the perspective of the CDX system. However, the document has not successfully been imported by the EMR. Once the problem has been diagnosed and fixed, the admin can use the CDX Admin panel to download the document(s) that could not be imported before (see below).
- 2. Undo Document Deletion.** EMR users have the ability to delete imported documents if they are convinced that the document was delivered in error. The CDX Admin panel allows a user to effectively undo such a manual deletion if it turns out that the document was deleted in error (see below).

The CDX Admin panel has a table showing those documents available from the CDX system that are not currently imported in the EMR. They can selectively be imported.

The figure below shows the CDX Admin panel indicating that there was one unsuccessful download and one document that was deleted. The user selected the unsuccessful download and can press the “*Import selected documents*” button to reattempt the import.

The screenshot displays the CDX Admin panel interface. On the left is a navigation sidebar with various administrative links. The main area is divided into two main sections: "CDX Configuration" and "CDX Status".

CDX Configuration: This section contains fields for "OBIB URL" (set to http://192.168.100.101:8081), "Clinic OID" (set to cdxpostprod-otca), "Automatic Import" (set to Disabled), and a "Polling Interval" of 2 minutes. A "Save" button is present.

CDX Status: This section includes a green message bar stating "The OBIB is connected". Below it, a red message bar indicates "There are 2 new documents waiting." with an "Import" button. Another red message bar shows "There are 1 messages that could not be imported due to an internal error.". A yellow message bar states "There are 1 documents that were deleted by a user (after import)".

Document List: A table titled "Select all documents you want to (re)import below" lists four entries. The columns are Time, Title, Message ID, and Status. The entries are:

Time	Title	Message ID	Status
2019-05-16 16:12	e2e Generic Unstructured Referral	da970e26-3078-e911-a96a-0050568c55a6	unsuccessful import at 2019-05-16 17:51:38.0
2019-05-16 10:54	e2e Generic Unstructured Referral	3a699fac-0378-e911-a96a-0050568c55a6	not in EMR
2019-05-16 10:54	e2e Generic Unstructured Referral	079e3eb4-0378-e911-a96a-0050568c55a6	not in EMR
2019-05-16 10:47	e2e Generic Unstructured Referral	3d27c49a-0278-e911-a96a-0050568c55a6	not in EMR

A blue "Import selected documents" button is located above the table. A "Search:" input field is also present.

Receiving and Routing

Routing to the “Inbox”

CDX documents may identify several *primary and secondary recipients* (roughly analogous to the “To:” and “Cc:” fields in email.) CDX documents may also not specify any recipient provider - but just a recipient clinic.

OSCAR’s CDX import engine uses the following logic to route incoming CDX documents to provider inboxes:

1. (Step 1) route the document to the Inbox of any provider with the same MSP number as any of the recipients named in the document.
2. (Step 2) if Step 1 did not result in any provider matches and if the patient named in the document could be matched to a demographic record in the EMR then route the document to the most responsible provider (MRP) of the matched patient (if available).
3. (Step 3) if Steps 1 and 2 did not result in any provider matches, the document is considered "unclaimed" and can be retrieved by searching for "unclaimed" documents in the Inbox.

Document Inbox

localhost:8083/oscar/dms/inboxManage.do?method=prepareForIndexPage&providerNo=-1&searchProviderNo=111112

All (1)

HL7 (1)

Normal Abnormal

+ ELDER, JUNE (1)

Forward File

Health Number	Patient Name	Sex	Result Status	Date of Test
8888999904	ELDER, JUNE	F	Abnormal	2017-10-15 00:00:00

--- no reports found matching the selected criteria ---

Search Lab Reports

localhost:8083/oscar/oscarMDS/Search.jsp?providerNo=111112

Patient Last Name: _____

Patient First Name: _____

Patient Health Number: _____

Start Date:(yyyy-mm-dd) _____

End Date:(yyyy-mm-dd) _____

Physician: All Unclaimed _____

Report status: All New Acknowledged Filed

Click "Search" to find unclaimed documents

Document Inbox

localhost:8083/oscar/dms/inboxManage.do?method=prepareForIndexPage&providerNo=-1&searchProviderNo=111112

All (20)

Documents (2)

HL7 (18)

Normal Abnormal

+ CLEESE, JOHN (1)

+ COPPER, COLEEN (2)

+ ELDER, JUNE (2)

+ GOLD, GORDEN (2)

+ Gepetto, Gerry (3)

+ Regan, Ronald (3)

+ SILVER, SILVIO (3)

+ Salvadore, Samuel (2)

+ Talbot, Tereza (1)

+ Unmatched (1)

Forward File

Health Number	Patient Name	Sex	Result Status	Date of Test	Order Priority	Requesting Client	Discipline	Report Status	Ack #
	*Not Assigned			2014-11-27 / 2019-05-17	----		General Lab Report	completed	0

--- no reports found matching the selected criteria ---

Example search result showing an "unclaimed" document

Associating incoming documents with patients

The CDX import engine attempts to automatically match incoming documents to patient demographic records in the EMR. This is done using *4-point matching* as follows:

- last name
- gender
- health number
- gender

Documents for which the above 4-point match fails are shown as “not assigned” in the Inbox view (see above).

Information shown in Inbox view

- Similar to other documents and labs, the Inbox shows **patient name, number and gender**.
- **Result status** is **not** currently shown.
 - (⚠ if the CDX document is a lab result, the result status is NOT displayed in the Inbox view. Consequently, the colour is NOT changed to red for an abnormal result.)
- The “**Date of Test**” column shows the **Observation Date**, followed by the time the document was authored (**Authoring Date**).
- The “**Order Priority**” and “**Requesting Client**” columns are **not** currently used for CDX documents.
- The “**Discipline**” column identifies the type of CDX document received.
- The “**Report status**” column displays the status of the document, which can be either
 - active (marks a preliminary document that may be updated),
 - completed (marks a final document), or
 - cancelled (marks a document that cancels an earlier one)
- The “**Ack**” column marks the acknowledgement status of a document.

Document Inbox

localhost:8083/oscar/dms/inboxManage.do?method=prepareForIndexPage&providerNo=111112&searchProviderNo=-1&status=

Preview Search Close Help About Forwarding Rules HL7 Lab Upload Doc Upload Pending Docs Incoming Docs Create Lab OLIS Search HRM Status/Upload

All (53)	Forward	File							
Documents (8)									
HL7 (45)									
Normal									
Abnormal									
+ CHAN, DALE (1)									
+ CHARLES, JOAN (1)									
+ CLEESL, JOHN (1)									
+ COPPER, COLEEN (5)									
+ ELDER, JUNE (9)									
+ GOLD, GORDEN (2)									
+ GRAY, GRACE (1)									
+ GRAY, JANE (4)									
+ Geppetto, Gerry (6)									
+ HOPE, HOLY (1)									
+ IVE, MARK (1)									
+ LUM, LUCY (1)									
+ Regan, Ronald (6)									
+ SILVER, SILVIO (3)									
+ SUGAR, MARY (1)									
+ Salvadore, Samuel (4)									
+ THOMAS, JILL (1)									
+ Talbot, Tereza (3)									
+ WINE, JOE (1)									
--- no reports found matching the selected criteria ---									
<input type="checkbox"/> Health Number	Patient Name	Sex	Result Status	Date of Test	Order Priority	Requesting Client	Discipline	Report Status	Ack #
<input type="checkbox"/> 2222	WINE, JOE	M		2019-05-17 / 2019-05-17 12:31:20.0 ----			eReferral Note	completed	1
<input type="checkbox"/> 2222	WINE, JOE	M		2019-05-17 / 2019-05-17 12:31:20.0 ----			eReferral Note	completed	1
<input type="checkbox"/> 5578978958	COPPER, COLEEN	F		2019-01-12 / 2019-01-12 08:03:43.0 ----			test photo	Partial	0
<input type="checkbox"/> 5578978958	COPPER, COLEEN	F		2019-01-12 / 2019-01-12 08:03:43.0 ----			test photo	Partial	0
<input type="checkbox"/> 8888999904	ELDER, JUNE	F		2018-09-05 / 2018-09-05 19:48:42.0 ----				Partial	0
<input type="checkbox"/> 8888999904	ELDER, JUNE	F		2018-09-05 / 2018-09-05 19:48:42.0 ----				Partial	0
<input type="checkbox"/> 8888999904	ELDER, JUNE	F		2018-09-05 / 2018-09-05 19:48:42.0 ----				Partial	0
<input type="checkbox"/> LUM, LUCY		F		2017-07-01 / 2018-10-02 15:18:32.0 ----			2-MAM	Partial	1
<input type="checkbox"/> HOPE, HOLY		F		2017-04-15 / 2018-10-02 18:28:02.0 ----			3-FOBT	Partial	2
<input type="checkbox"/> HOPE, HOLY		F		2017-04-15 / 2018-10-02 18:28:02.0 ----			3-FOBT	Partial	2
<input type="checkbox"/> GRAY, GRACE		F		2017-04-15 / 2018-10-02 17:29:07.0 ----			2-MAM	Partial	2
<input type="checkbox"/> GRAY, GRACE		F		2017-04-15 / 2018-10-02 17:29:07.0 ----			2-MAM	Partial	2
<input type="checkbox"/> 8888999904	ELDER, JUNE	F		2014-11-27 / 2019-05-17 10:23:26.0 ----			General Lab Report	completed	0
<input type="checkbox"/> 8888999904	ELDER, JUNE	F		2014-11-27 / 2019-05-17 10:23:26.0 ----			General Lab Report	completed	0

Viewing and Acknowledging CDX Documents

As with other Inbox items, clicking on a CDX Document will open up a viewer window that shows the content of the document, including potential attachments (e.g., PDF documents, images, etc.). The CDX Document Viewer provides the familiar functionality of acknowledging a document, flagging / messaging other providers, etc. (see below).

CDX Document Viewer

localhost:8083/oscar/dms/showCdxDocument.jsp?inWindow=true&segmentID=567&providerNo=111112&searchProviderNo=111112&status=N&demoName=ELDER, ... 0

Linked Demographic

JUNE ELDER F 1942-06-06

Close **Acknowledge** **Msg** **Tickler** **E-Chart** **Master** **Appt History**

Marcus Welby : Not Acknowledged 17-May-19 13:27 , comment: no comment

Linked Providers **Flag provider...** **Save**

- Welby, Marcus(Remove)

eReferral Note

Patient	JUNE ELDER		
Date of Birth	June 6, 1942 Age: 76	Sex	Female
Patient Contact Info	Home: 456 Main Street Toronto, null M6P 4J4 Tel (Home): 416-555-6789	Patient IDs	8888999904 (BC Patient Health Number)
Primary Recipient	Lucius Plisib 93188 (BC Ministry Practitioner ID)		
Recipient Contact Info	Home: , null, null null Tel (Home): 2504140376		
Authoring System	Oscar Service Provider		
Author	Marcus Welby		
Author Contact Info	Home: Hamilton Hamilton, Ontario L0R 4K3 Tel (Home): 555-555-5555		
Document Maintained By	cdxpostprod-otca (CDX Clinic Registry ID) - Oscar Test Clinic A		
Document Created	May 14, 2019, 21:36+0000		
Document Id	42c5c2a6-35cc-42cb-8fdf-050cd96fbf2c (CDX Clinical Document ID)		

There are attachments (see below)

Attachments (1):

- ConsultationRequestAttachedPDF-2019-05-14_023628.pdf (application/pdf)

Demographic data consistency warning

Even if the CDX Import Engine was able to positively match the patient named in the document with a demographic record in the EMR (using 4 point matching, see above), the Import Engine may alert the user about inconsistencies between the demographic data in the document and in the EMR (see below).

Patient	JUNE ELDER		
Date of Birth	June 6, 1942 Age: 76	Sex	Female
Patient Contact Info	Home: 456 Main Street Toronto, null M6P 4J4 Tel (Home): 416-555-6789	Patient IDs	8888999904 (BC Patient Health Number)
Primary Recipient	Lucius Plisib 93188 (BC Ministry Practitioner ID)		
Recipient Contact Info	Home: ' null, null null Tel (Home): 2504140376		
Authoring System	Oscar Service Provider		
Author	Marcus Welby		
Author Contact Info	Home: Hamilton Hamilton, Ontario L0R 4K3 Tel (Home): 555-555-5555		
Document Maintained By	cdxpostprod-otca (CDX Clinic Registry ID) - Oscar Test Clinic A		
Document Created	May 14, 2019, 21:36+0000		
Document Id	42c5c2a6-35cc-42cb-8fdf-050cd96fbf2c (CDX Clinical Document ID)		

The clinician may use this warning as a motivation to review and possibly update the patient demographic record.

Note:

- the update of demographic data is currently not automated
- there is currently no way to “dismiss” the warning. It will remain in the Inbox viewer even after the demographic record has been updated. (this will be improved in the next version)

Manually linking documents to existing patient demographics

The CDX Viewer shows a warning if the Import Engine failed to automatically match the document to a patient demographic record using the 4-point matching (last name, DOB, sex, HIN).

In this case, the user can manually search the EMR demographic records and link the document to a patient (see “Demographic Search” input and “Link” button below).

Anatomic Pathology Report - Bone Marrow

Patient	1BM PTH		
Date of Birth	January 1, 1968 Age: 47	Sex	Female
Patient Contact Info	Home: 2501 40th Ave LAKE COUNTRY, CA-BC V4V 2S7 Tel (Home): 250-558-1200	Patient IDs	A00030485 (IHA Patient EMR Number) VJ0070011/15 (IHA Patient Unit Number)
Encounter Id	VJ0070011/15 (IHA Patient Account Number)		
Encounter Date(s)	Admission/Registration: November 19, 2014, 12:22, PST		
Encounter Location	REF:VERVJHLPTH (Patient Type:Unit) Id: IHVJH (IHA Meditech Location Identifier)		
Healthcare Provider	Dr Aaron Plisihd Ordering Provider April 2, 2015, 08:24, PDT		
Secondary Recipient	Danilo Mitrovic MITD4 (IHA Provider Code)		
Primary Recipient	Dr Aaron Plisihd 93190 (BC MSP Provider License Number) PLISIHAA (IHA Provider Code)		
Authoring System	PTH_IHVJH		
Document Maintained By	IHVJH (IHA Meditech Location Identifier)		
Document Created	April 2, 2015, 08:23, PDT		
Document Id	2aa50693-8d29-4e3f-9e2f-f94c5b6fe4e5 (CDX Clinical Document ID)		

Creating a new Demographic

If the CDX document refers to a new patient (i.e., a patient that does not have a demographic record in the EMR), the user can create a new Demographic Record based on the information provided in the CDX document (see “New” button). The CDX Document will be linked automatically to this newly created Demographic record.

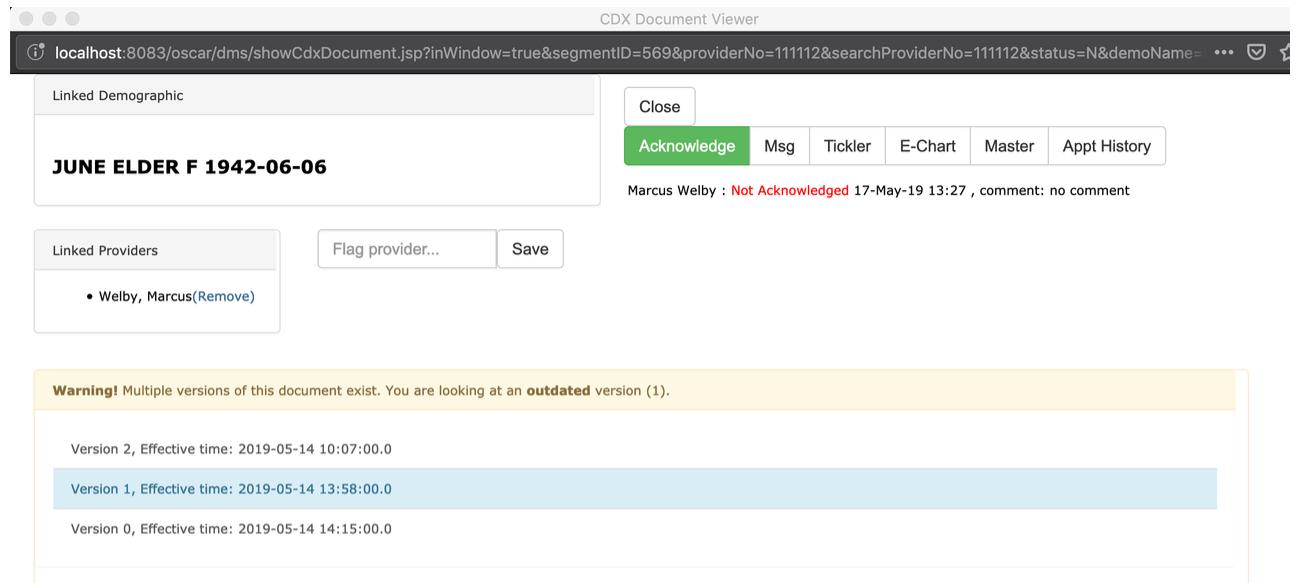
Deleting a CDX Document that was received in error

Finally, the user may delete a CDX document that was received in error, e.g., if the patient named on the document is not (and will not be) a client of the clinic. (see “Delete” button)

Note: Documents that were deleted in error can be restored by an Admin (see Administration above).

Viewing documents with different versions

It is possible to receive different versions of the same logical document. These documents will appear as separate entries in the Inbox. The CDX Viewer alerts the user that different versions are available and whether the user views the most up-to-date version. The user can switch between different versions.



The screenshot shows the CDX Document Viewer interface. At the top, it displays the URL: localhost:8083/oscar/dms/showCdxDocument.jsp?inWindow=true&segmentID=569&providerNo=111112&searchProviderNo=111112&status=N&demoName=.... The main content area shows a patient record for "JUNE ELDER F 1942-06-06". A green button labeled "Acknowledge" is highlighted. Below the patient info, a message from "Marcus Welby" is shown: "Not Acknowledged 17-May-19 13:27 , comment: no comment". On the left, there's a "Linked Providers" section with "Welby, Marcus" and a "(Remove)" link. Buttons for "Flag provider..." and "Save" are also present. A yellow warning bar at the bottom states: "Warning! Multiple versions of this document exist. You are looking at an **outdated** version (1)." Below this, three document versions are listed: Version 2 (Effective time: 2019-05-14 10:07:00.0), Version 1 (Effective time: 2019-05-14 13:58:00.0, highlighted in blue), and Version 0 (Effective time: 2019-05-14 14:15:00.0).

eReferral Note			
Patient	JUNE ELDER		
Date of Birth	June 6, 1942 Age: 76	Sex	Female
Patient Contact Info	Home: 456 Main Street Toronto, null M6P 4J4 Tel (Home): 416-555-6789	Patient IDs	8888999904 (BC Patient Health Number)
Primary Recipient	Lucius Plisibh 93188 (BC Ministry Practitioner ID)		
Recipient Contact Info	Home: 'null, null null Tel (Home): 2504140376		
Authoring System	Oscar Service Provider		
Author	Marcus Welby		
Author Contact Info	Home: Hamilton Hamilton, Ontario L0R 4K3 Tel (Home): 555-555-5555		
Document Maintained By	cdxpostprod-otca (CDX Clinic Registry ID) - Oscar Test Clinic A		

Example viewing an outdated version of a document

JUNE ELDER F 1942-06-06

Multiple versions of this document exist. You are looking at the **latest** version (2.).

Version 2, Effective time: 2019-05-14 10:07:00.0
Version 1, Effective time: 2019-05-14 13:58:00.0
Version 0, Effective time: 2019-05-14 14:15:00.0

eReferral Note

Patient	JUNE ELDER		
Date of Birth	June 6, 1942 Age: 76	Sex	Female
Patient Contact Info	Home: 456 Main Street Toronto, null M6P 4J4 Tel (Home): 416-555-6789	Patient IDs	8888999904 (BC Patient Health Number)
Primary Recipient	Lucius Plisib 93188 (BC Ministry Practitioner ID)		

Viewer indicating that user sees the latest version

Related documents

CDX documents may also be related in ways other than versioning:

- a document may have a “parent document”
- documents may belong to the same “set of documents”
- a document may have been sent “in fulfillment of” another document (e.g., a consult note document may have been sent in fulfillment of a referral request document)

Any related CDX documents are displayed at the bottom of the CDX Viewer window:

eReferral Note			
Patient	JUNE ELDER		
Date of Birth	June 6, 1942 Age: 76	Sex	Female
Patient Contact Info	Home: 456 Main Street Toronto, null M6P 4J4 Tel (Home): 416-555-6789	Patient IDs	8888999904 (BC Patient Health Number)
Primary Recipient	Lucius Plisib 93188 (BC Ministry Practitioner ID)		
Recipient Contact Info	Home: , null, null null Tel (Home): 2504140376		
Authoring System	Oscar Service Provider		
Author	Marcus Welby		
Author Contact Info	Home: Hamilton Hamilton, Ontario L0R 4K3 Tel (Home): 555-555-5555		
Document Maintained By	cdxpostprod-otca (CDX Clinic Registry ID) - Oscar Test Clinic A		
Document Created	May 14, 2019, 17:07+0000		
Document Id	b611bfca-917c-42f1-b749-96eef44dd4ee (CDX Clinical Document ID)		

There are attachments (see below)

Attachments (1):

- document.pdf (application/pdf)

Related documents:

- 17929b82-da25-4f19-bfd9-ee30c13becba (parent document)
- 8d87f639-bc01-4326-bf8d-e2c2815f66d5 (in fulfillment of)

CDX Documents as part of a Patient's eChart

CDX documents appear under "Documents" in the patient's eChart. For example, the General Lab Report, History & Physical Note, and Consult Note documents in the chart below are CDX documents:

Encounter - ELDER, JUNE F 76 years

localhost:8083/oscar/casemgmt/forward.jsp?action=view&demographicNo=81&providerNo=111112&providerName=Marcus+Welby&ap...

MRP DR. MARCUS WELBY **ELDER, JUNE F 76 years** **416-555-6789** **Next Appt:**

Preventions + **Medical History** + **Social History** + **Help | About**

HZV
RZV
Td
FOBT
BMD
H1N1

Ticker +
outstanding lab, one GFR, ... 25-Apr-2018
overdue flu shot ... 25-Apr-2018
overdue for annual physici... 25-Apr-2018

Disease Registry +
ALLERGIC RHINITIS*
DIABETES MELLITUS*
ANGINA PECTORIS* ... 29-Mar-2018

Forms +
Lab Red 2007 ... 29-Sep-2018

eForms +

Documents +
General Lab Report ... 05-Feb-2019
... 05-Sep-2018
Text Document ... 30-Mar-2018
Scanned Document ... 30-Mar-2018
History & Physical Note ... 08-Dec-2014
Consult Note ... 03-Oct-2014

Lab Result +
CHEMISTRY ... 15-Oct-2017
CHEMISTRY ... 12-Sep-2017
ROUTINE ... 31-Jul-2017
ROUTINE ... 26-Jul-2017
CHEMISTRY ... 12-Sep-2016
CHEMISTRY ... 10-Aug-2016

Messenger +
Report on bulk setting of ... 10-Nov-2018
Report on bulk setting of ... 03-Nov-2018

Measurements +
CDM Indicators
Health Tracker
Diabetes Flowsheet
A1C ... 5 20-Oct-2017
FBS ... 10.2 20-Oct-2017

Consultations +
Cardiology ... 17-May-2019
Cardiology ... 16-May-2019
Cardiology ... 16-May-2019
Cardiology ... 10-May-2019
Cardiology ... 10-May-2019
Cardiology ... 10-May-2019

HRM Documents +
PHR +
Register for PHR

Medical History +
Hysterectomy: PM/S Hx Note
Corneal Ulcer: Note about corneal ulcer

Social History +

On-going Concerns +
Problem list note for Infective Otitis Externa
Infective otitis externa or Acute swimmers' ear

Reminders +
Transportation needs - Spouse unavailable

Help | About

Allergies +
PEANUTS ... 06-Jul-2018
PENICILLINS ... 29-Mar-2018
CELEBREX 100MG ... 29-Mar-2018

Medications +

Other Meds +

Risk Factors +
Tobacco smoke - Second hand smoke
History of heavy alcohol consumption.

Family History +
Father had Acute Myocardial Infarction age 50...
Mother had Alzheimer's, onset age 70.

Unresolved Issues +
CORNEAL ULCER*
ACUTE MYOCARDIAL INFARCT*

Resolved Issues +

Decision Support Alerts +

Episodes +

Health Care Team +

Document General Lab Report template created at Thu May 02 17:46:07 PDT 2019 by Marcus Welby.
Document General Lab Report template created at Thu May 02 17:46:22 PDT 2019 by Marcus Welby.
Document Microbiology Lab Report template created at Thu May 02 17:46:53 PDT 2019 by Marcus Welby.
Document Referral note created at Fri May 03 12:54:12 PDT 2019 by Marcus Welby.
Document Referral note created at Fri May 03 12:55:10 PDT 2019 by Marcus Welby.
Document Referral note created at Fri May 03 12:56:27 PDT 2019 by Marcus Welby.
Document General Lab Report Template created at Fri May 10 09:59:51 PDT 2019 by Marcus Welby.
Document eReferral Note created at Fri May 10 13:26:13 PDT 2019 by Marcus Welby.
Document General Lab Report created at Fri May 17 12:39:22 PDT 2019 by Marcus Welby.
Document General Lab Report created at Fri May 17 12:40:42 PDT 2019 by Marcus Welby.
Document General Lab Report created at Fri May 17 15:15:12 PDT 2019 by Marcus Welby.
Document History & Physical Note created at Fri May 17 15:15:44 PDT 2019 by Marcus Welby.

[17-May-2019 :: Tel-Progress Note]

Note: in future versions of the CDX integration, Oscar may “sort” CDX document types more appropriately, e.g., lab results under “Lab Results” and consultation notes under “Consultations”.

Documents can be viewed by clicking on them.

Sending CDX documents

The current OSCAR version can send only one type of CDX documents, namely e-Referral requests. Other types of CDX documents will be supported in the future.

Sending e-Referral Requests

⚠ The term “referral” is used to align with provincial standard terminology. OSCAR uses the term “consultation”. They can be considered synonymous in the following.

Adding a CDX capable specialist

E-referrals can only be sent to specialists that are connected to the CDX system. The “Add Specialist” UI has been extended to add CDX-capable specialists.

The screenshot shows a web-based application window titled "Add Specialist". The URL in the address bar is "localhost:8083/oscar/oscarEncounter/oscarConsultationRequest/config/AddSpecialist.jsp". The left sidebar menu under "Consultation" includes links such as "Enable Request/Response", "Add Specialist", "Add Service", "Edit Specialists", "Show All Services", "Delete Services", "Add Institution", "Edit Institutions", "Add Department", "Edit Departments", "Show All Institutions", and "Add CDX Enabled Specialist". The main form area is titled "Add Specialist" and contains fields for "Add CDX Enabled Specialist". These fields include: First Name, Last Name, Professional Letters, Address, Annotation, Phone, Fax, Private phone, Cell phone, Pager, Salutation (dropdown menu with "Not Set" selected), Website, Email, Specialist Type, Referral No., Institution (dropdown menu with "Select Below"), Department (dropdown menu with "Select Below"), CDX ID, Hide From Search (checkbox set to "false"), and Referral EForm (dropdown menu with "--None--"). A "Add Specialist" button is located at the bottom of the form.

The new dialogue allows the user to search the CDX provider registry for providers to add to OSCAR. The search is based on any letters and returns all providers with these letters in their names.

Adjust Service Providers

localhost:8083/oscar/oscarEncounter/oscarConsultationRequest/config/AddCdxSpecialist.jsp?searchstring

Consultation	Add CDX Service Provider																																																								
Enable Request/Response	Select the specialist you would like to add																																																								
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Similarly, specialists can be updated.

⚠ At this point, the CDX system does not provide the speciality of providers returned from its registry. The speciality needs to be added manually:

Adjust Service Providers

localhost:8083/oscar/oscarEncounter>ShowAllServices.do?serviceId=53&serviceDesc=Cardiology

Consultation	Adjust Service Providers																																								
Enable Request/Response	Please check off all the specialist that offer Cardiology.																																								
Add Specialist	Update these Services Specialists																																								
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- i** There are plans to improve the functionality around managing specialists in future versions of OSCAR.

Creating and sending an e-Referral

E-referrals are created in the usual way (like normal “consultations”). Of course, it is important to select a CDX-capable specialist as the “Consultant”. These specialists are clearly marked in the dropdown box with “(CDX)” (see below):

Consultation		ELDER, JUNE F 76		
Created by:		<input type="button" value="Submit Consultation Request"/> <input type="button" value="Submit Consultation Request & Print Preview"/> <input type="button" value="Submit and Save CDX e-Referral"/>		
E-Referral History		Referral Date:	2019/5/17 <input type="button" value="Calendar"/>	
Not Sent		Service:	Cardiology <input type="button" value="Down"/>	
Status		Consultant:	<input checked="" type="checkbox"/> ----- All Specialists ----- (CDX) Abbey, Mark (CDX) Plisihb, Lucius Dr.	
<input checked="" type="radio"/> Nothing: <input type="radio"/> Pending Specialist Callback <input type="radio"/> Pending Patient Callback <input type="radio"/> Completed		Referrer Instructions		
		Urgency	Non-Urgent <input type="button" value="Down"/>	
		Phone:		
		Fax:		
		Address:		
		Appointment Instructions		
		Appointment Date:	<input type="button" value="Calendar"/>	
		Appointment Time:	<input type="button" value="Up"/> <input type="button" value="Down"/> <input type="button" value="Up"/> AM <input type="button" value="Down"/>	
		Letterhead Name:	Welby, Marcus <input type="button" value="Down"/>	
		Letterhead Address:	Hamilton Hamilton Ontario L0R 4K3	
		Letterhead Phone:	555-555-5555	
		Letterhead Fax:	faxUser1 <input type="button" value="Down"/>	
		Reason for Consultation		

Attachments can be added to the e-Referral (see left side of window). Once the data on the referral has been entered completely, the e-referral can be sent using the “Submit and Save CDX e-Referral” button (top right).

Checking the status of an e-Referral and viewing it

The user can validate that an e-referral was indeed sent by viewing the left side bar of the e-referral. It mentions the date and time the referral was sent.

OSCAR Consultation Request

localhost:8083/oscar/oscarEncounter/ViewRequest.do?de=81&requestId=20

Consultation	ELDER, JUNE F 76		
Created by: Welby, Marcus	Update Consultation Request	Update Consultation Request & Print Preview	Print Preview
E-Referral History <small>2019-05-17 03:51:00</small>	Referral Date: 2019-05-17	Service: Cardiology	Patient: ELDER, JUNE
Sent	Consultant: (CDX) Plisihb, Lucius Dr.	Address: 456 Main Streets	Tel.No.: 416-555-6789
Status	Referrer Instructions	Work No.:	Cell No.:
<input type="radio"/> Nothing: <input checked="" type="radio"/> Pending Specialist Callback <input type="radio"/> Pending	Urgency: Non-Urgent	Email: 1942-06-06	Health Card No.: 8888999904 ZE ON
	Phone:	Sex: F	Send to: ---- Teams ----
	Fax:		
	Address:		

Moreover, the user can view the information that was sent via CDX by clicking on the link.

eReferral Note

Patient	JUNE ELDER		
Date of Birth	June 6, 1942 Age: 76	Sex	Female
Patient Contact Info	Home: 456 Main Streets Toronto, ON M6P 4J4 Tel (Home): 416-555-6789	Patient IDs	8888999904
Primary Recipient	Lucius Plisihb 93188		
Recipient Contact Info	Home: , null, null null Tel (Home): null		
Authoring System	Oscar Service Provider		
Author	Marcus Welby		
Author Contact Info	Home: Hamilton Hamilton, Ontario L0R 4K3 Tel (Home): 555-555-5555		
Document Maintained By	cdxpostprod-otca (CDX Clinic Registry ID) - Oscar Test Clinic A		
Document Created	May 17, 2019, 15:51, PDT		
Document Id	8901d9dc-ba40-4ff2-a316-6ded7effa153 (CDX Clinical Document ID)		

REASON FOR CONSULTATION: This is the reason for the consultation

CLINICAL INFORMATION: History of heavy alcohol consumption.

Tobacco smoke - Second hand smoke

CONCURRENT PROBLEMS: Transportation needs - Spouse unavailable

Mother had Alzheimer's, onset age 70. Father had Acute Myocardial Infarction age 50. Father retired in 2000

Hysterectomy: PM/S Hx Note Corneal Ulcer: Note about corneal ulcer

ALLERGIES: PENICILLINS AHFS Class

CELEBREX 100MG Brand Name

PEANUTS Custom Allergy

Summary

This document describes the functionality added to OSCAR for its Version 1 of CDX interoperability. There are of course several places where the existing implementation can be improved. Such improvements will be shipped in future versions of the software.