Medsphere OpenVista

Release 2016.2.1 Enhancements

For Clinical Messaging and CCDA

May 2017

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Release 2016.2.1 CCDA Enhancements

Updated Login for Patient Portal Enhancements

With this release, it is now possible to create a patient portal login without requiring an email address. This applies to creating accounts for patients and for authorized agents.

The creation or management of a Patient Portal account begins with the **Manage Portal Logins** option normally located under the **Patient** menu:

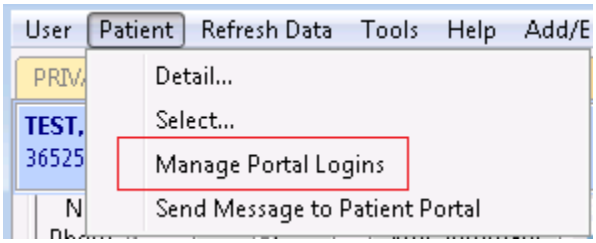

Figure 1: The Manage Portal Logins option

A username may be up to 50 character long as is required to create a Patient Portal account. A notification e-mail address, while not required, may also be entered. If a notification e-mail address is entered, notifications will be sent to that address when the account is created and when new activity happens on the Patient Portal for that patient.

To use two-factor authentication, set the **MSCCM SINGLE FACTOR AUTH** parameter to **NO**. When two-factor authentication is used, a username entered without an e-mail address is treated as one-factor authentication and a temporary password is included in the welcome letter. When an e-mail address is entered, two-factor authentication is activated and a temporary password is included in an e-mail notification sent to the patient e-mail address.

Additionally, clarifying text has been added to the **Manage Patient Portal Logins** dialog box.

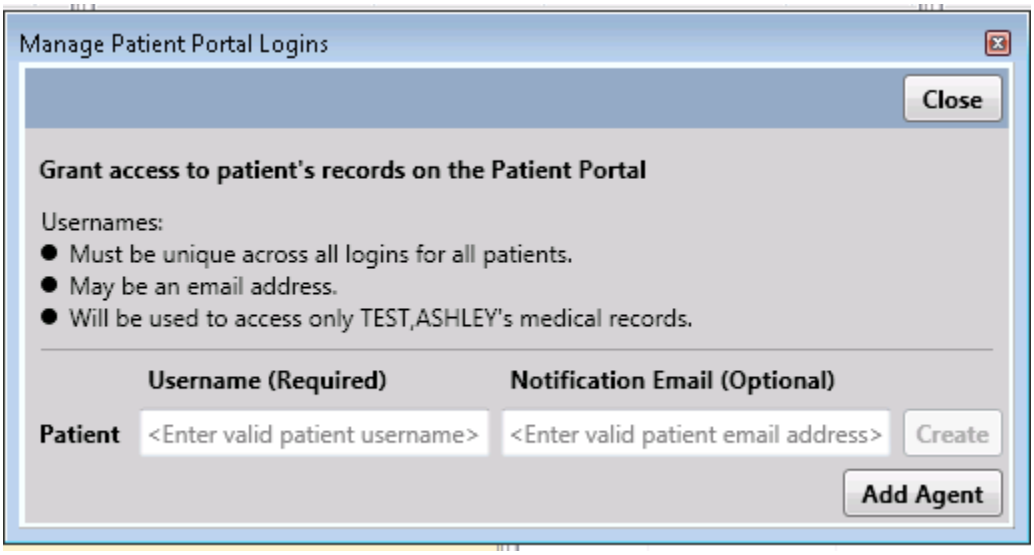

Figure 2: The Manage Patient Portal Logins dialog

Create an authorized agent using the **Add Agent** button on the **Manage Patient Portal Logins** dialog. The first and last name of the agent is required along with a username of up to 50 characters. If entered, an e-mail address enables notification of the authorized agent for new activity on the Patient Portal.

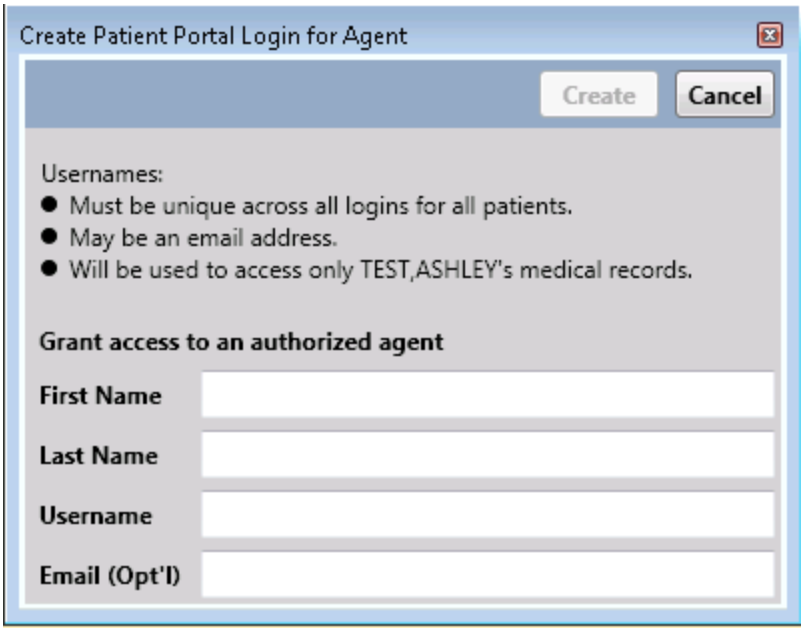

Figure 3: The Create Patient Portal Login for Agent dialog

Related artifact: 19817

Two new CCDA documents now available

Two new types of CCDA documents—**Discharge Summary** and **Continuity of Care**— are available with this release.

Both are available from the menu accessed by clicking the CCDA button.

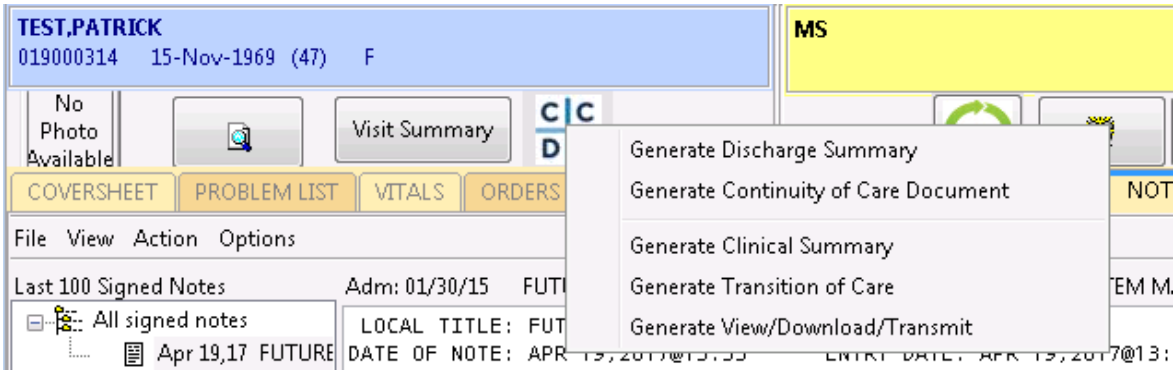

Figure 4: Menu options available from the CCDS button

Currently, these new CCDA types do *not* meet the **View, Download, Transmit** and **Summary of Care** requirements for Stage 2 Meaningful Use.

Select the **Generate Transition of Care** option to create a transition of care CCDA for patients transferred to another facility.

Use the **Generate View/Download/Transmit** option to upload a CCDA to the patient portal.

Related artifact: 19984

CCDA Export

Certified Electronic Health Record Technology that meets the requirements for Stage 3 Meaningful Use must enable authorized users to export select or all patient records as Continity of Care Documents (CCDs). This type of CCDA file is designed to transfer medical records between different EHR systems.

To satisfy this requirement, an HDS Service background task now polls for exports that need to be performed. The export process is controlled by editing two files using FileMan; it is similar to the **CCDA Importer** and **MU Report Extractor**, which import patient documents to the Patient Portal database.

Exporting CCD documents can be resource intensive, especially when large numbers of patient records are involved. Use caution in configuring exports and do not schedule exports unless needed. As delivered, only users with the highest level FileMan access of @ can edit the CCDA DATA EXPORT CONTROL FILE.

The data export measure, in short, requires that a user configure an export to happen immediately or at some time in the future. The data are exported as Continuity of Care (CCD) XML documents (CCDA). An export event can cover a date/time range or specific visits.

Once an export is complete, users can schedule it to recur in the future using a set of two (2) FileMan files that allow export job configuration. An HDS Service thread polls every 30 seconds and kicks off the export process when the set time arrives.

Configuration Synopsis

- In FileMan, add a record to the **CCDA DATA EXPORTER ENV CONFIG** file. This likely only needs to be done one time.
- In CareVue, subscribe to **Free Text** notifications.
- In FileMan, add a record to the **CCDA DATA EXPORT CONTROL** from the **USER** group.
- (Optional) From OpenVista, use **D REPORT^MSCHDSXP("S")** to monitor running exports.
- Wait for the notification in CareVue when the export is complete.
- Find the export files in their own directories, noted in the notification message.

Configuration Details

Two files must be configured for data export. The first, **CCDA DATA EXPORTER ENV CONFIG**, contains a single record and specifies authentication and environment information applicable to all exports. The second, **CCDA DATA EXPORT CONTROL**, allows a user to configure all necessary components for a single data export job.

Configuration of the first file, **CCDA DATA EXPORTER ENV CONFIG**, is fairly simple.

Field Name	Description
NUMBER	Only one record is allowed in this file, so NUMBER *must* be set to 1. Nothing else is allowed.
EXPORTER ACCESS CODE	The Access Code of a user who has the CIAV VUECENTRIC secondary option assigned (field 203 of the NEW PERSON file)

EXPORTER VERIFY CODE	The accompanying Verify Code for the Access Code; Choose a user with VERIFY CODE NEVER EXPIRES set to Yes.
DEFAULT OUTPUT DIRECTORY	This field is optional. It represents a default directory for an export for which an output directory was omitted when configuring an individual export. This allows users to not have to remember/configure an output directory each time they configure a data export job. This directory should be accessible and writable on the Glassfish server by the Glassfish service. For testing, /tmp is a valid choice for a Linux system. For production, something else would be more appropriate since /tmp gets cleaned upon reboot.

Table 1: File CCDA DATA EXPORTER ENV CONFIG details

The CCDA DATA EXPORT CONTROL file contains records for CCDA data export jobs, both past and future. Many fields in this file need no configuration. To make it simpler to enter data, a field group named USER presents only those few fields a user needs to configure for a data export job. Examples of how to use this group are presented later in this document. The USER group fields are described below.

Field Name	Description
EXPORT DATETIME	This is the date/time that the export should occur and can be any valid FileMan date/time specification. As such, it can also take meta date/time specifications, such as T+1W@1100 (a week from now at 11 a.m.). Examples of valid values: NOW (The current date time) NOW+1 (Tomorrow at this time) T+1 (Tomorrow at midnight) T+1W@1300 (In one week at 1:00 p.m.) JULY 1, 2017@15:00 3170701.15 (July 1, 2017 @ 15:00 in FM format)
RECURS	If the job is to recur, configure appropriately. Valid values are: N – Never D – Daily W – Weekly M – Monthly Y – Yearly Of course, N indicates a one-time job.
OUTPUT DIRECTORY	This field is optional but should only be left blank if the user wants to default to the value of the DEFAULT OUTPUT DIRECTORY field of the CCDA DATA EXPORTER ENV CONFIG file. A value here overrides the setting in the ENV CONFIG file.
PATIENT TYPE	The data export measure requires differentiation between Test patients and Non-test (e.g., real) patients. The valid values for this field are: N – Non-Test T – Test B – Both A patient is considered a test patient if either the TEST PATIENT INDICATOR field in the PATIENT (2) file is set to YES or if the patient's SSN starts with five (5) zeroes (0).

VISIT RANGE BEGIN DATETIME	This is the date/time of the earliest visit to include in the export. This field is optional. However, if omitted, the user should choose specific visits. The allowed input formats are the same as those described in the EXPORT DATETIME field.
VISIT RANGE END DATETIME	This is the date/time of the latest visit to include. The allowed input formats are the same as those described in the EXPORT DATETIME field.
VISITS	This is a multiple that points to the visit file. Choose Specific for specific patients using this field. Enter the name or MRN of the patient and then choose the proper visit(s) (if there is more than one visit).

Table 2: CCDA DATA EXPORT CONTROL (USER group fields)

Note: Users can configure both a visit date range and specific visits for export.

Example: Adding a new entry to the **CCDA DATA EXPORT CONTROL** file using the **USER** group fields and choosing both a visit date range and one specific visit. User input is in **bold and red**.

```
Select OPTION: 1  ENTER OR EDIT FILE ENTRIES

Input to what File: CCDA DATA EXPORT CONTROL// CCDA DATA EXPORT CONTROL
                                            (5 entries)
EDIT WHICH FIELD: ALL// USER

Fields in Group: USER
  .01     EXPORT DATETIME
  1       RECURS
  2       OUTPUT DIRECTORY
  3       PATIENT TYPE
  4       VISIT RANGE BEGIN DATETIME
  5       VISIT RANGE END DATETIME
  6       VISITS
Edit this GROUP of fields? YES//
THEN EDIT FIELD:
STORE THESE FIELDS IN TEMPLATE:

Select CCDA DATA EXPORT CONTROL EXPORT DATETIME: NOW   FEB 13,2017@15:41:56
  Are you adding 'FEB 13,2017@15:41:56' as
    a new CCDA DATA EXPORT CONTROL (the 6TH)? No// yes (Yes)
RECURS: ?
     Choose from:
       N        NEVER
       D        DAILY
       W        WEEKLY
       M        MONTHLY
       Y        YEARLY
RECURS: n  NEVER
OUTPUT DIRECTORY:
PATIENT TYPE: N  NON-TEST
```

```
VISIT RANGE BEGIN DATETIME: T-500  (OCT 02, 2015)
VISIT RANGE END DATETIME: T  (FEB 13, 2017)
Select VISIT: patient,
   1   PATIENT,CLINICAL F      4-27-55    4-27-55     Female
   2   PATIENT,CLINICAL M      11-18-45    11-18-45     Male
   3   PATIENT,DIETARY      12-1-68    12-1-68     Female
   4   PATIENT,KARUNA      8-20-12    8-20-12     Female
   5   PATIENT,LABORATORY      11-12-60    11-12-60     Male
ENTER '^' TO STOP, OR
CHOOSE 1-5: 1  PATIENT,CLINICAL F      4-27-55    4-27-55     Female
     1   PATIENT,CLINICAL F  SEP 9,2008@03:35:06     PATIENT,CLINICAL F     ICU
    10B2-TEST
     2   PATIENT,CLINICAL F  NOV 3,2008@07:20     PATIENT,CLINICAL F     GENERAL
 RADIOLOGY     10B6-TEST
     3   PATIENT,CLINICAL F  SEP 9,2008@03:35:06     PATIENT,CLINICAL F     ICU
    10B9-TEST
     4   PATIENT,CLINICAL F  SEP 9,2008@03:35:06     PATIENT,CLINICAL F     ICU
    10BM-TEST
     5   PATIENT,CLINICAL F  APR 1,2009@13:22     PATIENT,CLINICAL F     NM
10C1-TEST
Press <Enter> to see more, '^' to exit this list,  OR
CHOOSE 1-5: 1  SEP 9,2008@03:35:06     PATIENT,CLINICAL F     ICU     10B2-TEST
  Are you adding 'SEP 9,2008@03:35:06' as a new VISITS? No// yes  (Yes)
Select VISIT:

Select CCDA DATA EXPORT CONTROL EXPORT DATETIME:
```

Once the USER fields are entered, the status for the record will be PENDING and is qualified to be processed when the EXPORT DATETIME arrives.

Testing Notes

How do we know when an export is complete?

There are multiple ways.

- The simplest is for the user to subscribe to **Free Text** notifications in CareVue using Tools > Options > Notifications > [Tab] and ensuring **Free Text** notifications is checked. With this configured, the **Data export complete** notification (with details available on drill-down) is delivered to the user's Notifications tab.
- The **View Alerts** menu option in the roll-and-scroll interface always displays delivered notifications regardless of CareVue configuration.
- One of the last steps performed after the CCDA documents are created is to create a log file in the same directory as the CCD documents called **CCDAExportResults.log**. Users can monitor the directory for this file.

The users who created and last modified the **Data Export** record, if different, are notified when the export is complete.

What details are available in the notification?

- The location of output files
- How many succeeded and how many failed
- The error associated with any failed visit exports
- Information about rescheduling (if applicable)

What happens if a visit can't be exported?

After retrying the problem visit a few times (currently three), the export continues with the next visit. Information about the failures is included in the log.

Where are the export files?

The output directory is used as a base. Beneath that is an HDS Service directory (e.g., **PROD-HDSService**) that differentiates which service created which exports. Beneath that is a directory named **ccda-export-YYYY-MM-DD_hhmmss** where YYYY-MM-DD-hhmmss is the export datetime as specified in the export record. The CCDA files and log file are found in this directory.

How do we know if an export is running?

Available OpenVista tools report on export records in various states. The **REPORT^MSCHDSXP** tool has two parameters: The first (required) is status (e.g., PENDING, COMPLETE, STARTED, ERROR, or a comma-separated list of statuses); the second (optional) is a date/time to start reporting from.

Example: To see all Pending and Started exports since midnight:

```
PROD>D REPORT^MSCHDSXP("P,S","T")
```

To see all Complete, Pending, Started and Errored extracts, in that order, scheduled for today (or later):

```
D REPORT^MSCHDSXP("C,P,S,E")
```

What happens if an export stops before it is complete?

If Glassfish is restarted or some other system-down event occurs before an export can be completed, it will pick back up where it left off when the problem is resolved.

What security makes sure only authorized users can configure a data export job?

A user must have programmer access to modify either of the **CCDA DATA EXPORT** files or to even see that the files exist.

Can an authorized user change any field in the CCDA DATA EXPORT CONTROL file via FileMan?

The **CCDA DATA EXPORT CONTROL** file includes many fields besides those in the **USER** group. These fields are manipulated by the HDS Service using RPCs and include input transforms that keep a FileMan user from making changes. If users try to change those fields, the field edits will not be accepted.

What if someone needs to configure a non-USER group field in the CONTROL file?

The input transform recognizes a variable named **MSCHDSEDIT** that, when set, allows users to make changes. Only developers and customer care should know about this as it is used for diagnosing/remedying issues. The method for doing this (from the OpenVista prompt):

```
PROD>N MSCHDSEDIT S MSCHDSEDIT=1 D Q^DI
```

This sets a special variable after which FileMan is invoked with the **Q** tag instead of the **P** tag. The **Q** tag doesn't kill variables before starting FileMan; the **MSCHDSEDIT** variable is set to 1 and users with programmer access can modify any field in the **CCDA DATA EXPORT CONTROL** file.

What happens if an export is scheduled for a date in the past?

If a user schedules an export for a past date, it is processed immediately when the HDS Service next polls for exports, since that export date/time is satisfied (e.g., current date/time > export date/time).

How often does the HDS Service poll for exports?

Currently, it is configured to poll every 30 seconds.

What happens if the HDS Service doesn't pick up an export request for a significant amount of time (e.g., a week)?

When an export is more than a day old (via the export date), a visit date/time range is supplied, and the visit date/time range contains meta specifiers (e.g., T-30), then the visit date/time range shifts to when the export was supposed to have originally kicked off. For example, if an export doesn't kick off for a week and specifies T-30 as the begin time, T-30 minus 1 week is used for the beginning visit date/time range.

How can I configure an export for every visit on a system?

A full export is an MU requirement. The recommended approach is to specify a visit date/time range that encapsulates every possible visit. For example, T-10000 as the start of the range goes back 10,000 days and probably suffices in most instances.

Since VISIT RANGE BEGIN DATETIME, VISIT RANGE END DATETIME and VISITS multiple are all optional, what happens if a user doesn't configure any of them?

In this case, the status of the export record is in the **NOT READY** state and is not attempted. If a user goes back and supplies visit information, the state changes to **PENDING** (automatically) and is processed the next time the HDS Service polls (if the current date is after the export date).

What if a visit date range is specified, but there are no visits within that range?

Nothing is processed, of course, but also no errors are logged. The user receives a notice that the export is complete and can see that zero (0) CCDA documents were exported.

How can we test to see if exports resume properly?

- Enter a large visit range (e.g., T-500 to T) to encapsulate many visits.
- Use **D REPORT^MSCHDSXP("S")** to see that the export has started.
- Confirm that the exported and not-yet exported visits are in the report, making it simpler to see/monitor the export process.
- Disable the HDS Service in the Admin Glassfish console while the process is on-going.
- Use **REPORT^MSCHDSXP** to make sure no exports are being processed.
- Enable the service.
- Use **REPORT^MSCHDSXP** to see that they've resumed.

Can two or more exports occur at the same time?

Yes, multiple can be running at one time. The thread package allows three at one time; a fourth would have to wait for one of the three to finish before it could run.

How can we test recurring exports if we don't want to wait a between executions?

Since it is possible to schedule an export for a date in the past, schedule the export to first occur the same amount of time in the past as your **RECURS** value. For example, to test that an export recurs yearly, set the export date/time to **NOW-365** and **RECURS = YEARLY**, along with other valid **USER** group settings. When the HDS Service polls, it picks up the year-old export, processes it and then reschedules it for one year from that export date/time; this should be just before the current date/time, causing the HDS Service to pick it up almost immediately after finishing the first (year-old) one.

- If RECURS = MONTHLY, set the export date/time to NOW-1M
- If RECURS = WEEKLY, set the export date/time to NOW-1W
- If RECURS = DAILY, set the export date/time to NOW-1

Is it possible to stop the CCDA Extractor task from running after it has been started?

Yes. A **REST** call commands the extractor to stop polling, another to start polling and a third that prints a simple status. Supposing the HDS Service is named **QA620-HDSService** and is running on port 18280 on the qalinuxgtm01 machine, the following URLs demonstrate the use:

http://qalinuxgtm01:18280/QA620-HDSService/rest/ccda-exporter/stop-polling

http://qalinuxgtm01:18280/QA620-HDSService/rest/ccda-exporter/start-polling

http://qalinuxgtm01:18280/QA620-HDSService/rest/ccda-exporter/status

Related artifact: 19986

XPAR for Insurance Company Name and SOP Code

QRDA Category I files are generated for submission to the Qualitynet.org portal for the Hospital Inpatient Quality Program. These patient-specific QRDA files must include a **Source of Payment** code appropriate for the patient's insurance. A new parameter (XPAR) named **MSC INSURANCE SOP** allows customization of the mapping from the insurance company name to the appropriate SOP. The list of appropriate SOP codes can be found here:

http://www.phdsc.org/standards/pdfs/SourceofPaymentTypologyVersion5.0.pdf

A default mapping table is built in to CareVue and is shown below:

Insurance name	SOP
MEDICARE	1
MEDICARE A AND B	1
Medicare Part A	1
Medicare Part B	1
MEDICAID	2
MEDICAID/ARKANSAS	2
MEDICAID/OKLAHOMA	2
ALABAMA MEDICAID AGENCY	2
ALASKA MEDICAID	2
CALIFORNIA MEDICAID	2
COLORADO MEDICAID	2
IDAHO MEDICAID	2
SOUTH DAKOTA MEDICAID	2
TEXAS MEDICAID	2
VERMONT MEDICAID	2
OREGON MEDICAID	2
OTHER MEDICAID OUT OF STATE	2

MONTANA MEDICAID	2
DEPARTMENT OF VETERANS AF	32
VETERAN'S ADMINISTRATION	32
WPS - DEPT VETERAN AFFAIRS	32
TRICARE	31
SELF PAY	81
BC/BS	6

Table 3: Default insurance mapping codes

Your **INSURANCE COMPANY** file may contain insurance names not in the list above. If so, add them along with the appropriate **Source of Payment** code, to the **MSC INSURANCE SOP** parameter. The insurance name (field .**01** of the **INSURANCE COMPANY** file) must exactly match the table value.

Follow these steps to customize the insurance mapping in OpenVista using the new parameter.

1. Select Option: test an option not in your menu
2. Option entry to test: XPAR EDIT PARAMETER
3. Select PARAMETER DEFINITION NAME: MSC INSURANCE SOP
4. MSC INSURANCE SOP may be set for the following:

   Choose:

   1 System

   2 Division

   Enter selection: 1 System
5. Select Insurance Company SOP mapping: ?? to see list of Insurances to select. Select an insurance
6. Are you adding <Insurance name> as a new Insurance Company SOP mapping? Yes// YES
7. Insurance Company SOP mapping: <Enter Insurance name>
8. SOP Code: <Enter appropriate SOP code for the Insurance>

Related artifact: 20336

CCDA Display Enhancements

CareVue's new, more flexible CCDA viewer is available when viewing CCDA files received via **Clinical Messaging** and when viewing CCDA files attached to a patient's medical record. The viewer allows users to change the order of sections viewed, to select a subset of sections to view and to save user preferences.

The previewer used when ***creating*** a CCDA has not changed.

When viewing a message in the **Inbox** of the **Clinical Messaging** application, a small icon displays at the bottom of the message when a CCDA is attached. Click on this icon to display the CCDA in the new viewer.

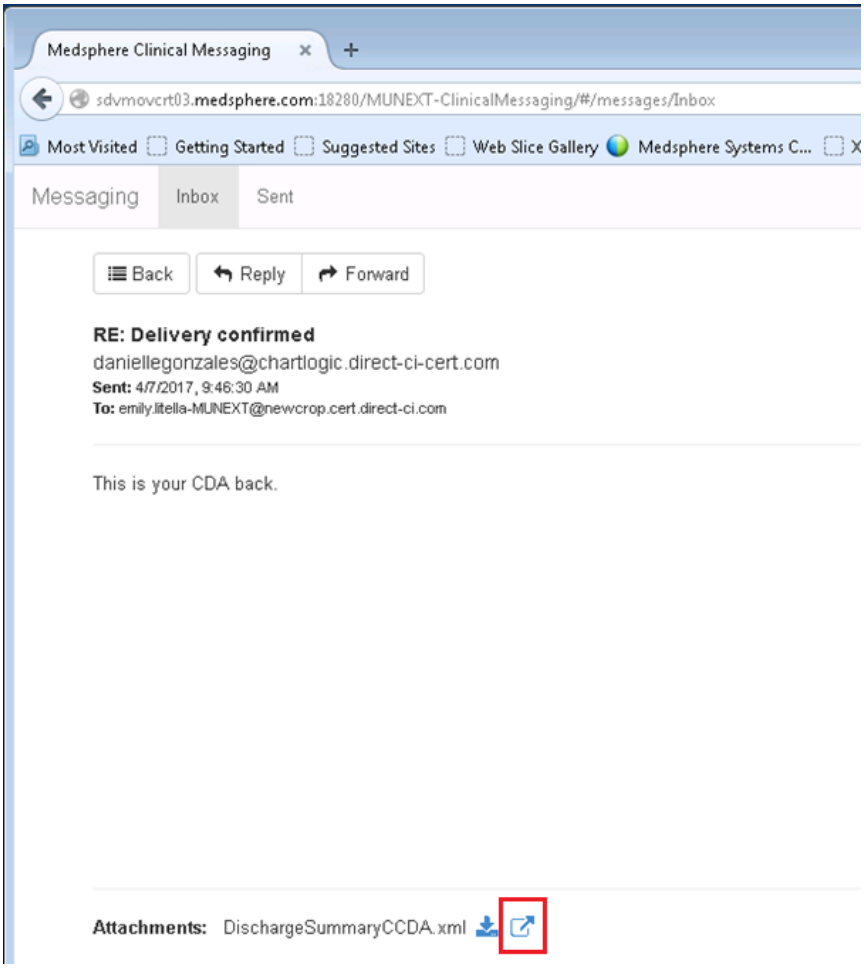

Figure 5: CCDA display viewer icon

View CCDAs attached to a patient chart by going to the **Tools > View Images** menu and selecting the document of interest. The new viewer displays the document.

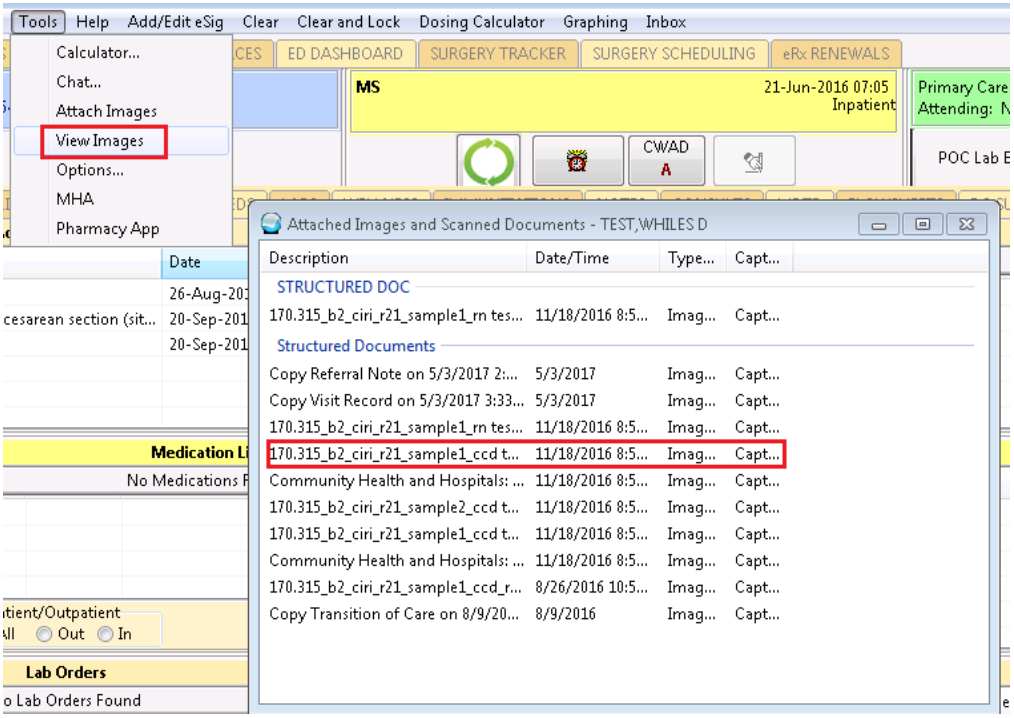

Figure 6: Selecting a CCDA document to display in the new viewer

A full screen view using the new style viewer is shown below. Notice the vertical scroll bar on the right side of the display that enables scrolling through the document.

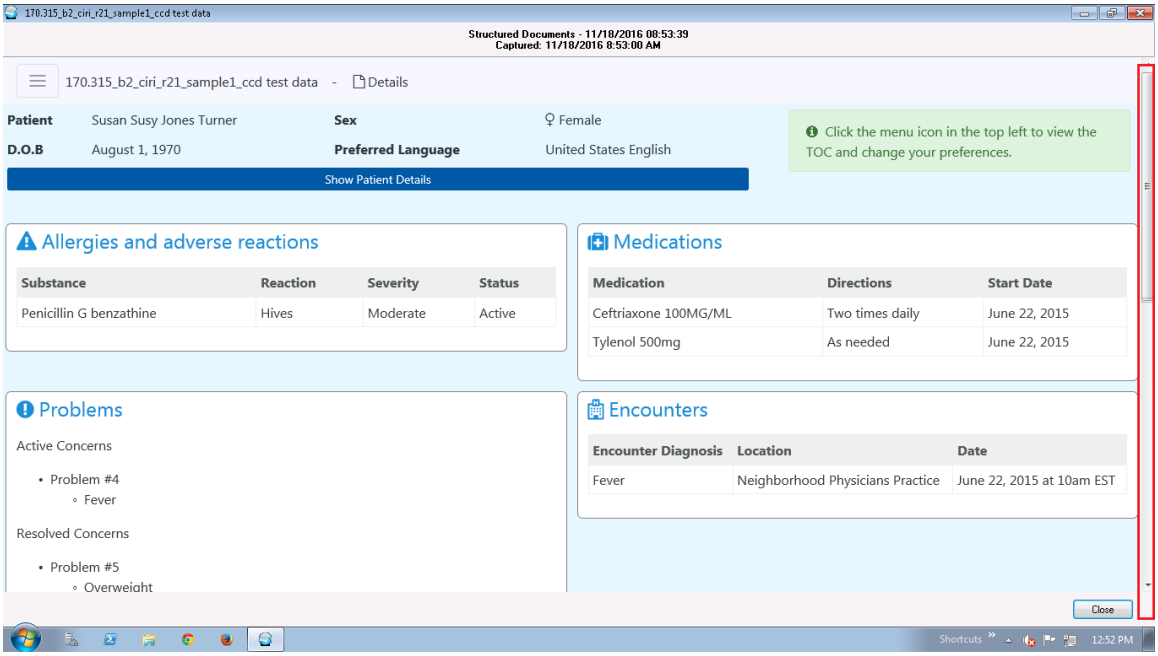

Figure 7: New CCDA viewer with highlighted scroll bar

Click on the icon above the patient name to display a **Table of Contents** on the left side of the page.

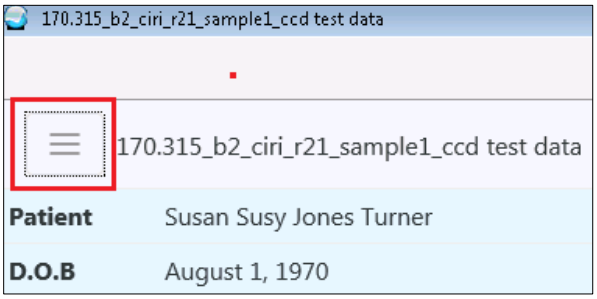

Figure 8: The Table of Contents icon

The table of contents includes several control elements.

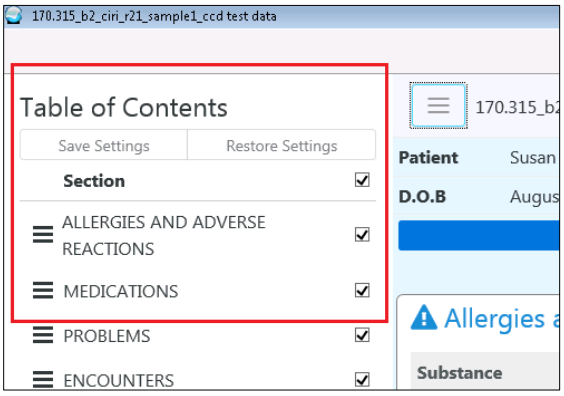

Figure 9: Optional elements in the Table of Contents

A checkbox for each section of the CCDA allows the user to hide or display that section.

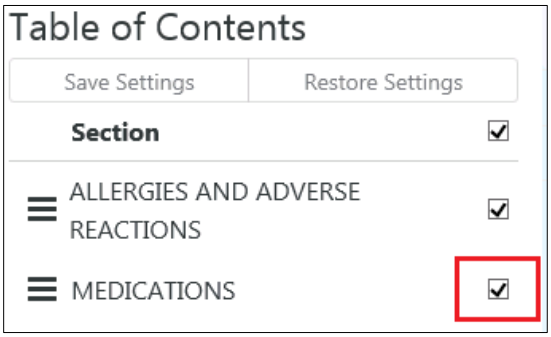

Figure 10: Displayable TOC options

Change the order of the sections displayed by clicking, holding and dragging the leftmost icon either up or down.

Figure 11: Icon enabling TOC reordering

When viewing documents attached to a patient chart, users can save their preferences in terms of which sections display (the checkbox) and the order in which they display. Saved settings are specific to the user. The saved user preferences are used each time a CCDA document is viewed by that user.

Note: When viewing a CCDA document within the **Clinical Messaging** application (Inbox), saving settings does not preserve them. When incoming documents are received via **Clinical Messaging**, it is important that the entire document always be viewed every time.

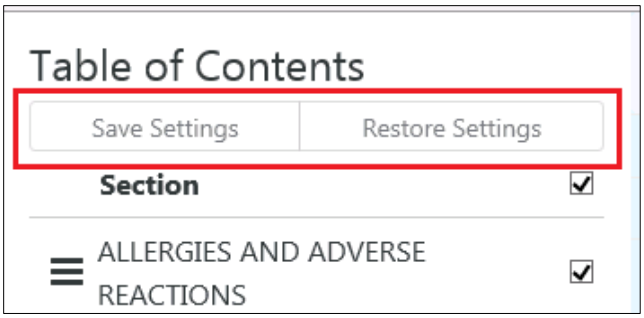

Figure 12: Saving TOC settings

When a user saves settings that don't contain all sections, a warning message displays to remind the user they are not viewing the entire document.

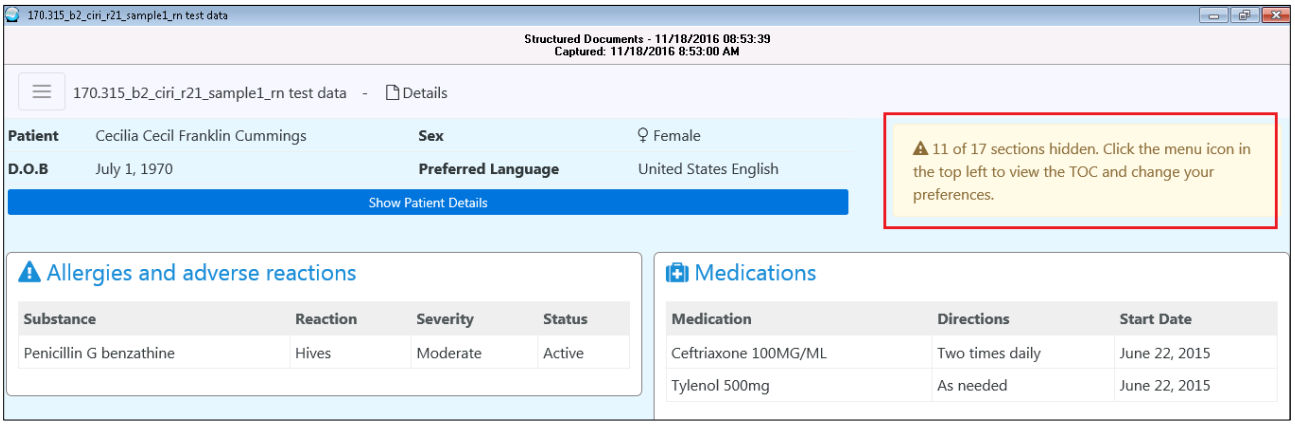

Figure 13: Sections hidden warning message

Click on the icon above the patient name a second time to close the Table of Contents window.

Click the **Details** icon to view additional information contained in the document.

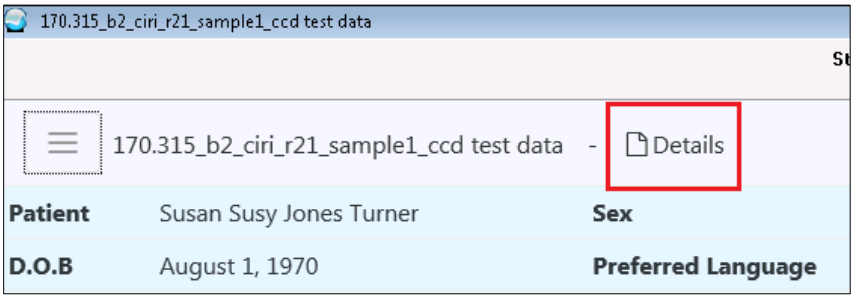

Figure 14: The Details icon

The document details display includes the name of the document, when it was created and who created it, the encounter date, contact information and various other information contained in the CCDA.

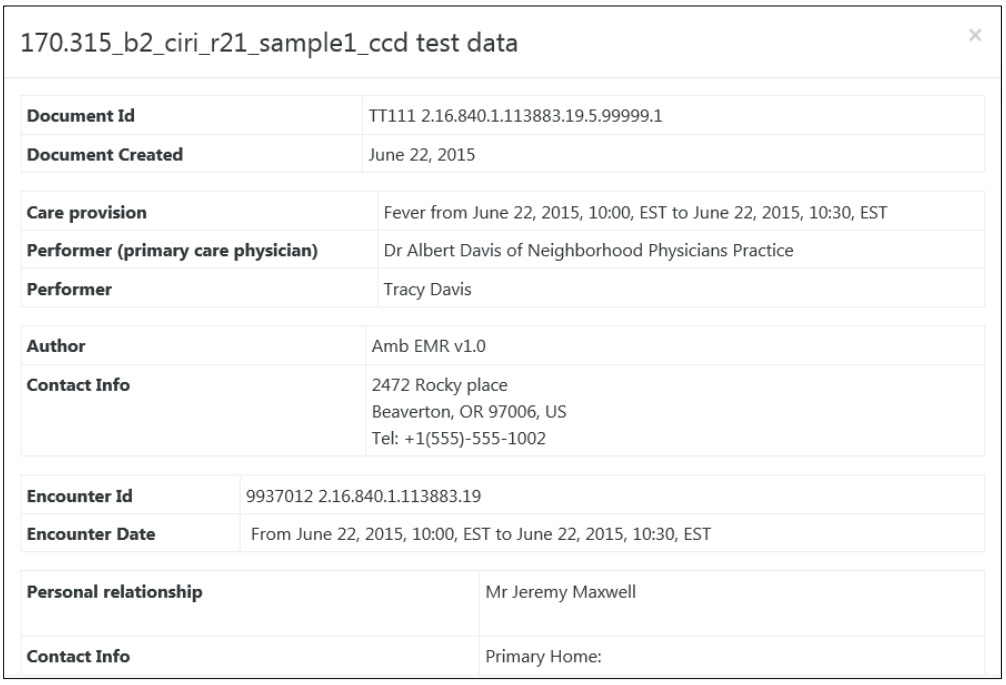

Figure 15: CCDA document details

Click the blue bar labeled **Show Patient Details** to see additional patient information.

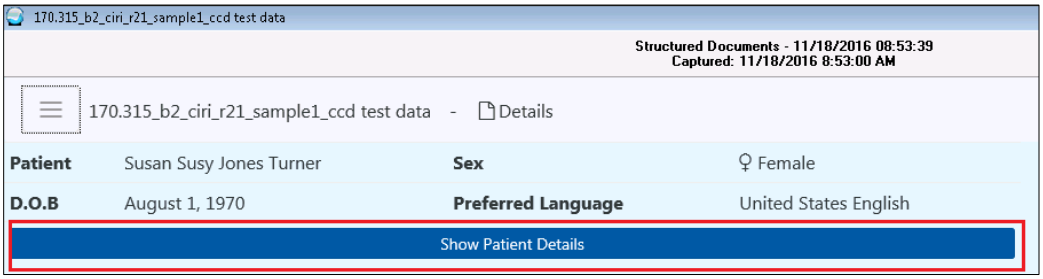

Figure 16: The Show Patient Details bar

The additional patient information is displayed below the patient name and date of birth. To hide the additional patient information, click the blue bar a second time.

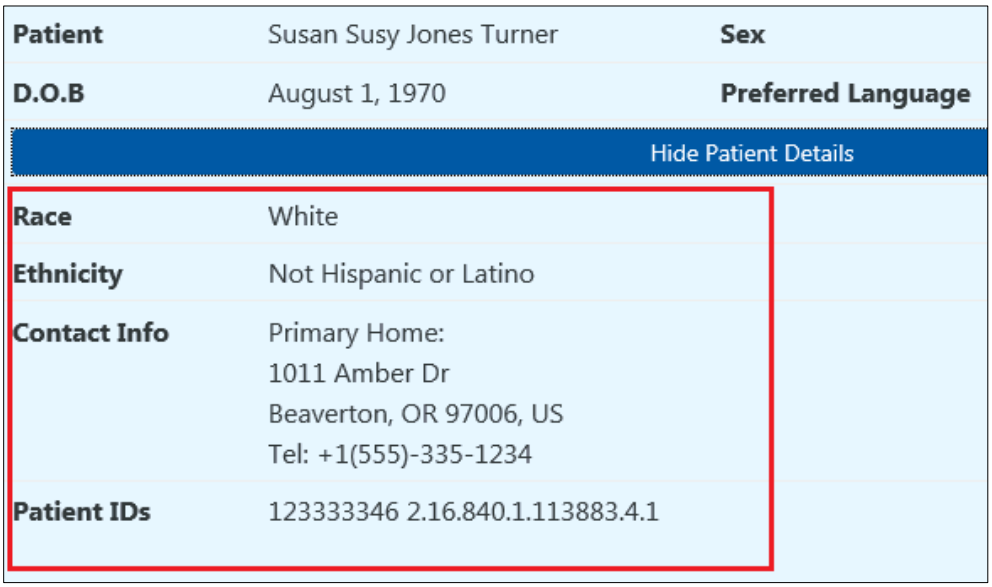

Figure 17: Patient details displayed

Click on the section name in each section of the CCDA containing clinical information to expand.

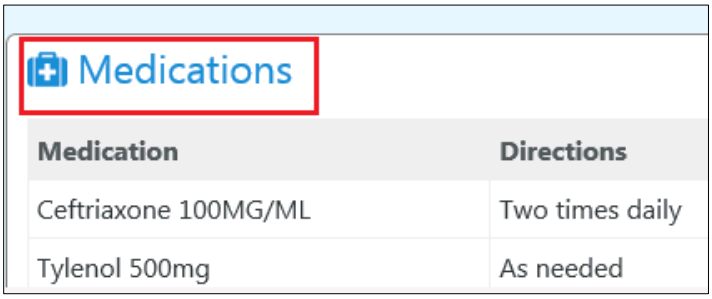

Figure 18: The Medications section header

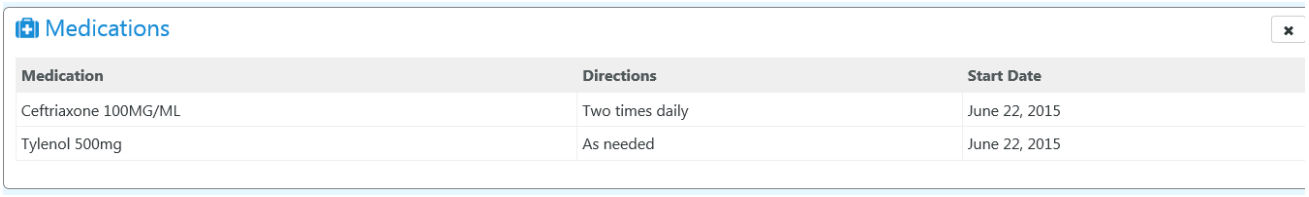

Figure 19: A detailed view of patient medications

Click the **Close** button at the bottom of the CCDA or click the Windows **X** in the upper right corner of the window to close the CCDA.

Related artifact: 20508

New CCDA Referral Note File

A new type of Consolidated Clinical Document Architecture (CCDA) file called **Referral Note** allows users to specify the **Receiving Organization** and **Reason For Referral**.

To create a **Referral Note**:

1. Select a patient.
2. Select a visit.
3. Navigate to **NOTES** tab.
4. Create a note to be used in the **Reason For Referral** section of the CCDA. This can be a TIU note using any template or no template at all. Any note title is acceptable, but titles such as **Referral Note**, **Long Term Care Referral**, **Pain Management Referral,** etc., work well.
5. Sign the note.
6. Select the signed TIU Note from the list. (Since any note can be sent in this fashion, steps 4 and 5 could be omitted if the user just selects a signed note.)
7. From the **ACTION** menu of the TIU component, select **Create Referral Note CCDA…**. (Alternatively, right-click on the note and select **Create Referral Note CCDA**… from the menu.)

A new modal dialog window called **Create Referral Note CCDA** displays. It contains one required text field, **Receiving Organization**, which permits 256 characters. Enter the name of the organization to which the patient is being referred, then click **OK**.

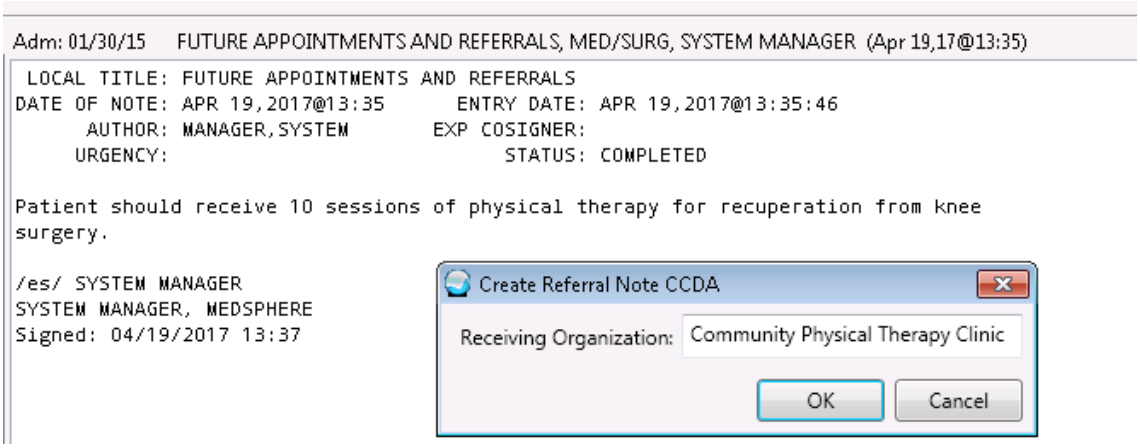

Figure 20: The Create Referral Note CCDA window

The **Referral Note CCDA** appears in a window. Click the **Finalize** check box to enable the **Save, Print**, or **Send** buttons.

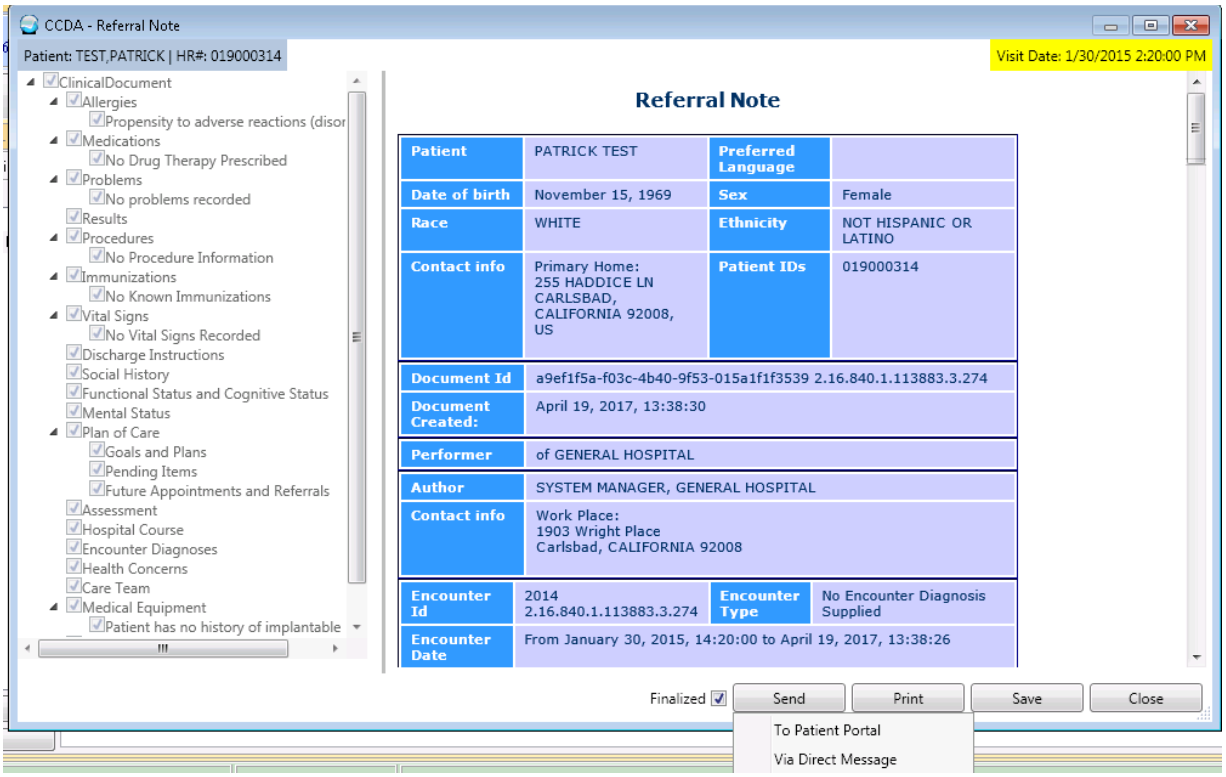

Figure 21: The Referral Note CCDA

Related artifact: 20510