RESOURCE AND PATIENT MANAGEMENT SYSTEM

Consolidated Clinical Document Architecture

(BCCD)

User Manual

Version 2.0 Patch 8
October 2026

Office of Information Technology
Division of Information Technology

Table of Contents

1.0 Introduction 1
1.1 Purpose 1
1.2 Scope 1
1.3 Patient Preferred Name (PPN) 3
2.0 System Navigation 4
2.1 CCDA Setup 4
2.2 Hospital Course Information Setup 5
2.3 Architecture 7
3.0 Package Management 9
3.1 Manage Site-Specific CCDA Parameters 9
3.1.1 Edit CCDA Site Parameters 9
3.1.2 Edit CCDA Clinical Site Parameters 11
3.1.3 BCCD Notes Definition Report 14
3.2 Manage CCDA Messaging 15
3.3 Manage CCDA IRIS Production 16
3.4 CCDA Application Status Report 17
3.5 Resubmitting and Purging Error Documents 19
4.0 Package Operation 22
4.1 Manually Generate One CCDA Document 22
4.2 Manually Regenerate All CCDA Documents 23
4.3 Manually Regenerate CCDA Documents for a Specified Date Range 24
5.0 CCDA Audit Log 25
6.0 Limits on the Data Included in CCDA Documents 26
7.0 Manage Email Notifications 38
8.0 References and Sources 43
Appendix A Rules of Behavior 44
A.1 All RPMS Users 44
A.1.1 Access 44
A.1.2 Information Accessibility 45
A.1.3 Accountability 45
A.1.4 Confidentiality 46
A.1.5 Integrity 46
A.1.6 System Logon 47
A.1.7 Passwords 47
A.1.8 Backups 48
A.1.9 Reporting 48
A.1.10 Session Timeouts 48
A.1.11 Hardware 48

A.1.12 Awareness 49
A.1.13 Remote Access 49
A.2 RPMS Developers 50
A.3 Privileged Users 50
Glossary 53
Acronym List 54
Contact Information 55

Trademark Notice

- Caché® and IRIS® are registered trademarks of InterSystems Corporation.
- Continuity of Care Document® is a registered trademark of Health Level Seven International.
- HL7® and Health Level Seven® are registered trademarks of Health Level Seven International.
- Windows® is a registered trademark of Microsoft Corporation.
- SNOMED® and SNOMED CT® are registered trademarks of the International Health Terminology Standards Development Organization.
- UNIX® is a registered trademark of The Open Group.

Preface

This manual provides information for site managers regarding operations of the Consolidated Clinical Document Architecture (CCDA) v2.0 (BCCD) package, including p7 updates. This manual is not intended for end users of RPMS since there is no end user functionality in this package.

The BCCD package is designed to generate industry standard Continuity of Care Documents (CCD) in Health Level 7 (HL7) CCDA format, following the August 2015 Draft Standard for Trial Use (DSTU) standard, further restricted by 2015 Certified Health Information Technology (CHIT) requirements; the 2015 Edition Cures Update (CURES); the Health Data, Technology, and Interoperability (HTI-1) final rule; and the U.S. Core Data for Interoperability (USCDI) v3.0 requirements and the Companion Guide Release 4.1 guidelines. These documents can be transmitted to Indian Health Service (IHS) Health Information Exchange (HIE) repositories, retrieved by the Electronic Health Record (EHR) Graphical User Interface (GUI) using web services, or viewed as export summary documents.

1.0 Introduction

The Consolidated Clinical Document Architecture (BCCD) software is a component of the IHS Resource and Patient Management System (RPMS). The software provides the ability to generate industry standard Clinical Summary, Clinical Summary Brief, Transitions of Care, Export Summary, Health Information Exchange (HIE) and Case Reporting documents that meet the Health Level Seven (HL7) August 2015 DSTU standard, the 2015 CHIT specifications, the 2015 CURES specifications, the USCDI v2.0 requirements, and the Companion Guide Release 3 guidelines.

Clinical Summary, Clinical Summary Brief, and Transitions of Care documents are retrieved by the EHR GUI using web services. Data Export summary documents are requested via an RPMS Application Programming Interface (API). HIE documents are generated by a nightly background job or via an RPMS menu option and are transmitted to IHS HIE repositories via web services. Case Reporting documents are requested by the iCare (BQI) application, which retrieves completed documents for transmission.

1.1 Purpose

CCDA documents can serve a variety of purposes, including enabling clinician access to patient data in an emergency scenario, quality reporting, bio surveillance, patient access to the patient's own data via a Personal Health Record (PHR) system, and medication or allergy reconciliation.

Each CCDA document consists of two components: a human-readable part known as a narrative block, which can be displayed by a web browser; and a machine-readable part intended for automated data processing. The machine-readable component may contain more detailed information than the human-readable part.

1.2 Scope

A CCDA document is an Extensible Markup Language (XML) document summarizing current and pertinent historical information about an individual patient’s health care record at a given facility. Although not every document type contains every section, the current IHS implementation of the CCDA standard supports the following sections:

- Allergies and Intolerances
- Assessment and Plan
- Care Team
- Case Reporting
- Chief Complaint and Reason for Visit (Case Reporting only)

- Consultation Notes
- Contacts
- Discharge Diagnoses (inpatient visits only)
- Discharge Summary Notes
- Electronic Initial Case Report (eICR) (Case Reporting Reportability Response only)
- Functional/Disability Status
- Goals
- Health Concerns
- Health Insurance
- History and Physical Notes
- History of Present Illness (Case Reporting only)
- Hospital Course (inpatient visits only)
- Hospital Discharge Instructions (displayed for observation ("O") and day surgery ("S") visits, in addition to inpatient visits)
- Immunizations
- Medical Equipment (Implantable Devices)
- Medications
- Medications Administered (Case Reporting only)
- Mental/Cognitive Status
- Patient
- Problems/Encounter Diagnoses
- Procedures and Interventions
- Progress Notes
- Reason for Hospitalization (inpatient visits only)
- Reason for Referral (ambulatory visits only)
- Reason for Visit (ambulatory visits only)
- Recent Encounters
- Recent Test Results
- Recent Vital Signs
- Reportability Response Subject (Case Reporting Reportability Response only)

- Reportability Response Summary (Case Reporting Reportability Response only)
- Security and Privacy Prohibitions
- Social History

1.3 Patient Preferred Name (PPN)

This application uses the AUPN DISPLAY PPN parameter functionality and is defaulted OFF until Patient Preferred Name (PPN) is available across the enterprise.

Note:	While this parameter is turned off, Patient Preferred Name will not display in this application. This allows the Patient Preferred Name to be turned on at once without requiring a coordinated release of all applications. Once all applications support the display of the PPN, instructions will be sent out on how to enable this parameter system-wide.

2.0 System Navigation

2.1 CCDA Setup

To set up CCDA at an RPMS site:

1. Calculate the additional disk space required for the BCCD application and allocate disk space.
2. Perform pre-install steps, including enabling Long Strings, verifying access to OS configuration file, designating a directory where the new CCDA database will reside, mapping BMW globals, and stopping CCDA.
3. Install the provided Kernel Installation and Distribution System (KIDS) build.
4. Perform post-install steps, including setting up optional encryption, optional email notifications, disabling journaling in the CCDA database, configuring the CCDA CSP Application, setting up site-specific BCCD parameters, and starting CCDA Messaging.

See the CCDA Installation Manual for further details on the installation and configuration steps.

The BCCD package has one RPMS menu used by site managers, CCDA MENU (BCCD MENU), which presents the following options:

- BCCD Notes Definition Report (BCCD NOTES DEFINITION REPORT)
- Edit CCDA Site Parameters (BCCD EDIT SITE PARAMETERS)
- Edit CCDA Clinical Site Parameters (BCCD EDIT CLINICAL PARAMETERS)
- Generate CCDA for a single patient (BCCD CCDGENONE)
- Generate CCDA documents for all patients in RPMS (BCCD CCDALLGEN)
- Generate CCDA documents for a specified date range (BCCD GEN CCDA DATE RANGE)
- Manage CCDA transmissions (BCCD CCDA MGR)
- Purge or Resubmit Error Documents (BCCD ERROR PROCESSING)
- Display the CCDA application status report (BCCD APP STATUS)

The BCCD package contains no menu options accessible by end users.

Site managers are responsible for performing the following two tasks to ensure that CCDA documents are successfully generated at their site:

1. Ensure that site-specific CCDA parameters are set up appropriately. Section 3.1 provides more information about the set up.
2. Ensure that CCDA Messaging is running. Section 3.2 provides more information about managing CCDA Messaging.

2.2 Hospital Course Information Setup

BCCD v2.0 added a new section to inpatient CCDA documents called Hospital Course. The information for the Hospital Course section comes from the signed Discharge Summary TIU note associated with the Inpatient stay. However, the Discharge Summary note may include additional information not related to the Hospital Course. To extract only the Hospital Course information in the CCDA from the Discharge Summary note, it is recommended that any Discharge Summary template have a Hospital Course header and footer. The header should be fifty (50) hyphens on their own line followed by the text "HOSPITAL COURSE" (without quotes) on its own line. The footer should follow the Hospital Course information and be fifty (50) hyphens on its own line.

Later, when the provider creates the Discharge Summary note for the patient, the Hospital Course information must be entered by the provider between the header and footer; otherwise, the CCDA will include all the information entered in the Discharge Summary note. To make it easier for the provider to identify what the header and footer are, you may want to consider entering some blank lines between the header and footer.

Please work with your Clinical Informaticists on entering the Hospital Course header and footer. An example of how to add the Hospital Course header and footer to a Discharge Summary template is shown in the figure below.

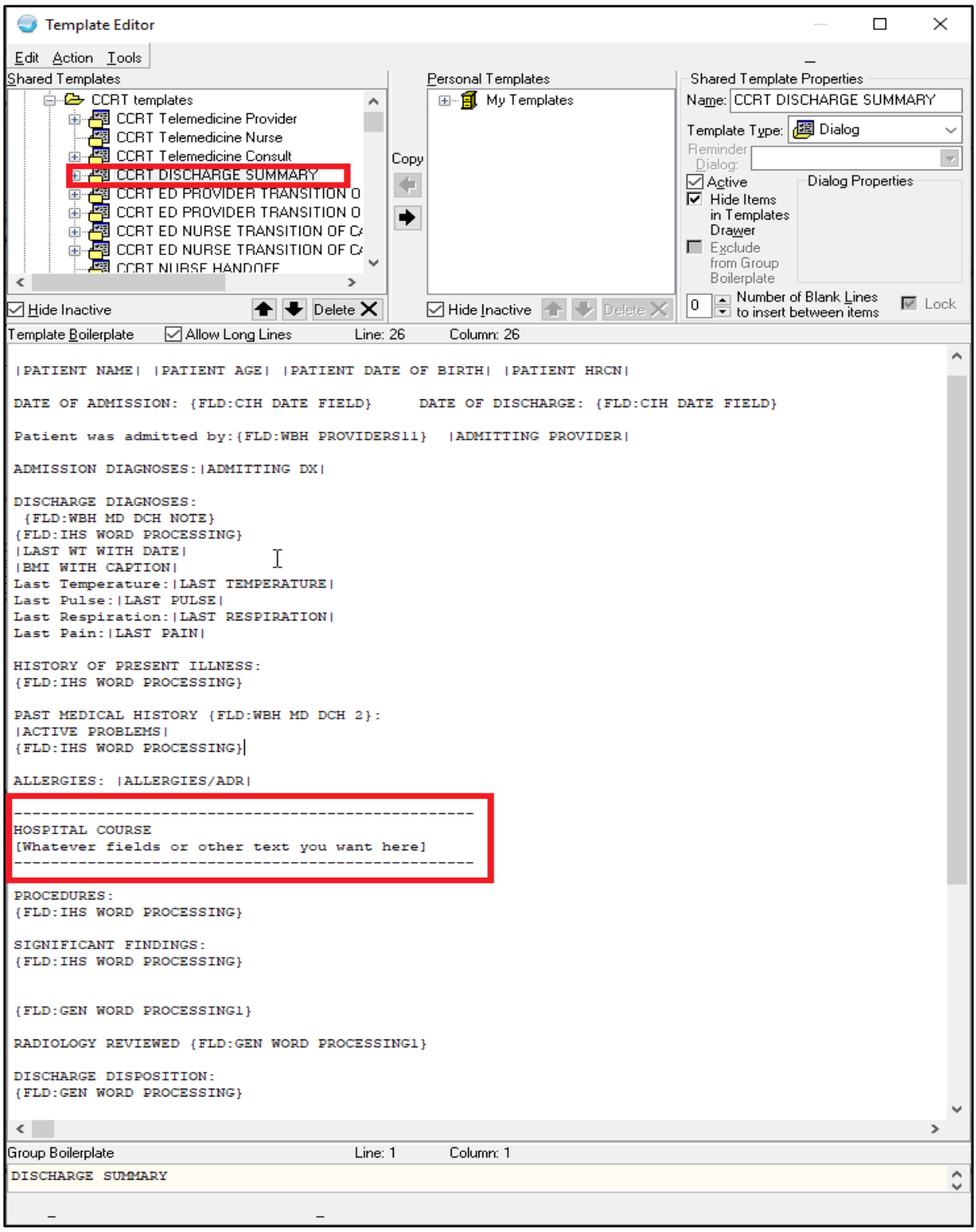


Figure 2-1: Adding Hospital Course Header and Footer to a Discharge Summary template

2.3 Architecture

CCDA processing can be initiated in four ways:

- If EHR v1.1 p13 has been installed and configured at the site, then authorized EHR users are able to request Clinical Summary and Transitions of Care documents for display within the EHR GUI client. If EHR v1.1 p42 has been installed and configured at the site, then users are also able to request Clinical Summary Brief documents.
- If the site is a part of the IHS HIE, then HIE documents are generated nightly for all patients whose data has changed since the previous nightly upload.
- Data Export summary documents can be generated for specific patients or for all patients via an RPMS API.
- Case Reporting and Case Reporting Reportability Response documents are requested by the iCare (BQI) application, which retrieves completed documents for transmission.

To accommodate requests from the EHR GUI, CCDA has a web service process listening for requests for Clinical Summary, Clinical Summary Brief, and Transitions of Care documents.

If the site is part of the IHS HIE, a nightly TaskMan task called BCCD NHIE PUSH JOB is automatically scheduled to run every night at the time specified by the site manager in option Edit CCDA Site Parameters. When BCCD NHIE PUSH JOB runs for the first time, it creates new CCDA requests for all patients in the RPMS database. On subsequent executions, BCCD NHIE PUSH JOB finds all patients whose data has changed since the last time it ran and creates new requests in the CCDA queue.

To request Data Export summary documents, the site manager accesses an RPMS API. In order to prevent unintended initiation of Data Export documents, the API is not included as an RPMS option in the menu system. Instead, the site manager must first access Programmer Mode, then enter the necessary command. Because it is expected that this Data Export functionality will rarely, if ever, be used, the IHS Software Quality Assurance (SQA) team will distribute instructions for generating Data Export documents on an "as needed" basis.

Case Reporting documents are requested and processed by the iCare (BQI) application. Details on this process are outside the scope of this document. For further information, consult the appropriate iCare documentation.

The only difference between CCDA requests created by these four mechanisms is that the DocType property is set to the requested document type and several flags are set to control where the documents are sent. For all CCDA requests, a new entry is placed in the CCDA queue, recording the IDs of the requested patient and visit(s), and sets the record's status to R (for Request).

The CCDA queue is monitored by BCCD BACKGROUND JOB, the main CCDA generator. The BCCD BACKGROUND JOB is a persistent TaskMan job started at TaskMan startup time or manually from menu option Manage CCDA transmissions that constantly runs in the background until the site manager chooses to stop CCDA. When the BCCD BACKGROUND JOB finds a new CCDA request with the status of R in the CCDA queue, it changes the request's status to CS (for Compile Started) and extracts all relevant RPMS data for the specified patient and visit and adds the data to the body of the CCDA request. Depending on the amount of eligible data in the patient's records, it may take anywhere from under a second to over 10 seconds to extract all needed data from RPMS.

Once the extraction process for the patient is finished, BCCD BACKGROUND JOB changes the status of the request to CE (for Compile Ended). The BCCD BACKGROUND JOB then checks the CCDA queue for other outstanding requests with the status of R. If no outstanding requests are found, the BCCD BACKGROUND JOB goes into hibernation for a specific amount of time, usually one second.

The CCDA queue is also monitored by the CCDA IRIS production running in the CCDA namespace. When the CCDA production finds a new request whose status is set to CE, it retrieves the CCDA data from the body of the request, changes the status to TS (for Transmission Started), and transforms it into a valid CCDA document. For EHR Clinical Summary, Clinical Summary Brief, and Transitions of Care requests, the document is sent back to the requesting EHR. For Data Export and Case Reporting, the production saves this document to a file. For HIE documents, the production transmits it to an IHS HIE. Finally, the production changes the status of the request to T (for Transmitted).

If a site is a part of the IHS HIE, then the site manager is provided with the URL of the associated CCDA repository. The IRIS production uses this URL to send CCDA documents to the repository. HIE CCDA processing typically occurs at night to minimize the impact on RPMS performance.

3.0 Package Management

3.1 Manage Site-Specific CCDA Parameters

The RPMS option Edit CCDA Site Parameters (BCCD EDIT SITE PARAMETERS) has been divided into two options with different security keys.

3.1.1 Edit CCDA Site Parameters

The Edit CCDA Site Parameters (BCCD EDIT SITE PARAMETERS) option allows site managers to configure site-specific CCDA parameters at installation time and modify them if necessary.

> **Note**: This menu option is locked by security key XUMGR, which site managers already have.

The following parameters can be edited using this option:

- TIME TO RUN NIGHTLY TASK
- DAYS KEEP TRANSMISSION ENTRIES
- REPOSITORY LOCATION
- ENABLED
- THREADS SCHEDULE START TIME

The first prompt is "TIME TO RUN NIGHTLY TASK" and there is no default value. If the RPMS site is not a part of the IHS HIE at this time, then skip the "TIME TO RUN NIGHTLY TASK" prompt. If the RPMS site is a part of the IHS HIE and the site manager has been provided with the location of the off-site CCDA repository, then enter the time when the site wants CCDA documents to be generated and transmitted on a nightly basis. It is recommended to enter a time outside of the regular business hours to minimize impact on the end users. The "TIME TO RUN NIGHTLY TASK" prompt accepts time values in all valid FileMan formats, e.g., 15:34 or 03:34PM.

The second prompt is "DAYS KEEP TRANSMISSION ENTRIES" and it is set to 30 days by default. The value may be set to any value between 7 and 999 days. The higher the number, the more disk space the intermediate compile structures created by the CCDA application will consume as described in Section 3.3 of this installation guide. On the other hand, if the default value is set too low, the compile data may be purged too soon and will not be available to facilitate debugging should any problems arise. If the site manager is not sure what value to enter, accept the default value of 30 days.

The third prompt is “REPOSITORY LOCATION” and there is no default value. If the RPMS site is not a part of the IHS HIE at this time, then skip the REPOSITORY LOCATION prompt. If the RPMS site is a part of the IHS HIE and the site manager has been provided with the location of the off-site CCDA repository, then enter that location at the REPOSITORY LOCATION prompt exactly as it was provided to the site manager. When a value is entered for both the “REPOSITORY LOCATION” and the “TIME TO RUN NIGHTLY TASK” prompts, the system will check whether the CCDA database has enough disk space to accommodate the process of generating CCDA documents for all patients in the system. An error message will be displayed if there is not enough disk space. If the “not enough disk space” error message displays, allocate more disk space and try again.

The fourth prompt is “ENABLED”, and the default value is NO. This NO value controls whether CCDA documents are generated when CCDA is running. Change this value to **YES**.

The fifth prompt is the “THREADS SCHEDULE START TIME” multiple. Entering a value at this prompt displays the “THREADS SCHEDULE START TIME”, “THREADS SCHEDULE END TIME”, and “MAX NUMBER OF THREADS” prompts. The values entered at these prompts specify the maximum number of simultaneous threads (jobs) that may be used to extract the document data from RPMS at a given time. Multiple time ranges may be entered to specify a different number of maximum threads at different times of the day. Typically, a site will specify a lower number of threads during the day and a higher number outside of business hours. The optimum number of threads will vary by site and may require trial and error to determine. The max number of threads may be 1-10, and for any time of day not covered by a time range, the default max number of threads is 2.

Figure 3-1 contains a screen capture of a typical setup session.

```
Select CCDA Menu Option: EDIT  CCDA Site Parameters
Now editing CCDA parameters:

TIME TO RUN NIGHTLY TASK: 01:00

Now editing CCD (Summarization of Episode Note)-specific parameters:

DAYS KEEP TRANSMISSION ENTRIES: 30//
REPOSITORY LOCATION:
http://sample.ihs.gov:19090/PatientRecordReceiverService/PatientRecordRecei
verService
ENABLED: YES//YES
Select THREADS SCHEDULE START TIME: 18:00//
  THREADS SCHEDULE START TIME: 18:00//
  THREADS SCHEDULE END TIME: 06:00//
  MAX NUMBER OF THREADS: 8//
```

Figure 3-1: Setting up CCDA Site Parameters

3.1.2 Edit CCDA Clinical Site Parameters

The option Edit CCDA Clinical Site Parameters (BCCD EDIT CLINICAL PARAMETERS) allows clinicians to configure site-specific clinical CCDA parameters at installation time and modify them if necessary. Note that this menu option is locked by security key BCCDZCLIN, which must be assigned before the option can be used.

The following four parameters can be edited using this option:

- ADD SOCIAL ENVIRONMENT PROB
- ADD INACTIVE PERS HISTORY PROB
- DISCHARGE PLANNER PROV TYPE
- CLINICAL NOTE

The first prompt is "ADD SOCIAL ENVIRONMENT PROB", which is set to NO by default. This NO value determines whether social environment problems will be included in Clinical Summary and Clinical Summary Brief documents for the site. All other document types will always display the social environment problems.

The second prompt is "ADD INACTIVE PERS HISTORY PROB", which is set to NO by default. This NO value specifies whether inactive personal problems are included in Clinical Summary and Clinical Summary Brief documents for site. All other document types will always display the inactive personal history problem.

The third prompt is "DISCHARGE PLANNER PROV TYPE", which has no default value. This parameter specifies the BDP DESG SPECIALTY PROVIDER type to be extracted and displayed as the discharge planner on an inpatient CCDA document.

The fourth prompt is "Select CLINICAL NOTE", which is a multiple value parameter with subsequent additional prompts. This parameter allows sites to designate what signed TIU documents should appear in the new Consultation Notes, Discharge Summary Notes, History and Physical Notes, Hospital Discharge Instructions, Progress Notes and Procedure Notes (found in the Procedures and Interventions) sections of the CCDA documents. To update this information, users will first be prompted to select one of the note types to enter or edit. Figure 3-2 shows the list of note choices to select from.

```
Select CLINICAL NOTE: ?
        You may enter a new CLINICAL NOTE, if you wish
        Enter the note type to set up a custom definition for.
   Choose from:
          C    CONSULTATION
          H    H&P
          D    DISCHARGE SUMMARY/HOSPITAL COURSE
          P    PROCEDURE
          I    DISCHARGE INSTRUCTIONS
```

```
Select CLINICAL NOTE:
```

Figure 3-2: CLINICAL NOTE type definition choices

Once a CLINICAL NOTE type has been selected, the user is prompted to enter one or more INCLUDE TITLE/DOCUMENT CLASS items. For this prompt, the user can select from available TIU document classes and titles. Any patient note created with a title entered here or, if a document class is selected, all titles in that document class will be included in the chosen section of the CCDA document. After entering all of the INCLUDE TITLE/DOCUMENT CLASS selections, the user will be prompted to enter any EXCLUDE NOTE TITLE items which are limited to document titles. This prompt is useful if a site wishes to include a specified document class in a CCDA notes section but does not wish to have one or more titles in that class included in the specified section.

After entering information for all of the CLINICAL NOTE types, the user is given the opportunity to enter SITE NOTE EXCLUSION values. Document classes or titles entered in this section will be excluded from all CLINICAL NOTE document types. This field is particularly useful for controlling what appears in the Progress Note section of the CCDA document. Progress Notes are defined as any patient note whose document title is not listed in one of the CLINICAL NOTE definitions described above. It should be noted that if one of the above sections excludes a particular document title from being displayed in specified section, then that document title, unless included in another CLINICAL NOTE section, will be included as a Progress Note. If a site wishes to have any document class or title excluded from every notes section (including the Progress Notes section) of the CCDA, then they can enter that document class or title in the SITE NOTE EXCLUSION prompt.

Figure 3-3 contains a screen capture of a typical setup session.

```
Select CCDA Menu Option: CLIN  Edit CCDA Clinical Site Parameters

Edit CCDA Clinical Site Parameters

NOW EDITING CCDA CLINICAL PARAMETERS:

ADD SOCIAL ENVIRONMENT PROB: NO//
ADD INACTIVE PERS HISTORY PROB: NO//
DISCHARGE PLANNER PROV TYPE:
Select CLINICAL NOTE: CON  (C   CONSULTATION)
  Are you adding 'CONSULTATION' as a new CLINICAL NOTE (the 1ST for this
BCCD MESSAGE TYPE)? No// Y  (Yes)
  Select INCLUDE TITLE/DOCUMENT CLASS: CONSULTS       DOCUMENT CLASS
DOCUMENT CLASS
  Are you adding 'CONSULTS' as
    a new INCLUDE TITLE/DOCUMENT CLASS (the 1ST for this CLINICAL NOTE)?
No// Y (Yes)
  Select INCLUDE TITLE/DOCUMENT CLASS:
  Select EXCLUDE NOTE TITLE: CHS       TITLE     TITLE
  Are you adding 'CHS' as a new EXCLUDE NOTE TITLE (the 1ST for this
CLINICAL NOTE)? No// Y  (Yes)
  Select EXCLUDE NOTE TITLE:
Select CLINICAL NOTE: DISCHARGE I  (I   DISCHARGE INSTRUCTIONS)
```

```
  Are you adding 'DISCHARGE INSTRUCTIONS' as a new CLINICAL NOTE (the 2ND
for this BCCD MESSAGE TYPE)? No// Y  (Yes)
  Select INCLUDE TITLE/DOCUMENT CLASS: DISCHARGE INS
     1   DISCHARGE INSTRUCTIONS       DOCUMENT CLASS     DOCUMENT CLASS
     2   DISCHARGE INSTRUCTIONS       TITLE     TITLE
CHOOSE 1-2: 1  DISCHARGE INSTRUCTIONS     DOCUMENT CLASS     DOCUMENT CLASS
  Are you adding 'DISCHARGE INSTRUCTIONS' as
    a new INCLUDE TITLE/DOCUMENT CLASS (the 1ST for this CLINICAL NOTE)?
No// Y (Yes)
  Select INCLUDE TITLE/DOCUMENT CLASS:
  Select EXCLUDE NOTE TITLE:
Select CLINICAL NOTE: DISCHARGE SU  (D   DISCHARGE SUMMARY/HOSPITAL COURSE)
  Are you adding 'DISCHARGE SUMMARY/HOSPITAL COURSE' as
    a new CLINICAL NOTE (the 3RD for this BCCD MESSAGE TYPE)? No// Y  (Yes)
  Select INCLUDE TITLE/DOCUMENT CLASS: DISCHARGE SU
     1   DISCHARGE SUMMARIES       DOCUMENT CLASS     DOCUMENT CLASS
     2   DISCHARGE SUMMARY       TITLE     TITLE
     3   DISCHARGE SUMMARY       DOCUMENT CLASS     DOCUMENT CLASS
     4   DISCHARGE SUMMARY       TITLE     TITLE
CHOOSE 1-4: 3  DISCHARGE SUMMARY     DOCUMENT CLASS     DOCUMENT CLASS
  Are you adding 'DISCHARGE SUMMARY' as
    a new INCLUDE TITLE/DOCUMENT CLASS (the 1ST for this CLINICAL NOTE)?
No// Y (Yes)
  Select INCLUDE TITLE/DOCUMENT CLASS:
  Select EXCLUDE NOTE TITLE: TELEPHONE       TITLE     TITLE
  Are you adding 'TELEPHONE' as a new EXCLUDE NOTE TITLE (the 1ST for this
CLINICAL NOTE)? No// Y  (Yes)
  Select EXCLUDE NOTE TITLE:
Select CLINICAL NOTE: H&P  (H   H&P)
  Are you adding 'H&P' as a new CLINICAL NOTE (the 4TH for this BCCD
MESSAGE TYPE)? No// Y  (Yes)
  Select INCLUDE TITLE/DOCUMENT CLASS: ADVERSE REA
     1   ADVERSE REACTION/ALLERGY       TITLE     TITLE
     2   ADVERSE REACTION/ALLERGY       DOCUMENT CLASS     DOCUMENT CLASS
CHOOSE 1-2: 1  ADVERSE REACTION/ALLERGY     TITLE     TITLE
  Are you adding 'ADVERSE REACTION/ALLERGY' as
    a new INCLUDE TITLE/DOCUMENT CLASS (the 1ST for this CLINICAL NOTE)?
No// Y (Yes)
  Select INCLUDE TITLE/DOCUMENT CLASS:
  Select EXCLUDE NOTE TITLE:
Select CLINICAL NOTE: PROCEDURE  (P   PROCEDURE)
  Are you adding 'PROCEDURE' as a new CLINICAL NOTE (the 5TH for this BCCD
MESSAGE TYPE)? No// Y  (Yes)
  Select INCLUDE TITLE/DOCUMENT CLASS: GENER
     1   GENERAL       TITLE     TITLE
     2   GENERAL  SCI GENERAL NOTE     TITLE     TITLE
     3   GENERATED  PATIENT GENERATED INFORMATION     TITLE     TITLE
      Std Title: PHYSICIAN TRANSFER SUMMARIZATION NOTE
     4   GENERATED  VI_PATIENT GENERATED INFORMATION     TITLE     TITLE
      Std Title: PHYSICIAN TRANSFER SUMMARIZATION NOTE
CHOOSE 1-4: 1  GENERAL     TITLE     TITLE
  Are you adding 'GENERAL' as a new INCLUDE TITLE/DOCUMENT CLASS (the 1ST
for this CLINICAL NOTE)? No// Y (Yes)
  Select INCLUDE TITLE/DOCUMENT CLASS:
  Select EXCLUDE NOTE TITLE: TELEPHONE       TITLE     TITLE
  Are you adding 'TELEPHONE' as a new EXCLUDE NOTE TITLE (the 1ST for this
CLINICAL NOTE)? No// Y  (Yes)
  Select EXCLUDE NOTE TITLE:
Select CLINICAL NOTE:
Select SITE NOTE EXCLUSION: TELEPHONE       TITLE     TITLE
  Are you adding 'TELEPHONE' as a new SITE NOTE EXCLUSION (the 1ST for this
BCCD MESSAGE TYPE)? No// Y  (Yes)
```

```
Select SITE NOTE EXCLUSION:
```

Figure 3-3: Setting up CCDA Clinical Site Parameters

3.1.3 BCCD Notes Definition Report

CLINICAL NOTE information entered in Section 3.1.2 can be displayed in the BCCD Notes Definition Report (BCCD NOTES DEFINITION REPORT). A sample display of the report is found in Figure 3-4.

```
Select OPTION NAME: BCCD NOTES DEFINITION REPORT       BCCD Notes
Definition Rep
ort
BCCD Notes Definition Report

This report will display the 'Edit CCDA Clinical Site Parameters' option
current
definition for the clinical notes sections on the CCDA documents. These
settings
determine what TIU note titles show up in each section.

Print report on which device: HOME// 0;80;999  VIRTUAL
BCCD Notes Definition Report                   APR 28, 2022  16:04   PAGE 1
-------------------------------------------------------------------------------

Discharge Summary/Hospital Course
(in Discharge Summary/Hospital Course Notes sections)
------------------------------------------------------
  Included Documents:
    DISCHARGE SUMMARY which is in DISCHARGE SUMMARIES (class) which is in
DISCHA
RGE SUMMARY (class)

  Excluded Documents:
    TELEPHONE

Consultation Note (in Consultation Notes section)
-------------------------------------------------
  Included Documents:
    CHS which is in CONSULTS (class)
    REFERRAL_CONSULT which is in CONSULTS (class)
    RADIOLOGY_CONSULT which is in CONSULTS (class)
    DIABETES_CONSULT which is in CONSULTS (class)
    DIABETES_ENDOCRINOLOGY_CONSULT which is in CONSULTS (class)

  Excluded Documents:
    CHS

History and Physical Note (in History and Physical Notes section)
------------------------------------------------------------------
  Included Documents:
    ADVERSE REACTION/ALLERGY

  Excluded Documents:
    No Excluded Documents defined for this note type

Procedures Note (in Procedures section)
---------------------------------------
  Included Documents:
```

```
    GENERAL

  Excluded Documents:
    TELEPHONE

Hospital Discharge Instructions (in Hospital Discharge Instructions
section)
------------------------------------------------------------------------------
  Included Documents:
    DISCHARGE INSTRUCTIONS which is in DISCHARGE INSTRUCTIONS (class)

  Excluded Documents:
    No Excluded Documents defined for this note type


Progress Note (in Progress Notes Section)
-----------------------------------------
  All TIU Note Title(s) except:
    ADVERSE REACTION/ALLERGY which is in History and Physical Notes
    DIABETES_CONSULT which is in Consultation Notes
    DIABETES_ENDOCRINOLOGY_CONSULT which is in Consultation Notes
    DISCHARGE INSTRUCTIONS which is in Hospital Discharge Instructions
    DISCHARGE SUMMARY which is in Discharge Summary Notes
    GENERAL which is in Procedures Notes
    RADIOLOGY_CONSULT which is in Consultation Notes
    REFERRAL_CONSULT which is in Consultation Notes

General Exclusions:
-------------------
  TELEPHONE

Imaging Narrative (in Recent Test Results section)
--------------------------------------------------
The imaging impression is a short description or summary of a patient's
exam
results report.  For legal purposes, it is strongly recommended that an
impression always be entered for every patient imaging report.

Laboratory Report Narrative (in Recent Test Results section)
------------------------------------------------------------
The lab comment is a short description or summary of the reference
laboratory
results and/or comments from the laboratory department.

<End of Report>

Press RETURN to continue or '^' to exit:
```

Figure 3-4: Sample CCDA Notes Definition Report

3.2 Manage CCDA Messaging

CCDA Messaging is automatically started whenever TaskMan starts, which typically occurs when IRIS is started. CCDA Messaging will not run if TaskMan is not running.

CCDA Messaging should be running at all times and does not require a manual start or stop once it has been installed. However, if the need arises, CCDA Messaging can be brought up or down using the **Manage CCDA transmissions** option, which is available in the CCDA Menu. The CCDA Menu can be accessed from the regular "OPTION NAME" prompt in RPMS.

If CCDA Messaging is not running, type **YES** at the prompt as shown in Figure 3-5:

```
Select CCDA Menu Option: MANG  Manage CCDA transmissions
CCDA status:
No configuration problems found

CCDA processing task is not running

Start CCDA? No// YES  (Yes)
Attempting to start CCDA  (JUL 16, 2013@16:09:54)..CCDA started
```

Figure 3-5: Starting CCDA Messaging

If CCDA Messaging is running, type **NO** at the prompt as shown in Figure 3-6:

```
Select CCDA Menu Option: MANG  Manage CCDA transmissions
C Messaging status:
No configuration problems found

CCDA processing task is running

Stop CCDA? No// Y (Yes)
Attempting to stop CCDA....CCDA stopped
```

Figure 3-6: Stopping CCDA Messaging

3.3 Manage CCDA IRIS Production

As described in Section 2.2, if the RPMS site is a part of the IHS HIE, CCDA documents are sent to outside repositories using the CCDA IRIS production. In addition, if EHR v1.1, p13 is installed and configured, authorized EHR users can send requests for CCDA documents to the CCDA IRIS production.

The CCDA IRIS production is automatically started when IRIS starts up. During normal business operations, the CCDA production will remain running and will not require maintenance. Refer to the Managing CCDA IRIS Production section in the CCDA Technical Manual to bring the CCDA production up or down manually, if required.

3.4 CCDA Application Status Report

The STAT (Display the CCDA application status report) option may be used to display a report summarizing various information about the state of the CCDA application, as well as information about the most recent pull, push, and error messages. The intent of the report is to provide support personnel with a snapshot of the application. It is not intended to be used by site managers, and no information is provided to assist site managers with interpreting the report.

When the user runs the report, it will ask whether to display the report with page breaks. If the user intends to view the report on the screen, it is recommended that page breaks be used. If the user is running the report in order to copy and paste information for the support team, then not using page breaks may be preferred.

A sample report is shown in Figure 3-7:

```
Select CCDA Menu <TEST ACCOUNT> Option: STAT  Display the CCDA application status
report
Display the report with page breaks? Yes// n  (No)

------------------------------ CCDA SUMMARY START ------------------------------
Site: 8999 (DEMO HOSPITAL)
Patches installed: v1 {1,2,3,4,5,6,7,8,9}, v2 {1,2,3,4,5}
$ZV=Cache for Windows (x86-64) 2017.2.2 (Build 865_3_19466U) Tue Dec 10 2019 15:
12:26 EST

CCDA background task is running.
CCDA production is running.
Nightly upload time: 18:00
Repository URL: https://repositoryurl.com/
Last upload time: 3180419.080003 (2018-04-19 08:00:03)
Threads: 18:00-06:00: 8, 06:00-18:00: 2
^BCCD.Xfer.QueueD: 5477

Ensemble queue counts:
      CaseReporting: 0                     EmailAlert: 1
          Ens.Actor: 0                      Ens.Alarm: 0
Ens.ScheduleHandler: 0                    FileDocument: 0
       GeneratePull: 0                    GeneratePush: 0
      PushWebClient: 0                    TransmitPush: 0

Queue documents by status:
    R:     0
   CS:     0
   CE:     0
   TS:     0
    T:   598
    E:    89

Last 10 pull documents:
 QID     DFN    Type Status      RequestTS         TransmissionEndTS
------  ------  ---- ------ -------------------  -------------------
5423    7207     CS    T    2018-04-03 15:11:51  2018-04-03 15:11:55
5422    7207     CS    T    2018-04-03 15:06:06  2018-04-03 15:06:06
658     174      TC    E    2018-03-19 14:47:55
648     174      TC    T    2018-03-19 14:46:30  2018-03-19 14:46:36
638     174      TC    E    2018-03-19 14:35:31
```

```
628     174      TC    T    2018-03-19 14:34:22  2018-03-19 14:34:36
608     4000     TC    T    2018-03-19 14:33:33  2018-03-19 14:33:35
588     4000     TC    T    2018-03-19 14:32:25  2018-03-19 14:32:26
583     4000     TC    T    2018-03-19 14:31:55  2018-03-19 14:31:56
579     4000     TC    T    2018-03-19 14:31:32  2018-03-19 14:31:34

Last 10 push documents:
 QID     DFN    Type Status      RequestTS        TransmissionEndTS
------  ------  ---- ------ -------------------  -------------------
5477    7207     HIE   T    2018-04-19 12:34:45  2018-04-19 12:34:55
5476    7207     HIE   T    2018-04-19 12:30:57  2018-04-19 12:31:03
5475    7207     HIE   T    2018-04-19 11:40:00  2018-04-19 11:40:07
5474    7207     HIE   T    2018-04-19 08:03:38  2018-04-19 08:03:51
5473    7207     HIE   T    2018-04-18 19:23:26  2018-04-18 19:23:35
5467    1937     HIE   T    2018-04-18 08:01:38  2018-04-18 08:02:02
5468    2195     HIE   T    2018-04-18 08:01:38  2018-04-18 08:01:57
5469    4432     HIE   T    2018-04-18 08:01:38  2018-04-18 08:01:53
5470    4432     HIE   T    2018-04-18 08:01:38  2018-04-18 08:01:49
5471    5651     HIE   T    2018-04-18 08:01:38  2018-04-18 08:01:42

Last 5 error documents:
 QID    Type      RequestTS                ErrorText
------  ---- ------------------- ----------------------------------------
5476    HIE  2018-04-19 12:30:57 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.

5475    HIE  2018-04-19 11:40:00 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.

5474    HIE  2018-04-19 08:03:38 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.

5463    HIE  2018-04-12 08:01:42 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.

5464    HIE  2018-04-12 08:01:42 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.
------------------------------ CCDA SUMMARY END -------------------------------
```

Figure 3-7: Sample CCDA application status report

Due to different rules surrounding patient DFNs, some sites may want to prevent DFNs from displaying on the report. To suppress DFNs site-wide, go to RPMS programmer mode and run the following command:

```
DO DFNOFF^BCCDSTAT
```

Figure 3-8: Command to Suppress DFNs site-wide

To clear the setting and re-enable DFNs on the report, go to RPMS programmer mode and run the following command:

```
DO DFNCLR^BCCDSTAT
```

Figure 3-9: Command to re-enable DFNs on the report

3.5 Resubmitting and Purging Error Documents

When a document encounters an error at any point of its lifecycle, the document is marked with an "E" status and is not processed any further. The document is not reprocessed again or purged during the weekly purge process. The ERR option provides the site manager options for resubmitting error documents from a given date/time range or purging error documents older than a given age. When the user runs the ERR option, the application will display the 20 most recent error documents, then will ask whether to resubmit or purge documents.

If the user opts to resubmit documents, the application will ask for the start and end date/times of the range and then ask whether to run in the background. It is recommended that the process run in the background to free up the user's terminal for additional work. However, if the user wishes to view additional information, such as the number of documents resubmitted and any possible errors in the resubmission process itself, then it is necessary to run the process in the foreground. The resubmission option will request a new document for any HIE upload document that errored out in the time range, provided a document for the same patient and visit list was not successfully uploaded later. Requests are deduplicated, so there will be only one new request for a given patient ID and visit list. A sample run is shown in Figure 3-10.

```
Select CCDA Menu Option: ERR  Purge or Resubmit Error Documents

Last 20 error documents:
 QID    Type      RequestTS               ErrorText
------  ---- ------------------- ------------------------------------------------
87682   HIE  2024-02-20 17:48:52 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.

87681   HIE  2024-02-20 17:48:51 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.

87675   DP   2024-02-15 15:51:40 ProcessRequest: Populate method returned error:
 ERROR #5001: CCDPopulate: Skipping demo patient 478

87674   HIE  2024-02-14 15:29:26 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.

87673   HIE  2024-02-14 15:29:26 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.

87672   HIE  2024-02-14 14:53:08 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.

87627   HIE  2024-01-17 17:27:00 BCCDTSK Error Trap: <METHOD DOES NOT EXIST>zIns
ert+2^%Library.RelationshipObject.1 *%Oid,BCCD.Xfer.TextWithLabel

87624   HIE  2024-01-17 13:47:49 BCCDTSK Error Trap: <UNDEFINED>zPop+234^BCCD.Xf
er.PopReasonForVisitHosp.1 *diagnosis

87614   HIE  2024-01-12 12:22:49 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.
```

```
87622   HIE  2024-01-12 12:12:07 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.

87607   HIE  2024-01-12 12:12:07 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.

87600   HIE  2024-01-11 17:53:00 Transmission error: ERROR <Ens>ErrGeneral: Mess
age '295843' aborted.

87593   HIE  2024-01-11 17:17:29 Transmission error: ERROR <Ens>ErrGeneral: Mess
age '295838' aborted.

87586   HIE  2024-01-11 17:14:48 Transmission error: ERROR <Ens>ErrGeneral: Mess
age '295789' aborted.

87583   HIE  2024-01-11 16:33:32 Missing RequestorDUZ

87581   HIE  2024-01-09 14:17:34 Missing RequestorDUZ

87535   CR   2023-11-01 12:09:59 Error in BuildDoc: 5002 : Cache error: <INVALID
 OREF>zCaseReportingModule+30^BCCD.Prod.Build.Main.1

87534   CR   2023-11-01 11:56:46 Error in BuildDoc: 5002 : Cache error: <INVALID
 OREF>zAssessmentAndPlanModule+49^BCCD.Prod.Build.Main.1

87531   HIE  2023-10-30 17:34:43 Error in data transformation: ERROR <Ens>ErrExc
eption: <PROPERTY DOES NOT EXIST>zTransform+28^BCCD.Prod.Build.DTL.AllergyCompon

87526   HIE  2023-10-27 17:11:08 Error in data transformation: ERROR #6231: Inva
lid format for %XML.Adaptor: shallow.

(R)esubmit or (P)urge error records:  (R/P): RESUBMIT
START DATE/TIME:  1/1/2024@00:01  (JAN 01, 2024@00:01)
END DATE/TIME:  1/31/2024@23:59  (JAN 31, 2024@23:59)
Run in background? Yes//   YES
```

Figure 3-10: Error Resubmission example

If the user chooses to purge error documents, the application will ask them to verify they want to purge error documents, then how many days of error documents to keep, then whether to run in the foreground or background. The purge may take a long time, even hours, depending on how many documents are being purged. Therefore, it is recommended to run the purge in the background. However, under some circumstances the user may wish to run in the foreground, e.g. if the user needs to perform a task that can only be started once the purge has finished. An example of the process of running the purge is shown in Figure 3-11.

```
Select CCDA Menu Option: ERR  Purge or Resubmit Error Documents

Last 20 error documents:
 QID    Type      RequestTS               ErrorText
------  ---- ------------------- ----------------------------------------------
87683   HIE  2024-02-26 16:18:43 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.

87682   HIE  2024-02-20 17:48:52 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.
```

```
87681   HIE  2024-02-20 17:48:51 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.

87675   DP   2024-02-15 15:51:40 ProcessRequest: Populate method returned error:
 ERROR #5001: CCDPopulate: Skipping demo patient 478

87674   HIE  2024-02-14 15:29:26 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.

87673   HIE  2024-02-14 15:29:26 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.

87672   HIE  2024-02-14 14:53:08 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.

87627   HIE  2024-01-17 17:27:00 BCCDTSK Error Trap: <METHOD DOES NOT EXIST>zIns
ert+2^%Library.RelationshipObject.1 *%Oid,BCCD.Xfer.TextWithLabel

87624   HIE  2024-01-17 13:47:49 BCCDTSK Error Trap: <UNDEFINED>zPop+234^BCCD.Xf
er.PopReasonForVisitHosp.1 *diagnosis

87614   HIE  2024-01-12 12:22:49 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.

87622   HIE  2024-01-12 12:12:07 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.

87607   HIE  2024-01-12 12:12:07 Transmission error: ERROR #6241: The SOAP WebCl
ient LOCATION parameter must specify http or https transport.

87600   HIE  2024-01-11 17:53:00 Transmission error: ERROR <Ens>ErrGeneral: Mess
age '295843' aborted.

87593   HIE  2024-01-11 17:17:29 Transmission error: ERROR <Ens>ErrGeneral: Mess
age '295838' aborted.

87586   HIE  2024-01-11 17:14:48 Transmission error: ERROR <Ens>ErrGeneral: Mess
age '295789' aborted.

87583   HIE  2024-01-11 16:33:32 Missing RequestorDUZ

87581   HIE  2024-01-09 14:17:34 Missing RequestorDUZ

87535   CR   2023-11-01 12:09:59 Error in BuildDoc: 5002 : Cache error: <INVALID
 OREF>zCaseReportingModule+30^BCCD.Prod.Build.Main.1

87534   CR   2023-11-01 11:56:46 Error in BuildDoc: 5002 : Cache error: <INVALID
 OREF>zAssessmentAndPlanModule+49^BCCD.Prod.Build.Main.1

87531   HIE  2023-10-30 17:34:43 Error in data transformation: ERROR <Ens>ErrExc
eption: <PROPERTY DOES NOT EXIST>zTransform+28^BCCD.Prod.Build.DTL.AllergyCompon

(R)esubmit or (P)urge error records:  (R/P): PURGE

Purge old error records? No// YES
Days to keep:  (0-365): 60//
Run in background? Yes//
```

Figure 3-11: Error Purge example

4.0 Package Operation

4.1 Manually Generate One CCDA Document

CCDA documents are generated automatically, and the process does not require manual intervention. However, on occasion, the site manager may be asked to regenerate the CCDA document for one or more patients. Select the **Generate CCD for a single patient (BCCD CCDGENONE)** option in the **CCDA Menu (BCCD Menu)**. Enter the patient by name, Social Security Number (SSN), date of birth, or chart number. If multiple patients match the input criteria, select the correct patient from the list displayed as shown in Figure 4-1:

```
Select CCDA Menu Option: one  Generate CCD for a single patient
ENTER NAME, SSN, DOB OR CHART#: BCCD, PATIENT
   1    BCCD, PATIENT               M 11-07-1911 XXX-XX-0313  ADB 129636
                                                               DB 129637(I)
                                                              URA 129638(I)
   2    BCCD, PATIENT               M 08-23-1935 XXX-XX-3756   DB 173511
   3    BCCD, PATIENT               M 04-13-1953 XXX-XX-3456   DB 123456
   4    BCCD, PATIENT A             M 01-01-1977 XXX-XX-8262  ADB 137983
                                                               DB 137984
                                                              URA 137985
   5    BCCD, PATIENT F SR          M 11-14-1961 XXX-XX-4124  ADB 108953
                                                               DB 108954
                                                              URA 108955
ENTER '^' TO STOP, OR
CHOOSE 1-5:
CHOOSE 1-5: 2
  BCCD, PATIENT                     M 08-23-1935 XXX-XX-3756   DB 173511
CCD request has been scheduled for patient SMITH,JOHN
```

Figure 4-1: Manually regenerating the CCDA document for one patient

> **Note**: The **Generate CCD for a single patient** option only works if the RPMS site is a part of the IHS HIE. Accessing this option at a site that is not a part of the IHS HIE will generate the error message shown in Figure 4-2.

```
Select CCDA Menu Option: one  Generate CCD for a single patient
No receiving location is currently defined for CCD documents.
Your site needs to be associated with a receiving location in order
to be able to upload CCD documents. If Support has provided you with
the URL of your receiving location, please consult the CCDA Installation
Guide for instructions on how to enter this information into the system.

If Support hasn't provided this URL to your site, then your site is a
"pull" site and you will be unable to generate CCDA on demand.
This will not affect other CCDA functionality.
```

Figure 4-2: Error message when trying to manually regenerate a CCDA document at a site that is not a part of the IHS HIE

4.2 Manually Regenerate All CCDA Documents

If the RPMS site is a part of the IHS HIE, then, on rare occasions, the Help Desk may ask the Site Manager to regenerate CCDA documents for all patients in the database. When this happens, select the **Generate CCD documents for all patients in RPMS (BCCD CCDALLGEN)** option in the **CCDA Menu (BCCD Menu)**. The system will check if there is enough disk space for this process and display the warning shown in Figure 4-3:

```
Select CCDA Menu Option: ALL  Generate CCD documents for all patients in
RPMS
Checking free space...

Generation and transmission of CCD documents for all patients may take
in excess of 2 days.  It may also make extensive use of system resources.
Please make sure that your system is not overloaded while this process is
running as this may impact system performance.

Generation of all CCD documents will be done during the next CCDA
nightly job which is currently scheduled to run at 01:00

Schedule All Patients? Yes// N  (No)
Not scheduled
```

Figure 4-3: Manually Regenerating All CCDA Documents

Enter **Y** (Yes) or **N** (No) to confirm regeneration of CCDA documents for all patients.

Accessing this option at a site that is not a part of the IHS HIE will generate the error message shown in Figure 4-4:

```
Select CCDA Menu Option: ALL  Generate CCD documents for all patients in
RPMS
No receiving location is currently defined for CCD documents.
Your site needs to be associated with a receiving location in order
to be able to upload CCD documents. If Support has provided you with
the URL of your receiving location, please consult the CCDA Installation
Guide for instructions on how to enter this information into the system.

If Support hasn't provided this URL to your site, then your site is a
"pull" site and you will be unable to generate CCDA on demand.
This will not affect other CCDA functionality.
```

Figure 4-4: Error message when trying to manually regenerate all CCDA documents at a site that is not a part of the IHS HIE

4.3 Manually Regenerate CCDA Documents for a Specified Date Range

If the RPMS site is a part of the IHS HIE, then, on rare occasions, the Help Desk may ask the Site Manager to regenerate CCDA documents for all visits updated in a specified date range. When this happens, select the **Generate CCD documents for a specified date range (BCCD GEN CCD DATE RANGE)** option in the **CCDA Menu (BCCD Menu)**. The application will ask the user for the start date/time and end date/time for the range. The application will then check whether the date range will result in an excessive number of documents generated. If the number of documents would exceed the maximum number allowed, the system will display the message shown in Figure 4-5:

```
Select CCDA Menu <TEST ACCOUNT> Option: DAT  Generate CCD documents for a
specified date range

This option uploads CCDA documents for a given date/time range. It should
be
used only when instructed to by the support team.

START DATE/TIME:  1/01/2017@2100  (JAN 01, 2017@21:00)
END DATE/TIME:  11/01/2017@2100  (NOV 01, 2017@21:00)

Identifying visits... The selected date range will result in too many
documents.
Please enter a smaller range.
```

Figure 4-5: Generate CCD documents for a specified date range option when selected range is too big

If the number of documents is within the allowed limit, the system will queue the document requests and display the message shown in Figure 4-6:

```
Select CCDA Menu <TEST ACCOUNT> Option: DAT  Generate CCD documents for a
specified date range

This option uploads CCDA documents for a given date/time range. It should
be
used only when instructed to by the support team.

START DATE/TIME:  1/01/2017@2100  (JAN 01, 2017@21:00)
END DATE/TIME:  11/01/2017@2100  (NOV 01, 2017@21:00)

Identifying visits...

100 visits queued.
```

Figure 4-6: Generate CCD documents for a specified date range option when selected range is sufficiently small

5.0 CCDA Audit Log

The CCDA application contains the global ^BCCD.Audit.AuditLogD, which is used to store the CCDA audit log. The CCDA Audit Log table contains audit information about specific requests for CCDA data that come from the EHR GUI, nightly uploads to the HIE, and for documents generated for Data Export. Prior to Patch 6 of Version 1, the audit log was stored in the CCDA database. Patch 6 of Version 1 moved the audit log to the RPMS database to make it easier for sites to journal and back up the audit log.

Please refer to the AU-Audit and Accountability section in the *CCDA Security Manual* for instructions to view the data stored in the CCDA Audit Log.

6.0 Limits on the Data Included in CCDA Documents

CCDA documents should contain "current and relevant historical" summary information about patients, which means only recent clinical data is extracted from RPMS and included in CCDA documents except as noted below.

The six types of CCDA documents are:

- Clinical Summary (CS)
- Clinical Summary Brief (CSB)
- Transitions of Care (ToC)
- Data Export Summary (DP)
- Health Information Exchange Document (HIE)
- Case Reporting (CR)–Sent to Division of Epidemiology

Table 6-1 describes the time ranges and data limitations used to extract RPMS data for individual CCDA modules.

Table 6-1: CCDA Data Limitations

CCDA Module	CCDA Document	Data Extract
Allergies and Intolerances	CSB	• Extract active allergies for the patient.
Allergies and Intolerances	All except CSB	• Extract all Allergies (active and inactive) for the patient.

CCDA Module	CCDA Document	Data Extract

Assessment and Plan	All	• For each Problem that is POV for the encounter, extract:
		  • The Care Plan
		  • The Visit Instructions
		  • The Treatment/Regimen
		  • The Request/Consultations
		  • The Ordered/Pending Lab Tests,
		  • The Lab Tests Awaiting Results
		• In addition, extract all the below whether associated with a problem or not:
		  • Ordered/Pending Lab and Radiology Tests
		  • All Lab/Radiology Tests awaiting Results
		  • All Referrals
		  • All Requests/Consultations
		  • All Future Appointments
		• Finally, extract all Treatment/Regimen not associated with a problem

Care Team	All	• Extract the Visit Provider, Attending and Admitting providers (Inpatient), and Referring Providers associated with the visit. • Extract all Specialty Providers associated with the patient.
Case Reporting	CR only	• This section includes the trigger information that prompted the creation of the Case Reporting document.

CCDA Module	CCDA Document	Data Extract

Chief Complaint and Reason for Visit	CR only	• Ambulatory Visits
		  • Information stored in the CHIEF COMPLAINT field in the VISIT file
		  • Any V NARRATIVE TEXT entries for the visit entered using the EHR Chief Complaint Module, PCC or the ED Dashboard
		  • Any Purpose of Visit (V POV) entries assigned to the visit
		• Inpatient Visits
		  • Any Purpose of Visit (V POV) entries from most recent ED visit (within 72 hours)
		  • The DIAGNOSIS [SHORT] field from the PATIENT MOVEMENT file entered during the admission process
		  • Admitting diagnosis from V HOSPITALIZATION
		  • Any Purpose of Visit (V POV) entries assigned to the main Hospitalization Visit or associated In-Hospital Visits
		• Any IPL entries marked as Used for Inpatient for the main Hospitalization Visit or associated In-Hospital Visits

Consultation Notes	CSB	• Not extracted.
Consultation Notes	All except CSB	• The contents of any signed TIU document associated with the visit and defined in the CCDA CLINICAL PARAMETERS option under the CLINICAL NOTE for CONSULTATION
Contacts	CSB	• Not extracted.
Contacts	All except CSB	• Include Next of Kin, Emergency Contact, Parent/Guardian, Parent/Guardian 2. • If not already included as NOK, EC, or Guardian, report Father and Mother.
Discharge Diagnoses	CSB	• Not extracted.

CCDA Module	CCDA Document	Data Extract
Discharge Diagnoses	All except CSB (Inpatient only)	• Primary discharge diagnosis from the most recent ED visit (within 72 hours) • Patient Movement–Short Diagnosis • Problem associated with the visit–Used for Inpatient • Primary Purpose of Visit entered via PCC
Discharge Summary Notes	CSB	• Not extracted.
Discharge Summary Notes	All except CSB	• The contents of any signed TIU document associated with the visit and defined in the CCDA CLINICAL PARAMETERS option under the CLINICAL NOTE for DISCHARGE SUMMARY/HOSPITAL COURSE
Functional Status	CS, CSB	• Not extracted.
Functional Status	ToC, DP, HIE, CR	• Fall Risk: Extract the most recent Fall Risk entry for the patient from the Examinations file • Elder Care Questions: Extract the most recent entry for the patient. • Problems: Extract the subset of SNOMED codes determined to be related to functional status (EHR IPL FUNCTIONAL STATUS).
General Header	All	• Visit Date and Location are visit-specific.
Goals	CSB	• Extract all Patient Goals that have a status of Active. • Extract all active that are associated with the visit.
Goals	All except CSB	• Extract all Patient Goals that have a status of Active or Maintaining Goal. • Extract all active or met Care Plan goals that are associated with the visit.
Health Concerns	CSB	• Not extracted.

CCDA Module	CCDA Document	Data Extract
Health Concerns	All except CSB	• Extract Chronic, Episodic, Environmental/Social History, Personal History/Inactive, and Sub-acute problems. • Extract any problems used as POV for that Encounter (mark with an asterisk). • Extract any POVs for that Encounter (mark with an asterisk). • Extract all Patient Goals that have a status of Active or Maintaining Goal
Health Insurance	CSB	• Not extracted.
Health Insurance	All except CSB	• Extract all insurance that was active at any point during the visit.
History and Physical Notes	All except CSB and CR	• The contents of any signed TIU document associated with the visit and defined in the CCDA CLINICAL PARAMETERS option under the CLINICAL NOTE for H&P

History of Present Illness	CR	• The contents of any signed TIU document associated with the visit and defined in the CCDA CLINICAL PARAMETERS option under the CLINICAL NOTE for H&P. Clinical Notes are chosen for any note assigned to a visit determined from the following criteria:
		  • For any coded value (whether SNOMED or ICD10 code) determined in the Chief Complaint and Reason for Visit section, if the code is not the IHS ZZZ.999 code, review the patient's IPL entries and identify any visits from the USED AS POV (VISIT) section or USED FOR INPATIENT section that occurred within the last year
		  • If no visits were identified for that last year for a code, retrieve the three previous visits that the IPL entry was used for
		• Once the list of visits is determined using the above criteria, return any clinical note for H&P linked to those visits

CCDA Module	CCDA Document	Data Extract
Hospital Course	CSB	• Not extracted.
Hospital Course	All except CSB (Inpatient only)	• Extract the Hospital Course section (see Section 2.2) for the Discharge Summary note associated with the visit (see the Discharge Summary Notes definition above to see how the Discharge Summary notes are determined). • Extract the Hospital Course section (see Section 2.2) for the Discharge Summary Addendums associated with the visit.
Hospital Discharge Instructions	CS, CSB	• Not extracted.
Hospital Discharge Instructions	ToC, DP, CR, HIE (Inpatient only)	• The contents of any signed TIU document associated with the visit and defined in the CCDA CLINICAL PARAMETERS option under the CLINICAL NOTE for DISCHARGE INSTRUCTIONS • Extract Discharge Information Addendums associated with the visit.
Immunizations	CSB	• Extract Immunizations Due.
Immunizations	All except CSB	• Extract all patient refusals and all immunizations, including Immunizations 'due'. • Extract only the last two Influenza immunizations. • Extract Immunization Refused or Declined by the patient • Extract Immunizations Due
Medical Equipment	CSB	• Not extracted.
Medical Equipment	All except CSB	• Extract all active or expired Patient Implanted Devices
Medications	CS, CSB	• Extract all Active, Held, Suspended, and Pending Outpatient Prescriptions. • Extract all Given During Visit medications are extracted. • Extract all Outside Medications.

CCDA Module	CCDA Document	Data Extract

Medications	ToC, DP	• Same as CS Medication but also include:
		  • Extract recently expired (last 30 days) for chronic medications.
		  • Inpatient (Unit Dose, IVs, Pending) that were Started between the Admit and Discharge (or Visit Date for ambulatory).
		• Extract all Historical Medications from past 5 years.

Medications	HIE	• Same as ToC/DP/CR but also include all Historical Medications from past 5 years.
Medications Administered	CR	• Same as ToC Medications but exclude anesthesia. Any medication in class code “CN200”, “CN201”, “CN202”, “CN203”, “CN204” or “CN205” will be excluded from this section.
Mental/Cognitive Status	CS, CSB	• Not extracted.
Mental/Cognitive Status	ToC, DP, HIE, CR	• Mini Mental Status Exam: Extract the most recent entry for the patient from the Measurement file. • Problems: Extract the subset of SNOMED codes determined to be related to cognitive status (EHR IPL COGNITIVE STATUS).
Patient	All	• Demographics for the requested patient.
Problems/Encounter Diagnoses	CS	• Extract Chronic, Episodic, and Sub-acute problems. • The CCDA Site Parameter ADD SOCIAL ENVIRONMENT PROB allows the sites to determine whether they want to extract social/environmental problems (see Section 3.1. • The CCDA Site Parameter ADD INACTIVE PERS HISTORY PROB allows the sites to determine whether they want to extract personal history with inactive status problems (see Section 3.1). • Extract any POVs for that Encounter (mark with an asterisk).

CCDA Module	CCDA Document	Data Extract
Problems/Encounter Diagnoses	CSB	• Extract any POVs for that Encounter.
Problems/Encounter Diagnoses	ToC, DP, HIE, CR	• Extract chronic and sub-acute problems. • Extract social and environmental problems. • Extract personal history with inactive status problems. • Extract any POVs for that Encounter (mark with an asterisk).
Procedures and Interventions	CS	• Extract the procedures done on today's visit (V Procedure and V CPT). • Extract Radiology exams associated with the visit. • Procedure Note: The contents of any signed TIU document associated with the visit and defined in the CCDA CLINICAL PARAMETERS option under the CLINICAL NOTE for PROCEDURE notes.
Procedures and Interventions	CSB	• Extract the procedures done on today's visit (V Procedure and V CPT). • Extract Radiology exams associated with the visit.
Procedures and Interventions	ToC, DP, HIE, CR	• Extract all significant procedures for CPT codes entered in the APCH HS MAJOR PROCEDURES CPTS taxonomy. For ICD-9/ICD-10 codes, use the same 'significant procedure' logic as is used by the Health Summary. • Extract all Radiology exams for the patient.
Progress Notes	CSB	• Not extracted.
Progress Notes	All except CSB	• Any signed TIU document associated with the visit and not defined in the CCDA CLINICAL PARAMETERS option under the CLINICAL NOTE definitions and not specifically excluded in the SITE NOTE EXCLUSION parameter
Reason for Referral	CS, CSB	• Not extracted.

CCDA Module	CCDA Document	Data Extract
Reason for Referral	ToC, DP, HIE, CR (ambulatory only)	• Extract referral information for the referrals associated with the visits.
Reason for Visit/Hospitalization	CS, CSB, ToC	Reason for Hospitalization (inpatient): • Chief complaint from most recent ED visit (within 72 hours) • Discharge diagnosis from most recent ED visit (within 72 hours) • Patient movement • Admitting diagnosis from V HOSPITALIZATION Reason for Visit (ambulatory): • Extract the Chief complaint.
Reason for Visit/Hospitalization	DP	• Not extracted.
Recent Encounters	CSB	• Not extracted.
Recent Encounters	All except CSB	• Extract the visit for which the document is being created • Extract all Hospitalization, Observation, Nursing Home, Same Day Surgery encounters going back one year from the date of the visit for which the document is being created. • Extract all Ambulatory and TeleMedicine encounters that are workload reportable going back one year going back one year from the date of the visit for which the document is being created. • For each encounter, extract the Purpose of Visit for the encounter.

CCDA Module	CCDA Document	Data Extract
Recent Test Results	CS, CSB	• Extract lab results that are modified or resulted. For ambulatory, extract labs resulted with the past 15 day for the date of the visit. For inpatient stays, extract all labs resulted during the inpatient stay. • Extract Radiology results for the current visit that has an impression, and the report has been verified. For inpatient stay, only get the results of the first and last Radiology exam. • Extract Radiology Results with abnormal results that are within thirteen months of the earliest visit date. • Does not extract skin tests.
Recent Test Results	ToC, DP, CR	• Extract resulted tests from Laboratory. For Ambulatory, results are not visit-specific. Extract the last two results for each atomic test and each panel that occurred within the last 30 days. For Inpatient, results are visit-specific. Extract the initial and last resulted test associated with the inpatient stay. • Extract Radiology results for the current visit that has an impression, and the report has been verified. For inpatient stay, only get the results of the first and last Radiology exam. • Extract Radiology Results with abnormal results that are within thirteen months of the earliest visit date. • Extract skin tests that occurred in the previous year, except for the TB skin test that has no time limit.

CCDA Module	CCDA Document	Data Extract
Recent Test Results	HIE	• Extract resulted tests from Laboratory. For Ambulatory, results are not visit-specific. Extract the last five results for each atomic test and each panel that occurred within the last year. For Inpatient, results are visit-specific. Extract the initial and last three resulted test associated with the inpatient stay. • Extract Radiology results for the current visit that has an impression, and the report has been verified. For inpatient stay, only get the results of the first and last Radiology exam. • Extract Radiology Results with abnormal results that are within thirteen months of the earliest visit date. • Extract skin tests that occurred in the previous year, except for the TB skin test that has no time limit.
Recent Vital Signs	CS, CSB	• Get only the most recent three vital signs per type. Display only Height, Weight, Blood Pressure, and Body Mass Index (BMI).
Recent Vital Signs	ToC, DP, HIE	• Extract measurements using the CCDA list of allowable measurements - Body Mass Index (BMI), Blood Pressure (BP), Head Circumference (HC), Height (HT), O2 Saturation (O2), Pulse (PU), Respiratory Rate (RS), Temperature (TMP), and Weight (WT). • For O2 Saturation measurement, also extract the Inhaled Oxygen Concentration, Inhaled Flow Rate, and Method modifiers. • Extract Pain measurement, even though it is not specified by CCDA. • Ambulatory vital signs are not visit-specific. Extract the last three measurements. • Inpatient vital signs are visit-specific. Extract the initial and last three associated with the inpatient stay.

CCDA Module	CCDA Document	Data Extract
Security and Privacy Prohibitions	CS, CSB, ToC, HIE	• Standard text-"This information, except for Alcohol and Drug Abuse Patient Records as defined in 42 Code of Federal Regulations, Part 2, may be subject to redisclosure by the recipient and may no longer be protected by the Health Insurance Portability and Accountability Act Privacy Rule of 1996 and the Privacy Act of 1974, as amended."
Security and Privacy Prohibitions	CR, DP	• Not extracted.
Social History	CSB	• Not extracted.
Social History	All except CSB	• Get the most recent smoking status from V Health Factors. • Extract historical smoking statuses and e-cigarette statuses from V Health Factors • Extract the most recent food insecurity assessment from within the year preceding the visit from V HEALTH FACTORS • Extract the most recent food insecurity, housing, transportation insecurity, environmental risk, and individual safety assessments from the year preceding the visit from V EXAM

7.0 Manage Email Notifications

This step allows the user to configure the CCDA IRIS production to automatically send email notifications about new errors to selected users. A notification is typically sent as soon as a new error occurs, but the number of emails is limited to one per 15 minutes in order to prevent flooding the recipients' mailboxes with multiple errors. This email notification functionality is only available on systems that have an email server configured. This managing email notifications step is optional and may be skipped if the sites do not want to be notified about CCDA errors by email. For requests coming from the EHR GUI, the site manager will be able to view errors in the CCDA Audit Log, which is described in the CCDA Security Manual, even if email notifications are not set up.

Check if the site's email server requires a user to sign on. If it does require a user to sign on, the credentials will need to be set up first. To set up the user credentials, sign on to IRIS's Management Portal as an administrator and follow these instructions:

1. Sign on to IRIS's Management Portal as an administrator. At the top center, the main **Management Portal** page displays the server name, the current namespace, the current user, a **Switch** link, and license and instance information.

2. Click the **Switch** link. The **Namespace Chooser** dialog displays.

3. Choose the appropriate CCDA namespace. The namespace will consist of "CCDA" concatenated with the name of the site's RPMS namespace.

4. On the **Management Portal** screen, click **Interoperability**, then click **Configure**, then click **Credentials**.

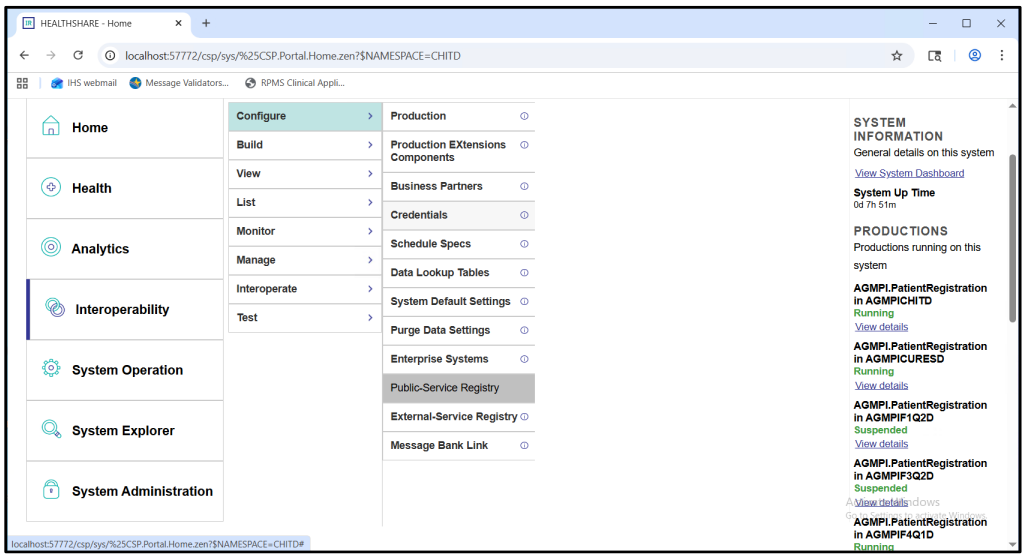


Figure 7-1: Management Portal, Credentials option

Figure 7-2 shows the **Credentials Viewer** screen.

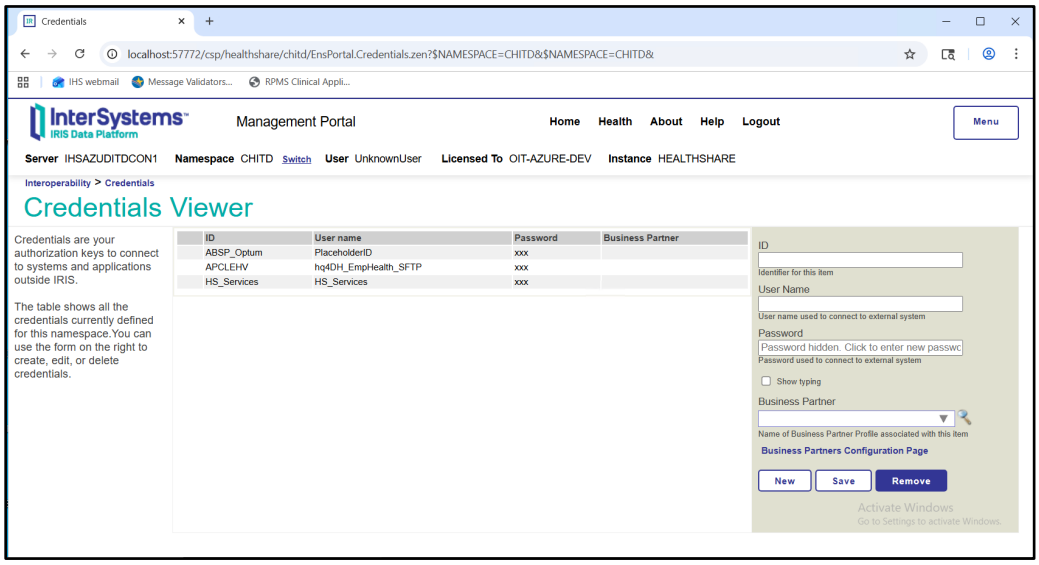


Figure 7-2: Credentials Viewer

5. In the **ID** field enter an arbitrary ID that will identify the site's email server, e.g., **mail-server** (this ID will later be utilized in the **Credentials** field of the email notification screen).

6. In the **Username** field, the IRIS username will be defaulted; however, change the IRIS username to a valid username on the email server that will allow the user to sign on to the server and send emails.

7. In the **Password** field, enter the password for the username that was entered in the previous step.

8. Leave the **Business Partner** field blank.

9. Click **Save** (the newly entered credential will be displayed in the list in the center of the screen).

10. Once the credentials have been configured (or if the site's email server does not require authentication), sign onto IRIS's Management Portal as the administrator.

11. Switch to the CCDA namespace. The namespace will consist of "CCDA" concatenated with the name of the site's RPMS namespace.

12. On the **Management Portal** page, click **Interoperability**, then click **Configure** >, then click **Production**.

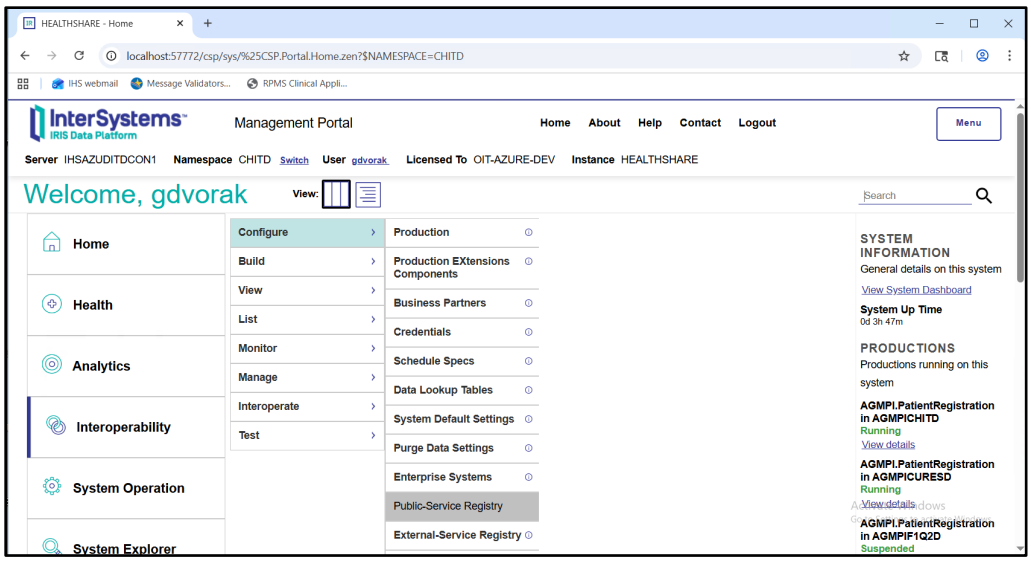


Figure 7-3: Management Portal, Production option

13. If the BCCD.Prod.Production production is not already open:

    a. On the **Production Configuration** screen, click **Open**.

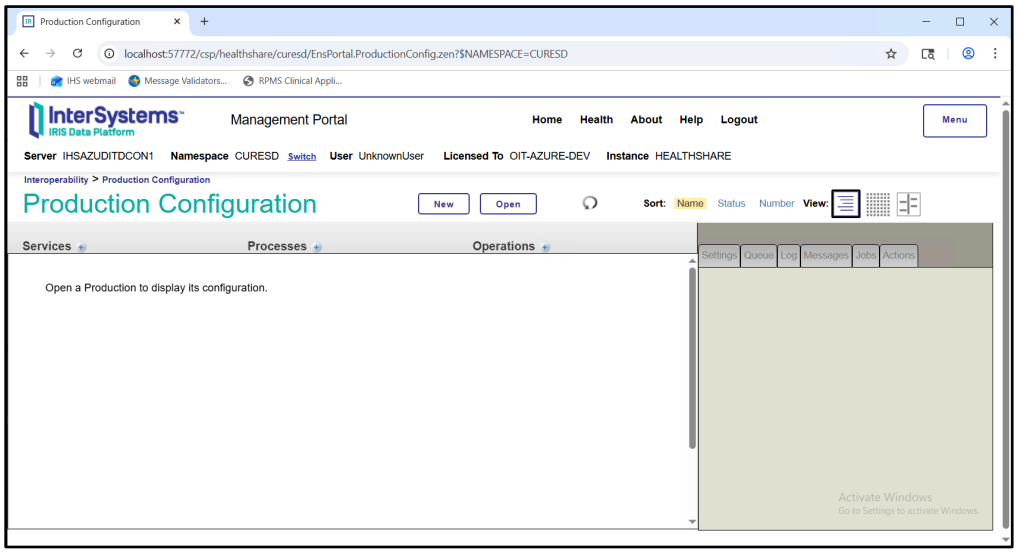


Figure 7-4: Production Configuration, no production open

    b. In the **Finder Dialog**, click **BCCD**, then click **Prod**, then click **Production** to select the CCDA production (the **Production Configuration** screen will update to display the items for the CCDA production).

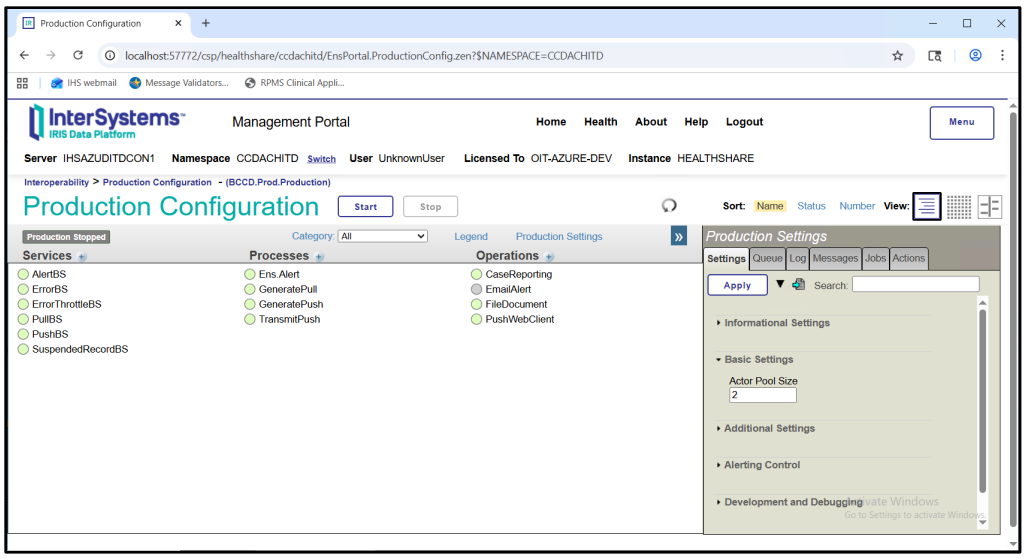


Figure 7-5: Production Configuration, CCDA production open

14. Single-click on **EmailAlert** in the **Operations** column. The details of this process will display in the **Production Settings** box on the right side of the page.

15. In the **EmailAlert** box on the right-hand side, be sure the **Basic Settings** and **Additional Settings** sections are expanded, and then enter values in Table 7-1:

Table 7-1: EmailAlert settings

Field Name	Value
Enabled	Check the box to enable email alerts
SMTP Server	IP address or name of the email server at the site
SMTP Port	Port number used by the site's email server. The default is 25
Credentials	Only required if the email server requires authentication (see instructions above)
Recipient	A comma-delimited list of email addresses that IRIS will be sending alerts to, e.g., John.Doe@ihs.gov, Jane.Doe@ihs.gov
From	The email address that the alerts will appear as coming from, e.g., CCDA@sitename.ihs.gov

If the site has a functional email server but the user does not have some of the information in the **EmailAlert** settings table above, contact the Help Desk. Do not modify any other values on this screen since it can invalidate the IRIS production.

16. Once all the required data is entered, click **Apply** at the top of the **EmailAlert** box.

Figure 7-6 contains a sample screenshot which shows what the screen will look like during the configuration process.

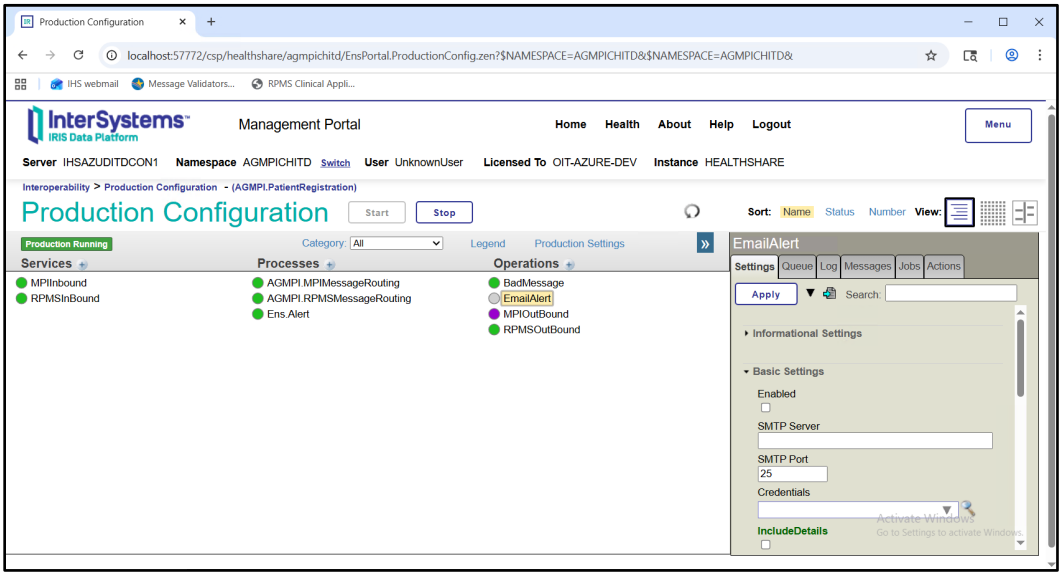


Figure 7-6 : IRIS email server configuration

8.0 References and Sources

HL7 Implementation Guide for CDA Release 2: Consolidated CDA Templates for Clinical Notes (US Realm), Draft Standard for Trial Use Release 2.1, August 2015: http://www.hl7.org/implement/standards/product_brief.cfm?product_id=492

Office of the National Coordinator for Health Information Technology (ONC) 2015 Certification of Health Information Technology (CHIT): https://www.healthit.gov/topic/certification-ehrs/certification-health-it

Appendix A Rules of Behavior

The Resource and Patient Management (RPMS) system is a United States Department of Health and Human Services (HHS), Indian Health Service (IHS) information system that is ***FOR OFFICIAL USE ONLY***. The RPMS system is subject to monitoring; therefore, no expectation of privacy shall be assumed. Individuals found performing unauthorized activities are subject to disciplinary action including criminal prosecution.

All users (Contractors and IHS Employees) of RPMS will be provided a copy of the Rules of Behavior (RoB) and must acknowledge that they have received and read them prior to being granted access to an RPMS system, in accordance with IHS policy.

- For a listing of general ROB for all users, see the most recent edition of *IHS General User Security Handbook* (SOP 06-11a).
- For a listing of system administrators/managers rules, see the most recent edition of the *IHS Technical and Managerial Handbook* (SOP 06-11b).

Both documents are available at this IHS Web site: https://home.ihs.gov/security/index.cfm.

The ROB listed in the following sections are specific to RPMS.

A.1 All RPMS Users

In addition to these rules, each application may include additional RoBs that may be defined within the documentation of that application (e.g., Dental, Pharmacy).

A.1.1 Access

RPMS users shall:

- Only use data for which you have been granted authorization.
- Only give information to personnel who have access authority and have a need to know.
- Always verify a caller's identification and job purpose with your supervisor or the entity provided as employer before providing any type of information system access, sensitive information, or nonpublic agency information.
- Be aware that personal use of information resources is authorized on a limited basis within the provisions *Indian Health Manual* Part 8, "Information Resources Management," Chapter 6, "Limited Personal Use of Information Technology Resources."

RPMS users shall not:

- Retrieve information for someone who does not have authority to access the information.
- Access, research, or change any user account, file, directory, table, or record not required to perform their *official* duties.
- Store sensitive files on a PC hard drive, or portable devices or media, if access to the PC or files cannot be physically or technically limited.
- Exceed their authorized access limits in RPMS by changing information or searching databases beyond the responsibilities of their jobs or by divulging information to anyone not authorized to know that information.

A.1.2 Information Accessibility

RPMS shall restrict access to information based on the type and identity of the user. However, regardless of the type of user, access shall be restricted to the minimum level necessary to perform the job.

RPMS users shall:

- Access only those documents they created and those other documents to which they have a valid need-to-know and to which they have specifically granted access through an RPMS application based on their menus (job roles), keys, and FileMan access codes. Some users may be afforded additional privileges based on the functions they perform, such as system administrator or application administrator.
- Acquire a written preauthorization in accordance with IHS policies and procedures prior to interconnection to or transferring data from RPMS.

A.1.3 Accountability

RPMS users shall:

- Behave in an ethical, technically proficient, informed, and trustworthy manner.
- Log out of the system whenever they leave the vicinity of their personal computers (PCs).
- Be alert to threats and vulnerabilities in the security of the system.
- Report all security incidents to their local Information System Security Officer (ISSO)
- Differentiate tasks and functions to ensure that no one person has sole access to or control over important resources.
- Protect all sensitive data entrusted to them as part of their government employment.

- Abide by all Department and Agency policies and procedures and guidelines related to ethics, conduct, behavior, and information technology (IT) information processes.

A.1.4 Confidentiality

RPMS users shall:

- Be aware of the sensitivity of electronic and hard copy information and protect it accordingly.
- Store hard copy reports/storage media containing confidential information in a locked room or cabinet.
- Erase sensitive data on storage media prior to reusing or disposing of the media.
- Protect all RPMS terminals from public viewing at all times.
- Abide by all Health Insurance Portability and Accountability Act (HIPAA) regulations to ensure patient confidentiality.

RPMS users shall not:

- Allow confidential information to remain on the PC screen when someone who is not authorized to that data is in the vicinity.
- Store sensitive files on a portable device or media without encrypting.

A.1.5 Integrity

RPMS users shall:

- Protect their systems against viruses and similar malicious programs.
- Observe all software license agreements.
- Follow industry standard procedures for maintaining and managing RPMS hardware, operating system software, application software, and/or database software and database tables.
- Comply with all copyright regulations and license agreements associated with RPMS software.

RPMS users shall not:

- Violate federal copyright laws.
- Install or use unauthorized software within the system libraries or folders.
- Use freeware, shareware, or public domain software on/with the system without their manager's written permission and without scanning it for viruses first.

A.1.6 System Logon

RPMS users shall:

- Have a unique User Identification/Account name and password.
- Be granted access based on authenticating the account name and password entered.
- Be locked out of an account after five successive failed login attempts within a specified time period (e.g., one hour).

A.1.7 Passwords

RPMS users shall:

- Change passwords a minimum of every 90 days.
- Create passwords with a minimum of eight characters.
- If the system allows, use a combination of alpha-numeric characters for passwords, with at least one uppercase letter, one lower case letter, and one number. It is recommended, if possible, that a special character also be used in the password.
- Change vendor-supplied passwords immediately.
- Protect passwords by committing them to memory or store them in a safe place (do not store passwords in login scripts or batch files).
- Change passwords immediately if password has been seen, guessed, or otherwise compromised, and report the compromise or suspected compromise to their ISSO.
- Keep user identifications (IDs) and passwords confidential.

RPMS users shall not:

- Use common words found in any dictionary as a password.
- Use obvious readable passwords or passwords that incorporate personal data elements (e.g., user's name, date of birth, address, telephone number, or social security number; names of children or spouses; favorite band, sports team, or automobile; or other personal attributes).
- Share passwords/IDs with anyone or accept the use of another's password/ID, even if offered.
- Reuse passwords. A new password must contain no more than five characters per eight characters from the previous password.
- Post passwords.
- Keep a password list in an obvious place, such as under keyboards, in desk drawers, or in any other location where it might be disclosed.

- Give a password out over the phone.

A.1.8 Backups

RPMS users shall:

- Plan for contingencies such as physical disasters, loss of processing, and disclosure of information by preparing alternate work strategies and system recovery mechanisms.
- Make backups of systems and files on a regular, defined basis.
- If possible, store backups away from the system in a secure environment.

A.1.9 Reporting

RPMS users shall:

- Contact and inform their ISSO that they have identified an IT security incident and begin the reporting process by providing an IT Incident Reporting Form regarding this incident.
- Report security incidents as detailed in the *IHS Incident Handling Guide* (SOP 05-03).

RPMS users shall not:

- Assume that someone else has already reported an incident. The risk of an incident going unreported far outweighs the possibility that an incident gets reported more than once.

A.1.10 Session Timeouts

RPMS system implements system-based timeouts that back users out of a prompt after no more than 5 minutes of inactivity.

RPMS users shall:

- Utilize a screen saver with password protection set to suspend operations at no greater than 10 minutes of inactivity. This will prevent inappropriate access and viewing of any material displayed on the screen after some period of inactivity.

A.1.11 Hardware

RPMS users shall:

- Avoid placing system equipment near obvious environmental hazards (e.g., water pipes).
- Keep an inventory of all system equipment.

- Keep records of maintenance/repairs performed on system equipment.

RPMS users shall not:

- Eat or drink near system equipment.

A.1.12 Awareness

RPMS users shall:

- Participate in organization-wide security training as required.
- Read and adhere to security information pertaining to system hardware and software.
- Take the annual information security awareness.
- Read all applicable RPMS manuals for the applications used in their jobs.

A.1.13 Remote Access

Each subscriber organization establishes its own policies for determining which employees may work at home or in other remote workplace locations. Any remote work arrangement should include policies that:

- Are in writing.
- Provide authentication of the remote user through the use of ID and password or other acceptable technical means.
- Outline the work requirements and the security safeguards and procedures the employee is expected to follow.
- Ensure adequate storage of files, removal, and nonrecovery of temporary files created in processing sensitive data, virus protection, and intrusion detection, and provide physical security for government equipment and sensitive data.
- Establish mechanisms to back up data created and/or stored at alternate work locations.

Remote RPMS users shall:

- Remotely access RPMS through a virtual private network (VPN) whenever possible. Use of direct dial in access must be justified and approved in writing and its use secured in accordance with industry best practices or government procedures.

Remote RPMS users shall not:

- Disable any encryption established for network, internet, and Web browser communications.

A.2 RPMS Developers

RPMS developers shall:

- Always be mindful of protecting the confidentiality, availability, and integrity of RPMS when writing or revising code.
- Always follow the IHS RPMS Programming Standards and Conventions (SAC) when developing for RPMS.
- Only access information or code within the namespaces for which they have been assigned as part of their duties.
- Remember that all RPMS code is the property of the U.S. Government, not the developer.
- Not access live production systems without obtaining appropriate written access and shall only retain that access for the shortest period possible to accomplish the task that requires the access.
- Observe separation of duties policies and procedures to the fullest extent possible.
- Document or comment all changes to any RPMS software at the time the change or update is made. Documentation shall include the programmer's initials, date of change, and reason for the change.
- Use checksums or other integrity mechanism when releasing their certified applications to assure the integrity of the routines within their RPMS applications.
- Follow industry best standards for systems they are assigned to develop or maintain and abide by all Department and Agency policies and procedures.
- Document and implement security processes whenever available.

RPMS developers shall not:

- Write any code that adversely impacts RPMS, such as backdoor access, "Easter eggs," time bombs, or any other malicious code or make inappropriate comments within the code, manuals, or help frames.
- Grant any user or system administrator access to RPMS unless proper documentation is provided.
- Release any sensitive agency or patient information.

A.3 Privileged Users

Personnel who have significant access to processes and data in RPMS, such as, system security administrators, systems administrators, and database administrators, have added responsibilities to ensure the secure operation of RPMS.

Privileged RPMS users shall:

- Verify that any user requesting access to any RPMS system has completed the appropriate access request forms.
- Ensure that government personnel and contractor personnel understand and comply with license requirements. End users, supervisors, and functional managers are ultimately responsible for this compliance.
- Advise the system owner on matters concerning information technology security.
- Assist the system owner in developing security plans, risk assessments, and supporting documentation for the certification and accreditation process.
- Ensure that any changes to RPMS that affect contingency and disaster recovery plans are conveyed to the person responsible for maintaining continuity of operations plans.
- Ensure that adequate physical and administrative safeguards are operational within their areas of responsibility and that access to information and data is restricted to authorized personnel on a need-to-know basis.
- Verify that users have received appropriate security training before allowing access to RPMS.
- Implement applicable security access procedures and mechanisms, incorporate appropriate levels of system auditing, and review audit logs.
- Document and investigate known or suspected security incidents or violations and report them to the ISSO, Chief Information Security Officer (CISO), and systems owner.
- Protect the supervisor, superuser, or system administrator passwords.
- Avoid instances where the same individual has responsibility for several functions (i.e., transaction entry and transaction approval).
- Watch for unscheduled, unusual, and unauthorized programs.
- Help train system users on the appropriate use and security of the system.
- Establish protective controls to ensure the accountability, integrity, confidentiality, and availability of the system.
- Replace passwords when a compromise is suspected. Delete user accounts as quickly as possible from the time that the user is no longer authorized system. Passwords forgotten by their owner should be replaced, not reissued.
- Terminate user accounts when a user transfers or has been terminated. If the user has authority to grant authorizations to others, review these other authorizations. Retrieve any devices used to gain access to the system or equipment. Cancel logon IDs and passwords and delete or reassign related active and backup files.

- Use a suspend program to prevent an unauthorized user from logging on with the current user's ID if the system is left on and unattended.
- Verify the identity of the user when resetting passwords. This can be done either in person or having the user answer a question that can be compared to one in the administrator's database.
- Shall follow industry best standards for systems they are assigned to and abide by all Department and Agency policies and procedures.

Privileged RPMS users shall not:

- Access any files, records, systems, etc., that are not explicitly needed to perform their duties.
- Grant any user or system administrator access to RPMS unless proper documentation is provided.
- Release any sensitive agency or patient information.

Glossary

BCCD

Namespace for CCDA files, routines and classes.

BMW

Namespace for classes generated from FileMan files.

Hypertext Transfer Protocol

A widely used communication protocol on the World Wide Web.

Simple Object Access Protocol

The communication protocol and message format used in communicating with web services.

Software Quality Assurance

The office within the IHS Office of Information Technology responsible for ensuring that the system conforms to RPMS Programming Standards and Conventions.

V Codes

V codes (codes V01–V91) are used to describe encounters with circumstances other than disease or injury. V codes are used either as a first listed (primary) or contributing (secondary) code depending on the situation.

Web service

An application programming interface (API) that allows communication with an application via SOAP messages over HTTP.

Web Service Description Language

A file that describes a web service's API.

Acronym List

Acronym	Meaning
API	Application Programmer Interface
BMI	Body Mass Index
CCD	Continuity of Care Document
CCDA	Consolidated Clinical Document Architecture
CDA R2	Clinical Document Architecture Release 2
CHIT	Certified Health Information Technology
CPT	Current Procedural Terminology
CS	Clinical Summary
CSB	Clinical Summary Brief
DP	Data Export, formerly Data Portability
DTL	Data Transformation Language
EHR	Electronic Health Record
GUI	Graphical User Interface
HIE	Health Information Exchange
HIPAA	Health Insurance Portability and Accountability Act
HL7	Health Level Seven
HTTP	Hypertext Transfer Protocol
I/T/U	IHS direct, tribal, and urban facilities. Generally, refers to all components of the Indian healthcare system
IHS	Indian Health Service
KIDS	Kernel Installation and Distribution System
OIT	Office of Information Technology
PHR	Personal Health Record
POV	Purpose of Visit
RPMS	Resource and Patient Management System
SAC	Standards and Conventions
SME	Subject Matter Expert
SNOMED CT	Systematized Nomenclature of Medicine--Clinical Terms
TB	Tuberculosis
ToC	Transitions of Care
WS	Web Service
WSDL	Web Services Description Language
XML	Extensible Markup Language

Contact Information

If you have any questions or comments regarding this distribution, please contact the IHS IT Service Desk.

Phone: (888) 830-7280 (toll free)

Web: https://www.ihs.gov/itsupport/

Email: itsupport@ihs.gov