Clinical Case Registries (CCR)

Version 1.5

Technical Manual / Security Guide

Documentation Revised March 2011

For Patch ROR*1.5*14

Department of Veterans Affairs

Office of Enterprise Development

Health Data Systems – Registries

Revision History

Date	Description	Author	Role
March 2011	Patch ROR*1.5*14. See Table 13 for details.	Vida Dunie Angela Saunders Linda Berry Ed Micyus	Tech Writer M Developer Software Quality Assurance Analyst Delphi Developer
December, 2010	Final release for Patch ROR*1.5*13. See Table 12 for details.	Kenneth Rikard Edward Micyus Angela Saunders Linda Berry VJ McDonald	Project Manager Developer Developer Software Quality Assurance Analyst Technical Writer
July, 2009	Technical Writer/SQA review and matchup with CCR User Manual for Patch ROR*1.5*8	Kenneth Rikard VJ McDonald Linda Berry	Project Manager Technical Writer Software Quality Assurance Analyst
October, 2008	With patch ROR*1.5*3, the possible values of the parameter were updated to include the “M” flag.	A. Scott T. Dawson	Project Manager Technical Writer
February, 2006	Completely updated for version 1.5	Sergey Gavrilov	Developer

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1. Preface

1.1. Typographical Conventions Used in the Manual

Fonts and other conventions shown in Table 1 are used throughout this document. Conventions for the use of graphic icons and other symbols are shown in Table 2.

Table 1 – Typographical Conventions

Font	Used for…	Examples:
Blue text, underlined	Hyperlink to another document or URL	ftp.fo-slc.med.va.gov
Green text, dashed underlining	Hyperlink to a place in this document	"CCR accesses several other Veterans Health Information Systems and Technology Architecture (VistA) files…"
Courier New	Patch names	`ROR*1.5*2, XYZ file #798.1`
	VistA menu options	`ACL – Re-index the ACL cross-reference`
	VistA filenames	Xxx
	VistA field names	Xxx
Franklin Gothic Demi	Keyboard keys	**< F1 >, < Alt >, < L >, [Enter]**
Microsoft Sans Serif	Software Application names	Clinical Case Registries (CCR)
	Registry names	CCR:HIV
	GUI database field names	Comment field
	GUI report names	Procedures report
Microsoft Sans Serif bold	GUI panel, pane, tab, button and command icon names	**Other Registries** panel **[Delete]** button
Times New Roman	Normal text	"… designed for use by designated Registry Coordinators, Managers, and Clinicians…."
Times New Roman Italic	Text emphasis	"It is *very* important…"
	National and International Standard names	*International Statistical Classification of Diseases and Related Health Problems*
	Document names	*Clinical Case Registries User Manual*

Table 2 – Graphical Conventions

Graphic	Used for…
	Information of particular interest regarding the current subject matter
	A tip or additional information that may be helpful to the user

Graphic	Used for…
	A warning concerning the current subject matter
	Information about the history of a function or operation; provided for reference only.

1.2. Navigating Hyperlinks

Throughout this document, you will find hyperlinks of various types like those indicated in Table 1, above. Some will be to other places in this document, while others will take you to websites or other documents stored online. If the hyperlink is to another place in this document, use the web toolbar "back" button ( ) to return to the point in the document where you clicked the link. If the link is external and takes you to a website, use the back button in your browser to return.

If you do not see the back button in the program you are using to read this document, use your program's View menu to turn on the Web toolbar. For example, in Microsoft® Word® 2003, first click **View**, then **Toolbars**; make sure the Web toolbar is selected.

1.3. Screen Displays and Text Notes

In this manual, the VistA user's response is shown in **`bold type`**, but it does not appear on the screen as bold. The bold part of the entry is the letter, or letters, that you must type so that the computer can identify the response. In most cases, you only have to enter the first few letters. This increases speed and accuracy.

Every response you type must be followed by pressing the **[Return]** key (or **[Enter]** for some keyboards). In VistA screen shots, whenever the Return or Enter key should be pressed, you will see the symbol **<RET>**. This symbol is not shown but is implied if there is bold input.

Within the "roll'n'scroll" part of the system, Help frames may be accessed from most prompts by entering one, two, or three question marks (**?**, **??**, or **???**).

Within the examples of actual terminal dialogues, additional information about the dialogue may be shown. This information is enclosed in brackets, for example, *{type ward name here}*, and it does not appear on the screen.

1.4. Clinical Case Registries Software Application

The Clinical Case Registries (CCR) software application supports the maintenance of local and national registries for clinical and resource tracking of care for patients with certain clinical conditions. Registries for Hepatitis C (CCR:HEPC) and Human Immunodeficiency Virus (CCR:HIV) are available. This application allows access to important demographic and clinical data on all VHA patients with these conditions, and provides many capabilities to VA facilities that provide care and treatment to patients with these conditions, including clinical categorization

of patients and automatic transmission of data to the VA's National Case Registry. It also provides clinical and administrative reports for local medical center use.

CCR accesses several other Veterans Health Information Systems and Technology Architecture (VistA) files that contain information regarding other diagnoses, prescriptions, surgical procedures, laboratory tests, radiology exams, patient demographics, hospital admissions, and clinical visits. This access allows identified clinical staff to take advantage of the wealth of data supported through VistA.

1.5. Purpose of the Manual

The *Clinical Case Registries User Manual* provides detailed instructions for using the CCR software and its graphical user interface (GUI). This document, the *CCR Technical Manual / Security Guide*, provides more technical information about the CCR application.

Throughout this document, the acronym CCR always refers to the application and its features, not to the individual registries. The HIV and Hepatitis C registries are referred to as CCR:HIV and CCR:HEPC, respectively: see Appendix A and Appendix B for registry-specific information.

1.6. Recommended Users

The Information Resource Management (IRM) staff is required for installation and support of the CCR v1.5.

1.7. Related Documents

These related documents are available at http://www.va.gov/vdl/application.asp?appid=126.

- *Clinical Case Registries 1.5 Installation & Implementation Guide*
- *Clinical Case Registries 1.5 Release Notes*
- *Clinical Case Registries 1.5 User Manual*

2. Introduction

The Clinical Case Registries (CCR)) software application collects data on the population of veterans with certain clinical conditions, namely Hepatitis C and Human Immunodeficiency Virus (HIV) infections.

2.1. Overview

The Clinical Case Registries (CCR) software uses pre-defined selection rules that identify patients with possible Hepatitis C and/or HIV (such as a disease related ICD-9 code or a positive result on an antibody test) and adds them to the registry in a pending state. Pending patients are reviewed by the local registry coordinator and if the data confirm the diagnosis, the local registry coordinator confirms the patient in the registry.

A nightly background process transmits a set of predefined data via HL7 to the national CCR database at Corporate Data Center Operations (CDCO).[1] Data from both registries is aggregated in the same message. The CCR software creates a limited set of database elements to be stored locally in the VistA system, and focuses on assuring that the local listing is complete and accurate, that the desired data elements are extracted, and that data elements are appropriately transmitted to the national database.

Note: Effective with Patch ROR*1.5*14, the extract code pulls Purchased Care Data. New ZIN/ZSV/ZRX segments were added to the HL7 message for this purpose (see updated tables starting on page 166). This change is transparent and seamless to users; no changes in process or method were made.

If there is more new data than is allowed by the registry parameter for a single CCR HL7 batch message (currently, five megabytes), the software will send several messages during a single night.

Data from the registries is used for both clinical and administrative reporting on both a local and national level. Each facility can produce local reports (information related to patients seen in their system.). Reports from the national database are used to monitor clinical and administrative trends, including issues related to patient safety, quality of care and disease evolution across the national population of patients.

2.2. Software Features and Functions

CCR provides these key features:

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[1] CDCO was formerly known as the Austin Automation Center (AAC). CDCO is managed by the VHA Center for Quality Management in Public Health (CQMPH).

- Easy data access and navigation of the data files via the GUI.
- Semi-automatic sign-on to the VistA databases via the web-based GUI; a separate VistA log-in is not required, nor is emulation software such as !KEA or Attachmate Reflection.
- Automated development of local lists of patients with evidence of HIV or Hepatitis C infection.
- Automatic transmission of patient data from the local registry lists to a national database.
- Robust reporting capabilities.

CCR also provides the following functions:

- Tracking of patient outcomes relating to treatment.
- Identification and tracking of important trends in treatment response, adverse events, and time on therapy.
- Monitoring quality of care using both process and patient outcome measures.

2.3. About Clinical Case Registries 1.5

Version 1.5 of the CCR software (published via Patch `ROR*1.5*1`) introduced a single software package to support both the CCR:HEPC Registry and the CCR:HIV Registry (also called the Immunology Case Registry (ICR)). CCR provides access to both CCR:HIV and CCR:HEPC from a single interface; previously, these two registries were created and maintained through two separate software packages. Since the functional requirements for these registries were substantially the same, they were combined.

CCR 1.5 has also been enhanced by automation of the data collection system and transformed from an administrative database into a clinically relevant tool for patient management.

Each patch released since the original iteration of CCR 1.5 has added improvements and fixes; see CCR Patches ROR*1.5*X for details.

2.3.1. Decommissioned Software

2.3.1.1. Immunology Case Registry v2.1

Patients from ICR version 2.1 were migrated to CCR:HIV during the installation of patch `ROR*1*5` (March 2004). After a transitional period when the two packages were used concurrently, ICR 2.1 was removed from service by patch `IMR*2.1*21` (October 2005).

2.3.1.2. Hepatitis C Case Registry v1.0

Hepatitis C Case Registry (HCCR) v1.0 was removed from service with the release of CCR 1.5. Historical patient data from the previous Hepatitis C Registry was migrated to CCR:HEPC.

2.3.2. CCR Patches ROR*1.5*X

Changes provided by patches in the ROR*1.5 series are shown in the following tables. Under "**Type**," "E" indicates an enhancement, "F" indicates a fix, and "M" denotes a modification (as to data). To jump to a particular patch, click (or **<Ctrl>+<Click>**) a green link below.

Patch ROR*1.5*1	Patch ROR*1.5*2	Patch ROR*1.5*3	Patch ROR*1.5*4	Patch ROR*1.5*5	Patch ROR*1.5*6	Patch ROR*1.5*7
Patch ROR*1.5*8	(Patch ROR*1.5*9: maintenance patch; not documented herein)		Patch ROR*1.5*10	Patch ROR*1.5*13	Patch ROR*1.5*14	

2.3.2.1. Patch ROR*1.5*1

Table 3 – Patch ROR*1.5*1 Description

Patch Number	#	Description	Type
ROR*1.5*1	1	Selected (Date) and Selection Rule columns added to the patient list on the Registry tab.	E
	2	When a report is opened, the Task Manager tab is activated.	E
	3	The Mode field is added to the Local Fields and Other Registries panels of the Report parameters to provide patient include and exclude filters.	E
	4	A Delete button is added to the Patient Data Editor dialog box.	E
	5	A Patients panel is added to the Procedures report to use selected procedures performed and selected procedures not performed within a date range.	E
	6	A Procedures panel is added to the Procedures report to indicate whether a procedure is an inpatient or outpatient one	E
	7	The ICD-9 panel of the Diagnoses report is modified to be able to define groups and add ICD-9 codes to the groups.	E
	8	The "Check if patient ever had an AIDS-OI" checkbox is automatically selected and the "Date of AIDS-OI" field is populated if an indicator disease Def box is selected in Section VIII of the CDC form in the Clinical Status section.	E
	9	A new patient search parameter is added for the Registry tab: # followed by the patient's 11-digit coded SSN.	E
	10	The output format of the Combined Meds and Labs report is modified.	E
	11	The Patient Medication History report is modified with the addition of two radio buttons, Consider All and Selected Only to the Select Patient panel.	E

Patch Number	#	Description	Type
	12	Fixed Microsoft® Windows Server 2003® issue.	F
	13	Fixed missing CDC bitmap error.	F
	14	Fixed incorrect printing of the CDC form.	F

2.3.2.2. Patch ROR*1.5*2

Table 4 – Patch ROR*1.5*2 Description

Patch Number	#	Description	Type
ROR*1.5*2	1	Fixed RPC Broker timeout issue.	F
	2	Fixed issues with duplicates in patient list.	F
	3	Fixed issues with lower-case characters in lab tests and medications data.	F
	4	Fixed issue with Reporting date entry not accepting "-T."	F
	5	Fixed issue with un-checking of local fields in the Patient Data Editor not being saved.	F
	6	Fixed issues with run-time errors using $QUERY on non-Caché platforms.	F
	7	Fixed issues with non-SSN patient identifier appearing on reports at non-VA sites.	F

2.3.2.3. Patch ROR*1.5*3

Table 5 – Patch ROR*1.5*3 Description

Patch Number	#	Description	Type
ROR*1.5*3	1	Accommodated Patch RA*5*75 (Radiology), which introduced a Reason for Study data field.	E
	2	Addition of Task Control flag ("M") which signals the system to disable HL7 messaging.	E

2.3.2.4. Patch ROR*1.5*4

Table 6 – Patch ROR*1.5*4 Description

Patch Number	#	Description	Type
ROR*1.5*4	1	Added two additional ICD-9 codes needed for the nightly ROR registry update and data extraction.	E

2.3.2.5. Patch ROR*1.5*5

Table 7 – Patch ROR*1.5*5 Description

Patch Number	#	Description	Type
ROR*1.5*5	1	Fixed issue with Procedures without a Provider not being sent to AAC.	F
	2	Added drug identified as needed for nightly ROR registry update and data extraction.	E

2.3.2.6. Patch ROR*1.5*6

Table 8 – Patch ROR*1.5*6 Description

Patch Number	#	Description	Type
ROR*1.5*6	1	Added generic drug RALTEGRAVIR to VA GENERIC file #50.6.	E

2.3.2.7. Patch ROR*1.5*7

Table 9 – Patch ROR*1.5*7 Description

Patch Number	#	Description	Type
ROR*1.5*7	1	Added generic drug ETRAVIRINE to VA GENERIC file #50.6.	E

2.3.2.8. Patch ROR*1.5*8

Table 10 – Patch ROR*1.5*8 Description

Patch Number	#	Description	Type
ROR*1.5*8	1	Fixes the “access violation” seen when selecting Diagnoses Report (Remedy Tickets HD0000000262208 and HD0000000262209).	F
	2	Inserts a Comment Field in the Pending Patient File necessary for tracking special conditions for a patient (see *CCR User Manual*, Pending Comment).	E
	3	Adds the Comments panel to the Patient Data Editor screen (see 2 above).	E
	4	Adds the Comment field to Processing Pending Patient screen (see 2 above).	E

Patch Number	#	Description	Type
	5	Refreshes the Processing Pending Patient screen when comment is added or deleted (see 2 above).	E
	6	Adds radio buttons “Include,” “Exclude,” or “Ignore” to provide a filter limiting reports to patients who have diagnoses based on International Classification of Diseases, 9th edition (ICD-9) codes in Common Templates or Your Templates. This filter applies to all reports except the Diagnoses Report.	E
	7	Modifies the Combined Meds and Labs report to require the user to assign a group name.	E
	8	Modifies the Combined Meds and Labs report to provide the option to limit lab results to most recent.	F
	9	Modifies the Combined Meds and Labs report to "Include All" or "Selected Only" for lab results (Remedy Ticket HD0000000232223).	E
	10	Modifies the Combined Meds and Labs report, Pharmacy Prescription Utilization report, and the Patient Medication History report to include a new method of handling Investigational Drugs and Registry Medications on the **Medications panel** drop-down list.	E

2.3.2.9. Patch ROR*1.5*10

Table 11 – Changes for Patch 10

<table>
<tr><th>#</th><th>Description</th><th>Type</th></tr>
<tr><td>1</td><td>Adds new ICD-9 diagnosis groups to the Common Templates:
<table>
<tr><td>HCC</td><td>155.0</td><td>MAL NEO LIVER, PRIMARY</td></tr>
<tr><td rowspan="4">Esophageal Varices</td><td>456.0</td><td>ESOPHAG VARICES W BLEED</td></tr>
<tr><td>456.1</td><td>ESOPH VARICES W/O BLEED</td></tr>
<tr><td>456.20</td><td>BLEED ESOPH VAR OTH DIS</td></tr>
<tr><td>456.21</td><td>ESOPH VARICE OTH DIS NOS</td></tr>
</table></td><td>M</td></tr>
<tr><td>2a</td><td>Adds LOINC codes to CCR:HIV Patient ID:
<table>
<tr><th>LOINC_NUM</th><th>SHORTNAME</th><th>LONG_COMMON_NAME</th></tr>
<tr><td>34591-8</td><td>HIV1 Ab Fld Ql EIA</td><td>HIV 1 Ab [Presence] in Body fluid by Immunoassay</td></tr>
<tr><td>34592-6</td><td>HIV1 Ab Fld Ql IB</td><td>HIV 1 Ab [Presence] in Body fluid by Immunoblot (IB)</td></tr>
<tr><td>43009-0</td><td>HIV1+2 IgG Ser Ql</td><td>HIV 1+2 IgG Ab [Presence] in Serum</td></tr>
<tr><td>43010-8</td><td>HIV1+2 Ab XXX Ql</td><td>HIV 1+2 Ab [Presence] in Unspecified specimen</td></tr>
<tr><td>43185-8</td><td>HIV 1 & 2 Ab Patrn Ser IB-Imp</td><td>HIV 1 & 2 Ab band pattern [interpretation] in Serum by Immunoblot (IB)</td></tr>
<tr><td>43599-0</td><td>HIV1 Ab Ser IF-aCnc</td><td>HIV 1 Ab [Units/volume] in Serum by Immunofluorescence</td></tr>
<tr><td>44533-8</td><td>HIV1+2 Ab Ser Donr Ql</td><td>HIV 1+2 Ab [Presence] in Serum from donor</td></tr>
<tr><td>44607-0</td><td>HIV1 Ser EIA-Imp</td><td>HIV 1 [interpretation] in Serum by Immunoassay</td></tr>
</table></td><td>M</td></tr>
</table>

<table>
<tr><th>#</th><th>Description</th><th>Type</th></tr>
<tr><td></td><td>
<table>
<tr><td>44873-8</td><td>HIV1+2 Ab Ser Ql IB</td><td>HIV 1+2 Ab [Presence] in Serum by Immunoblot (IB)</td></tr>
<tr><td>49580-4</td><td>HIV1+2 Ab XXX Ql Rapid</td><td>HIV 1+2 Ab [Presence] in Unspecified specimen by Rapid test</td></tr>
<tr><td>49905-3</td><td>HIV1 Ab XXX Ql Rapid</td><td>HIV 1 Ab [Presence] in Unspecified specimen by Rapid test</td></tr>
<tr><td>5221-7</td><td>HIV1 Ab Ser Ql IB</td><td>HIV 1 Ab [Presence] in Serum by Immunoblot (IB)</td></tr>
<tr><td>53379-4</td><td>HIV1 Ab XXX Ql</td><td>HIV 1 Ab [Presence] in Unspecified specimen</td></tr>
<tr><td>54086-4</td><td>HIV1+2 IgG Bld.Dot Ql</td><td>HIV 1+2 IgG Ab [Presence] in Blood dot (filter paper)</td></tr>
</table>
</td><td></td></tr>
<tr><td>2b</td><td>Adds LOINC Codes to CCR:HEPC Patient ID:
<table>
<tr><th>LOINC NUM</th><th>SHORTNAME</th><th>LONG_COMMON_NAME</th></tr>
<tr><td>47365-2</td><td>HCV Ab Ser Donr Ql EIA</td><td>Hepatitis C virus Ab [Presence] in Serum from donor by Immunoassay</td></tr>
<tr><td>47441-1</td><td>HCV Ab Ser Donr Ql</td><td>Hepatitis C virus Ab [Presence] in Serum from donor</td></tr>
<tr><td>48576-3</td><td>HCV RNA XXX Ql bDNA</td><td>Hepatitis C virus RNA [Presence] in Unspecified specimen by Probe & signal amplification method</td></tr>
<tr><td>51655-9</td><td>HCV RNA Fld Ql PCR</td><td>Hepatitis C virus RNA [Presence] in Body fluid by Probe & target amplification method</td></tr>
<tr><td>51657-5</td><td>HCV Ab Fld Ql</td><td>Hepatitis C virus Ab [Presence] in Body fluid</td></tr>
</table>
</td><td>M</td></tr>
<tr><td>3</td><td>Updates (by changing date selection criteria) the Microbiology data extraction code to capture missing Microbiology data. Extract now uses “completion date” and/or “date collected.”
Prior to this patch, the Microbiology data extraction was pulling data based on the 'completion date' (DATE REPORT COMPLETED, #.03 in the MICROBIOLOGY sub-file #63.05 of the LAB DATA file #63) alone. It was found that many sites do not populate that field, causing microbiology data to be omitted from the nightly extract to the central registry. The extract will now pull data based on the 'date collected' (DATE/TIMESPECIMEN TAKEN, #.01) if the 'completion date' is null.</td><td>E</td></tr>
<tr><td>4</td><td>Corrects Problem List Extraction by using DATE RESOLVED versus DATE RECORDED.
Previously, the Problem List Extraction was pulling data from the wrong field (DATE RECORDED, #1.09) to populate the 'date resolved' field in the extract. Data is now correctly pulled from the DATE RESOLVED field (#1.07) of the PROBLEM file (#9000011).</td><td>F</td></tr>
<tr><td>5</td><td>Adds new OBR and OBX segments to the nightly extract to pull Immunization data and Skin Test data for Registry patients (see CCR Technical Manual).
The nightly and historical extracts have been enhanced to include OBR and OBX segments for Immunization data and Skin Test data for registry patients. Immunization data and Skin Test data will be pulled if the DATE LAST MODIFIED (#.13 in the VISIT file (#9000010) is within the extract range. For details of the data included in the segments, please refer to the CCR Technical Manual.</td><td>E</td></tr>
<tr><td>6</td><td>Changes nightly data extract to include patients on the Pending list.
The CCR data extract (both nightly and historical) previously included data for 'confirmed' patients only. It will now include data for 'pending' patients as well. Previously, the DON'T SEND field (#11) in the ROR REGISTRY RECORD file (#798) was set to 'true' when a pending patient was added to the registry. With patch 10, the DON'T SEND field will be set to 'true' for test patients only.</td><td>E</td></tr>
<tr><td>7</td><td>Adds three new reports:
<table>
<tr><td>Model for End-Stage Liver Disease (MELD) Score by Range</td></tr>
<tr><td>Body Mass Index (BMI) by Range</td></tr>
</table>
</td><td>E</td></tr>
</table>

#	Description	Type
	Renal Function by Range *These reports can be executed from the GUI application. See the User Manual for additional report information.*	
8	Modifies existing report headers to reflect the Other Diagnosis filter (added by ROR*1.5*8)	E
9	Adds ALL REGISTRY MEDICATIONS to the **Medications Selection panel** via a new **[All Registry Meds]** button. This is included in the Combined Meds and Labs, Patient Medication History, and Pharmacy Prescription Utilization reports.	E
10	Adds new checkbox to display Pending Comments on the List of Registry Patients report. *The "List of Registry Patients" report has been enhanced to include a "Pending Comments" column added to the Report Options. If this option is checked, an additional column called Pending Comments will be added as the right-most column of the report. If the Registry Status' Pending check box is not checked, the Pending Comments option will be disabled.*	E
11	Replaces Direct global and FileMan reads to the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) files with calls using supported Application Program Interfaces (APIs). *To support encapsulation of data in the ICD-9-CM package, direct global and FileMan reads previously used in the ROR namespace were replaced with calls using supported ICD-9-CM APIs. These supported APIs retrieve Diagnosis information needed by the CCR application for the extracts and reports.*	E
12	Modifies Other Diagnosis filter to allow the user to remove group header from the "selected" box when the user removes a group from the "selected" panel. *If the user highlights the header and presses the delete key, the header will be deleted. In addition, if the user highlights the header and hits the left arrow, the header will be deleted. Previously, the header was not being removed from the selected box.* *Reports with the 'Other Diagnoses' filter have been modified to display the selected diagnoses in the report header. One of the three formats shown below will be displayed on the report, depending on what the user selected.* *Diagnoses: All* *Diagnoses: Include abc, def, etc.* *Diagnoses: Exclude abc, def, etc.*	M
13	Modifies the "Help About" popup to conform to VA standards, including hyperlinks to reference documents.	E
14	Modifies the online help file to make it context-sensitive.	E
15	Updates the GUI application to work toward adherence to the Section 508 standards.	M
16	Reports XML code have been updated to address a bug introduced in Internet Explorer 7 that was causing page breaks to not work correctly.	F

2.3.2.10. Patch ROR*1.5*13

Table 12 – Changes for Patch 13

#	Description	Type

#	Description	Type
1	Adds LOINC code 57006 to the VA HEPC entry of the Lab Search criteria in the ROR LAB SEARCH file (#798.9), sub-file LAB TEST (#2).	M
2	Enhances the nightly and historical HL7 extracts to include ORC and RXE segments for Non-VA medications for registry patients. Non-VA medication data will be pulled if the DOCUMENTED DATE (#11) or the DISCONTINUED DATE (#6) in the NON-VA MEDS sub-file (#52.2) of the PHARMACY PATIENT file (#55) is within the extract range.	E
3	Enhances the Patient Medication History report to allow users to select the most recent fill only, or all fills. The report output has been enhanced to include a column displaying the number of fills remaining.	E
4	Reports BMI by Range, MELD Score by Range, and Renal Function by Range have been enhanced to allow users to sort the report output by the calculations. The BMI by Range report can be sorted by the BMI score. The MELD Score by Range report can be sorted by the MELD or the MELD-Na score. The Renal Function by Range report can be sorted by the CrCL or the eGFR score.	E
5	All reports (except Outpatient Utilization, Inpatient Utilization, List of Registry Patients, and Current Inpatient List) will allow users to select specific clinics or divisions. All reports (except List of Registry Patients and Current Inpatient List) will allow users to select specific patients.	E
6	When users want to select specific medications in the Combined Meds And Labs report or the Patient Medication History report, the text in the search box will automatically convert to uppercase.	E
7	The CCR GUI application will now check VistA for the CCR server version, and it will display a message if the CCR GUI and the CCR server version are out of sync with each other.	E
8	The CCR GUI was updated to work towards becoming fully compliant with the Section 508 standards.	
9	An historical data extraction for Non-VA meds is added to the ROR HISTORICAL DATA EXTRACTION file (#799.6). It will automatically execute during the next nightly extract, and there is no manual intervention required by the sites. The extraction date range for this historical data extraction is 1/1/1985 through current date (installation date).	E

2.3.2.11. Patch ROR*1.5*14

Table 13 – Changes for Patch 14

#		Type
1	The 13 risk factors for the HIV registry have been changed from mandatory to optional.	E
2	Currently, within the Patient Data Editor in the HIV registry, the user is prompted to click a checkbox if the patient "ever had an AIDS OI." This prompt and checkbox has been replaced with the question "Did the patient ever have an AIDS OI?" and the option to select either **Yes**, **No**, or **Unknown** has been added to the checkbox.	E
3	The following mandatory question has been added to the Patient Data Editor: "Was your VHA facility/station the first health care setting (VA or non-VA) to diagnose HIV?" along with a checkbox to select either **Yes**, **No** or **Unknown**.	E
4	A new column has been added to the List of Registry Patients Report that allows the user to select "Diagnosed at this facility." This column indicates whether this facility was the first health care setting (VA or Non-VA) to diagnose HIV.	E
5	The nightly extract has been enhanced to include Purchased Care data for registry patients.	E
6	The "MELD Score by Range" report has been renamed to "Liver Score By Range".	E
7	The "Liver Score by Range" report now includes the list of LOINC codes used in the report.	E
8	The "Renal Score by Range" report now includes the list of LOINC codes used in the report.	E
9	The "Liver Score by Range" report now includes APRI and FIB-4 calculations.	E
10	Patients will be automatically confirmed into the HEPC Registry if they have a positive Hepatitis C Virus (HCV) viral load test result.	E
11	This patch brings the Clinical Case Registries (CCR) application into 508 compliance in many areas.	E
12	A historical data extraction for Purchased Care is added to the ROR HISTORICAL DATA EXTRACTION file (#799.6) for automatic execution during the next nightly extract.	E

2.4. Obtaining Software and Documentation

The CCR software (ROR 1_5) and documentation files are available for downloading from the following Office of Information Field Offices (OIFO) ANONYMOUS SOFTWARE directories.

The preferred method of obtaining the files is to use File Transfer Protocol (FTP) from ftp://download.vista.med.va.gov/.

This transmits the file from the first available FTP server. Sites may also elect to retrieve software directly from a specific server as shown in Table 14.

Table 14 – Software and Documentation Sources

OIFO	FTP Address	Directory
Albany	ftp.fo-albany.med.va.gov	ANONYMOUS.SOFTWARE
Hines	ftp.fo-hines.med.va.gov	ANONYMOUS.SOFTWARE
Salt Lake City	ftp.fo-slc.med.va.gov	ANONYMOUS.SOFTWARE

The CCR software and accompanying guides and manuals are distributed as the following set of files:

Table 15 – Files Included in Distribution

File Name	Contents	Retrieval Format
ROR1_5.KID	CCR Initial version 1.5 build (usually needed only for initial build, as at a new site)	ASCII
ROR1_5P14GUI.ZIP	Zipped GUI distributive ► CCRSETUP.EXE	BINARY
ROR1_5P14DOC1.ZIP	Zipped DOC distributive, which includes both .PDF and .DOC formats: ► User Manual (ROR1_5_14UM)	BINARY
ROR1_5P14DOC2.ZIP	► Installation and Implementation Guide (ROR1_5_14IG) ► Technical Manual / Security Guide (ROR1_5_14TM) ► Release Notes (ROR1_5_14RN)	BINARY

2.5. VistA Documentation on the Intranet

Documentation for this product, including all of the software manuals, is available in the VistA Document Library (VDL). The Clinical Case Registries documentation may be found at http://www.va.gov/vdl/application.asp?appid=126.

For additional information about the CCR, access the CCR Home Page at the following address: http://VistA.med.va.gov/ClinicalSpecialties/CCR/.

Training links and information are also available at http://vaww.VistAu.med.va.gov/VistAu/CCR/.

2.6. Accessibility Features in Clinical Case Registries 1.5

Keyboard shortcuts make the CCR GUI accessible to a wide range of users, including those with limited dexterity, low vision, or other disabilities. See the *Clinical Case Registries User Manual* (available at http://www.va.gov/vdl/application.asp?appid=126) for a complete list of keyboard shortcuts. [2]

[2] Patch ROR*1.5*1 October 2006 added accessibility information for Section 508 compliance.

3. Implementation and Maintenance

3.1. Implementation

Not applicable.

3.2. Maintenance

The `Clinical Case Registries Maintenance menu [RORMNT MAIN]` has the following options which sites can use to customize and maintain their use of the software:

Table 16 – CCR Menu Options

Option	Description
ACL	Re-index the ACL cross-reference
ELS	Edit Lab Search Criteria
ERP	Edit Registry Parameters
HDE	Historical Data Extraction
PLF	Print Log Files
PP	Pending Patients

3.2.1. Re-index the ACL cross-reference

The `ACL` cross-reference of the `ROR REGISTRY PARAMETERS file (#798.1)` should be rebuilt after changes in the allocation of the security keys associated with any registry. Usually, this is done by the nightly task (the `Registry Update & Data Extraction [ROR TASK]` option). However, if you want the changes to take effect immediately, you can rebuild this cross-reference manually:

Figure 1 – Re-index the ACL Cross-reference

```
   ACL     Re-index the ACL cross-reference
   ELS     Edit Lab Search Criteria
   ERP     Edit Registry Parameters
   HDE     Historical Data Extraction ...
   PLF     Print Log Files
   PP      Pending Patients ...
Select Clinical Case Registries Maintenance Option: ACL
Do you want to reindex the ACL cross-reference? NO// YES
```

```
Done.
```

3.2.2. Edit Lab Search Criteria

This option allows you to enter the Lab Search criteria used by the registry update process. The criteria are updated via CCR patches and should not be edited without approval from the Center for Quality Management in Public Health (CQM) and Product Support (PS).

Figure 2 – Edit Lab Search Criteria

```
   ACL    Re-index the ACL cross-reference
   ELS    Edit Lab Search Criteria
   ERP    Edit Registry Parameters
   HDE    Historical Data Extraction ...
   PLF    Print Log Files
   PP     Pending Patients ...

Select Clinical Case Registries Maintenance Option: ELS  Edit Lab Search
Criteria

Select ROR LAB SEARCH NAME: VA HIV
Select LOINC CODE: 33807
  Are you adding '33807' as a new LOINC CODE (the 35TH for this ROR LAB
SEARCH)?
 No// Y  (Yes)
  INDICATOR: P  Positive Result
INDICATED VALUE: <RET>
Select LOINC CODE: <RET>
STATUS: <RET>
```

Each criterion includes one or more *triads* that consist of `LOINC CODE`, `INDICATOR`, and an optional `INDICATED VALUE`. The indicator defines the comparison operation applied to the Lab result. The Lab result is compared to the value of the `INDICATED VALUE` parameter. For example, if the internal value of this field is equal to `3` ("Greater Than") and the value of the `INDICATED VALUE` field is `5`, then this indicator will be evaluated as True for all numeric Lab results values greater than 5.

The only exceptions are the `Use Reference Range` and `Positive Result` indicators; they ignore the value.

The `Use Reference Range` indicator checks to see if the result value is outside of the reference range defined for the Lab test.

The `Positive Result` indicator selects a test result if the value…

- is equal to P

or

- contains POS, DETEC or REA *and* does not contain NEG, NO or IND.

For example, the POSITIVE, POS, REACT, and DETECTABLE values will be picked up. At the same time, the NON-REACT, INDETERMINATE, and NEG values will be skipped.


Note: All string comparisons are case-insensitive.

The STATUS field allows users to temporarily inactivate the whole lab search criterion.

3.2.3. Edit Registry Parameters

This option allows you to review/edit the registry parameters. These values can alter the way the system works on a site-by-site basis.

Figure 3 – Edit Registry Parameters

```
   ACL   Re-index the ACL cross-reference
   ELS   Edit Lab Search Criteria
   ERP   Edit Registry Parameters
   HDE   Historical Data Extraction ...
   PLF   Print Log Files
   PP    Pending Patients ...

Select Clinical Case Registries Maintenance Option: ERP  Edit Registry Parameters

Select ROR REGISTRY PARAMETERS REGISTRY NAME: VA HEPC      Hepatitis C Registry
REGISTRY UPDATED UNTIL: DEC 18,2005// <RET>
DATA EXTRACTED UNTIL: DEC 18,2005// <RET>
EXTRACT PERIOD FOR NEW PATIENT: 7300// <RET>
ENABLE LOG: YES// <RET>
Select LOG EVENT: <RET>
REGISTRY STATUS: <RET>
Select NOTIFICATION: CCRUSER,TWO
  Are you adding 'CCRUSER,TWO' as a new NOTIFICATION (the 2ND for this ROR REGISTRY
PARAMETERS)? No// Y  (Yes)
Select NOTIFICATION: <RET>
LAG DAYS: 7// <RET>
ALERT FREQUENCY: 2/ <RET>/
ENABLE PROTOCOLS: YES// <RET>
MAXIMUM MESSAGE SIZE: 5// <RET>
```

This option is typically run during the implementation phase to enter Notifications and Log Event Types. All other parameters are set during the package installation and should not be edited without approval from PS or package developers.

- The REGISTRY UPDATED UNTIL and DATA EXTRACTED UNTIL parameters are initialized during the package installation; they will be subsequently updated by the nightly task. These fields should only be edited in situations such as a system failure.
- The EXTRACT PERIOD FOR NEW PATIENT parameter defines the number of days subtracted from the date a new patient first selection rule was passed that the extract process uses when extracting data. The value of this parameter for national registries cannot be changed by the users.
- The ENABLE LOG field allows you to turn the CCR log on or off. The log stores messages generated by different CCR processes (mostly, by the nightly task).
- The LOG EVENT multiple allows the system to monitor the registry on various levels. If this field is left empty (default), all events except debug messages are recorded in the log file. If the multiple contains one or more records, only events specified by these records and error messages will be recorded. Possible event types are:
    - Debug
    - Information
    - Data Quality
    - Warning
    - Database Error
    - Error

  Debug messages are intended for registry troubleshooting. These messages are exclusions from the above rule; they are not logged if ENABLE LOG is set to "Yes" and the LOG EVENT multiple is empty. Their recording can only be explicitly enabled.

  Information messages can be used as formatting elements (headers, trailers, separators, etc.) and as a source of additional information that may be helpful in the troubleshooting process.

  Data Quality messages indicate possible issues with the data in the FileMan files, such as missing or invalid values, ambiguous data, etc.

  Database Error messages most of these error messages are generated by the FileMan DBS calls. Usually, these messages indicate serious problems with the database. Database errors are recorded regardless of content of the LOG EVENT multiple.

  Error messages indicate fatal problems during the execution. Usually, processing of the patient data (or even the registry as a whole) stops after these errors. Errors are recorded regardless of content of the LOG EVENT multiple.

  You may enter a new LOG EVENT, if you wish select the type of event and if you want to enable recording of these events. If the list is empty, recording of all events is enabled. Otherwise, only events from the list and error messages will be recorded.

If you need to temporarily exclude the registry from the registry updates and data extractions, set the REGISTRY STATUS parameter to INACTIVE (1).

- Users referenced by the NOTIFICATION multiple receive VistA alerts about problems with the CCR software (such as data transmission problems).
- Value of the LAG DAYS parameter defines an overlap of the data searches during the registry updates and a data extraction delay during the regular data extractions. See the Technical Description of the field in the data dictionary for more information.
- Value of the ALERT FREQUENCY parameter determines how often e-mail notifications and VistA alerts are sent to the CDCO and local staff in case of problems with the site's CCR software (data extraction problems, unsent HL7 messages, etc.). For example, if the nightly task runs every night and the ALERT FREQUENCY is 2, then alerts and notifications will be sent every other night.
- If the ENABLE PROTOCOLS parameter is set to "Yes" (default), event protocols will be used by the package to speed up the registry processing. The protocols create references to the patient events in the ROR PATIENT EVENTS file (#798.3). Only those patients that have new references will be processed by the next registry update.

  Note: If several registries are updated at the same time and at least one of them has this field set to "Yes", all these registries will be processed using event references.

- The MAXIMUM MESSAGE SIZE parameter defines the maximum size (in megabytes) of a batch HL7 message that can be sent to the CDCO. If this field is empty or contains 0, the size is not limited.

  Note: You must coordinate your intentions with CDCO support personnel if you are going to edit this field.

3.2.4. Historical Data Extraction

This option displays the Historical Data Extraction menu. See the Manual Historical Data Extraction section below for details.

Figure 4 – Historical Data Extraction

```
   DS     Display Extraction Status
   ED     Edit ...
   ST     Start a Task
   TT     Stop a Task
   DL     Display Task Log

Select Historical Data Extraction Option:
```

3.2.5. Print Log Files

This option allows you to print the CCR log files. It provides a history of all events that have occurred within the provided time frame.

Figure 5 – Print Log Files

```
   ACL   Re-index the ACL cross-reference
   ELS   Edit Lab Search Criteria
   ERP   Edit Registry Parameters
   HDE   Historical Data Extraction ...
   PLF   Print Log Files
   PP    Pending Patients ...

Select Clinical Case Registries Maintenance Option: PLF  Print Log Files
  START WITH START DATE/TIME: // T-1  (FEB 08, 2006)
  GO TO START DATE/TIME: LAST// <RET>

DEVICE: HOME// <RET>

CLINICAL REGISTRIES LOG FILE(S)               FEB  9,2006  15:02    PAGE 1
DATE/TIME             TYPE           PATIENT NAME (DFN)
   MESSAGE
   ADDITIONAL INFO
------------------------------------------------------------------------------

           LOG DATE/TIME: FEB  8,2006  08:34

FEB  8,2006  08:34     Information
   ROR 1.5 PRE-INSTALL STARTED
   VA HEPC
   VA HIV

FEB  8,2006  08:34     Information
   Removing old selection rule references...

FEB  8,2006  08:34     Information
   The references have been removed.

FEB  8,2006  08:34     Information
   Clearing the ROR TASK file...

...
```

Note: Logs that are older than 31 days are automatically purged by the nightly task.

3.2.6. Pending Patients

When you select this option, you are offered the `List of Pending Errors` option. This option lists all patients whose data caused errors during the Registry Update process.

The option prints a report containing list of patients referenced by the ERROR multiples of the ROR PATIENT EVENTS file (#798.3). The list is sorted by the value of the COUNTER field. This field indicates how many times an error was recorded for the patient.

Figure 6 – Pending Patients

```
   ACL   Re-index the ACL cross-reference
   ELS   Edit Lab Search Criteria
   ERP   Edit Registry Parameters
   HDE   Historical Data Extraction ...
   PLF   Print Log Files
   PP    Pending Patients ...

Select Clinical Case Registries Maintenance Option: PP  Pending Patients

   LPE   List of Pending Errors

Select Pending Patients Option: LPE  List of Pending Errors

DEVICE: HOME// <RET>

LIST OF PENDING PATIENT ERRORS                FEB  9,2006  15:11    PAGE 1
PATIENT NAME                    DFN           REGISTRY
-------------------------------------------------------------------------------


        COUNTER:  14

CCRPATIENT,ONE                  19937         VA HEPC
CCRPATIENT,TWO                  11866         VA HEPC

        COUNTER:  5

CCRPATIENT,THREE                10075623      VA HIV

...
```

This report can be used to find patients ignored by the registry update (until someone fixes the error(s) and resets value of the COUNTER field to 1).

3.3. Manual Historical Data Extraction

3.3.1. Overview

If it is necessary to re-extract a large amount of registry data in the specified date range due to new data elements, problems in the data extraction code, etc., then the manual historical data extraction should be used.

The historical data extraction process runs independent of the nightly task. It gathers historical data for each registry patient and writes it to the host operating system files in HL7 format. Several menu options are provided to initiate and control the process.

Any data errors found will be reported on a log file, and the job will continue on to the next patient on the registry to get historical data. You can check the status of the run using the user interface. The user interface shows when the job is completed and indicates if any data errors were found.

After errors are fixed, the job can be re-run. This second run goes through all patients having errors during the first run and automatically creates an additional file. This process continues until the interface indicates that all patients are processed. After all patients have data extracted successfully, you can transmit all files created by this process to the national database using FTP or any other means.

3.3.2. Historical Data Extraction Menu

Manual historical data extraction menu options are accessible from the Historical Data Extraction [RORHDT MAIN] menu:

Figure 7 – Historical Data Extraction Menu

```
Select OPTION NAME: RORHDT MAIN

   DS     Display Extraction Status
   ED     Edit ...
   ST     Start a Task
   TT     Stop a Task
   DL     Display Task Log

Select Historical Data Extraction Option: ED

   CT     Create Extraction Tasks
   EE     Edit data extraction

Select Edit Option:
```

`DS – Display Extraction Status`

This option displays the status of a selected data extraction. The historical data extraction start and end dates, the output directory name, processed registries, and task table are displayed.

`ED – Edit …`

This option offers two more edit options when selected:

`CT – Create Extraction Tasks`

This option spreads historical data processing over several tasks in order to speed up the process.

`EE – Edit Data Extraction`

This option allows users to edit parameters of a manual historical data extraction in the `ROR HISTORICAL DATA EXTRACTION file` (`#799.6`).

`ST – Start a Task`

This option starts a data extraction task that was created with the Create Extraction Tasks option.

`TT – Stop a Task`

This option allows you to stop a running task and de-queue a scheduled task. The task can be restarted later. In that case, it will try to re-extract data that was not extracted during the previous runs due to errors. Then it will continue the extraction from the first unprocessed record from the group of patients defined for the task.

`DL – Display Task Log`

This option lets users see a log of any running/finished data extraction task. If any errors have been found, they will be logged here. Any errors should be fixed and then the task re-started.

3.3.3. Data Extraction Instructions

Follow the steps below to perform the historical data extraction:

1. **Create the output directory.**

   Historical data extraction tasks create files containing historical data for registry patients. The host file system directory for these files must be created and defined in the parameters of the historical data extraction before the extraction tasks are run.

   In VMS, create the directory as follows:

Figure 8 – Create the Output Directory

```
$ CREATE/DIR/PROT=(OWNER:RWD) VA2S$:[RORHDT]
$ SET SECUR /ACL=(IDENTIFIER={VistA},ACCESS=READ+WRITE) VA2$:[000000]RORHDT.DIR
```

   Replace the *{VistA}* in the `SET` command with the VMS username (or UIC) associated with the VistA TaskMan processes.

   
   Note: See Appendix A for instructions on creating the output directory in a Windows environment.

2. **Define the name of the output directory in the data extraction parameters.**

   Use the `Edit data extraction [RORHDT EDIT EXTRACTION]` option to populate the historical data extraction parameters with the name of the output directory:

Figure 9 – Define Output Directory Name in Data Extraction Parameters

```
   CT    Create Extraction Tasks
   EE    Edit data extraction

Select Edit Option: EE  Edit data extraction

Select a Data Extraction: ROR-TEST

OUTPUT DIRECTORY: // VA2$:[RORHDT]
```

3. Create the data extraction task(s).

Use the `Create Extraction Tasks [RORHDT CREATE]` option to define the data extraction tasks:

Figure 10 - Create Data Extraction Task

```
     CT    Create Extraction Tasks
     EE    Edit data extraction

   Select Edit Option: CT  Create Extraction Tasks

   Select a Data Extraction: ROR-TEST

   Name:       ROR-TEST
   Registries: VA HEPC
   Date Range: JAN 01, 1980 -- JAN 25, 2006
   Output Dir: VA2$:[RORHDT]

             No tasks have been defined
   Number of unique patients:            3385
   Maximum number of patients per batch: 750
   Number of data extraction tasks:      5


   Create the new task table? NO// YES

   New task table has been created.
```

4. Start the data extraction task(s).

Use the `Start a Task [RORHDT START]` option to start the data extraction task(s). The user can select a task using a value from the "ID" column:

Figure 11 – Start Data Extraction Task

```
     DS     Display Extraction Status
     ED     Edit ...
     ST     Start a Task
```

```
   TT     Stop a Task
   DL     Display Task Log

Select Historical Data Extraction Option: ST  Start a Task

Select a Data Extraction: ROR-TEST

Name:       ROR-TEST
Registries: VA HEPC
Date Range: JAN 01, 1980 -- JAN 25, 2006
Output Dir: VA2$:[RORHDT]

  ID  File Name                        Task      Status

   1  ROR-605-01.HDT
   2  ROR-605-02.HDT
   3  ROR-605-03.HDT
   4  ROR-605-04.HDT
   5  ROR-605-05.HDT

Task ID:  (1-5): 1
Task #85179 has been scheduled.
```

It is not necessary to wait until the previous task finishes before scheduling the next one. You can schedule several tasks at the same time. Make sure that the system has enough resources for this and there will be no negative impact on the response time during business hours.

5. Wait for task(s) completion.

The person who schedules the data extraction tasks will receive VistA alerts when they are complete (one alert per task).

Meanwhile, you can use the `Display Task Log [RORHDT LOG]` option to display the data extraction status of a selected registry. The task log includes historical data extraction start and end dates, the output directory name, affected registries, and the task table.

Table 17 shows the information displayed for each task in the table:

Table 17 – Task Information

Task	Description
ID	Internal Entry Number of the task (IEN).
File Name	A unique name based on site name and sequential number of the task. This file will contain the extracted results when the task has run; it will reside in the designated output directory.
Task	Task number assigned by TaskMan to the data extraction task
Status	Status of the data extraction task

The eight Status values are shown in Table 18.

Table 18 – Status Values

Status	Meaning
Active: Pending	Task is scheduled but is not currently running
Active: Running	Task is currently running
Active: Stopping	Task was requested to stop but has not responded yet
Inactive: Finished	Task has finished successfully
Inactive: Available	Task was created without being scheduled or was edited without being rescheduled
Inactive: Interrupted	Task was stopped by a user
Inactive: Crashed	Task has stopped running due to a crash
Inactive: Errors	Task has completed but some patient data was not processed completely due to errors

In the example below, one of the tasks has the status of Inactive: Errors.

Figure 12 – Display Extraction Status

```
   DS     Display Extraction Status
   ED     Edit ...
   ST     Start a Task
   TT     Stop a Task
   DL     Display task log

Select Historical Data Extraction Option: DS  Display Extraction Status

Select a Data Extraction: ROR-TEST
```

```
Name:       ROR-TEST
Registries: VA HEPC
Date Range: JAN 01, 1980 -- JAN 25, 2006
Output Dir: VA2$:[RORHDT]

  ID  File Name                         Task      Status

   1  ROR-605-01.HDT                    85179     Inactive: Errors
   2  ROR-605-02.HDT
   3  ROR-605-03.HDT
   4  ROR-605-04.HDT
   5  ROR-605-05.HDT

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

If you need to stop a task (*e.g.* due to a slow system response), use the `Stop a Task [RORHDT STOP]` option. You will be prompted to select a data extraction, and then the task table and task selection prompt will display.

The system displays the `De-queue the task?` prompt (if the task is already running, the `Stop the task?` prompt displays instead). If `NO` is entered, no changes are made to the selected task. If `YES` is selected, the task is de-queued (or stopped).

Figure 13 – Stop a Task

```
   DS     Display Extraction Status
   ED     Edit ...
   ST     Start a Task
   TT     Stop a Task
   DL     Display Task Log

Select Historical Data Extraction Option: TT  Stop a Task

Select a Data Extraction: ROR-TEST

Name:       ROR-TEST
Registries: VA HEPC
Date Range: JAN 01, 1980 -- JAN 25, 2006
Output Dir: VA2$:[RORHDT]

  ID  File Name                         Task      Status

   1  ROR-605-01.HDT                    85179     Inactive: Errors
   2  ROR-605-02.HDT                    85180     Active: Running
   3  ROR-605-03.HDT
   4  ROR-605-04.HDT
   5  ROR-605-05.HDT

Task ID:  (1-5): 2
Stop the task #85180? NO// YES
The task #85180 has been stopped/unscheduled.
The task #85180 has not responded to the stop request yet.
```

6. Examine the task log(s).

If one or more data extraction tasks with problems are identified at the previous step, use the Display Task Log [RORHDT LOG] menu option to examine the logs of those tasks. You are prompted to select a data extraction, and then the task table and task selection prompt displays.

Figure 14 – Display Task Log

```
     DS     Display Extraction Status
     ED     Edit ...
     ST     Start a Task
     TT     Stop a Task
     DL     Display Task Log

   Select Historical Data Extraction Option: DL  Display Task Log

   Select a Data Extraction: ROR-TEST

   Name:       ROR-TEST
   Registries: VA HEPC
   Date Range: JAN 01, 1980 -- JAN 25, 2006
   Output Dir: VA2$:[RORHDT]

     ID  File Name                         Task      Status

      1  ROR-605-01.HDT                    85179     Inactive: Errors
      2  ROR-605-02.HDT                    85180     Inactive: Interrupted
      3  ROR-605-03.HDT
      4  ROR-605-04.HDT
      5  ROR-605-05.HDT

   Task ID:  (1-5): 1

   DEVICE: HOME// <RET>

   TASK LOG FILE                              JAN 27,2006  13:25    PAGE 1
   DATE/TIME              TYPE            PATIENT (DFN)
      MESSAGE
      ADDITIONAL INFO
   ------------------------------------------------------------------------

   JAN 27,2006  13:20     Information
      HISTORICAL DATA EXTRACTION STARTED
      VA ICR

   JAN 27,2006  13:29     Database Error  CCRPATIENT,TEN (7145502)
      Cannot obtain results of the Lab tests
      Invalid patient identifier passed
      No patient found with requested identifier
      Location: LABRSLTS+16^RORUTL02
```

```
JAN 27,2006  13:44     Information
   HISTORICAL DATA EXTRACTION FINISHED
   Patients:     1020
   Errors:       1
   Time (sec):   9
   Patients/sec: 0.66
```

In addition to the warnings and error messages, a task log also shows the date and time that the task was started and when it finished, how many patients were processed, the amount of errors that were encountered, the time (in seconds) that the task took to complete, and the average processing rate (patients per second).

7. If there are errors, fix them and restart the tasks with errors.

After fixing the errors, restart the task(s) that had errors using the Start a Task [RORHDT START] option. This creates new files containing only the data for those patients who had errors during the previous run.

As shown in the example below, the rescheduling dialog is slightly different from that described in step 4:

Figure 15 – Start a Task

```
   DS     Display Extraction Status
   ED     Edit ...
   ST     Start a Task
   TT     Stop a Task
   DL     Display Task Log

Select Historical Data Extraction Option: ST Start a Task

Select a Data Extraction: ROR-TEST

Name:       ROR-TEST
Registries: VA HEPC
Date Range: JAN 01, 1980 -- JAN 25, 2006
Output Dir: VA2$:[RORHDT]

  ID  File Name                        Task      Status

   1  ROR-605-01.HDT                   85179     Inactive: Errors
   2  ROR-605-02.HDT                   85180     Inactive: Interrupted
   3  ROR-605-03.HDT
   4  ROR-605-04.HDT
   5  ROR-605-05.HDT

Task ID:  (1-5): 1
Data will be written to the 'ROR-605-01-01.HDT' file.
Task #85182 has been scheduled.
```

If you decide to begin the historical data extraction process from scratch, first delete all historical data files from the output directory, then recreate the task table as shown below, and then return to step 4.

Figure 16 – Create Extraction Tasks

```
     CT    Create Extraction Tasks
     EE    Edit data extraction

   Select Edit Option: CT  Create Extraction Tasks

   Select a Data Extraction: ROR-TEST

   Name:       ROR-TEST
   Registries: VA HEPC
   Date Range: JAN 01, 1980 -- JAN 25, 2006
   Output Dir: VA2$:[RORHDT]

     ID  File Name                          Task      Status

      1  ROR-605-01-01.HDT                  85179     Inactive: Errors
      2  ROR-605-02.HDT                     85180     Inactive: Interrupted
      3  ROR-605-03.HDT
      4  ROR-605-04.HDT
      5  ROR-605-05.HDT

   Overwrite the existing task table? NO// YES

   Number of unique patients:            3385
   Maximum number of patients per batch: 750
   Number of data extraction tasks:      5

   Create the new task table? NO// YES
   New task table has been created.
```

The only difference from the step 3 is the additional **`Overwrite the existing task table?`** prompt. Answer **`YES`** to that question.

3.3.4. Data Transmission Instructions

3.3.4.1. Background Information

You should transfer the historical data files to the national database via FTP. If the files were created in VMS, you can use the VMS FTP client. If you are using a Windows server, use either a command line or GUI client.

Note: Historical data files *must* be transmitted in binary mode.

3.3.4.2. Data Transmission Instruction

Follow the steps below to transmit the data using the VMS FTP (see the VMS documentation and/or online help for more details):

1. Obtain the IP address, user name, and password for the FTP account.
2. Enter the **FTP** command with the IP address as a parameter.
3. Wait for the "Name (…):" prompt and enter your user name.
4. Wait for the "Password:" prompt, and then enter your password (the characters of the password do not display on the screen).
5. Change the transfer mode to binary using the **SET TYPE IMAGE** command.
6. Send the historical data files (*.HDT) from the output directory using the **PUT** command:

   FTP> **PUT** *{disk and directory name}****.HDT**
7. Wait until the transfer is complete, and then verify that all files have uploaded successfully.
8. Disconnect and exit the FTP client using the **EXIT** command.

The screen capture below shows a typical VMS FTP session:

Figure 17 – Typical VMS FTP Session

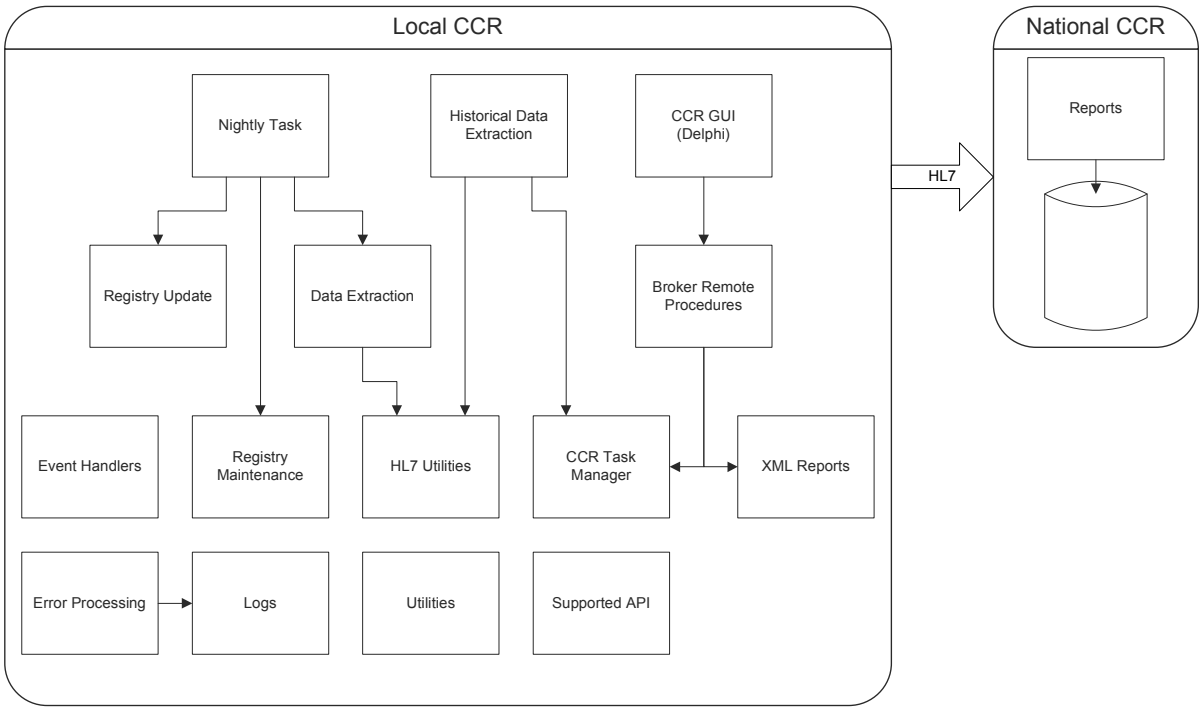
```
$ FTP 10.168.97.208
220 Palo Alto CQM0 Server
Connected to 10.168.97.208.
Name (10.168.97.208): stn499
331 Please specify the password.
Password:
230 Login successful.
FTP> SET TYPE IMAGE
200 Switching to Binary mode.
FTP> PUT VA2$:[RORHDT]*.HDT
200 PORT command successful. Consider using PASV.
150 Ok to send data.
226 File receive OK.
local: VA2$:[RORHDT]ROR-605-01.HDT;1  remote: ror-605-01.hdt
93003 bytes sent in 00:00:00.69 seconds (130.31 Kbytes/s)
200 PORT command successful. Consider using PASV.
150 Ok to send data.
226 File receive OK.
local: VA2$:[RORHDT]ROR-605-02.HDT;1  remote: ror-605-02.hdt
91391 bytes sent in 00:00:00.51 seconds (174.31 Kbytes/s)
FTP> EXIT
221 Goodbye.
```

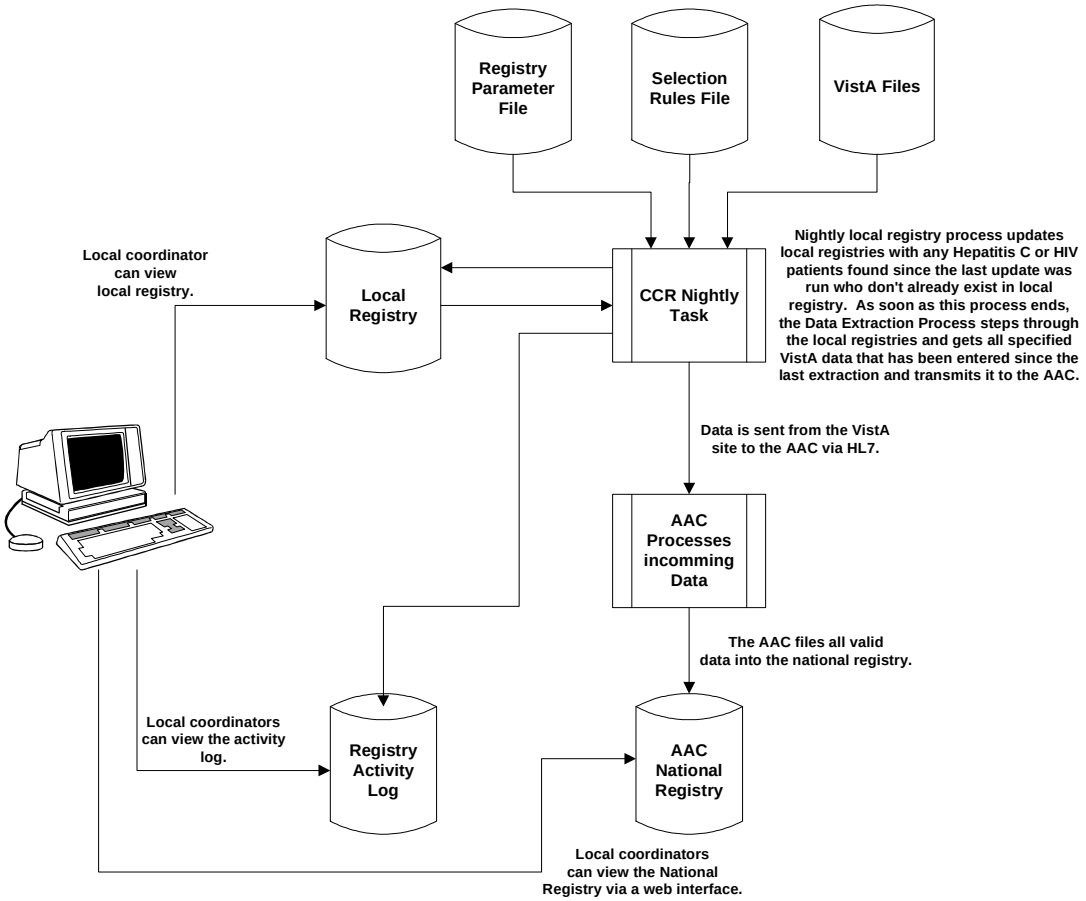
 **Note:** For information on using the Windows FTP client, see Appendix B.

4. CCR Structure and Process Overview

CCR consists of several parts:

- Data stored in VistA database files
- **M** Programs in the ROR namespace
- Data Dictionaries necessary to achieve the specified requirements
- A Delphi-based graphical user interface (GUI) "front-end" application
- Relevant Remote Procedure Call (RPC) protocols


Local CCR
Nightly Task
Historical Data Extraction
CCR GUI (Delphi)
Registry Update
Data Extraction
Broker Remote Procedures
Event Handlers
Registry Maintenance
HL7 Utilities
CCR Task Manager
XML Reports
Error Processing
Logs
Utilities
Supported API
HL7
National CCR
Reports


Registry Parameter File
Selection Rules File
VistA Files
Local coordinator can view local registry.
Local Registry
CCR Nightly Task
Nightly local registry process updates local registries with any Hepatitis C or HIV patients found since the last update was run who don't already exist in local registry. As soon as this process ends, the Data Extraction Process steps through the local registries and gets all specified VistA data that has been entered since the last extraction and transmits it to the AAC.
Data is sent from the VistA site to the AAC via HL7.
AAC Processes incomming Data
The AAC files all valid data into the national registry.
Local coordinators can view the activity log.
Registry Activity Log
AAC National Registry
Local coordinators can view the National Registry via a web interface.

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5. CCR Files

5.1. Files and Globals List

The following files and globals are exported with the CCR software:

Table 19 – Files and Globals Exported with CCR

File Number	File Name	Global Name	Description
798	**ROR REGISTRY RECORD**	**^RORDATA(798,**	The ROR REGISTRY RECORD file contains records of local registries. Each record associates a patient with a registry and contains registry-specific and additional service information.
798.1	**ROR REGISTRY PARAMETERS**	**^ROR(798.1,**	Records of the ROR REGISTRY PARAMETERS file contain various registry parameters and the data that indicates current registry state. Every registry must have a record in this file.
798.2	**ROR SELECTION RULE**	**^ROR(798.2,**	The ROR SELECTION RULE file contains definitions of the selection rules that are used to screen patients for addition to the registries.
798.3	**ROR PATIENT EVENTS**	**^RORDATA(798.3,**	The ROR PATIENT EVENTS file is used to store references to those patients that were processed with errors and were not added to the registry, even if they potentially should have been added (see the ERROR multiple). Moreover, the data references generated by the event protocols are stored in this file (see the EVENT multiple). These references are used to speed up the regular registry updates.

File Number	File Name	Global Name	Description
798.4	**ROR PATIENT**	**^RORDATA(798.4,**	The ROR PATIENT file contains patient information that is common for all local registries (mostly, demographic information). Demographic data from this file is compared to that from the PATIENT file (#2) to determine if it has been changed since the last registry data extraction. These fields are updated with the values from the PATIENT file and the UPDATE DEMOGRAPHICS flag is set to "Yes" in all active registry records of the patient.
798.6	**ROR PHARMACY CODE**	**^ROR(798.6,**	This file contains a list of pointers to the VA DRUG CLASS file (#50.605). Within the Pharmacy package each class is linked to a group of medications. Each class on this file has an associated registry; the "AC" cross-reference groups all entries by registry.
798.7	**ROR LOG**	**^RORDATA(798.7,**	The ROR LOG file is used for recording different kinds of events (errors, debug messages, etc.) that are generated by the CCR software.
798.8	**ROR TASK**	**^RORDATA(798.8,**	The ROR TASK file enhances the functionality of TaskMan and supports the package APIs used by the GUI to schedule and control the tasks, and view and print the reports.
798.9	**ROR LAB SEARCH**	**^ROR(798.9,**	Lab search criteria are stored in this file. These criteria are referenced by the selection rules and used in the search for Lab results. *Update by (11): LOINC value 57006 is added to the VA HEPC Lab Search criteria in sub-file LAB TEST (#2).*

File Number	File Name	Global Name	Description
799.1	ROR LIST ITEM	^ROR(799.1,	This file contains code sets used within different registries.
799.2	ROR METADATA	^ROR(799.2,	The ROR METADATA file contains descriptors of the files, data elements and APIs used by the registry update subsystem (search engine). These descriptors define relationships between files ("file-processing tree") used by the search engine, data elements, and APIs.
799.31	ROR XML ITEM	^ROR(799.31,	The ROR XML ITEM file contains a list of XML tags and attributes that can be used in the reports.
799.33	ROR DATA AREA	^ROR(799.33,	The ROR DATA AREA stores codes and names of the data areas referenced by the DATA AREA (the ROR HISTORICAL DATA EXTRACTION file) and the EVENT (the ROR PATIENT EVENTS file) multiples.
799.34	ROR REPORT PARAMETERS	^ROR(799.34,	The ROR REPORT PARAMETERS file stores the report definitions that are used by the ROR REPORT SCHEDULE remote procedure to schedule the reports.
799.4	ROR HIV RECORD	^RORDATA(799.4,	The ROR HIV RECORD file stores the patients' data specific to the Human Immunodeficiency Virus Registry (CCR:HIV).
799.49	ROR AIDS INDICATOR DISEASE	^ROR(799.49,	The ROR AIDS INDICATOR DISEASE file contains definitions of the AIDS indicator diseases referenced by Part VIII of the HIV CDC form.
799.51	ROR GENERIC DRUG	^ROR(799.51,	This file contains a list of registry specific generic drugs.
799.53	ROR LOCAL FIELD	^ROR(799.53,	The ROR LOCAL FIELD file stores definitions of local registry-specific fields created at the site.

File Number	File Name	Global Name	Description
799.6	ROR HISTORICAL DATA EXTRACTION	^RORDATA(799.6,	Records of this file store parameters of the historical data extractions (backpulls) performed on the registries and reflect status of these data extractions.

5.2. File Diagrams (Pointers)

Figure 18 – Pointer Matrix Legend

Pointer Matrix Legend

Type	Pointer Description
L	LAYGO (learn as you go)
S	File not in set
N	Normal reference
C	Cross-reference (Xref)

Field	Field Modifier
*	Name/description truncated
m	Indicates multiple
v	Variable pointer

Figure 19 – File Pointers

File Name (File #) Pointer Field	Type*	File Name (File #) Pointer Field	File Pointed To
ROR HIV RECORD (#799.4)			
REGISTRY RECORD.....	(N C) →	(798) ROR REGISTRY *	
		PATIENT NAME	→ ROR PATIENT
		REGISTRY	→ ROR REGISTRY PARAM*
		CONFIRMED BY	→ NEW PERSON
		DELETED BY	→ NEW PERSON
		m SELECTI:SELECTI*	→ ROR SELECTION RULE
		SELECTI:LOCATION*	→ INSTITUTION
		m LOCAL F:LOCAL F*	→ ROR LOCAL FIELD
ROR REGISTRY RECORD (#798)			
REGISTRY.....	(N C) →	(798.1) ROR REGISTR*	
ROR REGISTRY RECORD (#798.31)			
ERROR:REGISTRY.....	(N) →	PROTOCOL	→ PROTOCOL
ROR PHARMACY CODE (#798.6)			
REGISTRY.....	(N C) →	AUTOMATIC BACKPU*	→ ROR HISTORICAL DAT*
ROR LOG (#798.73)			
REGISTRY	(N) →	m NOTIFIC:NOTIFIC*	→ NEW PERSON
ROR TASK (#798.8)			
REGISTRY	(N C) →	m REPORT :REPORT *	→ ROR REPORT PARAMET*
ROR LIST ITEM (#799.1)			
REGISTRY	(N) →	m LOCAL T:LOCAL T*	→ LABORATORY TEST
ROR GENERIC DRUG (#799.51)			
REGISTRY	(N) →	LOCAL T:LAB GRO*	→ ROR LIST ITEM
ROR LOCAL FIELD (#799.53)			
REGISTRY	(N) →	M LOCAL D:LOCAL D*	→ DRUG
		LOCAL D:DRUG GR*	→ ROR LIST ITEM
ROR REGISTRY RECORD (#798.01)			

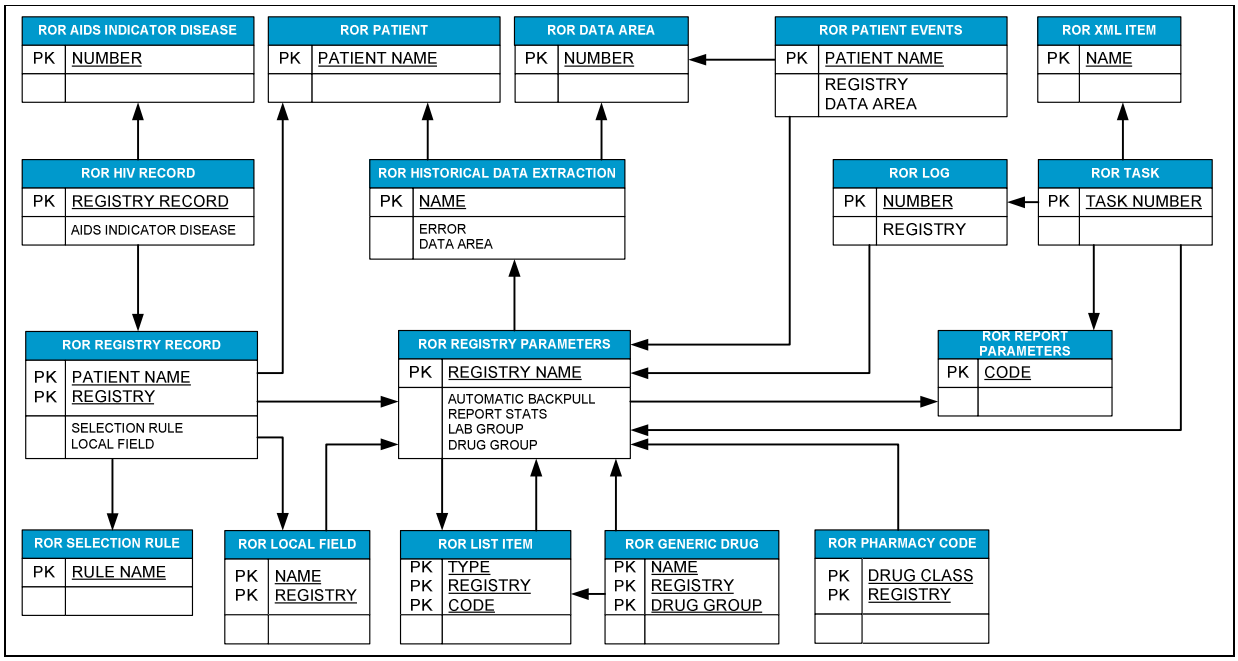
SELECTION RULE	(N)	→	**798.2** ROR SELECTI*	
			798.3 ROR PATIENT*	
			PATIENT NAME	→ PATIENT
			m ERROR:REGISTRY	→ RCR REGISTRY PARAM*
			EVENT:DATA AREA	→ ROR DATA AREA
ROR REGISTRY RECORD (#798)				
PATIENT NAME	(N C L)	→	**798.4** ROR PATIENT	
ROR HISTORICAL DATA (#799.641)				
TASK:ERROR	(N C L)	→	PATIENT NAME	→ PATIENT
			PERIOD OF SERVICE	→ PERIOD OF SERVICE
			798.6 ROR PHARMAC*	
			DRUG CLASS	→ VA DRUG CLASS
			REGISTRY	→ RCR REGISTRY PARAM*
ROR TASK (#798.8)				
LOG	(N C)	→	**798.7** ROR LOG	
			USER	NEW PERSON
			m **REGISTRY:REGISTRY**	ROR REGISTRY PARAM*
			MESSAGE:PATIENT	PATIENT

Figure 20 – File Pointers

File Name (File #) Pointer Field	Type*		File Name (File #) Pointer Field	File Pointed To
ROR HIV RECORD (#799.4)				
REGISTRY RECORD	(N C)	→	**798** ROR REGISTRY *	
			PATIENT NAME	ROR PATIENT
			REGISTRY	ROR REGISTRY PARAM*
			CONFIRMED BY	NEW PERSON
			DELETED BY	NEW PERSON
			m SELECTI:SELECTI*	ROR SELECTION RULE
			SELECTI:LOCATIO*	INSTITUTION
			m LOCAL F:LOCAL F*	ROR LOCAL FIELD
ROR REGISTRY RECORD (#798)			**798.1** ROR REGISTR*	
REGISTRY	(N C)	→		
ROR PATIENT EVENTS (#798.31)				
ERROR:REGISTRY	(N)	→	PROTOCOL	→ PROTOCOL
ROR PHARMACY CODE (#798.6)				
REGISTRY	(N C)	→	AUTOMATIC BACKPU	→ ROR HISTORICAL DAT*
ROR LOG (#798.73)				
REGISTRY	(N)	→	m NOTIFIC:NOTIFIC*	→ NEW PERSON
ROR TASK (#798.8)				
REGISTRY	(N C)	→	m REPORT :REPORT *	→ ROR REPORT PARAMET*
ROR LIST ITEM (#799.1)				
REGISTRY	(N)	→	m LOCAL T:LOCAL T*	→ LABORATORY TEST
ROR GENERIC DRUG (#799.51)				
REGISTRY	(N)	→	LOCAL T:LAB GRO*	→ ROR LIST ITEM
ROR LOCAL FIELD (#799.53)				
REGISTRY	(N)	→	m LOCAL D:LOCAL D*	→ DRUG
			LOCAL D:DRUG GR*	ROR LIST ITEM
ROR REGISTRY RECORD (#798.01)				
SELECTION RULE	(N)	→	798.2 ROR SELECT*	
			798.3 ROR PATIENT*	
			PATIENT NAME	→ PATIENT
			m ERROR:REGISTRY	→ ROR REGISTRY PARAM*
			EVENT:DATA AREA	→ ROR DATA AREA
ROR REGISTRY RECORD (#798)				
PATIENT NAME	(N C L)	→	798.4 ROR PATIENT	
ROR HISTORICAL DATA (#799.641)				
TASK:ERROR	(N C L)	→	PATIENT NAME	→ PATIENT
			PERIOD OF SERVICE	→ PERIOD OF SERVICE
			798.6 ROR PHARMAC*	
			DRUG CLASS	→ VA DRUG CLASS
			REGISTRY	→ ROR REGISTRY PARAM*
ROR TASK (#798.8)				

File Name (File #) Pointer Field	Type*	File Name (File #) Pointer Field	File Pointed To
LOG	(N C) →	798.7 ROR LOG	
		USER	→ NEW PERSON
		m REGISTRY:REGISTRY	→ ROR REGISTRY PARAM*
		MESSAGE:PATIENT	→ PATIENT
		798.8 ROR TASK	
		REGISTRY	→ ROR REGISTRY PARAM*
		REPORT	→ ROR REPORT PARAMET*
		USER	→ NEW PERSON
		LOG	→ ROR LOG
		m **REPORT :REPORT ***	→ ROR XML ITEM
		m **REPO:ATTR:ATTR***	→ ROR XML ITEM
ROR REGISTRY PARAMET (#798.128)			
LOCAL TEST NAME:LAB GROUP .	(N) →	**799.1 ROR LIST IT***	
LOCAL DRUG NAME:DRUG GROUP	(N) →	**REGISTRY**	→ ROR REGISTRY PARAM*
ROR GENERIC DRUG 9#799.51)			
DRUG GROUP	(N) →		
ROR METADATA (#799.2)			
PARENT	(N) →	**799.2** ROR METADATA	
		PARENT	→ ROR METADATA
ROR TASK (#798.87)			
REPORT ELEMENT	(N) →	**799.31** ROR XML IT*	
REPORT ELEMENT:ATTRIBUTE ..	(N C) →		
ROR PATIENT EVENTS (#798.32)			
EVENT:DATA AREA	(N) →	**799.33** ROR DATA A*	
ROR HISTORICAL DATA (#799.61)			
DATA AREA	(N) →	**799.34** ROR REPORT*	
ROR REGISTRY PARAMET (#798.12)			
REPORT STATS	(N) →		
ROR TASK (#798.8)			
REPORT	(N) →		
		799.4 ROR HIV REC*	
		REGISTRY RECORD	→ ROR REGISTRY RECORD
		STATION	→ INSTITUTION
		CDC FORM COMPLET*	→ NEW PERSON
		ONSET OF ILLNESS*	→ STATE
		AIDS DX – STATE	→ STATE
		m **AIDS IN:AIDS IN***	→ ROR AIDS INDICATOR*
ROR HIV RECORD (#799.41)			
AIDS INDICATOR DISEASE	(N) →	**799.49** ROR AIDS I*	
		799.51 ROR GENERI*	
		REGISTRY	→ ROR REGISTRY PARAM*
		DRUG GROUP	→ ROR LIST ITEM
		VA GENERIC	→ VA GENERIC
ROR REGISTRY RECORD (#798.02)			
LOCAL FIELD	(N C) →	**799.53** ROR LOCAL *	
		REGISTRY	→ ROR REGISTRY PARAM*
ROR REGISTRY PARAMET (#798.1)			
AUTOMATIC BACKPULL	(N) →	**799.6** ROR HISTORI	
		m DATA AR:DATA AR*	ROR DATA AREA
		m TASK:ERROR:ERROR	ROR PATIENT

Figure 21 – Pointers



6. Globals

6.1. Upgrade Installation

No new globals are exported/allocated by the ROR 1.5 build if you install it an account that already has CCR v1.0 installed.

6.2. Initial Installation

Two new globals are created during an initial installation of the KIDS build ROR 1.5: ^ROR and ^RORDATA.

The ^ROR global is quite small and mostly static. It contains the registry parameters, selection rules, Lab search definitions, etc.

The ^RORDATA global is a dynamic global and under most circumstances will be large. It will contain the registries, error logs, list of the event references, reports, etc. The sustained growth of ^RORDATA depends on the number of new patients in the registries (about 200 bytes per patient).

In the first couple of weeks, however, the global will grow faster because of the error logs (the ROR LOG file) and event references (the EVENT multiple of the ROR PATIENT EVENTS file). Both files are self-maintained and the nightly task (the Registry Update & Data Extraction [ROR TASK] option) purges the old records from these files automatically. The initial growth of these files depends on activity level (number of events) and quality of the data (number of error messages stored in the logs) at your site.

6.3. Temporary Globals

The CCR package uses the ^TMP and ^XTMP globals quite intensively, especially during the initial registry population. Please make sure that these globals are allocated in the database with enough free space.

7. Routines

7.1. Routine List for CCR 1.5

The M routines listed in Table 20 are included in KIDS build `ROR 1.5`. The second line of each of these routines now looks like:

```
 ;;1.5;CLINICAL CASE REGISTRIES;**[Patch List]**;Feb 17,
2006;Build [nn]
```

The following M routines are included in CCR 1.5. Entries shaded in yellow were created/changed by Patch ROR*1.5*14.

Note: Effective with Patch ROR*1.5*14, file checksums are no longer included in this manual. They are always included with the patch description, and can be checked with `CHECK1^XTSUMBLD`.

Table 20 – CCR 1.5 Routine List

Routine	Short Description
ROR	CLINICAL CASE REGISTRIES
ROR01	CLINICAL CASE REGISTRIES
ROR02	CLINICAL CASE REGISTRIES
ROR10	NIGHTLY TASK UTILITIES
ROR11	NIGHTLY TASK UTILITIES
RORAPI01	CLINICAL REGISTRIES API
RORBIN	BINARY OPERATIONS
RORDD	DATA DICTIONARY UTILITIES
RORDD01	DATA DICTIONARY UTILITIES
RORERR	ERROR PROCESSING
RORERR20	LIST OF ERROR MESSAGES
ROREVT01	EVENT PROTOCOLS
ROREXPR	PREPARATION FOR DATA EXTRACTION
ROREXT	DATA EXTRACTION & TRANSMISSION
ROREXT01	EXTRACTION & TRANSMISSION PROCESS
ROREXT02	DEFAULT MESSAGE BUILDER

Routine	Short Description
RORXT03	REGISTRY DATA EXTRACTION (OVERFLOW)
RORXTUT	DATA EXTRACT UTILITIES
RORHDT	HISTORICAL DATA EXTRACTION
RORHDT01	HISTORICAL DATA EXTRACTION STATUS
RORHDT02	CREATE EXTRACTION TASK RECORDS
RORHDT03	MANIPULATIONS WITH EXTRACTION TASKS
RORHDT04	HISTORICAL DATA EXTRACTION PROCESS
RORHDT05	HISTORICAL DATA EXTRACTION FUNCTIONS
RORHDT06	HISTORICAL DATA EXTRACTION PARAMETERS
RORHDTAC	DATA EXTRACTION ACTION CONFIRMATIONS
RORHDTUT	HISTORICAL DATA EXTRACTION UTILITIES
RORHIV03	CONVERSION OF THE FILE #158
RORHIVUT	HIV UTILITIES
RORHL01	HL7 PATIENT DATA: PID,ZSP,ZRD
RORHL02	HL7 REGISTRY DATA: CSP,CSR,CSS
RORHL03	HL7 PHARMACY: ORC,RXE
RORHL031	HL7 PHARMACY: UTILITIES
RORHL04	HL7 RADIOLOGY: OBR,OBX
RORHL05	HL7 AUTOPSY: OBR
RORHL06	HL7 LIVER BIOPSY: OBR,OBX
RORHL07	HL7 INPATIENT PHARMACY: ORC,RXE
RORHL071	HL7 IV PHARMACY: ORC,RXE
RORHL08	HL7 INPATIENT DATA: PV1,OBR
RORHL081	HL7 INPATIENT DATA: OBX
RORHL09	HL7 OUTPATIENT DATA: PV1,OBR,OBX
RORHL10	HL7 SURGICAL PATHOLOGY DATA: OBR,OBX
RORHL11	HL7 CYTOPATHOLOGY DATA: OBR,OBX
RORHL12	HL7 MICROBIOLOGY DATA: OBR
RORHL121	HL7 MICROBIOLOGY DATA: OBX
RORHL13	HL7 MEDICAL PROCEDURES (EKG): OBR,OBX
RORHL14	HL7 ALLERGY DATA: OBR,OBX
RORHL15	HL7 IV DATA: OBR, OBX

Routine	Short Description
RORHL16	HL7 VITALS DATA: OBR,OBX
RORHL17	HL7 PROBLEM LIST: OBR,OBX
RORHL18	HL7 IMMUNIZATION: OBR, OBX
RORHL19	HL7 SKIN TEST: OBR, OBX
RORHL20	HL7 NON-VA MEDS: ORC, RXE
RORHL21	HL7 PURCHASED CARE : ZIN, ZSV, ZRX
RORHL7	HL7 UTILITIES
RORHL7A	HL7 UTILITIES
RORHLUT1	HL7 UTILITIES (HIGH LEVEL)
RORKIDS	INSTALL UTILITIES (LOW-LEVEL)
RORLOCK	LOCKS AND TYRANSACTIONS
RORLOG	LOG FILE MANAGEMENT
RORLOG01	LOG FILE MANAGEMENT (UTILITIES)
RORNTEG	KERNEL - Package checksum checker
RORNTEG0	KERNEL - Package checksum checker
RORP000	CCR V1.5 INSTALLATION ROUTINE
RORP000A	CCR V1.5 PRE-INSTALL CODE
RORP000B	CCR V1.5 POST-INSTALL CODE
RORP011	CCR POST-INIT PATCH 13
RORPUT01	EDIT LOINC AND DRUG CODE MULTIPLES
RORPUT02	DATA TRANSPORT FOR KIDS
RORREP01	REGISTRY COMPARISON REPORT
RORREP02	VERSION COMPARISON REPORT (ICR)
RORRP007	RPC: LOGS & MESSAGES
RORRP010	RPC: TASK MANAGER
RORRP011	RPC: TASK MANAGER (REPORTS)
RORRP012	RPC: MISCELLANEOUS
RORRP013	RPC: ACCESS & SECURITY
RORRP014	RPC: REGISTRY INFO & PARAMETERS
RORRP015	RPC: DIVISIONS AND HOSPITAL LOCATIONS
RORRP016	RPC: ICD-9 CODES
RORRP017	RPC: DRUGS AND CLASSES

Routine	Short Description
RORRP018	RPC: LIST OF LAB TESTS
RORRP019	RPC: LIST OF PATIENTS
RORRP020	RPC: PATIENT DATA UTILITIES
RORRP021	RPC: PATIENT DATA
RORRP022	RPC: SELECTION RULES
RORRP023	RPC: REGISTRY COORDINATORS
RORRP024	RPC: VISTA USERS
RORRP025	RPC: RORICR CDC LOAD
RORRP026	RPC: CDC UTILITIES
RORRP027	RPC: RORICR CDC SAVE
RORRP029	RPC: ADDRESS UTILITIES
RORRP030	RPC: PATIENT DELETE
RORRP031	RPC: LOCAL LAB TEST NAMES
RORRP032	RPC: LOCAL DRUG NAMES
RORRP033	RPC: HIV PATIENT LOAD
RORRP034	RPC: HIV PATIENT SAVE/CANCEL
RORRP035	RPC: GENERIC DRUG NAMES
RORRP036	RPC: HEPC PATIENT LOAD
RORRP037	RPC: HEPC PATIENT SAVE/CANCEL
RORRP038	RPC: USER AND PACKAGE PARAMETERS
RORRP040	RPC: LOCAL REGISTRY FIELDS
RORRP041	RPC: REGISTRY-SPECIFIC LAB RESULTS
RORRP042	RPC: CPT CODES
RORSET01	REGISTRY SETUP ROUTINE
RORSETU1	SETUP UTILITIES (USER INTERFACE)
RORSETU2	SETUP UTILITIES (REGISTRY)
RORTSITE	PREPARE TEST SITES FOR GOING LIVE
RORTMP	TEMPORARY GLOBAL STORAGE
RORTSK	TASK MANAGER
RORTSK01	(SUB)TASK UTILITIES
RORTSK02	TASK MANAGER UTILITIES
RORTSK03	TASK MANAGER OVERFLOW CODE

Routine	Short Description
RORTSK10	REPORT RETRIEVING UTILITIES
RORTSK11	REPORT CREATION UTILITIES
RORTSK12	REPORT STATS UTILITIES
RORTSK13	PARSER FOR REPORT PARAMETERS
RORTSK14	PARSER FOR REPORT PARAMETERS (TOOLS)
RORTXT	TEXT RESOURCE UTILITIES
RORUPD	REGISTRY UPDATE
RORUPD01	PROCESSING OF THE FILES
RORUPD04	PROCESSING OF THE LAB DATA
RORUPD05	REGISTRY UPDATE (MULTITASK)
RORUPD06	REGISTRY UPDATE (MISCELLANEOUS)
RORUPD07	PROCESSING OF THE 'PROBLEM' FILE
RORUPD08	PROCESSING OF 'VISIT' & 'V POV' FILES
RORUPD09	PROCESSING OF THE 'PTF' FILE
RORUPD50	UPDATE THE PATIENT IN THE REGISTRIES
RORUPD51	UPDATE PATIENT'S DEMOGRAPHIC DATA (1)
RORUPD52	UPDATE PATIENT'S DEMOGRAPHIC DATA (2)
RORUPD62	HIV-SPECIFIC REGISTRY UPDATE CODE
RORUPDUT	REGISTRY UPDATE UTILITIES
RORUPEX	SELECTION RULE EXPRESSION PARSER
RORUPP01	PATIENT EVENTS (ERRORS)
RORUPP02	PATIENT EVENTS (EVENTS)
RORUPR	SELECTION RULES PREPARATION
RORUPR1	SELECTION RULES PREPARATION
RORUTL01	UTILITIES
RORUTL02	UTILITIES
RORUTL03	ENCRYPTION/DECRYPTION
RORUTL04	REGISTRY STAT REPORT
RORUTL05	MISCELLANEOUS UTILITIES
RORUTL06	DEVELOPER ENTRY POINTS
RORUTL07	TEST ENTRY POINTS
RORUTL08	REPORT PARAMETERS UTILITIES

Routine	Short Description
RORUTL09	LIST ITEM UTILITIES
RORUTL10	LAB DATA SEARCH
RORUTL11	ACCESS AND SECURITY UTILITIES
RORUTL14	PHARMACY DATA SEARCH
RORUTL15	PHARMACY DATA SEARCH (TOOLS)
RORUTL16	PHARMACY DATA SEARCH (UTILITIES)
RORUTL17	REGISTRY INFORMATION UTILITIES
RORUTL18	MISCELLANEOUS UTILITIES
RORUTL19	PATIENT DATA UTILITIES
RORVM001	MAINTENANCE OPTIONS
RORX000	DUMMY REPORT
RORX001	LIST OF REGISTRY PATIENTS
RORX002	CURRENT INPATIENT LIST
RORX003	GENERAL UTLIZATION AND DEMOGRAPHICS
RORX003A	GENERAL UTLIZATION AND DEMOGRAPHICS
RORX004	CLINIC FOLLOW UP
RORX005	INPATIENT UTILIZATION
RORX005A	INPATIENT UTILIZATION (QUERY)
RORX005B	INPATIENT UTILIZATION (SORT)
RORX005C	INPATIENT UTILIZATION (STORE)
RORX006	LAB UTILIZATION
RORX006A	LAB UTILIZATION (QUERY & SORT)
RORX006C	LAB UTILIZATION (STORE)
RORX007	RADIOLOGY UTILIZATION
RORX007A	RADIOLOGY UTILIZATION (OVERFLOW)
RORX008	VERA REIMBURSEMENT REPORT
RORX008A	VERA REIMBURSEMENT REPORT
RORX009	PHARMACY PRESCRIPTION UTILIZATION
RORX009A	PRESCRIPTION UTILIZ. (QUERY & SORT)
RORX009C	PRESCRIPTION UTILIZ. (STORE)
RORX010	LAB TESTS BY RANGE REPORT
RORX011	PATIENT MEDICATION HISTORY

Routine	Short Description
RORX012	COMBINED MEDS AND LABS REPORT
RORX012A	COMBINED MEDS AND LABS (QUERY & STORE)
RORX013	DIAGNOSIS CODES REPORT
RORX013A	DIAGNOSIS CODES (QUERY & SORT)
RORX013C	DIAGNOSIS CODES (STORE)
RORX014	REGISTRY MEDICATIONS REPORT
RORX014A	REGISTRY MEDS REPORT (QUERY & SORT)
RORX015	PROCEDURES (CPT) REPORT
RORX015A	PROCEDURES (QUERY & SORT)
RORX015C	PROCEDURES (STORE)
RORX016	OUTPATIENT UTILIZATION
RORX016A	OUTPATIENT UTILIZATION (QUERY)
RORX016B	OUTPATIENT UTILIZATION (SORT)
RORX016C	OUTPATIENT UTILIZATION (STORE)
RORX018	BMI BY RANGE REPORT
RORX019	LIVER SCORE BY RANGE REPORT
RORX019A	LIVER SCORE BY RANGE REPORT
RORX020	RENAL FUNCTION BY RANGE REPORT
RORX020A	RENAL FUNCTION BY RANGE REPORT
RORXU001	REPORT UTILITIES
RORXU002	REPORT BUILDER UTILITIES
RORXU003	REPORT BUILDER UTILITIES
RORXU004	REPORT UTILITIES (STATISTICS)
RORXU005	REPORT BUILDER UTILITIES
RORXU006	REPORT PARAMETERS
RORXU007	PHARMACY-RELATED REPORT PARAMETERS
RORXU009	REPORT MODIFICATION UTILITY
RORXU010	REPORT MODIFICATION UTILITY

7.2. Routine Sub-Namespaces

Table 21 – Routine Sub-Namespaces

Namespace	Description
RORAPI*	Supported APIs
RORDD*	Routines used by the Data Dictionary
RORERR*	Error processing
ROREVT*	Event protocols
ROREX*	Regular data extraction & transmission
RORHDT*	Historical data extraction
RORHIV*	HIV Registry-specific routines
RORHL*	HL7 utilities
RORKIDS*	Low-level installation utilities (KIDS)
RORLOCK*	Locks and transactions
RORLOG*	Error recording
RORPnnn*	Patch installation routines (KIDS) (nnn = patch number)
RORPUT*	High-level installation utilities
RORREP*	Roll-and-scroll reports
RORRP*	Remote procedures
RORSET*	Registry setup routines
RORTXT*	Text resource routines
RORUP*	Registry update
RORUTL*	Utilities
RORVM*	Entry points for VistA menu options
RORXnnn*	XML reports (nnn = report code)
RORXU*	Utilities for XML reports

7.3. XINDEX

XINDEX is a routine that produces a report called the VA Cross-Reference. This report is a cross-reference listing of one routine or a group of routines. XINDEX provides a summary of errors and warnings for routines that do not comply with VA programming standards and conventions, a list of local and global variables and what routines they are referenced in, and a listing of internal and external routine calls.

XINDEX is invoked from programmer mode: **D ^XINDEX**.

When selecting routines, select **ROR***.

8. Exported Options

The menus and options exported by the build ROR 1.5 are all located in the ROR namespace. Individual options can be viewed by using the Option Function Inquiry [XUINQUIRE] option. This option can be found on the Menu Management [XUMAINT] menu, which is a sub-menu of the Systems Manager Menu [EVE] menu.

A diagram of the structure of the CCR menu and its options can be produced by using the Diagram Menus [XUUSERACC] option. Choosing XUUSERACC permits you to further select Menu Diagrams (with Entry/Exit Actions) [XUUSERACC1] or Abbreviated Menu Diagrams [XUUSERACC2] options.

Table 22 – Exported Options

Option Name	Description
Broker Context **[ROR GUI]**	This option holds the references to the package RPC Broker Calls used by the GUI to create an application context (for security purposes).
Registry Setup **[ROR SETUP]**	This option allows the user to enter parameters of the registry setup process, and to schedule the task that will populate the registry.
Registry Update & Data Extraction **[ROR TASK]**	This option starts the registry update and data extraction task that processes registries defined by the TASK PARAMETERS field. The field must contain a list of registry names separated by commas. The following task parameters are optional. They can be defined on the second page of the option scheduling form (as the pairs of the variable names and values). **RORFLCLR** (Default: "") and **RORFLSET** (Default: EX) These two parameters override the values of the flags that control the processing. Add the flags to the RORFLCLR variable to clear them and to the RORFLSET variable to set them. Below are the possible values of the parameters (can be combined): D – Run the task(s) in Debug Mode E – Use the event references (file #798.3) S – Run the data extraction in single-task mode X – Suspend the data extraction task in the same way as the registry update M – Disable the HL7 messaging for local (user defined) registries. When the M flag is set, HL7 messages will not be transmitted to Austin. **RORMNTSK** (Default: 2-3-AUTO) Maximum number of the registry update subtasks. If this

Option Name	Description
	parameter is less than 2, all patients will be processed by the single main task. Otherwise, all patients can be distributed among several subtasks. If N-M-AUTO is passed as the value of this parameter and difference between the end and start dates of the registry update is more than M days then N subtasks will be started. Otherwise, the single task will run. **RORSUSP** (Default: "") Suspension parameters of the registry update and data extraction subtasks. The subtasks are not suspended by default. Parameter should contain start and end times of the suspension (in external format) separated by the "-". For example, the 7:00-18:00 value will suspend the subtasks from 7am until 6pm each day except weekends and holidays.
Create Extraction Tasks **[RORHDT CREATE]**	This option spreads historical data processing over several tasks in order to speed up the process.
Edit **[RORHDT EDIT]**	This option displays a submenu when selected. The submenu contains options that are used to create and edit the parameters of the historical data extraction.
Edit data extraction **[RORHDT EDIT EXTRACTION]**	This option allows users to edit parameters of manual historical data extraction in the ROR HISTORICAL DATA EXTRACTION file (#799.6).
Edit Task Descriptor **[RORHDT EDIT TASK]**	This option allows users to edit parameters of historical data extraction tasks in the ROR HISTORICAL DATA EXTRACTION file (#799.6).
Display Task Log **[RORHDT LOG]**	The Display Task Log option lets users see a log of any running or finished data extraction task. If any errors have been found, they will be logged here. Any errors should be fixed and then the task re-started.
Historical Data Extraction **[RORHDT MAIN]**	This is a top level management option for the historical data extraction that gathers historical data for each registry patient that exists on the ROR REGISTRY RECORD file (#798) and creates flat text files that can be sent by FTP to a pre-defined area at the AAC. This is done independently of daily updates and extracts and requires some intervention of an IRM.
Start a Task **[RORHDT START]**	This option starts a data extraction task that was created with the Create Extraction Tasks option.
Display Extraction Status **[RORHDT STATUS]**	This option displays the status of a selected data extraction. The historical data extraction start and end dates, the output directory name, processed registries, and task table are displayed.
Stop a Task **[RORHDT STOP]**	This option allows users to stop a running task or de-queue a task that is scheduled to run in the future.

Option Name	Description
ICR Version Comparison Report **[RORICR VERSION COMPARISON]**	Provides a detailed comparison between the CCR:HIV and Immunology Case Registry v2.1. The ICR was officially retired on October 27, 2005 (patch IMR*2.1*21) and replaced by CCR:HIV. This option is left for compatibility. If ICR v2.1 is not installed in the account, then the option will display an error message and quit.
Re-index the ACL cross-reference **[RORMNT ACL REINDEX]**	This option lets users re-index the ACL cross-reference of the ROR REGISTRY PARAMETERS file (#798.1). This cross-reference should be rebuilt after changes in the allocation of the security keys associated with any registry.
Edit Lab Search Criteria **[RORMNT EDIT LAB SEARCH]**	This option is used to edit the Lab search criteria (stored in the ROR LAB SEARCH file (#798.9)) that are used by the registry update process to find patients with positive registry-specific Lab results.
Edit Registry Parameters **[RORMNT EDIT REG PARAMS]**	This option can be used to edit registry parameters in the ROR REGISTRY PARAMETERS file (#798.1).
Clinical Case Registries Maintenance **[RORMNT MAIN]**	This menu contains miscellaneous maintenance options for the CCR package. Usually, they should be used only for troubleshooting.
List of Pending Errors **[RORMNT PENDING ERRORS LIST]**	The option prints a report containing list of patients (referenced by the ERROR multiples of the ROR PATIENT EVENTS file (#798.3)) having erroneous data. The list is sorted by value of the COUNTER field (number of times that an error was recorded for a patient). This report can be used to find patients ignored by the registry update (until someone fixes the error(s) and resets value of the COUNTER field to 1).
Pending Patients **[RORMNT PENDING PATIENTS]**	This menu groups the options used for maintenance of the ROR PATIENT EVENTS file (#798.3) containing event and error references.
Print Log Files **[RORMNT PRINT LOGS]**	This option can be used to print messages recorded by the CCR software.

9. Archiving and Purging

9.1. Archiving

No archiving functions are necessary with the CCR software.

9.2. Purging

Old event references are automatically purged by the nightly task (the [ROR TASK] option) from the EVENT multiple (2) of the ROR PATIENT EVENTS file (#798.3) no later than 60 days after they were entered there by the event protocols.

ROR LOG file (#798.7) entries are automatically purged 31 days after they are entered into this file.

Old tasks are automatically purged from the ROR TASK file (#798.8) 14 days after they are completed (the creation date is used for incomplete tasks).

10. Protocols

The following protocols are exported with the KIDS build ROR 1.5.

10.1. HL7 Protocols

- ROR-SITE-DRIVER
- ROR-SITE-SUBSCRIBER

10.2. Event Protocols

Three event protocols are used by CCR, as outlined in Table 23.

Table 23 – Event Protocols

Protocol	Description
ROR EVENT LAB	This protocol is used by the CCR package to maintain references to patients who have new lab results. The protocol should be subscribed to the LR7O ALL EVSEND RESULTS protocol (this is done by the KIDS during the installation). If at least one of the defined registries enables event protocols, this protocol will process the Lab events and create references in the ROR PATIENT EVENTS file (#798.3). Otherwise, the protocol will be executed (if it is not disabled or unsubscribed manually) but will not call the processing routine (LAB^ROREVT01).
ROR EVENT PTF	This protocol is used by the CCR package to maintain references to patients who have new admissions.). The protocol should be subscribed to the DGPM MOVEMENT EVENT protocol (this is done by the KIDS during the installation). If at least one of the defined registries enables event protocols, this protocol will process the movement events and create references in the ROR PATIENT EVENTS file (#798.3). Otherwise, the protocol will be executed (if it is not disabled or unsubscribed manually) but will not call the processing routine (PTF^ROREVT01).
ROR EVENT VISIT	This protocol is used by the CCR package to maintain references to patients who have new data in the V-files (VISIT, V POV, etc). The protocol should be subscribed to the PXK VISIT DATA EVENT protocol (this is done by the KIDS during the installation). If at least one of the defined registries enables event protocols, this protocol will process the Lab events and create references in the ROR PATIENT EVENTS file (#798.3). Otherwise, the protocol

Protocol	Description
	will be executed (if it is not disabled or unsubscribed manually) but will not call the processing routine (`VISIT^ROREVT01`).

11. Application Program Interfaces

The Data Base Agreement (DBIA) #4166 defines two controlled-subscription Application Program Interfaces (APIs) that are supplied by CCR. The first of these APIs enumerates patients of the given registry (CCR:HEPC or CCR:HIV), and the other API enumerates registries within which the patient exists.

Table 24 – Application Program Interfaces

API	Description		
$$PATITER^RORAPI01(IDESC, REGNAME,MODE)	Creates an iterator of patients in the registry, where…		
	IDESC	Refers to a local variable where the iterator descriptor will be created	
	REGNAME	Is the Registry name	
	[MODE]	Is a bit flag which defines the iteration mode (default = **3**)	
		1	Active patients (confirmed and not deleted)
		2	(reserved)
	Return Values	**<0**	Error code
		0	OK
$$NEXTPAT^RORAPI01(IDESC)	Returns the next patient in the registry, where…		
	IDESC	Refers to the iterator descriptor created by $$PATITER^RORAPI01.	
	Return Values	**<0**	Error code
		""	No more patients in the registry
		>0	Patient IEN (DFN)
$$REGITER^RORAPI01(IDESC, PATIEN,MODE)	Creates an iterator of patient registries, where…		
	IDESC	Refers to a local variable where the iterator descriptor will be created	
	PATIEN	Is the Patient IEN (DFN)	
	[MODE]	Is a bit flag which defines the iteration mode (default = 3)	
		1	Registries where the patient is active (confirmed and not deleted)
		2	(reserved)

API	Description		
	Return Values	**<0**	Error code
		0	OK
$$NEXTREG^RORAPI01(IDESC)	Returns the next patient in the registry, where…		
	IDESC	Refers to the iterator descriptor created by $$REGITER^RORAPI01.	
	Return Values	**<0**	Error code
		““	No more patients in the registry
		>0	Registry IEN

Below is a usage example for these APIs taken from the source code of the **RORAPI01** routine:

Figure 22 – Sample Usage (RORAPI01 Routine)

```
        N BUF,IPD,IRD,PATIEN,RC,REGIEN
        W !,”   Patient  Registries”
        W !,”   -------  ----------”
        ;--- Initialize the patient iterator
        S RC=$$PATITER^RORAPI01(.IPD,”VA HEPC”)
        I RC<0  W “RC= “,RC,!  Q
        ;--- Browse through the registry patients
        F  S PATIEN=$$NEXTPAT^RORAPI01(.IPD)  Q:PATIEN'>0  D
        . W !,$J(PATIEN,10),”  “
        . ;--- Initialize the registry iterator
        . S RC=$$REGITER^RORAPI01(.IRD,PATIEN)
        . I RC<0  W “RC= “,RC  Q
        . ;--- Browse through the patient's registry records
        . S BUF=””
        . F  S REGIEN=$$NEXTREG^RORAPI01(.IRD)  Q:REGIEN'>0  D
        . . S BUF=BUF_”,”_REGIEN
        . W $P(BUF,”,”,2,999)
        ;---
        W !
        Q
```

The following screenshot illustrates the output of the sample code:

Figure 23 - Sample Output (RORAPI01 Routine)

```
>D ^RORAPI01

   Patient  Registries
   -------  ----------
        40  1
         4  1
        13  1
        90  1
        14  1
        43  1
         5  1
        37  2,1
        38  1,2
```

12. External Interfaces

The National Database has an HL7 interface. This interface receives all data transmissions sent from all sites nationally, converts the data, and enters it into an SQL-enabled database.

13. External Relations

Before the KIDS build ROR 1.5 can be installed, the following software applications and patches must be installed and *fully* patched in your accounts:

Application Name	Minimum Version
Automated Information Collection System (AICS)	V 3.0
Adverse Reaction Tracking (ART)	V 4.0
Authorization/Subscription Utility (ASU)	V 1.0
Consult/Request Tracking	V 3.0
Gen. Med. Rec.-Vitals	V 4.0
Health Summary	V 2.7
HL7	V 1.6
Inpatient Medications (IM)	V 5.0
Kernel	V 8.0
Laboratory	V 5.2
Lexicon Utility	V 2.0
National Drug File (NDF)	V 4.0
Order Entry/Results Reporting (OE/RR)	V 3.0
Outpatient Pharmacy	V 7.0
Patient Care Encounter (PCE)	V 1.0
Pharmacy Data Management (PDM)	V 1.0
Problem List	V 2.0
Radiology/Nuclear Medicine	V 5.0
RPC Broker	V 1.1
Registration	V 5.3
Scheduling	V 5.3
Text Integration Utilities (TIU)	V 1.0
ToolKit	V. 7.3
VA FileMan	V 22.0
Visit Tracking	V 2.0

13.1. Required Patches

Before the installation of the build ROR 1.5, the following patches **must** be installed:

Table 25 – Prerequisite Patches

Application Name	Patches
Health Level Seven	HL*1.6*57
Registration	DG*5.3*471, DG*5.3*415, DG*5.3*631
Automated Lab Instruments	LA*5.2*69, LA*5.2*68
Lab Service	LR*5.2*222, LR*5.2*232
Medicine or Clinical Procedures	MC*2.3*34 or MD*1.0*1
National Drug File	PSN*4.0*53, PSN*4*79, PSN*4.0*104
Pharmacy Data Management	PSS*1.0*101, PSS*1.0*105, PSS*1.0*97
Clinical Case Registries	ROR*1*8 (this patch is not required for initial installation)
Scheduling	SD*5.3*254, SD*5.3*131

13.2. Database Integration Agreements (DBIAs)

The list of approved DBIAs for CCR 1.5 (including 1.5.10) is shown in Table 26.

In the Comments column: C = Controlled; P = Private; S = Supported

Table 26 – Database Integration Agreements

File Name	File Number	Access	DBIA #	Comment*
PATIENT	2	Browse IENs .02, .03, .06, .09, .351, 63	10035	**S**
		6^VADPT (.1112, .301, .302, .323)	10061	**S**
		$$GETICN^MPIF001 (991.01)	2701	**S**
		-9 node	2762	**P**
		.3721 (multiple)	174	**C**
		63	998	**C**
		EN^VAFHLPID	263	**S**
CLINIC STOP	40.7	^DIC(40.7,D0,0) .01, 1, 2 ^DIC(40.7,'C',X,D0)	93-C	**C**
	40.7	Read access to the file #40.7	557	**C**
MEDICAL CENTER DIVISION	40.8	.01, 1 “B”, “C”	417	**C**

File Name	File Number	Access	DBIA #	Comment*
SPECIALTY	42.4	^DIC(42.4,D0,0) .01	997	**C**
CLINIC STOP	44	^SC(D0,0) 8	93-A	**C**
		3.5	10040	**S**
PTF	45	RPC^DGPTFAPI	3157	**S**
		80 ^DGPT('AAD',	3545	**P**
		Access to multiple fields	92	**C**
PTF CLOSE OUT	45.84	.01 "AC"	994	**C**
PHARMACY PATIENT	55	^PS(55,'AUDS',X,D0,D1) ^PS(55,D0,5, .01, .5, 3, 1, 68 ^PS(55,D0,5,D1,2) 9, 10, 26, 34 ^PS(55,D0,5,D1,1,D2,0) .01, .02, .03 ^PS(55,D0,5,D1,11,D2,0) .01, .02, .05, .03, .04, .06, .07, .08 ^PS(55,D0,'IV', .01, .02, .03, .04, 108, .06, .08, .08, 104, 106, 132, .22 ^PS(55,D0,'IV',D1,AD,D2,0) .01,.02 ^PS(55,D0,'IV',D1,SOL,D2,0) .01, 1 ^PS(55,D0,'IV',D1,LAB,D2,0) 1, 2, 4, 6	2497	**C**
		^PS(55,D0,5,D1,0) .01, 3, 4, 7, .25, 12, 39 ^PS(55,D0,5,D1,2) 26, 10, 34 ^PS(55,D0,5,D1,1,D2,0) .01, .02 ^PS(55,DFN,5,'AUS',	117	**C**
		^PS(55,D0,'P',D1,0) .01 ^PS(55,DFN,'P','A',DATE,	90-B	**C**
		OCL^PSOORRL, OEL^PSOORRL	2400	**C**
OUTPATIENT SITE	59	^PS(59,D0,0) .01, .06 ^PS(59,D0,INI) 100	1876	**C**
LAB	60	^LAB(60,D0,0) .01, 1, 4, 5	91-A	**C**

File Name	File Number	Access	DBIA #	Comment*
		^LAB(60,'B', ^LAB(60,'C', ^LAB(60,D0,2)		
		ATESTS^ORWLRR	2947	**C**
COLLECTION SAMPLE	62	^LAB(62,0) .01	2210	**P**
LAB DATA	63		67-C	Surgical pathology for liver biopsy
			2503	**C**
			91-B	**C**
		Autopsy node	3465	**P**
		$$GCPR^LA7QRY	3556	**C**
		SPATH^LA7UTL03	4343	**C**
		CPATH^LA7UTL03	4344	**C**
		GETDATA^LA7UTL1A	4335	**C**
LABORATORY SITE	69.9	.01, 95.3	3557	**P** Environment check routine
RAD/NUC MED PATIENT	70	^RADPT(D0,0) .01 ^RADPT(D0,'DT',D1,0) .01, 2, 3, 4 ^RADPT(D0,'DT',D1,'P',D2,0) 2, 3 6, 7, 8, 13, 14 ^RADPT(D0,'DT',D1,'P',D2,'M',D3,0) .01 ^RADPT(D0,'DT',D1,'P',D2,'CMOD',D3,0) 135 ^RADPT(D0,'DT',D1,'P',D2,'H', .01	65	**C**
RAD/NUC MED PROCEDURES	71	^RAMIS(71,D0,0) .01, 9 , 10 ^RAMIS(71,'D',X,DA) 9	118-B	**C**
EXAMINATION STATUS	72	^RA(72,D0,0) .01 ^RA(72,'B',X,DA) .01 ^RA(72,'AA',	118-D	**C**
RAD/NUC MED REPORTS	74	^RARPT(5	15-C	**P**

File Name	File Number	Access	DBIA #	Comment*
		^RARPT(D0,'R', .01 ^RARPT(D0,'I', .01 ^RARPT(D0,'H', .01		
LAB LOINC	95.3	.01, 95.3	3557	**P**
PROTOCOL	101	.01, 4	872	**C** Direct read in the screen; pointed to.
GMRV VITAL MEASUREMENT	120.5	EN1^GMRVUTO ^PXRMINDX(120.5,"PI"	1446 4290	**C** **C**
PATIENT ALLERGIES	120.8	^GMR(120.8,D0,10,D1,0) REACTION (10,.01) OTHER REACTION (10,1)	190-B	**C**
FEE BASIS PAYMENT	162, sub-file 162.02	.01, 1.5	5107	**C**
FEE BASIS PAYMENT	162, sub-file 162.03	.01, 5, 16, 28, 30	5107	**C**
FEE BASIS PHARMACY INVOICE	162.1 sub-file 162.11	.01, 1, 2, 9, 1.5, 1.6, 15	5409	**C**
VA FORM 10-7078	162.4	3.5, 4.5	5104	**C**
FEE BASIS INVOICE	162.5	4, 5, 6, 6.5, 6.6, 8, 19, 24, 30, 31, 32, 33, 34, 40, 41, 42, 43, 44, 54	not yet available	**P**
PATIENT MOVEMENT	405	.01, .03, .06, .17 ^DGPM('AMV1', ^DGPM('ATT1',	1480	**C**
ELECTROCARDIOGRAM (EKG)	691.5	GET^MCARAPI	3780	**P**
		GET^MDAPI1	3854	**P**
HL7 ERROR MESSAGE FILE	771.7	.01	4493	**P**
VISIT	9000010		1905	**C**
		SELECTED^VSIT (returns selected visits)	1900-F	**C**
		$$LOOKUP^VSIT (looks up a visit and returns its information)	1900-G	**C**

File Name	File Number	Access	DBIA #	Comment*
			1906	C
		ENCEVENT^PXKENC	1889-F	C
		Access to the 'AA' x-ref	2309	C
V POV	9000010.07	POV^PXAPIIB	1554	P
V IMMUNIZATION	9000010.11	C x-ref, .01, .03, .06, .07, 1201, 1202, 81101	5521	P
V SKIN	9000010.12	C x-ref, .01, .03, .04, .05, .06, 1201, 1202, 81101	5520	P
PROBLEM	9000011	ACTIVE^GMPLUTL	928	C
		$$MOD^GMPLUTL3	2644	C
		FileMan captioned output of entire PROBLEM record.	2308	C
		GETFLDS^GMPLEDT3	2977	C
		Subscription to the DGPM MOVEMENT EVENTS protocol	1181	C
		GET^GMPLWP	4743	C
	9000010.18 9000010.23 9000010.11 9000010.16 9000010.07 9000010.06 9000010.12 9000010.15 9000010 9000010.13 9000010	Subscription to the PXK VISIT DATA EVENT protocol	1298	C
		Subscription to the LR7O ALL EVSEND RESULTS	3565	C
		BHS^HLFNC3	4481	P
		$$EMPL^DGSEC4	3646	C
		BLDPID^VAFCQRY	3630	C

File Name	File Number	Access	DBIA #	Comment*
		EN^VAFHLZRD	4535	**P**
		$$EN^VAFHLZSP	4536	**P**
		ZERO^PSS50, NDF^PSS50, DATA^PSS50	4533	**S**
		ZERO^PSN50P6	4540	**S**
		C^PSN50P65, IEN^PSN50P65	4543	**S**
		LIST^DIC	2051	**S**
		GET1^DIQ, GETS^DIQ	2056	**S**
		FILE^DIC	2053	**S**
		$$CODEN^ICPTCOD	1995	**S**
		$$CODEN^ICDCODE	3990	**S**
		EN^MXMLPRSE	4149	**S**
		LIST^DIC	2051	**S**
		GET1^DIQ, GETS^DIQ	2056	**S**
		FMADD^XLFDT, FMDIFF^XLFDT, FMTE^XLFDT	10103	**S**
		GET1^DIQ	2056	**S**
		FMADD^XLFDT, FMDIFF^XLFDT	10103	**S**
		GET1^DIQ	2056	**S**
		EN1^RAO7PC1	2043	**S**
		FMADD^XLFDT	10103	**S**
		GETS^DIQ	2056	**S**
		FMADD^XLFDT	10103	**S**
		DT^XLFDT, FMADD^XLFDT	10103	**S**
		FMADD^XLFDT	10103	**S**
		$$CODEN^ICPTCOD and $$CPT^ICPTCOD	1995	**S**
		ROOT^DILFD	2055	**S**
		GETS^DIQ	2056	**S**

File Name	File Number	Access	DBIA #	Comment*
		GETCPT^SDOE	2546	S
		Multiple APIs in SDQ routine	2548	S
		$$CODEN^ICDCODE and $$ICDOP^ICDCODE	3990	S
		FMADD^XLFDT	10103	S
		APIs in routine SDQ: ACRP Interface Toolkit	2548	S
		FMADD^XLFDT	10103	S
		ADM^VADPT2	325	C
		GET1^DIQ, GETS^DIQ	2056	S
		APIs in routine SDQ	2548	S
		DT^XLFDT, FMADD^XLFDT	10103	S
		^ICD9(	5388	S
		ZERO^PSS50, NDF^PSS50, DATA^PSS50	4533	S
		ZERO^PSN50P6	4540	S
		C^PSN50P65, IEN^PSN50P65	4543	S
		LIST^DIC	2051	S
		GET1^DIQ, GETS^DIQ	2056	S
		EN^GMVPXRM	3647	C
		GETIEN^GMVGETVT	5047	S
		LN^XLFMTH	10105	S
		DEM^VADPT	10061	S
		PWR^XLFMTH	10105	S
		HL7TFM^XLFDT	10103	S
*** Comments: C = Controlled; P = Private; S = Supported**				

14. Internal Relations

There are no internal relations with this software.

15. Package-wide Variables

There are no package-wide variables in this software

16. Software Product Security

Only users with CCR security keys have access to the registries.

CCR transmits data to the national database through the VA network. This network has security protection in place.

All patients' Social Security Numbers (SSNs) are encrypted before transmission to an agreed-upon standard. The fields sent to CDCO become readable upon receipt of the data; however, only high-level users have access to the unencrypted fields when viewing the national database.

16.1. Alerts

The system produces the following VA Alerts:

Alert	Addressee
When an access violation occurs	Coordinators
When the first update is completed (an e-mail is also sent to the mail group)	Initiator of the setup
When a report (or a generic task) is ready	Initiator of the report (generic task)
Unsent HL7 message (an e-mail is also sent to the mail group)	Coordinators
Problems with the nightly task	Coordinators
Historical data extraction task finished	Initiator of the task
Error during the pre- or post-install (if scheduled)	Initiator of the build installation

16.2. Remote Systems

Data will be transmitted to the National CCR Registry via the VistA HL7 system.

16.3. Contingency Planning

Sites utilizing CCR should develop a local contingency plan to be used in the event of product problems in a live environment. The facility contingency plan must identify the procedure for maintaining functionality provided by this package in the event of system outage. Field station Information Security Officers (ISOs) may obtain assistance from their Regional Information Officer (RISO).

16.4. Interfacing

No interfacing is used in the CCR software.

16.5. Electronic Signatures

No electronic signatures are used in the CCR software.

16.6. Security Keys

Users must have a valid VistA account and must be assigned at least one of the following VistA security keys:

- ROR VA HIV USER or ROR VA HIV ADMIN
- ROR VA HEPC USER or ROR VA HEPC ADMIN
- ROR VA IRM

Users with the ROR VA HIV/HEPC USER key will be displayed on the Show Registry Users window as "User."

Users will have full GUI access that will enable them to run reports, create local fields, and edit, confirm and delete patient records.

Users with this security key will be able to run reports.

Users with the ROR VA HIV/HEPC ADMIN key will be displayed on the Show Registry Users window as "Administrator."

Administrators will have full GUI access that will enable them to run reports, create local fields, and edit, confirm and delete patient records.

Users with the ROR VA IRM key will be displayed on the Show Registry Users window as "IRM."

IRM Users will have full GUI access that will enable them to run reports, create local fields, and edit, confirm and delete patient records.

Users with this security key will have access to all CCR files in VistA but no access to the GUI. This key should be assigned to the IRM personnel authorized to maintain and troubleshoot the CCR package.

If any unauthorized users access this system, a VA alert will be sent to persons identified to receive registry notifications stating the date and time of the violation, the name of the user who attempted to access the system, and a record of the access violation will be written to the Access Violations folder of the Technical Log.

Note: Only users having these keys can access the records of the ROR REGISTRY RECORD (#798), ROR REGISTRY PARAMETERS (#798.1), ROR PATIENT (#798.4), ROR LOG (#798.7), ROR TASK (#798.8), and ROR HIV RECORD (#799.4) files via FileMan.

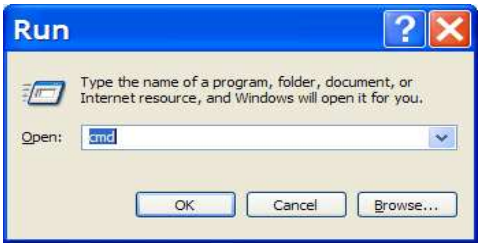
Appendix A. Creating an Output Directory in Windows

A.1 Graphical User Interface

1. Double-click the My Computer icon on the desktop.
2. Choose a drive, then right-click the drive icon and select Properties from the pop-up menu.
3. Make sure that the drive has enough free space for the new directory (about 500Mb), then click Cancel to close the Properties window.
4. Double-click the drive icon.
5. From the File menu, select New | Folder, then type **RORHDT** over the New Folder name.
6. Press **< Enter >**.
7. Close the window.

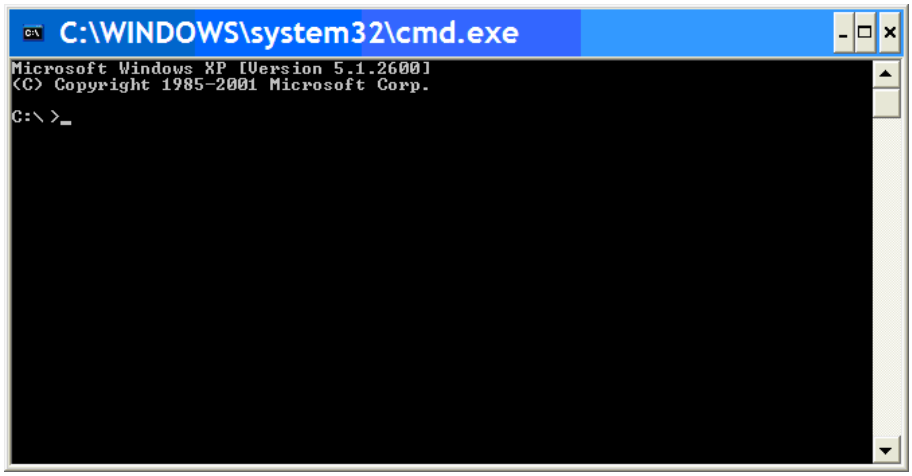
A.2 Command Prompt

1. From the Start menu, select Run…. The Run dialog box appears.



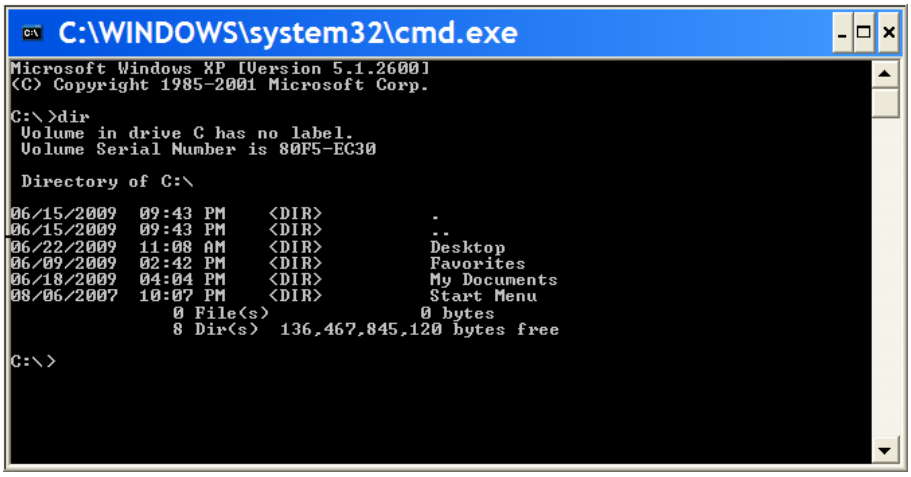
2. In the Open: field, enter **CMD** and click **< OK >.**

The Command Prompt window opens:



In most cases, the current drive will be C: and you will see the **C:\>** prompt. To create the directory on a different drive, type the letter of the drive followed by a colon (e.g., "**D:**"), and then press **< Enter >**.

3. At the command prompt, type the **DIR** command followed by **< Enter >** to make sure that the drive has enough free space (about 500Mb). Look for a message like this at the end of the output: "**N Dir(s) nn,nnn,nnn bytes free**."



4. Type **MKDIR** followed by a space and the name of directory **\RORHDT** and press **< Enter >**.
5. Type **DIR \RORHDT** and press **< Enter >** to make sure that the directory has been created.

```
C:\>D:

D:\>DIR
 Volume in drive D is DATA
 Volume Serial Number is 924D-6524
```

```
 Directory of D:\

12/18/2001  10:48a      <DIR>          CacheSys
08/30/2001  01:37p      <DIR>          VISTA
               2 Dir(s)  16,823,896,064 bytes free

D:\>MKDIR \RORHDT

D:\>DIR \RORHDT
 Volume in drive D is DATA
 Volume Serial Number is 924D-6524

 Directory of D:\RORHDT

05/08/2002  09:32a      <DIR>          .
05/08/2002  09:32a      <DIR>          ..
               0 File(s)              0 bytes
               2 Dir(s)  16,823,896,064 bytes free

D:\>
```

6. Type **EXIT** and press **< Enter >** to close the command prompt window.

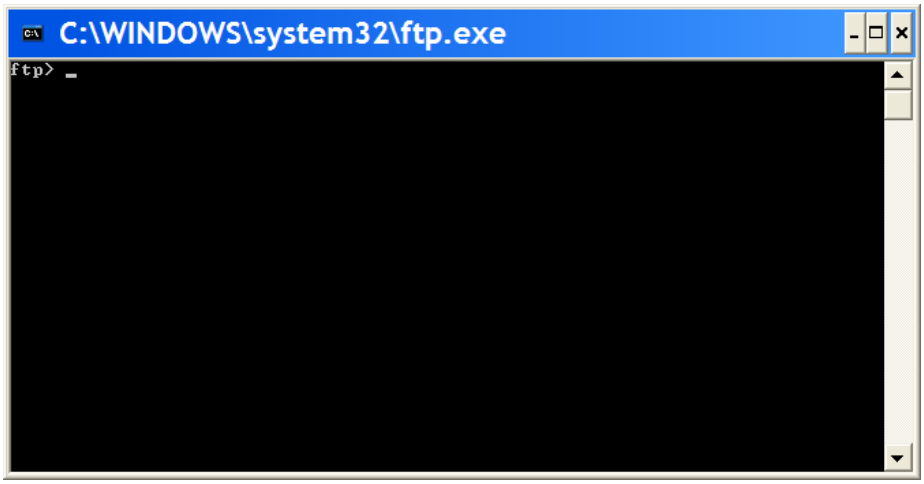
Appendix B. Using the Windows FTP Client

B.1 Transmit Using FTP Client

Use these steps to transmit the data using the Windows NT/2000/XP FTP client (see Windows documentation and/or online help for more details):

1. From the Start menu, select Run...
2. In the Open: field, enter **FTP** and click **< OK >.**

   The FTP client window opens and the **ftp>** prompt is displayed.



3. Enter the **OPEN** command with the IP address **10.168.97.208** as a parameter;
4. At the **Name (…):** prompt, enter your user name.
5. At the **Password:** prompt, enter your password. The characters of the password will not be displayed on the screen.
6. Use the **BIN** command to change the transfer mode to binary, then initiate transfer of historical data files (*.HDT) from the output directory using the **MPUT** command:

   FTP> **MPUT** *{disk and directory name}****.HDT**
7. Confirm transmission of each file by pressing **< Enter >**.
8. Use the **QUIT** command to disconnect and exit the FTP client.

The following screen capture shows a typical Windows FTP session:

```
ftp> OPEN 10.168.97.208
Connected to 10.168.97.208.
220 Palo Alto CQM0 Server
User (10.168.97.208): {your username}
331 Please specify the password.
```

```
Password: {your password}
230 Login successful.
ftp> BIN
200 Switching to Binary mode.
ftp> MPUT D:\RORHDT\*.HDT
mput d:\rorhdt\ROR-605-01.HDT? <RET>
200 PORT command successful. Consider using PASV.
150 Ok to send data.
226 File receive OK.
ftp: 93003 bytes sent in 0.84Seconds 110.59Kbytes/sec.
mput d:\rorhdt\ROR-605-02.HDT? <RET>
200 PORT command successful. Consider using PASV.
150 Ok to send data.
226 File receive OK.
ftp: 91391 bytes sent in 0.98Seconds 93.25Kbytes/sec.
ftp> QUIT
```

Note: If you need to transmit or retransmit a single file, use the PUT command:

ftp> **PUT** {disk and directory name}\{file name}

Example:

```
ftp> PUT D:\RORHDT\ ROR-605-01.HDT
```

Appendix C. HL7 Message Definitions

The CCR package sends patient data to the national registry as HL7 batch messages of CSU type. Each patient will be transmitted as an individual CSU message within the batch message.

C.1 Typographic Conventions

The following conventions are specific *to this appendix only*. See paragraph 1.1 above for other typographic conventions.

- The HL7 segments in the table are color-coded according to their purpose:
  - HL7 structure segments are highlighted in 15% gray (BHS, MSH, and BTS).
  - Patient demographic data segments are highlighted in light green (PID, ZSP, and ZRD).
  - Patient's clinical data (registry-independent) segments are highlighted in turquoise (OBR, OBX, ORC, and RXE).
  - Patient's registry-specific data segments are highlighted in ivory (CSP, CSS, OBR, and OBX).
- Square brackets [ ] denote optional segments (groups of segments).
- Curly brackets { } denote repeatable segments (groups of segments).

C.2 CSU – Clinical Trials Message (Event type C09)

The function of this message is to pass information relating to patients on the locally identified registries to a centralized database. The message includes patient demographics; registry information; and relevant clinical data.

C.2.1 Normalized Structure of the CSU Message

Segment ID	Description	Comments
BHS {	Batch Header	
MSH {	Message Header	
PID	Patient Identification	Patient Demographics
[ZSP]	Service Period	
[{ ZRD }]	Rated Disabilities	
[{ PV1 }]	Patient visit	Admissions/Outpatient data

CSR [{	Clinical Study Registration	Clinical Case Registry data
CSP {	Clinical Study Phase	
[{		
OBR	Observation Request	Inpatient/Outpatient, Radiology, Autopsy, Surgical Pathology, Cytopathology, Microbiology, Medical Procedures (EKG), Allergy, Immunization, IV, Skin Test, Vitals, Problem List, and Laboratory data
{ OBX }	Observation/Result	
}] [{		
ORC	Common Order	Pharmacy/Drug data
{ RXE }	Pharmacy/Treatment Encoded Order	
}]		
[		
{ ZIN }	Inpatient	Purchased Care data
{ ZSV }	Outpatient	
{ ZRX }	Pharmacy	
]		
}		
}]		
}		
} BTS	Batch Trailer	

C.2.2 Expanded Structure of the CSU Message

Segment ID	Description	Comments
BHS	Batch Header	
MSH {	Message Header	

PID	Pseudo-patient Identification	**Registry State** This group of segments is sent for each registry included in the data transmission.
CSR	Clinical Study Registration	
}		
[{		
MSH [	Message Header	
PID	Patient Identification	**Patient's Demographic and Clinical Data** This group of segments is sent only if the corresponding data has been modified/added since the last data transmission.
[ZSP]	Service Period	
[{ ZRD }]	Rated Disabilities	
[{ PV1 }]	Patient visit	
CSR	Clinical Study Registration	
[{		
OBR	Observation Request	
{ OBX }	Observation/Result	
}] [{		
ORC	Common Order	
{ RXE }	Pharmacy/Treatment Encoded Order	
}]		
] [{		
PID	Patient Identification	**Patient's Registry Data** This group of segments contains the patient's registry data. It is sent for each registry included in the transmission if the patient belongs to that registry.
CSR	Clinical Study Registration	
{ CSP }	Clinical Study Phase	
}]		
}] BTS	Batch Trailer	

C.2.3 Sample CSU Message

```
BHS|^~\&|ROR SITE|640^PALO-ALTO.MED.VA.GOV^DNS|ROR AAC|
|20050303020252-0800||^P^CSU~C09^2.4^AL^NE||64038648827|

MSH|^~\&|ROR SITE|||||CSU^C09^CSU_C09|640105760888-1
|P|2.4|||AL|NE|USA
PID|1||0^^^^U||PSEUDO^PATIENT
CSR|VA HEPC^1.5||640^PALO ALTO HCS^99VA4|0^^^^U^3^20
PID|1||0^^^^U||PSEUDO^PATIENT
CSR|VA HIV^1.5||640^PALO ALTO HCS^99VA4|0^^^^U^0^101

MSH|^~\&|ROR SITE|||||CSU^C09^CSU_C09|640105760888-2
|P|2.4|||AL|NE|US
PID|1||1243567890V123456^^^USVHA&&0363^NI^VA FACILITY
ID&640&L~325500^^^USVHA&&0363^PI^VA FACILITY
ID&640&L||||19630408|M||2106-3-SLF^WHITE^0005^2106-
3^WHITE^CDC|^^^^95123|||||||00007600044| ||2186-5-SLF^NOT
HISPANIC OR LATINO^0189^2186-5^NOT HISPANIC OR
LATINO^CDC|||||||""
ZSP|1|1|30|8|""|0|0|19700325
ZRD|1|7709^HODGKINS DISEASE|100|1
PV1|1|O|640^^^^^408|P|||10935^^^^^^^^^^^PHYSICIAN||||||||||
|8710273|||||||||||||||||||||||200403020815-0800||||||0
CSR|CCR^1.5||640^PALO ALTO HCS^99VA4|325500^^^USVHA^PI
OBR|1||45353453|OP^Outpatient^C4|||1997040593-000600||||||||||
|||||PHY|||||||||||||||||||499^HINES OIFO^99VA4
OBR|2||110120021658|93000^ELECTROCARDIOGRAM^C4||199504151100-
0600|199505161100-0600|||||||||||||||EC|F|||||||||||||||
|612GF^MARTINEZ OPC/CREC^99VA4
OBX|1|FT|INT^Interpretation^VA080|CHANGES OR SERIAL|RECOMMEND
CLINICAL CORRELATION||||||F
OBX|2|FT|AUTO^Auto Instrument^VA080||This is the Auto-Instrument
Diagnosis, which is a free text word processing field
OBR|3||2050600309|81129.0000^Hepatic Function Panel^99VA64||
|20050301101656-0800||||A|^||20050301101656-
0800|SER&SER/PLAS&HL7&SER/PLAS&SER/PLAS&LN|30890||||87712\S\CH\S
\6949697.898344||20050301111748-0800||LAB|
OBX|3||777-3^PLATELETS:NCNC:PT:BLD:QN:AUTOMATED COUNT^LN
^85570.0000^Platelet Count Whole Blood^99VA64||3.6|g/dL|3.3-
4.8||||F||2|20020129082501-0700|612GF^MARTINEZ O PC/CREC^99VA4
|617-VA612GF^
OBX|4||LABC|LCOMM|Lab Comments go here||||||F
ZIN|36520|20040408|20040409|1|9153.70|6445.16|20040817|DRG202|20
040408|20040409|1|571.2|456.20|456.8|305.1|303.90|42.33|44.43ZSV
|2943-169-1-1|20000908||76091|OPT SERVICES/TREATMENT FOR NSC
DISABILITIES|611.72|OUTPATIENT HOSPITAL (22)ZRX|8344-
1|6532803|19931221|CONDYLOX|PODOFILOX 0.5% TOP SOLN|0.5%|1
```

```
PID|2||1243567890V123456^^^USVHA&&0363^NI^VA FACILITY
ID&640&L~325500^^^USVHA&&0363^PI^VA FACILITY
ID&640&L||||19630408|M||2106-3-SLF^WHITE^0005^2106-
3^WHITE^CDC|^^^^95123|||||||00007600044| ||2186-5-SLF^NOT
HISPANIC OR LATINO^0189^2186-5^NOT HISPANIC OR
LATINO^CDC|||||||""
CSR|VA HEPC^1.5||640^PALO ALTO HCS^99VA4
|325500^^^USVHA^PI||20040328||||7^Automatically Added -
ICD9^99VA799_1||0^NO~1^YES~1^YES~0^NO~0^NO~0^NO~0^NO~0
^NO~0^NO~0^NO~0^NO~0^NO~9^UNKNOWN
CSP|0^UPDATE|20050225020252-0800|20050226020252-0800
CSP|1^SELECT|200502241415-0800

BTS|2
```

C.3 ACK – Commit Acknowledgement Message

The CCR uses original HL7 acknowledgment rules. The responding application is required to send only a commit acknowledgment when the message is received and safely stored.

C.3.1 Structure of the Message

Segment ID	Description	OPT	RP	Comments
BHS	Batch Header	R		
MSA	Message Acknowledgment	R		
BTS	Batch Trailer	R		

C.3.2 Sample ACK Message

```
BHS|^~\&|ROR AAC||ROR SITE||20050303020500||^^ACK^2.4
|CA|23423423423|64038648827
MSA|CA|64038648827
BTS|1
```

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Appendix D. HL7 Segment Definitions

D.1 Typographic Conventions

The following conventions are specific *to this appendix only*. See paragraph 1.1 above for other typographic conventions.

Table 27 – Typographic Conventions (Segment Definitions)

Notation	Description	Example
Bold	Literal	**DNS**
<…>	Name that represents the corresponding value	**<Race Code>**
[…]	Optional element(s)	[ss]
|	Or	**+|-**
DD	Day (1-31)	05
MM	Month (1-12)	10
N	Digit (0-9)	
YY	2-digit year	05
YYYY	4-digit year	2005
Hh	Hours (0-23)	15
Mm	Minutes (0-59)	05
Ss	Seconds (0-59)	43
Zzzz	Time zone	0600
Blue	Hyperlink. You can click on it to open the corresponding section in this document, external document, or website.	See Notes
N/A	Field, component, or sub-component is not used by the package. Usually, it is empty but might have a value, which will be ignored.	
Example vs. Value	Description of an element contains either the Example or the Value row. In the latter case, the element always has the provided value.	

D.2 HL7 Segment Table Definitions

For each HL7 segment, the data elements contained in the segment are described in table format under Field Definitions in the following sections. The abbreviated column headings contained in the tables and associated HL7 data types are also defined.

Table 28 – HL7 Abbreviated Column Headings

Column Heading	Definition
SEQ	Sequence of data element in segment
LEN	Maximum length of data element
DT	Data Type
OPT	Required/Optional (R=Required, O=Optional)
RP/#	Repeats/Maximum number of repetitions (Y for repeats)
TBL#	Number of corresponding HL7 user defined/supported table
ELEMENT NAME	HL7 Element Name with VistA file and field location

Table 29 – HL7 Data Types

Column Heading	Definition
CE	Coded Element
ID	Coded values for HL7 tables
SI	Sequence ID
TS	Date/Time Stamp
XCN	Extended Composite ID number for name and persons

Table 30 – Diagnostic Service Section ID (HL7 Table 0074)

Value	Description
AU	Audiology
BG	Blood gases
BLB	Blood bank
CUS	Cardiac Ultrasound
CTH	Cardiac catheterization
CT	CAT scan
CH	Chemistry
CP	Cytopathology
EC	Electrocardiac (e.g., EKG, EEC, Holter)
EN	Electroneuro (EEG, EMG,EP,PSG)

Value	Description
HM	Hematology
ICU	Bedside ICU Monitoring
IMG	Diagnostic Imaging
IMM	Immunology
LAB	Laboratory
MB	Microbiology
MCB	Mycobacteriology
MYC	Mycology
NMS	Nuclear medicine scan
NMR	Nuclear magnetic resonance
NRS	Nursing service measures
OUS	OB Ultrasound
OT	Occupational Therapy
OTH	Other
OSL	Outside Lab
PAR	Parasitology
PAT	Pathology (gross and histopathology, not surgical)
PHR	Pharmacy
PT	Physical Therapy
PHY	Physician (Hx. Dx, admission note, etc.)
PF	Pulmonary function
RAD	Radiology
RX	Radiograph
RUS	Radiology ultrasound
RC	Respiratory Care (therapy)
RT	Radiation therapy
SR	Serology
SP	Surgical Pathology
TX	Toxicology
URN	Urinalysis
VUS	Vascular Ultrasound
VR	Virology
XRC	Cineradiograph

D.2.1 Reference Table Values

Within the segment information are references to tables (TBL#), when applicable.

Table 31 – Segment Definition Examples

Format	Valid Values
<Station Number>^<Station Name>**^DNS**	640^PALO-ALTO.MED.VA.GOV^DNS
YYYYMMDD[hhmm[ss]] [**+**|**-**zzzz]	20050303020252-0800 20050303020252 200503030202+0600 200503030202 20050303

D.3 BHS – Batch Header Segment

Table 32 – Batch Header Segments

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
1	1	ST	R			Batch Field Separator	See Notes
2	4	ST	R			Batch Encoding Characters	See Notes
3	15	ST	R			Batch Sending Application	See Notes
4	72	ST	R			Batch Sending Facility	See Notes
5	15	ST	R			Batch Receiving Application	See Notes
6	20	ST	O			Batch Receiving Facility	N/A
7	26	TS	R			Batch Creation Date/Time	See Notes
8	40	ST	O			Batch Security	N/A
9	23	ST	R			Batch Name/ID/Type	See Notes
10	80	ST	C			Batch Comment	See Notes
11	20	ST	R			Batch Control ID	See Notes
12	20	ST	C			Reference Batch Control ID	See Notes

D.3.1 Field Definitions

D.3.1.1 BHS-1 Batch Field Separator

Definition:	This field contains the separator between the segment ID and the first real field, *BHS-2*

	Batch Encoding Characters. As such it serves as the separator and defines the character to be used as a separator for the rest of the message.
Value:	**|** (ASCII 124)

D.3.1.2 BHS-2 Batch Encoding Characters

Definition:	This field contains four characters in the following order: the component separator; repetition separator; escape character; and subcomponent separator.
Value:	**^~\&** (ASCII 94, 126, 92, and 38, respectively)

D.3.1.3 BHS-3 Batch Sending Application

Definition:	This field uniquely identifies the sending application among all other applications within the network enterprise. The network enterprise consists of all those applications that participate in the exchange of HL7 messages within the enterprise. Entirely site-defined.
Value:	• ACK: **ROR AAC** • CSU: **ROR SITE**

D.3.1.4 BHS-4 Batch Sending Facility

SEQ	DT	TBL#	Component Name	CCR
1	IS	0362	Namespace ID	Station Number
2	ST		Universal ID	Station Domain Name
3	ID	0301	Universal ID Type	**DNS**
Definition:	This field contains the address of one of several occurrences of the same application within the sending system. Entirely site-defined.			
Value:	640^PALO-ALTO.MED.VA.GOV^DNS			

D.3.1.5 BHS-5 Batch Receiving Application

Definition:	This field uniquely identifies the receiving application among all other applications within the network enterprise. The network enterprise consists of all those applications that participate in the exchange of HL7 messages within the enterprise. Entirely site-defined.
Value:	• ACK: **ROR SITE** • CSU: **ROR AAC**

D.3.1.6 BHS-7 Batch Creation Date/Time

Definition:	This field contains the date/time that the sending system created the message. If the time zone is specified, it will be used throughout the message as the default time zone.
Value:	YYYYMMDD[hhmm[ss]] [+|-zzzz]
Example:	**20050303020252-0800**

D.3.1.7 BHS-9 Batch Name/ID/Type

Table 33 – BHS-9 Batch Name/ID/Type

SEQ	DT	TBL#	Component Name	CCR
1	ID			N/A
2	ID	0103	Processing ID	
3	ID		<Message Type>~<Trigger Event>	
4	ID	0104	Version ID	**2.4**
5	ID	0155	Accept ACK Type	
6	ID	0155	Application ACK Type	
Definition:	This field contains the *Processing ID*, *Message Type*, *Trigger Event*, and several other characteristics of the message. The CCR package sends a CSU message type with the trigger event C09. The CCR package always requests the commit acknowledgement but it does not require the application acknowledgement.			
Example:	• ACK: **^P^ACK^2.4** • CSU: **^P^CSU~C09^2.4^AL^NE**			

D.3.1.8 BHS-10 Batch Comment

Definition:	This field is a comment field that is not further defined in the HL7 protocol.
Example:	• ACK: **CA** • Historical CSU: **HISTORICAL DATA** • Nightly CSU: N/A

D.3.1.9 BHS-11 Batch Control ID

Definition:	This field is used to uniquely identify a particular batch. It is echoed back in the *BHS-12 Reference Batch Control ID* field of the commit acknowledgement.
Example:	**64038648827**

D.3.1.10 BHS-12 Reference Batch Control ID

Definition:	This field contains the value of *BHS-11 Batch Control ID* when this batch was originally transmitted.
Value:	CSU: **N/A** **ACK:** Value of BHS-11 Batch Control ID from the original CSU batch.
Example:	**64038648827**

D.3.2 Sample BHS Segments

D.3.2.1 ACK

```
BHS|^~\&|ROR AAC||ROR SITE||20050303020500||^^ACK^2.4
|CA|23423423423|64040054123
```

D.3.2.2 CSU

```
BHS|^~\&|ROR SITE|640^PALO-ALTO.MED.VA.GOV^DNS|ROR AAC|
||20050303020252-0800||^P^CSU~C09^2.4^AL^NE||64038648827|
```

D.4 BTS – Batch Trailer Segment

Table 34 – Batch Trailer Segment

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
1	10	ST	R			Batch Message Count	See Notes
2	80	ST	O			Batch Comment	N/A
3	100	NM	O	Y		Batch Totals	N/A

D.4.1 Field Definitions

D.4.1.1 BTS-1 Batch Message Count

Definition:	This field stores the count of individual messages contained within the batch.
Example:	**235**

D.4.2 Sample BTS Segment

```
BTS|235
```

D.5 CSP – Clinical Study Phase Segment

Table 35 – Clinical Study Phase Segment

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
1	30	CE	R			Study Phase Identifier	See Notes
2	26	TS	R			Date/time Study Phase Began	See Notes
3	26	TS	C			Date/time Study Phase Ended	See Notes
4	250	CE	C			Study Phase Evaluability	N/A

The CSP segments represent different registry-specific events, store the corresponding dates, and/or group the subsequent segments.

If a segment with a particular value of the *CSP-1 Study Phase ID* field is not present in the message, then the corresponding values in the national database should not be changed.

D.5.1 Field Definitions

D.5.1.1 CSP-1 Study Phase ID

SEQ	DT	TBL#	Component Name	CCR
1	ST		Identifier	Registry Event Code
2	ST		Text	Registry Event Name
3	ST		Name of Coding System	N/A
4	ST		Alternate Identifier	N/A
5	ST		Alternate Text	N/A
6	ST		Name of Alternate Coding System	N/A

Definition:	This field indicates type of the registry-specific event represented by the CSP segment.	
Tables:	**Identifier**	**Text**
	0	**UPDATE**
	1	**SELECT**
	2	**ADD**
	3	**CONFIRM**
	4	**DELETE**
	5	**CDC**
Example:	**0^UPDATE**	

D.5.1.2 CSP-2 Date/time Study Phase Began

Definition:	Meaning of this field depends on the value of the *CSP-1 Study Phase ID* field:	
	UPDATE	Start date/time of the data extraction
	SELECT	Date/time of the earliest selection rule
	ADD	Date/time when the patient was added to the registry (in pending state)
	CONFIRM	Date/time when the patient was confirmed in the registry
	DELETE	Date/time when the patient was deleted from the registry
	CDC	Date/time of CDC data modification
Format:	YYYYMMDD[hhmm[ss]] [+|-zzzz]	
Example:	**200502100920-0800**	

D.5.1.3 CSP-3 Date/time Study Phase Ended

Definition:	Meaning of this field depends on the value of the *CSP-1 Study Phase ID* field:
Value:	**UPDATE:** End date/time of the data extraction Otherwise: N/A
Format:	YYYYMMDD[hhmm[ss]] [+|-zzzz]
Example:	**200502101015-0800**

D.5.2 Sample CSP segment

```
CSP|0^UPDATE|20010806010000-0600|20010806015030-0600
```

D.6 CSR – Clinical Study Registration Segment

Table 36 – Clinical Study Registration Segment

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
1	60	EI	R			Sponsor Study ID	See Notes
2	60	EI	O			Alternate Study ID	N/A
3	250	CE	R			Institution Registering the Patient	See Notes
4	30	CX	R			Sponsor Patient ID	See Notes
5	30	CX	O			Alternate Patient ID - CSR	N/A
6	26	TS	C			Date/Time Of Patient Study Registration	See Notes
7	250	XCN	O	Y		Person Performing Study Registration	N/A
8	250	XCN	C	Y		Study Authorizing Provider	N/A

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
9	26	TS	C			Date/time Patient Study Consent Signed	See Notes
10	250	CE	C			Patient Study Eligibility Status	See Notes
11	26	TS	O	Y/3		Study Randomization Date/time	N/A
12	250	CE	C	Y		Randomized Study Arm	See Notes
13	250	CE	O	Y/3		Stratum for Study Randomization	N/A
14	250	CE	C			Patient Evaluability Status	N/A
15	26	TS	C			Date/time Ended Study	N/A
16	250	CE	C			Reason Ended Study	N/A

D.6.1 Field Definitions

D.6.1.1 CSR-1 Sponsor Study ID

SEQ	DT	TBL#	Component Name	CCR
1	ST		Entity Identifier	Registry Name
2	IS		Namespace ID	Software Version Information
3	ST		Universal ID	N/A
4	ID		Universal ID Type	N/A

Definition:	This field holds the internal registry name, the version number, and the build number of the CCR software: Clinical Data: **CCR**^<Version Major>.<Version Minor>[.<Latest Patch Number>[.<Build Number>]] Otherwise: <Registry Name>^<Version Major>.<Version Minor>[.<Latest Patch Number>[.<Build Number>]]	
Examples:	Clinical Data:	**CCR^1.5.2.1**
	Otherwise:	**VA HIV^1.5.2.1**

D.6.1.2 CSR-3 Institution Registering the Patient

SEQ	DT	TBL#	Component Name	CCR
1	ST	0005	Identifier	Station Number (without suffix)
2	ST		Text	Institution Name
3	ST		Name of Coding System	**99VA4**

4	ST		Alternate Identifier	N/A
5	ST		Alternate Text	N/A
6	ST		Name of Alternate Coding System	N/A

Definition:	This field distinguishes the station where the local registry is held.
Example:	**640^PALO ALTO HCS^99VA4**

D.6.1.3 CSR-4 Sponsor Patient ID

SEQ	DT	TBL#	Component Name	CCR
1	ST		ID	Patient IEN (DFN)
2	ST		Check Digit	
3	ID	0061	Code of the Check Digit Scheme	
4	HD	0363	Assigning Authority	
5	ID	0203	Identifier Type Code	
6	HD		Assigning Facility	Number of pending patients
7	DT		Effective Date	Number of reports that have been run since the last transmission
8	DT		Expiration Date	N/A

Definition:	Clinical Data:	Both patient's clinical and patient's registry CSR segments contain the Internal Entry Number (DFN) of the patient's record at the sending facility in this field: <DFN>^^^**USVHA^PI**
	Registry Data:	See Clinical Data
	Registry State:	CSR segments in the Registry State section of the batch utilize the following format of this field: **0^^^^U^**<Number of Pending Patients>^<Number of Reports>
Examples:	**15^^^USVHA^PI**	
	0^^^^U^3^20	

D.6.1.4 CSR-6 Date/time of Patient Study Registration

Definition:	Clinical Data: N/A

	Registry Data:	Date when the patient was added to the registry (in pending state)
	Registry State:	N/A
Format:	YYYYMMDD	
Examples:	**20050210**	

D.6.1.5 CSR-9 Date/time Patient Study Consent Signed

Definition:	Clinical Data:	N/A
	Registry Data:	Date of the AIDS OI (Clinical AIDS) is sent in this field if the corresponding check-box is selected on the Patient Edit dialog box.
	Registry State:	N/A
Format:	YYYYMMDD	
Examples:	**20050210**	

D.6.1.6 CSR-10 Patient Study Eligibility Status

SEQ	DT	TBL#	Component Name	CCR
1	ST	0005	Identifier	Code
2	ST		Text	Description
3	ST		Name of Coding System	**99VA799_1**
4	ST		Alternate Identifier	N/A
5	ST		Alternate Text	N/A
6	ST		Name of Alternate Coding System	N/A

Definition:	Clinical Data:	N/A
	Registry Data:	Reason for addition of the patient to the registry
	Registry State:	N/A
Tables:	**Code**	**Description**
	7	Automatically Added - ICD9
	8	Reason for addition of the patient to the registry
	9	Automatically Added - ICD9 and Lab

Example:	7^Automatically Added - ICD9^ 99VA799_1

D.6.1.7 CSR-12 Randomized Study Arm

SEQ	DT	TBL#	Component Name	CCR
1	ST	0005	Identifier	Code
2	ST		Text	Description
3	ST		Name of Coding System	N/A
4	ST		Alternate Identifier	N/A
5	ST		Alternate Text	N/A
6	ST		Name of Alternate Coding System	N/A

Definition:	Clinical Data:	N/A
	Registry Data:	Risk factors. 14th component indicates whether this site was the first site (VA or Non-VA) to diagnose HIV in the patient. Number of repetitions is registry-specific.
	Registry State:	N/A
Tables:	**Code**	**Description**
	0	NO
	1	YES
	9	UNKNOWN
Example:	• 0^NO~1^YES~1^YES~0^NO~0^NO~0^NO~0^NO~0^NO~0^NO~0^NO~0^NO~1^YES • 0^NO~9^UNKNOWN • ~~~~~~~~~~~~~9^UNKNOWN	

D.6.2 Sample CSR segment

```
CSR|VA HEPC^1.5||640^PALO ALTO HCS^99VA4|325500^^^USVHA^PI|
|20040328|||20050210|7^Automatically Added - ICD9^99VA7991|
|0^NO~1^YES~1^YES~0^NO~0^NO~0^NO~0^NO~0^NO~0^NO~0^NO~0^NO~9
^UNKNOWN~1^YES
```

D.7 MSA – Message Acknowledgment Segment

Table 37 – Message Acknowledgment Segment

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
1	2	ID	R		0008	Acknowledgment Code	See Notes
2	20	ST	R			Message Control ID	See Notes
3	80	ST	O			Text Message	See Notes
4	15	NM	O			Expected Sequence Number	N/A
5	1	ID	B		0102	Delayed Acknowledgment Type	N/A
6	250	CE	O		0357	Error Condition	N/A

D.7.1 Field Definitions

D.7.1.1 MSA-1 Acknowledgment Code

Definition:	This field holds the acknowledgment code, which defines whether the message was accepted or rejected.
Example:	**CA**

D.7.1.2 MSA-2 Message Control ID

Definition:	This field contains the message control ID of the message sent by the sending system. This allows the sending system to associate the response with the original message.
Example:	**64038648827**

D.7.1.3 MSA-3 Text Message

Definition:	This field will describe an error condition in the event of an AE or AR being returned.

D.7.2 Sample MSA Segment

```
MSA|CA|64038648827
```

D.8 MSH – Message Header Segment

Table 38 – Message Header Segment

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
1	1	ST	R			Field Separator	See Notes
2	4	ST	R			Encoding Characters	See Notes

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
3	180	HD	O		0361	Sending Application	See Notes
4	180	HD	O		0362	Sending Facility	N/A
5	180	HD	O		0361	Receiving Application	N/A
6	180	HD	O		0362	Receiving Facility	N/A
7	26	TS	R			Date/Time Of Message	N/A
8	40	ST	O			Security	N/A
9	15	CM	R		0076/ 0003	Message Type	See Notes
10	20	ST	R			Message Control ID	See Notes
11	3	PT	R			Processing ID	See Notes
12	60	VID	R		0104	Version ID	See Notes
13	15	NM	O			Sequence Number	N/A
14	180	ST	O			Continuation Pointer	N/A
15	2	ID	O		0155	Accept Acknowledgment Type	See Notes
16	2	ID	O		0155	Application Acknowledgment Type	See Notes
17	3	ID	O		0399	Country Code	See Notes
18	16	ID	O	Y	0211	Character Set	N/A
19	250	CE	O			Principal Language Of Message	N/A
20	20	ID	O		0356	Alternate Character Set Handling Scheme	N/A
21	10	ID	O	Y	0449	Conformance Statement ID	N/A

D.8.1 Field Definitions

D.8.1.1 MSH-1 Field Separator

Definition:	This field contains the separator between the segment ID and the first real field, *MSH-2 Encoding Characters.* As such it serves as the separator and defines the character to be used as a separator for the rest of the message.
Example:	| (ASCII 124)

D.8.1.2 MSH-2 Encoding Characters

Definition:	This field contains the four characters in the following order: the component separator;

	repetition separator; escape character; and subcomponent separator.
Example:	**^~\&** (ASCII 94, 126, 92, and 38, respectively)

D.8.1.3 MSH-3 Sending Application

Definition:	This field uniquely identifies the sending application among all other applications within the network enterprise. The network enterprise consists of all those applications that participate in the exchange of HL7 messages within the enterprise. Entirely site defined.
Example:	**ROR SITE**

D.8.1.4 MSH-9 Message Type

SEQ	DT	TBL#	Component Name	CCR
1	ID	0076	Message Type	**CSU**
2	ID	0003	Trigger Event	**C09**
3	ID	0354	Message Structure	**CSU_C09**

Definition:	This field contains the message type and trigger event for the message. The CCR package sends a CSU message type with the trigger event C09.
Example:	**CSU^C09^CSU_C09**

D.8.1.5 MSH-10 Message Control ID

Definition:	This field contains a number or other identifier that uniquely identifies the message. The receiving system echoes this ID back to the sending system in the Message Acknowledgment segment (MSA).
Example:	**640105354833-1**

D.8.1.6 MSH-11 Processing ID

SEQ	DT	TBL#	Component Name	CCR
1	ID	0103	Processing ID	
2	ID	0207	Processing Mode	N/A

Definition:	This field identifies the current status of the interface, the component is used to indicate if the area and circumstances of the transmission. The CDCO should not file training or debugging data into their production database.
Example:	**P**

D.8.1.7 MSH-12 Version ID

Definition:	This field is matched by the receiving system to its own HL7 version to be sure the message will be interpreted correctly.
Example:	**2.4**

D.8.1.8 MSH-15 Accept Acknowledgment Type

Definition:	This field defines whether the sending system requires an acknowledgment from the receiving system when a message is accepted. The CCCR package always requests the accept (commit) acknowledgment.
Example:	**AL**

D.8.1.9 MSH-16 Application Acknowledgment Type

Definition:	This field defines whether the sending system requires an acknowledgment from the receiving system when a message has been validated by the application. The CCR package does not use application acknowledgments.
Example:	**NE**

D.8.1.10 MSH-17 Country Code

Definition:	This field contains the country of origin for the message.
Example:	**USA**

D.8.2 Sample MSH Segment

```
MSH|^~\&|ROR SITE|||||CSU^C09^CSU_C09|640105760888-2|P|2.4||
|AL|NE|USA
```

D.9 OBR – Observation Request

Table 39 – Observation Request

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
1	4	SI	O			Set ID - OBR	See Notes
2	22	EI	C			Placer Order Number	N/A
3	22	EI	C			Filler Order Number	See Notes

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
4	250	CE	R			Universal Service Identifier	See Notes
5	2	ID	X			Priority - OBR	N/A
6	26	TS	X			Requested Date/Time	See Notes
7	26	TS	C			Observation Date/Time	See Notes
8	26	TS	O			Observation End Date/Time	See Notes
9	20	CQ	O			Collection Volume	N/A
10	250	XCN	O	Y		Collector Identifier	N/A
11	1	ID	O		0065	Specimen Action Code	See Notes
12	250	CE	O			Danger Code	See Notes
13	300	ST	O			Relevant Clinical Info.	See Notes
14	26	TS	C			Specimen Received Date/Time	See Notes
15	300	CM	O		0070	Specimen Source	See Notes
16	250	XCN	O	Y		Ordering Provider	See Notes
17	250	XTN	O	Y/2		Order Callback Phone Number	N/A
18	60	ST	O			Placer Field 1	See Notes
19	60	ST	O			Placer Field 2	N/A
20	60	ST	O			Filler Field 1	See Notes
21	60	ST	O			Filler Field 2	See Notes
22	26	TS	C			Results Rpt/Status Chng - Date/Time	See Notes
23	40	CM	O			Charge to Practice	N/A
24	10	ID	O		0074	Diagnostic Serv Sect ID	See Notes
25	1	ID	C		0123	Result Status	See Notes
26	400	CM	O			Parent Result	See Notes
27	200	TQ	O	Y		Quantity/Timing	N/A
28	250	XCN	O	Y/5		Result Copies To	N/A
29	200	CM	O			Parent	See Notes
30	20	ID	O		0124	Transportation Mode	N/A
31	250	CE	O	Y		Reason for Study	N/A
32	200	CM	O			Principal Result Interpreter	N/A

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
33	200	CM	O	Y		Assistant Result Interpreter	N/A
34	200	CM	O	Y		Technician	N/A
35	200	CM	O	Y		Transcriptionist	N/A
36	26	TS	O			Scheduled Date/Time	N/A
37	4	NM	O			Number of Sample Containers	N/A
38	250	CE	O	Y		Transport Logistics of Collected Sample	N/A
39	250	CE	O	Y		Collector's Comment	N/A
40	250	CE	O			Transport Arrangement Responsibility	See Notes
41	30	ID	O		0224	Transport Arranged	N/A
42	1	ID	O		0225	Escort Required	N/A
43	250	CE	O	Y		Planned Patient Transport Comment	N/A
44	250	CE	O		0088	Procedure Code	See Notes
45	250	CE	O	Y	0340	Procedure Code Modifier	N/A
46	250	CE	O	Y	0411	Placer Supplemental Service Information	See Notes
47	250	CE	O	Y	0411	Filler Supplemental Service Information	N/A

D.9.1 Field Definitions

D.9.1.1 OBR-1 Set ID – OBR

Definition:	This field contains the number that identifies this transaction. For the first occurrence of the segment, the sequence number shall be one, for the second occurrence, the sequence number shall be two, etc.
Example:	**2**

D.9.1.2 OBR-3 Filler Order Number

SEQ	DT	TBL#	Component Name	CCR

SEQ	DT	TBL#	Component Name	CCR
1	ST		Entity Identifier	
2	IS		Namespace ID	
3	ST		Universal ID	
4	ID		Universal ID Type	

Definition:	Allergy:	IEN in the `PATIENT ALLERGIES file (#120.8)`
	Autopsy:	Accession Number
	Cytopathology:	Accession Number
	Immunization:	IEN in the `IMMUNIZATION file (#9000010.11, #.01)`
	Inpatient:	IEN in the `PTF file (#45)`
	IV:	Order Number
	Laboratory data:	Accession Number (Host UID)
	Med. Proc. (EKG):	IEN in the `ELECTROCARDIOGRAM (EKG) file (#691.5)`
	Microbiology:	Accession Number
	Outpatient:	IEN in the `VISIT file (#9000010)`
	Problem list:	IEN in the `INSTITUTION file (#4)` concatenated with the Problem Number (values of the `.06` and `.07` fields of the `PROBLEM file (# 9000011)` accordingly). The number can have decimal places.
	Radiology:	Case Number
	Skin Test:	IEN in the `SKIN TEST file (#9000010.12, #.01)`
	Surgical Pathology:	Accession Number
Example:	Allergy:	**`123`**
	Autopsy:	**`AU 02 462820`**
	Cytopathology:	**`CY 02 345`**
	Immunization:	**`123`**
	Inpatient:	**`2495`**
	Outpatient:	**`904726`**
	IV:	**`123431345`**
	Laboratory data:	**`CH 02 1234`**
	Med. Proc. (EKG):	**`110120021658`**
	Microbiology:	**`324MI33221`**
	Problem list:	**`24452.11`**
	Radiology:	**`6989273.8975-1^072601-1445`**
	Skin Test:	**`123`**
	Surgical	**`SP 95 345`**

SEQ	DT	TBL#	Component Name	CCR
		Pathology:		

D.9.1.3 OBR-4 Universal Service ID

SEQ	DT	TBL#	Component Name	CCR
1	ST	0005	Identifier	
2	ST		Text	
3	ST		Name of Coding System	
4	ST		Alternate Identifier	
5	ST		Alternate Text	
6	ST		Name of Alternate Coding System	

Definition:	This field contains the identifier code for the requested observation/test.	
	Allergy:	Generic Hard-coded CPT-4 Code
	Autopsy:	Generic Hard-coded CPT-4 Code
	Cytopathology:	Generic Hard-coded CPT-4 Code
	Immunization:	Generic Hard-coded CPT-4 Code
	Inpatient:	Generic Hard-coded CPT-4 Code
	IV:	Generic Hard-coded CPT-4 Code
	Laboratory data:	NLT Code and Test Name
	Med. Proc. (EKG):	Generic Hard-coded CPT-4 Code
	Microbiology:	Generic Hard-coded CPT-4 Code
	Outpatient:	Generic Hard-coded CPT-4 Code
	Problem list:	Generic Hard-coded CPT-4 Code
	Radiology:	The Procedure Name will appear in the text part of this segment and the identifier will be the CPT code that relates to the procedure name.
	Skin Test:	Generic Hard-coded CPT-4 Code
	Surgical Pathology:	Generic Hard-coded CPT-4 Code
	Vitals:	Generic Hard-coded CPT-4 Code
	Distinguishing between records for Allergy, IV, Medical Procedures, Lab, Radiology, Autopsy, Surgical and Cytopathology results can be done by a combination of OBR-4 and OBR-24.	
Example:	Laboratory data:	**83020.0000^Hemoglobin^99VA64**
	Radiology:	**71020^CHEST X-RAY^C4^58^CHEST PA\T\LAT^99RAP**
Value:	Allergy:	**95000^ALLERGY^C4**
	Autopsy:	**88099^UNLISTED NECROPSY PROC^C4**
	Cytopathology:	**88108^CYTOPATHOLOGY, CONCENT^C4**
	Immunization:	**90749^IMMUNIZATION^C4**
	Inpatient:	**IP^Inpatient^C4**

	IV:	**90780^IV^C4**
	Med. Proc. (EKG):	**93000^ELECTROCARDIOGRAM^C4**
	Microbiology:	**87999^MICROBIOLOGY^C4**
	Outpatient:	**OP^Outpatient^C4**
	Problem list:	**90125^HOSPITAL CARE,NEW, INTERMED.^C4**
	Skin Test:	**86486^SKIN TEST^C4**
	Surgical Pathology:	**88300^LEVEL I - SURGICAL PAT^C4**
	Vitals:	**94150^VITAL CAPACITY TEST^C4**

D.9.1.4 OBR-6 Requested Date/Time

Definition:	This field contains the number that identifies this transaction. For the first occurrence of the segment, the sequence number shall be one, for the second occurrence, the sequence number shall be two, etc.	
	Med. Proc. (EKG):	Date/Time of the EKG
	Problem list:	Date/Time when the problem was entered into the PROBLEM file (#9000011)
Format:	**YYYYMMDD[hhmm[ss]] [+|-zzzz]**	
Example:	200502101015-0800	

D.9.1.5 OBR-7 Observation Date/Time

Definition:	This field contains the identifier code for the requested observation/test:	
	Allergy:	Origination Date
	Autopsy:	Autopsy Date
	Cytopathology:	Exam Date
	Inpatient:	Admission Date/Time
	IV:	Start Time
	Laboratory data:	Date/Time when the specimen was taken
	Med. Proc. (EKG):	Date/Time of the last successful transfer through the automated interface (populated only if received from an instrument)
	Microbiology:	Accession Date
	Outpatient:	Visit Date/Time
	Problem list:	Approximate date when the problem appeared
	Radiology:	Exam Date/Time
	Skin Test:	Date Read
	Surgical Pathology:	Date/Time when the specimen was taken
	Vitals:	N/A
	Distinguishing between records for Allergy, IV, Medical Procedures, Lab, Radiology, Autopsy, Surgical and Cytopathology results can be done by a combination of OBR-4 and OBR-24.	
Format:	**YYYYMMDD[hhmm[ss]] [+|-zzzz]**	
Example:	**200502101015-0800**	

D.9.1.6 OBR-8 Observation End Date/Time

Definition:	This field is populated only in the following segments:	
	Autopsy:	Date of the final autopsy diagnoses
	IV:	Stop Date
	Problem List:	Date/Time when the problem was resolved or inactivated
	Surgical Pathology:	Date/Time when the report was completed
Format:	**YYYYMMDD[hhmm[ss]] [+|-zzzz]**	
Example:	**200502101015-0800**	

D.9.1.7 OBR-11 Specimen Action Code

Definition:	This field is populated only in the following segments:	
	Laboratory:	Specimen Action Code
	Microbiology:	Indicates whether the urine screen is positive or negative.
Tables:	**Value**	**Urine Screen**
	N	Negative
	P	Positive
Example:	**P**	

D.9.1.8 OBR-12 Danger Code

SEQ	DT	TBL#	Component Name	CCR
1	ST	0005	Identifier	N/A
2	ST		Text	
3	ST		Name of Coding System	N/A
4	ST		Alternate Identifier	N/A
5	ST		Alternate Text	N/A
6	ST		Name of Alternate Coding System	N/A

Definition:	This field is populated only in the following segments:	
	Laboratory Data:	Infection Warning (value of the PAT. INFO. field (#.091) of the LAB DATA file (#63))
Format:	Free Text	

D.9.1.9 OBR-13 Relevant Clinical Info.

Definition:	This field is populated only in the following segments:	
	Autopsy:	Reactant
	Immunization:	Comments
	IV:	Schedule
	Microbiology:	Site Specimen
	Problem List:	Diagnosis Code (ICD-9)
	Skin Test:	Comments
Example:	Autopsy:	ONION
	Immunization:	HISTORY OF ALLERGY
	IV:	ONCE
	Microbiology:	PERITONEAL
	Problem List:	097.1
	Skin Test:	positive 9.9cm

D.9.1.10 OBR-14 Specimen Received Date/Time

Definition:	This field is populated only in the following segments:	
	Laboratory Data:	Collection Date/Time
	Problem List:	Date when the problem was resolved or inactivated
Format:	**YYYYMMDD[hhmm[ss]] [+|-zzzz]**	
Example:	**200502101015-0800**	

D.9.1.11 OBR-15 Specimen Source

SEQ	DT	TBL#	Component Name	CCR
1	CE		Specimen Source	LOINC
2	TX		Additives	N/A
3	TX		Free Text	N/A
4	CE		Body Site	N/A
5	CE		Site Modifier	N/A
6	CE		Collection Modifier	N/A
7	CE		Specimen Role	N/A

Definition:	This field is populated only in the following segment:	
	Laboratory Data:	Specimen Source
Example:	**UR&Urine&HL70070&UR&Urine&LN**	

D.9.1.12 OBR-16 Ordering Provider

SEQ	DT	TBL#	Component Name	CCR
1	ST		ID Number	IEN of the user in the NEW PERSON file (#200)
2	FN		Family Name	N/A
3	ST		Given Name	N/A
4	ST		Second and further given names or initials thereof	N/A
5	ST		Suffix (e.g., JR or III)	N/A
6	ST		Prefix (e.g., DR)	N/A
7	IS	0360	Degree (e.g., MD)	N/A
8	IS	0297	Source Table	N/A
9	HD		Assigning Authority	N/A
10	ID	0200	Name Type Code	N/A
11	ST		Identifier Check Digit	N/A
12	ID	0061	Code identifying the check digit scheme employed	N/A
13	IS		Identifier Type Code	Provider Class Name
14	HD		Assigning Facility	N/A
15	ID	0465	Name Representation Code	N/A
16	CE	0448	Name Context	N/A
17	DR		Name Validity Range	N/A
18	ID	0444	Name Assembly Order	N/A

Definition:	This field identifies the individual who ordered the test. Provider name is not used to ensure the patient privacy protection.	
Format:	Allergy:	<Provider IEN>^^^^^^^^^^^^<Provider Class Name>
	Autopsy:	<Provider IEN>
	Cytopathology:	N/A
	Immunization:	<Provider IEN>^^^^^^^^^^^^<Provider Class Name>
	Inpatient:	N/A
	IV:	N/A
	Laboratory Data:	<Provider IEN>
	Med. Proc. (EKG):	N/A

	Microbiology:	N/A
	Outpatient:	N/A
	Problem list:	<Provider IEN>^^^^^^^^^^^^<Provider Class Name>
	Radiology:	<Provider IEN>^^^^^^^^^^^^<Provider Class Name>
	Skin Test:	<Provider IEN>^^^^^^^^^^^^<Provider Class Name>
	Surgical Pathology:	<Surgeon/Physician IEN>
	Vitals:	N/A
Example:	2177^^^^^^^^^^^^PHYSICIAN	

D.9.1.13 OBR-18 Placer Field 1

Definition:	This field is populated only in the following segment:	
	Laboratory Data:	Name of the Auto-instrument
Format:	<Name of Analyzer or Instrument>^<Card Address>	

D.9.1.14 OBR-20 Filler Field 1

Definition:	This field is populated only in the following segments:	
	Allergy:	Allergy type
	IV:	Infusion rate
	Laboratory Data:	Reference to the node in the LAB DATA file (#63)
	Microbiology:	Collection Sample
	Problem List:	Condition of the Record
Format:	Allergy:	Text
	IV:	Text
	Laboratory Data:	<LRDFN>\S\<Subscript>\S\<Inverted D/T> (\S\ - encoded ^ character)
	Microbiology:	<Name>
	Problem List:	<Code>
Tables:	**Code**	**Condition of the Problem Record**
	H	Hidden
	P	Permanent
	T	Transcribed
Examples:	Allergy:	FOOD
	IV:	INFUSE OVER 30 MIN
	Laboratory Data:	42058\S\CH\S\6949770.89857

	Microbiology:	FLD-PERITONEAL
	Problem List:	P

D.9.1.15 OBR-21 Filler Field 2

Definition:	This field is populated only in the following segment:	
	Microbiology:	Sputum Screen
Format:	**Free Text**	

D.9.1.16 OBR-22 Results Rpt/Status Chng - Date/Time

Definition:	This field is populated only in the following segment:	
	Autopsy:	Date/Time the report is released
	Laboratory Data:	Date/Time the report is released
	Problem List:	Date/Time Last Modified
Format:	**YYYYMMDD[hhmm[ss]] [+|-zzzz]**	
Example:	**200502101015-0800**	

D.9.1.17 OBR-24 Diagnostic Service Section ID

Definition:	This field is the section of the diagnostic service where the observation was performed.	
Value:	Allergy:	**TX**
	Autopsy:	**SP**
	Cytopathology:	**CP**
	Immunization:	**OTH**
	Inpatient:	**PHY**
	IV:	**IMM**
	Laboratory Data:	**LAB**
	Med. Proc. (EKG):	**EC**
	Microbiology:	**MB**
	Outpatient:	**PHY**
	Problem list:	**TX**
	Radiology:	**RAD**
	Skin Test:	**OTH**
	Surgical Pathology:	**SP**
	Vitals:	**EC**

D.9.1.18 OBR-25 Result Status

Definition:	This field is the section of the diagnostic service where the observation was performed.				
Value:	Allergy:	Observed/Historical			
	Med. Proc. (EKG):	Confirmation Status			
	Microbiology:	Sterility Control			
	Problem list:	Status of the Problem			
Tables:	**Value**	**Allergy**	**Med Proc (EKG)**	**Microbiology**	**Problem Status**
	F	Observed	Confirmed	Positive	Active
	R	Historical	Unconfirmed	Negative	Inactive
Example:	**F**				

D.9.1.19 OBR-26 Parent Result

SEQ	DT	TBL#	Component Name	CCR
1	CE		OBX-3 observation identifier of parent result	
2	ST		OBX-4 sub-ID of parent result	
3	TX		Part of OBX-5 observation result from parent	
Definition:	This field is populated only in the following segment:			
	Laboratory Data:	The PARENT RESULT uniquely identifies the parent result's OBX segment related to this order.		

D.9.1.20 OBR-29 Parent

SEQ	DT	TBL#	Component Name	CCR
1	EI		Parent's Placer Order Number	
2	EI		Parent's Filler Order Number	
Definition:	This field is populated only in the following segment:			
	Laboratory Data:	This field relates a child to its parent when a parent-child relationship exists.		

D.9.1.21 OBR-40 Transport Arrangement Responsibility

SEQ	DT	TBL#	Component Name	CCR

1	ST	0005	Identifier	
2	ST		Text	
3	ST		Name of Coding System	**VA**
4	ST		Alternate Identifier	N/A
5	ST		Alternate Text	N/A
6	ST		Name of Alternate Coding System	N/A

Definition:	This field is populated in the following segments only:	
	IV:	Type
Tables:	**Value**	**IV Type Tect**
	A	Admixture
	C	Chemotherapy
	H	Hyperal
	P	Piggyback
	S	Syringe
Example:	**IV: P^Piggyback^VA**	

D.9.1.22 OBR-44 Procedure Code

SEQ	DT	TBL#	Component Name	CCR
1	ST	0005	Identifier	Station Number (without suffix)
2	ST		Text	Institution Name
3	ST		Name of Coding System	**99VA4**
4	ST		Alternate Identifier	N/A
5	ST		Alternate Text	N/A
6	ST		Name of Alternate Coding System	N/A

Definition:	The OBR-44 holds the station/division that placed the order. This field is empty in the Allergy and Laboratory segments.
Example:	**640^PALO ALTO HCS^99VA4**

D.9.1.23 OBR-46 Placer Supplemental Service Information

SEQ	DT	TBL#	Component Name	CCR

1	ST	0005	Identifier	
2	ST		Text	
3	ST		Name of Coding System	N/A
4	ST		Alternate Identifier	N/A
5	ST		Alternate Text	N/A
6	ST		Name of Alternate Coding System	N/A

Definition:	The OBR-46 contains supplemental service information sent from the placer system to the filler system for the universal procedure code reported in OBR-4, Universal Service ID. This field will be used to provide ordering information detail that is not available in other, specific fields in the OBR segment. Multiple supplemental service information elements may be reported. *[Source: HL7 Standard v24, 4.5.3.46]*	
	Autopsy:	Value of the SERVICE field (14.5) of the LAB DATA file (#63)
Format:	**<Service Code>^<Service Name>**	
Example:	**Autopsy: S^SURGERY**	

D.9.2 Sample OBR Segments

D.9.2.1 Allergy

```
OBR|1||AL 99 5|95000^ALLERGY^C4|||1995051611-000600|||||||
|8491^^^^^^^^^^^STAFF PHYSICIAN||DF||||||TX|R
```

D.9.2.2 Autopsy

```
OBR|2||AU 99 5|88099^UNLISTED NECROPSY PROC^C4|||199505161100-
0600|199505200900-
0600|||||||||||||||SP|||||||||||||||||499^HINES
OIFO^99VA4||S^SURGERY
```

D.9.2.3 Cytopathology

```
OBR|3||AU 99 5|88108^CYTOPATHOLOGY, CONCENT^C4|||199505161100-
0600|||||||||||||||CP|||||||||||||||||499^HINES OIFO^99VA4
```

D.9.2.4 Inpatient

```
OBR|4||23443|IP^Inpatient^C4|||1997040593-000600||||||||
||||||||PHY|||||||||||||||||499^HINES OIFO^99VA4
```

D.9.2.5 Immunizations

```
OBR|2||24917|90749^IMMUNIZATION^C4||||||||||||||||||||OTH
```

D.9.2.6 IV

```
OBR|5||IV 99 5|90780^IV^C4|||1995051611-000600
|1996030312-000600|||||Schedule goes here – free text||||||
|Infusion Rate||||IMM|||||||||||||||P^Piggyback^VA^^^^|||
|499^HINES OIFO^99VA4
```

D.9.2.7 Laboratory data

```
OBR|6||2050600309|81129.0000^Hepatic Function Panel^99VA64||
|20050301101656-0800||||A|^||20050301101656-
0800|SER&SER/PLAS&HL7&SER/PLAS&SER/PLAS&LN|30890||||87712\S\CH\S
\6949697.898344||20050301111748-0800||LAB
```

D.9.2.8 Med. Proc. (EKG)

```
OBR|7||110120021658|93000^ELECTROCARDIOGRAM^C4||199504151100-
0600|199505161100-0600||||||||||||||||EC|F||||||||||||||||
|612GF^MARTINEZ OPC/CREC^99VA4
```

D.9.2.9 Microbiology

```
OBR|8||MI 99 5|87999^MICROBIOLOGY^C4|||1997040511-000600||||P
||BLOOD|||||||Sample type – free text|Sputum Screen – free
text|||MB|F||||||||||||||||||499^HINES OIFO^99VA4
```

D.9.2.10 Outpatient

```
OBR|9||45353453|OP^Outpatient^C4|||1997040593-000600||||||||||
|||||PHY||||||||||||||||||||499^HINES OIFO^99VA4
```

D.9.2.11 Problem List

```
OBR|1||640.016|90125^HOSPITAL CARE,NEW,
INTERMED.^C4||20100119|20091101|20100119|||||070.0|20091201||352
20^^^^^^^^^^^^STAFF
PHYSICIAN||||P||20100119||TX|R||||||||||||||||||499^HINES
OIFO^99VA4
```

D.9.2.12 Radiology

```
OBR|2||6989798.8767-1^020101-1327^L|75736^ANGIO PELVIC SELECT OR
SUPRASELECT S&I^C4^288^ANGIO CAROTID CEREBRAL BILAT
```

```
S\T\I^99RAP|||200102011232-0600||||||||2177^^^^^^^^^^^^STAFF
RADIOLOGIST||||||||RAD||||||||||||||||||||499^HINES OIFO^99VA4
```

D.9.2.13 Skin Test

```
OBR|1||2111|86486^SKIN TEST^C4|||20010523||||||||35220^^^^^^^^^^^^STAFF
PHYSICIAN|||||||OTH
```

D.9.2.14 Surgical Pathology

```
OBR|3||SP 99 5|88300^ LEVEL I – SURGICAL PAT^C4|||19990316
|199508021100-0600||||||||329||||||||SP||||||||||||||||||
|499^HINES OIFO^99VA4
```

D.9.2.15 Vitals

```
OBR|4|||94150^VITAL CAPACITY TEST^C4|||||||||||||||||||EC
|||||||||||||||||||499^HINES OIFO^99VA4
```

D.10 OBX – Observation/Result Segment

Table 40 – Observation/Result Segment

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
1	4	SI	O			Set ID - OBX	See Notes
2	2	ID	C		0125	Value Type	See Notes
3	250	CE	R			Observation Identifier	See Notes
4	20	ST	C			Observation Sub-ID	See Notes
5	65536	*	C	Y		Observation Value	See Notes
6	250	CE	O			Units	See Notes
7	60	ST	O			Reference Ranges	See Notes
8	5	IS	O	Y/5	0078	Abnormal Flags	See Notes
9	5	NM	O			Probability	N/A
10	2	ID	O	Y	0080	Nature of Abnormal Test	N/A
11	1	ID	R		0085	Observation Result Status	See Notes
12	26	TS	O			Date Last Observation Normal Value	See Notes
13	20	ST	O			User Defined Access Checks	See Notes
14	26	TS	O			Date/Time of the Observation	See Notes
15	250	CE	O			Producer's ID	See Notes

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
16	250	XCN	O	Y		Responsible Observer	See Notes
17	250	CE	O	Y		Observation Method	See Notes
18	22	EI	O	Y		Equipment Instance Identifier	N/A
19	26	TS	O			Date/Time of the Analysis	N/A

D.10.1 Field Definitions

D.10.1.1 OBX-1 Set ID – OBX

Definition:	This field contains the number that identifies this transaction. For the first occurrence of the segment, the sequence number will be one, for the second occurrence, the sequence number will be two, etc.
Example:	**2**

D.10.1.2 OBX-2 Value Type

Definition:	This field identifies the format of the observation value in OBX-5.	
Tables:	A subset of the HL7 Table 0125 – Value type is used.	
	Value	**Description**
	CE	Coded Entry
	FT	Formatted Text (Display)
	NM	Numeric
	ST	String Data
	TS	Time Stamp (Date & Time)
Example:	ST	

D.10.1.3 OBX-3 Observation Identifier

SEQ	DT	TBL#	Component Name	CCR
1	ST	0005	Identifier	
2	ST		Text	
3	ST		Name of Coding System	
4	ST		Alternate Identifier	
5	ST		Alternate Text	
6	ST		Name of Alternate Coding System	

SEQ	DT	TBL#	Component Name	CCR
7	ST		Alternate Identifier 2	
8	ST		Alternate Text 2	
9	ST		Name of Alternate Coding System 2	

Definition:	This field identifies the segment.	
Format:	Allergy:	• **CLAS^Drug Class^VA080** • **INGR^Ingredients^VA080** • **RCTS^Reactions^VA080**
	Autopsy:	• **AUCD^Clinical Diagnosis^VA080** • **AUPD^Pathological Diagnosis^VA080**
	Cytopathology:	• **BCH^Brief Clinical History^VA080** • **CDIAG^Cytopathology Diagnosis^VA080** • **ICD9^ICD9^VA080** • **MICRO^Microscopic Description^VA080** • **OF^Operative Findings^VA080** • **PDIAG^Preoperative Diagnosis^VA080** • **POPDIAG^Postoperative Diagnosis^VA080** • **SPEC^Specimen^VA080**
	Inpatient:	• **INAD^Admitting Diagnosis^VA080** • **INBED^Bed-section Diagnosis^VA080** • **INDIS^Discharge Diagnosis^VA080** • **INOTR^Other Diagnosis^VA080** • **INPRI^Primary Dis. Diagnosis^VA080** • **INSURG^Surgical Procedures^VA080**
	Immunization:	• **^Immunization Name**
	IV:	• **ADD^Additive^VA080** • **OTPR^Other Print Info^VA080** • **SOL^Solution^VA080**
	Laboratory Data:	• **[<LOINC^Text>^LN^][<NLT>^<Text>^99VA64^]<Local Test ID>^<Local Test Name>^99VA63** ▪ **LABC^Lab Comment^VA080**
	Med. Proc. (EKG):	• **AUTO^Auto Instrument^VA080** • **INT^Interpretation^VA080**
	Microbiology:	• **AFB-Bay Pines^TB Report^VA080** • **BACT^Bact^VA080** • **BACT-Bay Pines^Bact Smear/Prep^VA080** • **COMP^Specimen Comment^VA080**

SEQ	DT	TBL#	Component Name	CCR
				• FUNG^Fungus-Yeast^VA080 ▪ FUNGC^F-Y Comment^VA080 • GRAM^Gram Stain^VA080 • MYCO^Mycobacterium^VA080 ▪ MYCOAF^Myco Anti-F^VA080 ▪ MYCOAO^Myco Anti-O^VA080 ▪ MYCOC^Myco Comment^VA080 • MYCO-Bay Pines^Mycology Smear/Prep^VA080 • ORG^Organism^VA080 ▪ ORGA^Org Antibiotic^VA080 ▪ ORGAF^Org Antibiotic-F^VA080 ▪ ORGAO^Org Antibiotic-O^VA080 ▪ ORGC^Org Comment^VA080 • PAR^Parasite^VA080 ▪ PARQ^Stage^VA080 ▪ PARC^Comment^VA080 • PARA-Bay Pines^Para Smear/Prep^VA080 • PARP^Parasite Remark^VA080 • VIRUS^Virus^VA080 • VIRUSR^Virology RPT^VA080
			Outpatient:	• OCPT^Procedures^VA080 • OICD9^Diagnosis^VA080
			Problem List:	• EXPR^Expression^VA080 • NOTE^Note Narrative^VA080 • PRVN^Provider Narrative^VA080
			Radiology:	• CH^Clinical History^VA080 • IT^Impression Text^VA080 • RT^Report Text^VA080
			Skin Test:	• ^Skin Test name
			Surgical Pathology:	• BCH^Brief Clinical History^VA080 • GDESC^Gross Decription^VA080 • ICD9^ICD-9 Code^VA080 • MDESC^Microscopic Description^VA080 • OF^Operative Findings^VA080 • PDIAG^Preoperative Diagnosis^VA080 • POPDIAG^Postoperative Diagnosis^VA080 • SPDIAG^Surgical Pathology Diagnosis^VA080 • SPEC^Specimen^VA080

SEQ	DT	TBL#	Component Name	CCR
		Vitals:	• **Bay Pines^Blood Pressure^VA080** • **HT^Height^VA080** • **P^Pulse^VA080** • **PN^Pain^VA080** • **R^Respiration^VA080** • **T^Temperature^VA080** • **WT^Weight^VA080**	
Example:		Laboratory Data:	718-7^HEMOGLOBIN:MCNC:PT:BLD:QN^LN ^83020.0000^Hemoglobin^99VA64^CH386^HGB^99VA63	

D.10.1.4 OBX-4 Observation Sub-ID

Definition:	This field contains the result observed by the observation producer. This field is populated in the following cases only:	
	Laboratory Data:	• If OBX-3 contains the LOINC code and this field is blank then this is the main lab OBX segment. • If OBX-3 contains "LABC^Lab Comment" and this field contains "LCOMM", then the OBX-5 will contain the Lab Comment.
	Med. Proc. (EKG):	If OBX-3 contains "INT^Interpretation", then this field may contain the Interpretation Code Modifier for Medical Procedure data.
	Microbiology:	If OBX-3 contains "MYCOAF^Myco Anti-F", "MYCOAO^Myco Anti-O", "ORGAF^Org Antibiotic-F", or "ORGAO^Org Antibiotic-O", then this field contains the microbiology field name.
	Vitals:	Unique identifier for the record.
Example:	Med. Proc. (EKG):	**CHANGES OR SERIAL**
	Laboratory Data:	**LCOMM**
	Microbiology:	**STR**
	Vitals: **2355**	

D.10.1.5 OBX-5 Observation Value

Definition:	This field contains the result(s) observed by the observation producer. The format depends on the data type in **OBX-2** and the content depends on **OBX-3**. Vitals: **<Rate>^<Quality>^<Qualifiers>** - these values are always separated by the '^' character (even if other component separator is used), then the

	whole string is encoded according to the HL7 standard.	
	Vitals:	**<Rate>^<Quality>^<Qualifiers>** These values are always separated by the "**^**" character (even if other component separator is used), then the whole string is encoded according to the HL7 standard.
Example:	• Vitals: • Otherwise:	**34\S\Weak\S\QER** **103.9**
Notes:	This field can be repeated in the following segments:	
	Allergy:	• **CLAS^Drug Class^VA080**
	Cytopathology:	• **ICD9^ICD9^VA080**
	Immunization:	• **Reaction^Contraindicated**
	Inpatient:	• **INBED^Bed-section Diagnosis^VA080** • **INDIS^Discharge Diagnosis^VA080** • **INOTR^Other Diagnosis^VA080** • **INSURG^Surgical Procedures^VA080**
	Skin Test:	• **Results^Reading**
	Surgical Pathology:	• **ICD9^ICD-9 Code^VA080**
	This field can contain multi-line text in the following segments (lines are separated by "**.br**" enclosed in HL7 escape character):	
	Autopsy:	• **AUCD^Clinical Diagnosis^VA080** • **AUPD^Pathological Diagnosis^VA080**
	Cytopathology:	• **BCH^Brief Clinical History^VA080** • **CDIAG^Cytopathology Diagnosis^VA080** • **MICRO^Microscopic Description^VA080** • **OF^Operative Findings^VA080** • **PDIAG^Preoperative Diagnosis^VA080** • **POPDIAG^Postoperative Diagnosis^VA080**
	Med. Proc. (EKG):	• **AUTO^Auto Instrument^VA080**
	Problem List:	• **NOTE^Note Narrative^VA080**
	Radiology:	• **CH^Clinical History^VA080** • **IT^Impression Text^VA080** • **RT^Report Text^VA080**
	Surgical Pathology:	• **BCH^Brief Clinical History^VA080** • **GDESC^Gross Decription^VA080** • **MDESC^Microscopic Description^VA080** • **OF^Operative Findings^VA080** • **PDIAG^Preoperative Diagnosis^VA080**

		• **POPDIAG^Postoperative Diagnosis^VA080** • **SPEC^Specimen^VA080**

D.10.1.6 OBX-6 Units

SEQ	DT	TBL#	Component Name	CCR
1	ST	0005	Identifier	
2	ST		Text	
3	ST		Name of Coding System	N/A
4	ST		Alternate Identifier	N/A
5	ST		Alternate Text	N/A
6	ST		Name of Alternate Coding System	N/A

Definition:	This field is populated in the following cases only:	
	Inpatient:	Bed Section, if OBX-3 contains "INOTR^Other Diagnosis" or "INBED^Bedsection Diagnosis"
	Laboratory Data:	Unit of the observation value
	Microbiology:	Quantity (free text), if OBX-3 contains any of these values: "FUNG^Fungus-Yeast" "MYCO^Mycobacterium" "PARQ^Stage"
	Vitals:	Value in metric system
Examples:	Inpatient:	**94^INTERMEDIATE MEDICINE – LTC**
	Laboratory Data:	**GM/DL**
	Microbiology:	
	Vitals:	**182.88**

D.10.1.7 OBX-7 Reference Ranges

Definition:	This field is populated in the following cases only:	
	IV:	• Strength for additive, *if* OBX-3 contains "ADD^Additive" • Volume for solution, *if* **OBX-3** contains "**SOL^Solution**".
	Laboratory Data:	<Lower>-<Upper>
	Microbiology:	• <MIC> - Minimum Inhibitory Concentration (LAB

		DATA file (#63) → MICROBIOLOGY multiple (5) → ORGANISM multiple (12) → ANTIBIOTIC multiple (200) → 'MIC(ug/ml)' field (1)), *if* OBX-3 contains "ORGA^Org Antibiotic"; • Acid Fast Stain result, *if* OBX-3 contains "AFB-SP^TB Report" (LAB DATA file (#63) → MICROBIOLOGY multiple (5) → ACID FAST STAIN (24)).
	Vitals:	Body Mass, *if* OBX-3 contains "WT^Weight"
Examples:	IV:	**37 MG**
	Laboratory Data:	**3.4-5.0**
	Microbiology:	**23**
	Vitals:	**27**

D.10.1.8 OBX-8 Abnormal Flags

Definition:	This field is populated in the following segments only:	
	Laboratory Data:	Flag on Values for lab tests
Example:	Laboratory Data:	**LL**

D.10.1.9 OBX-11 Observation Result Status

Definition:	This field contains the observation result status.	
Tables:	A subset of the HL7 Table 0085 – Observation result status codes interpretation is used.	
	Value	**Description**
	C	Record coming over is a correction and thus replaces a final result
	F	Final results; Can only be changed with a corrected result
	I	Specimen in lab; results pending
	P	Preliminary results
Example:	**F**	

D.10.1.10 OBX-12 Date Last Observation Normal Value

Definition:	This field is populated in the following cases only:

	Allergy:	Reactions Date/Time Entered
	Inpatient:	Bed-section End Date/Time, *if* OBX-3 contains "INBED^Bedsection Diagnosis"
Format:	YYYYMMDD[hhmm[ss]] [+|-zzzz]	
Example:	**200502101015-0800**	

D.10.1.11 OBX-13 User Defined Access Checks

Definition:	This field is populated in the following cases only:	
	Microbiology:	<MBC> - Minimum Bactericidal Concentration (LAB DATA file (#63) → MICROBIOLOGY multiple (5) → ORGANISM multiple (12) → ANTIBIOTIC multiple (200) → 'MBC(ug/ml)' field (2)), if OBX-3 contains "ORGA^Org Antibiotic".
Example:	**222**	

D.10.1.12 OBX-14 Date/Time of the Observation

Definition:	This field is populated in the following cases only:	
	Immunization:	Event Date/Time
	Inpatient:	• Bed Section Start Date, if OBX-3 contains "INBED^Bedsection Diagnosis"; • Surgical Procedure Date, if OBX-3 contains "INSURG^Surgical Procedures"; • Other Procedure Date, if OBX-3 contains "INOTR^Other Diagnosis".
	Laboratory Data:	Collection Date/Time
	Microbiology:	Date/Time of the TB report approval, *if* OBX-3 contains "AFB-SP^TB Report")
	Skin Tests:	Event Date/Time
	Vitals:	Date/Time of Measurement
Format:	YYYYMMDD[hhmm[ss]] [+|-zzzz]	

Example:	**200502101015-0800**

D.10.1.13 OBX-15 Producer's ID

SEQ	DT	TBL#	Component Name	CCR
1	ST	0005	Identifier	Station Number
2	ST		Text	Institution Name
3	ST		Name of Coding System	**99VA4**
4	ST		Alternate Identifier	N/A
5	ST		Alternate Text	N/A
6	ST		Name of Alternate Coding System	N/A

Definition:	This field is populated in the following cases only:
	Laboratory Data
Example:	**499^HINES OIFO^99VA4**

D.10.1.14 OBX-16 Responsible Observer

SEQ	DT	TBL#	Component Name	CCR
1	ST		ID Number	IEN of the user in the NEW PERSON file (#200)
2	FN		Family Name	
3	ST		Given Name	
4	ST		Second and further given names or initials thereof	
5	ST		Suffix (e.g., JR or III)	
6	ST		Prefix (e.g., DR)	
7	IS	0360	Degree (e.g., MD)	N/A
8	IS	0297	Source Table	N/A
9	HD		Assigning Authority	N/A
10	ID	0200	Name Type Code	N/A

11	ST		Identifier Check Digit	N/A
12	ID	0061	Code identifying the check digit scheme employed	N/A
13	IS		Identifier Type Code	Provider Class Name
14	HD		Assigning Facility	N/A
15	ID	0465	Name Representation Code	N/A
16	CE	0448	Name Context	N/A
17	DR		Name Validity Range	N/A
18	ID	0444	Name Assembly Order	N/A

Definition:	This field identifies the provider. It is populated in the following cases only:	
	Laboratory Data:	Technician who performed the analysis: `<User IEN>-<Station Number>^<Last Name>^<First Name>^…`
	Outpatient:	Procedure Provider and the Provider's Class Name: `<User IEN>^^^^^^^^^^^^^<Provider Class Name>`
Example:	**`2177^^^^^^^^^^^^^PHYSICIAN`**	

D.10.1.15 OBX-17 Observation Method

SEQ	DT	TBL#	Component Name	CCR
1	ST	0005	Identifier	
2	ST		Text	
3	ST		Name of Coding System	
4	ST		Alternate Identifier	N/A
5	ST		Alternate Text	N/A
6	ST		Name of Alternate Coding System	N/A

Definition:	This field is populated in the following cases only:	
	Laboratory Data:	Observation Method

		<Workload Suffix Code>^<Name>**^99VA64_2**
Example:	**.3112^CHEM 1^99VA64_2**	

D.10.1.16 OBX-19 Date/Time of the Analysis

SEQ	DT	TBL#	Component Name	CCR
1	ST	0005	Identifier	

Definition:	This field is populated in the following cases only:	
	Immunization:	Visit Date/Time
	Skin Test:	Visit Date/Time
Example:	**200502101015-0800**	

D.10.2 Sample OBX Segments

D.10.2.1 Allergy

```
OBX|1|FT|INGR^Ingredients^VA080||Drug ingredients text||||||F
OBX|2|FT|CLAS^Drug Class^VA080||Drug Class Text||||||F
OBX|3|FT|RCTS^Reactions^VA080||Reactions Text||||||F|20021203
```

D.10.2.2 Autopsy

```
OBX|1|FT|AUCD^Clinical Diagnosis^VA080||Text Line #1\.br\Text
Line #2||||||F
OBX|2|FT|AUPD^Pathological Diagnosis^VA080||Text||||||F
```

D.10.2.3 Cytopathology

```
OBX|1|FT|SPEC^Specimen^VA080||BLADDER WASH||||||F
OBX|2|FT|BCH^Brief clinical History^VA080||HX BLADDER CA||||||F
```

```
OBX|3|FT|MICRO^Microscopic Examination^VA080||CLASS I (Absence
of atypical cells.)|||||| F
```

D.10.2.4 Inpatient

```
OBX|1|FT|INAD^Admitting Diagnosis^VA080||309.4||||||F
OBX|2|FT|INPRI^Primary Dis Diagnosis^VA080||204.9||||||F
OBX|3|FT|INDIS^Discharge Diagnosis^VA080||301.2||||||F
OBX|4|FT|INBED^Bedsection Diagnosis^VA080||301.3~303.2|Bed
Section|||||F|199504151100-0600||199404151100-0600
OBX|5|FT|INSURG^Surgical Procedures^VA080||84.3~34.3||||||F||
|199504151100-0600
OBX|6|FT|INOTR^Other Diagnosis^VA080||83.1~93.1|Bed
Section|||||F|||199504151100-0600
```

D.10.2.5 Immunization

```
OBX|2||^TETANUS DIPTHERIA (TD-
ADULT)||^0|||||||||20000315|||||200003151100-0400
```

D.10.2.6 IV

```
OBX|1|FT|ADD^Additive^VA080||Addative text||300||||F
OBX|2|FT|SOL^Solution^VA080||Solution text||300ml||||F
OBX|3|FT|OTPR^Other Print info.^VA080||Other print text||||||F
```

D.10.2.7 Laboratory Data

```
OBX|1||777-3^PLATELETS:NCNC:PT:BLD:QN:AUTOMATED COUNT^LN
^85570.0000^Platelet Count Whole Blood^99VA64||3.6|g/dL|3.3-
4.8||||F||2|20020129082501-0700|612GF^MARTINEZ O PC/CREC^99VA4
|617-VA612GF^
OBX|2||LABC|LCOMM|Lab Comments go here||||||F
OBX|3||777-3^PLATELETS:NCNC:PT:BLD:QN:AUTOMATED COUNT^LN
^85570.0000^Platelet Count Whole Blood^99VA64|PRICE|300||||||F
|||200502281000-0800|640^PALO ALTO HEALTH CARE SYSTEM - PALO
ALTO DIVSION^99VA4|2785-640^DEVINZI^LARCY|.3112^CHEM 1^99VA64_2|
```

D.10.2.8 Med. Proc. (EKG)

```
OBX|1|FT|INT^Interpretation^VA080|CHANGES OR SERIAL|RECOMMEND
CLINICAL CORRELATION||||||F
OBX|2|FT|AUTO^Auto Instrument^VA080||This is the Auto-Instrument
Diagnosis, which is a free text word processing field||||||F
```

D.10.2.9 Microbiology

```
OBX|1|FT|BACT^Bact^VA080||Bact Remarks||||||F
OBX|2|FT|GRAM^Gram Stain^VA080||Gram Stain Text||||||F
OBX|3|FT|ORGC^Org Comment^VA080||Org Comment||||||F
OBX|4|FT|ORG^Organism^VA080||Organism Comment||||||F
OBX|5|FT|ORGQ^Quantitiy^VA080||Organism Quantity||||||F
OBX|6|FT|PAR^Parasite^VA080||Parasite Text|T|||||F
OBX|7|FT|PARQ^Quantity^VA080||Parasite Quantity Text||||||F
OBX|8|FT|PARC^Comment^VA080||Parasite Comment Text||||||F
OBX|9|FT|PARP^Parasite Remark^VA080||Parasite Remark||||||F
OBX|10|FT|COMP^Specimen Comment^VA080||Specimen Comment||||||F
```

D.10.2.10 Outpatient

```
OBX|1|FT|OCPT^Procedures^VA080||93455||||||F||||
|2177^^^^^^^^^^^^PHYSICIAN
OBX|2|FT|OICD9^Diagnosis^VA080||309.2||||||F
```

D.10.2.11 Problem List

```
OBX|1|FT|PRVN^Provider Narrative^VA080||Mood Disorder in
conditions classified elsewhere (ICD-9-CM 293.83)||||||F
OBX|2|FT|EXPR^Expression^VA080||Unresolved||||||F
OBX|2|FT|NOTE^Note Narrative^VA080||Note goes here||||||F
```

D.10.2.12 Radiology

```
OBX|1|FT|RT^Report Text^VA080||This is where the report test
goes||||||F
OBX|2|FT|IT^Impression Text^VA080||This is where the impression
text goes||||||F
OBX|3|FT|ACH^Additional Clinical History^VA080||This is where
the additional clinical information goes||||||F
```

D.10.2.13 Skin Test

```
OBX|1||^PPD||N^2|||||||||20010518|||||200105181015-0400
```

D.10.2.14 Surgical Pathology

```
OBX|1|FT|SPEC^Specimen^VA080||This is the specimen text||||||F
OBX|2|FT|BCH^Brief clinical History^VA080||Clinical history
text||||||F
OBX|3|FT|PDIAG^Preoperative Diagnosis^VA080||Preoperative
diagnosis text||||||F
```

```
OBX|4|FT|OF^Operative Findings^VA080||Operative findings
text||||||F
OBX|5|FT|POPDIAG^Postoperative Diagnosis^VA080||Preoperative
text||||||F
OBX|6|FT|GDESC^Gross Decription^VA080||Gross description
text||||||F
OBX|7|FT|MDESC^Microscopic Description^VA080||Microscopic
description text||||||F
OBX|8|FT|SPDIAG^Surgical Pathology Diagnosis^VA080||Surgical
pathology text||||||F
OBX|9|FT|ICD9^ICD9^VA080||304.6||||||F
```

D.10.2.15 Vitals

```
OBX|1|FT|BP^Blood Pressue^VA080|5853632|136/72\S\SITTING\S\L
ARM;SITTING;CUFF;ADULT||||||F|||20050228091501-0800
OBX|2|FT|T^Tempreture^VA080|5853636|98.2\S\\S\ORAL|36.8|||||F
|||20050228091501-0800
OBX|3|FT|R^Respiration^VA080|5853635|13\S\\S\SPONTANEOUS||||||F
|||200502280915-0800
OBX|4|FT|P^Pulse^VA080|5853634|76\S\\S\RADIAL;PALPATED||||||F
|||20050228091501-0800
OBX|5|FT|PN^Pain^VA080|5853633|0\S\\S\||||||F|||20050228091501-
0800
OBX|6|FT|WT^Weight^VA080|5844022|195.7\S\\S\|88.95|27||||F
|||200502281300-0800
```

D.11 ORC – Common Order Segment

Table 41 – Common Order Segment

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
1	2	ID	R	N	0119	Order Control	See Notes
2	22	EI	C			Placer Order Number	See Notes
3	22	EI	C			Filler Order Number	N/A
4	22	EI	O			Placer Group Number	N/A
5	2	ID	O	N	0038	Order Status	See Notes
6	1	ID	O		0121	Response Flag	N/A
7	200	TQ	O	Y		Quantity/Timing	N/A
8	200	CM	O			Parent	N/A
9	26	TS	O			Date/Time of Transaction	See Notes

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
10	250	XCN	O	Y		Entered By	N/A
11	250	XCN	O	Y		Verified By	N/A
12	250	XCN	O	Y		Ordering Provider	See Notes
13	80	PL	O			Enterer's Location	N/A
14	250	XTN	O	Y/2		Call Back Phone Number	N/A
15	26	TS	O			Order Effective Date/Time	See Notes
16	250	CE	O			Order Control Code Reason	See Notes
17	250	CE	O			Entering Organization	See Notes
18	250	CE	O			Entering Device	N/A
19	250	XCN	O	Y		Action By	N/A
20	250	CE	O		0339	Advanced Beneficiary Notice Code	N/A
21	250	XON	O	Y		Ordering Facility Name	N/A
22	250	XAD	O	Y		Ordering Facility Address	N/A
23	XTN	O	Y		XTN	Ordering Facility Phone Number	N/A
24	XAD	O	Y		XAD	Ordering Provider Address	N/A
25	CWE	O	N		CWE	Order Status Modifier	N/A

D.11.1 Field Definitions

D.11.1.1 ORC-1 Order Control

Definition:	This field determines the function of the order segment. For this interface the code will be set to indicate results follow.
Example:	**NW**

D.11.1.2 ORC-2 Placer Order Number

SEQ	DT	TBL#	Component Name	CCR
1	ST		Entity Identifier	Number
2	IS		Namespace ID	Type
3	ST		Universal ID	N/A

4	ID		Universal ID Type	N/A

Definition:	This field contains an order number associated with the pharmacy data to follow.	
	Inpatient:	<Order Number>**^IP**
	Outpatient:	<Prescription Number>**^OP**
	Non-VA Meds:	<52.2 IEN>^**NVA**
Example:	**1000000429^OP**	

D.11.1.3 ORC-5 Order Status

Definition:	This field contains the status of the order.	
	Inpatient:	N/A
	Outpatient:	N/A
	Non-VA Meds:	[???]**^IP** (Active) [???]**^DC** (Discontinued)
Example:	**[???]^IP** **[???]^DC**	

D.11.1.4 ORC-9 Date/Time of Transaction

Definition:	This field is populated in the following cases only:	
	Outpatient:	Release Date/Time
	Non-VA Meds:	Documented Date/Time
Format:	YYYYMMDD[hhmm[ss]] [+|-zzzz]	
Example:	**20041006**	

D.11.1.5 ORC-12 Ordering Provider

SEQ	DT	TBL#	Component Name	CCR

SEQ	DT	TBL#	Component Name	CCR
1	ST		ID Number	IEN of the user in the NEW PERSON file (#200)
2	FN		Family Name	N/A
3	ST		Given Name	N/A
4	ST		Second and further given names or initials thereof	N/A
5	ST		Suffix (e.g., JR or III)	N/A
6	ST		Prefix (e.g., DR)	N/A
7	IS	0360	Degree (e.g., MD)	N/A
8	IS	0297	Source Table	N/A
9	HD		Assigning Authority	N/A
10	ID	0200	Name Type Code	N/A
11	ST		Identifier Check Digit	N/A
12	ID	0061	Code identifying the check digit scheme employed	N/A
13	IS		Identifier Type Code	Provider Class Name
14	HD		Assigning Facility	N/A
15	ID	0465	Name Representation Code	N/A
16	CE	0448	Name Context	N/A
17	DR		Name Validity Range	N/A
18	ID	0444	Name Assembly Order	N/A

Definition:	This field identifies the individual responsible for the request. Names are not used to ensure data protection.
Format:	`Documented By IEN^^^^^^^^^^^^PROVIDER CLASS`
Example:	**`2177^^^^^^^^^^^^PHD`**

D.11.1.6 ORC-15 Order Effective Date/Time

Definition:	This field contains the order start date/time.
Format:	`YYYYMMDD[hhmm[ss]] [+|-zzzz]`

Example:	**200503140944-0800**

D.11.1.7 ORC-16 Order Control Code Reason

SEQ	DT	TBL#	Component Name	CCR
1	ST	0005	Identifier	N/A
2	ST		Text	N/A
3	ST		Name of Coding System	N/A
4	ST		Alternate Identifier	N/A
5	ST		Alternate Text	**NEW**
6	ST		Name of Alternate Coding System	N/A

Definition:	This field identifies the reason for the order. For this interface, it will be set to new.
Value:	**^^^^NEW**

D.11.1.8 ORC-17 Entering Organization

SEQ	DT	TBL#	Component Name	CCR
1	ST	0005	Identifier	Station Number
2	ST		Text	Institution Name
3	ST		Name of Coding System	**99VA64**
4	ST		Alternate Identifier	N/A
5	ST		Alternate Text	N/A
6	ST		Name of Alternate Coding System	N/A

Definition:	This field distinguishes the station where the order was made.
Format:	**Station Number^Station Name^99VA4**
Value:	**499^HINES OIFO^99VA4**

D.11.2 Sample ORC Segments

D.11.2.1 Inpatient

```
ORC|NW|7338989V2726709^IP|||||||||43882^^^^^^^^^^^RESIDENT||
|200503140944-0800|^^^^NEW|640^PALO ALTO HCS^99VA4
```

D.11.2.2 Outpatient

```
ORC|NW|5666184^OP||||||20040517|||7114^^^^^^^^^^^NURSE
PRACTITIONER|||20040507|^^^^NEW|640^PALO ALTO HCS^99VA4
```

D.11.2.3 Non-VA Meds

```
ORC|NW|1^NVA|||IP||||20070210150448-
0500|||2229^^^^^^^^^^^^PHYSICIAN||||^^^^NEW|442^CHEYENNE
VAMC^99VA4
```

D.12 PID – Patient ID Segment

Table 42 – Patient ID Segment

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
1	4	SI	O			Set ID - PID	See Notes
2	20	CX	B			Patient ID	N/A
3	250	CX	R	Y		Patient Identifier List	See Notes
4	20	CX	B	Y		Alternate Patient ID - PID	N/A
5	250	XPN	R	Y		Patient Name	See Notes
6	250	XPN	O	Y		Mother's Maiden Name	N/A
7	26	TS	O			Date/Time of Birth	See Notes
8	1	IS	O		0001	Sex	See Notes
9	250	XPN	O	Y		Patient Alias	N/A
10	250	CE	O	Y	0005	Race and Collection Method	See Notes
11	250	XAD	O	Y		Patient Address	See Notes
12	4	IS	B		0289	County Code	N/A
13	250	XTN	O	Y		Phone Number - Home	N/A
14	250	XTN	O	Y		Phone Number - Business	N/A
15	250	CE	O		0296	Primary Language	N/A
16	250	CE	O		0002	Marital Status	N/A

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
17	250	CE	O		0006	Religion	N/A
18	250	CX	O			Patient Account Number	N/A
19	16	ST	B			SSN Number - Patient	See Notes
20	25	DLN	O			Driver's License Number - Patient	N/A
21	250	CX	O	Y		Mother's Identifier	N/A
22	250	CE	O	Y	0189	Ethnic Group	See Notes
23	250	ST	O			Birth Place	N/A
24	1	ID	O		0136	Multiple Birth Indicator	N/A
25	2	NM	O			Birth Order	N/A
26	250	CE	O	Y	0171	Citizenship	N/A
27	250	CE	O		0172	Veterans Military Status	N/A
28	250	CE	O		0212	Nationality	N/A
29	26	TS	O			Patient Death Date and Time	See Notes
30	1	ID	O		0136	Patient Death Indicator	N/A
31	1	ID	O		0136	Identity Unknown Indicator	N/A
32	20	IS	O	Y	0445	Identity Reliability Code	N/A
33	26	TS	O			Last Update Date/Time	N/A
34	40	HD	O			Last Update Facility	N/A
35	250	CE	C		0446	Species Code	N/A
36	250	CE	C		0447	Breed Code	N/A
37	80	ST	O			Strain	N/A
38	250	CE	O	2	0429	Production Class Code	N/A

D.12.1 Field Definitions

D.12.1.1 PID-1 Set ID – PID

Definition:	This field contains the number that identifies this transaction. For the first occurrence of the segment, the sequence number shall be one, for the second occurrence, the sequence number shall be two, etc.
Value:	**2**

D.12.1.2 PID-3 Patient Identifier List

SEQ	DT	TBL#	Component Name	CCR
1	ST		ID	
2	ST		Check Digit	
3	ID	0061	Code of the Check Digit Scheme	
4	HD	0363	Assigning Authority	
5	ID	0203	Identifier Type Code	
6	HD		Assigning Facility	
7	DT		Effective Date	N/A
8	DT		Expiration Date	N/A

Definition:	This field contains the list of identifiers (one or more) used by the healthcare facility to uniquely identify a patient (e.g., medical record number, billing number, birth registry, national unique individual identifier, etc.). Currently, the CCR package uses 2 identifiers: `Patient IEN (DFN)` and `Integration Control Number` (if available). `Patient IEN` is concatenated with the station number by the receiver to create a unique identifier.	
	ICN:	`<ICN>^^^USVHA&&0363^NI^VA FACILITY ID&<Station Number>&L`
	Patient EIN:	`<DFN>^^^USVHA&&0363^PI^VA FACILITY ID&<Station Number>&L`
	Registry State:	PID segments in the registry-wide section of the batch utilize the following format of this field: `0^^^^U`
Example:	**`1243567890V123456^^^USVHA&&0363^NI^VA FACILITY ID&640&L`** **`~325500^^^USVHA&&0363^PI^VA FACILITY ID&640&L`**	

D.12.1.3 PID-5 Patient Name

Definition:	Clinical Data:	

	Registry Data:	Despite the fact that the *Patient Name* field is a required one, it is not populated in regular PID segments due to patient privacy and security reasons.
	Registry State:	PID segments in the registry-wide section of the batch have **PSEUDO^PATIENT** string in this field.
Example:	**PSEUDO^PATIENT**	

D.12.1.4 PID-7 Date/Time of Birth

Definition:	This field contains the patient's date of birth.
Format:	YYYYMMDD (either day or both month and day can be zeros)
Example:	**19521027**

D.12.1.5 PID-8 Sex

Definition:	This field contains the patient's sex.	
Tables:	A subset of the HL7 Table 0001 - Administrative sex is used:	
	Value	**Description**
	F	Female
	M	Male
	O	Other
	U	Unknown
Example:	**F**	

D.12.1.6 PID-10 Race and Collection Method

SEQ	DT	TBL#	Component Name	CCR
1	ST	0005	Identifier	
2	ST		Text	
3	ST		Name of Coding System	
4	ST		Alternate Identifier	
5	ST		Alternate Text	
6	ST		Name of Alternate Coding System	

Definition:	This field refers to the patient's race.	
Format:	The *Identifier* has the following format: `<Race ID>-<Collection Method ID>.`	
Tables:	**ID**	**Race**
	1002-5	AMERICAN INDIAN OR ALASKA NATIVE
	2028-9	ASIAN
	2054-5	BLACK OR AFRICAN MAERICAN
	2076-8	NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER
	2106-3	WHITE
	0000-0	DECLINED TO ANSWER
	9999-4	UNKNOWN BY PATIENT
	ID	**Collection method**
	SLF	SELF IDENTIFICATION
	PRX	PROXY
	OBS	OBSERVER
	UNK	UNKNOWN
Example:	**2106-3-SLF^WHITE^0005^2106-3^WHITE^CDC**	

D.12.1.7 PID-11 Patient address

SEQ	DT	TBL#	Component Name	CCR
1	ST		Street Address	N/A
2	ST		Other Designation	N/A
3	ST		City	N/A
4	ST		State or Province	N/A
5	ST		ZIP or Postal Code	
6	ID	0399	Country	N/A
7	ID	0190	Address Type	N/A
8	ST		Other Geographic Designation	N/A
9	IS	0289	County/Parish Code	N/A
10	IS	0288	Census Tract	N/A
11	ID	0465	Address Representation Code	N/A
12	DR		Address Validity Range	N/A

Definition:	This field contains the mailing address of the patient. The CCR HL7 interface sends only the zip code.
Format:	NNNNN[-NNN]
Example:	**^^^^60141-7008**

PID-19 SSN Number - Patient

Definition:	This field contains the encoded social security number of the patient.
Format:	NNNNNNNNNNN[**P**] (11 digits followed by optional indicator of a pseudo-SSN).
Example:	**60129282062**

D.12.1.8 PID-22 Ethnic Group

SEQ	DT	TBL#	Component Name	CCR
1	ST		Identifier	
2	ST		Text	
3	ST		Name of Coding System	
4	ST		Alternate Identifier	
5	ST		Alternate Text	
6	ST		Name of Alternate Coding System	

Definition:	This field refers to the patient's ethnicity.	
Format:	The *Identifier* has the following format: <Ethnicity ID>-<Collection Method ID>.	
Tables:	**ID**	**Ethnicity**
	2135-2	HISPANIC OR LATINO
	2165-5	NOT HISPANIC OR LATINO
	0000-0	DECLINED TO ANSWER
	9999-4	UNKNOWN BY PATIENT
	ID	**Collection method**
	SLF	SELF IDENTIFICATION
	PRX	PROXY

	OBS	OBSERVER
	UNK	UNKNOWN
Example:	**2186-5-SLF^NOT HISPANIC OR LATINO^0189 ^2186-5^NOT HISPANIC OR LATINO^CDC**	

D.12.1.9 PID-29 Patient Death Date and Time

Definition:	This field contains the date on which the patient death occurred.
Format:	YYYYMMDD[hhmm[ss]] [+|-zzzz]
Example:	**195210271230**

D.12.2 Sample PID Segment

```
PID|1||1243567890V123456^^^USVHA&&0363^NI^VA FACILITY
ID&640&L~325500^^^USVHA&&0363^PI^VA FACILITY
ID&640&L||||19630408|M||2106-3-SLF^WHITE^0005^2106-
3^WHITE^CDC|^^^^95123|||||||00007600044| ||2186-5-SLF^NOT
HISPANIC OR LATINO^0189^2186-5^NOT HISPANIC OR
LATINO^CDC|||||||""
```

D.13 PV1 – Patient Visit Segment

Table 43 – Patient Visit Segment

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
1	4	SI	O			Set ID - PV1	See Notes
2	1	IS	R		0004	Patient Class	See Notes
3	80	PL	O			Assigned Patient Location	See Notes
4	2	IS	O		0007	Admission Type	See Notes
5	250	CX	O			Preadmit Number	N/A
6	80	PL	O			Prior Patient Location	See Notes
7	250	XCN	O	Y	0010	Attending Doctor	See Notes
8	250	XCN	O	Y	0010	Referring Doctor	N/A
9	250	XCN	B	Y	0010	Consulting Doctor	N/A
10	3	IS	O		0069	Hospital Service	N/A

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
11	80	PL	O			Temporary Location	N/A
12	2	IS	O		0087	Preadmit Test Indicator	N/A
13	2	IS	O		0092	Re-admission Indicator	N/A
14	6	IS	O		0023	Admit Source	N/A
15	2	IS	O	Y	0009	Ambulatory Status	N/A
16	2	IS	O		0099	VIP Indicator	N/A
17	250	XCN	O	Y	0010	Admitting Doctor	N/A
18	2	IS	O		0018	Patient Type	N/A
19	30	CX	O			Visit Number	See Notes
20	50	FC	O	Y	0064	Financial Class	N/A
21	2	IS	O		0032	Charge Price Indicator	N/A
22	2	IS	O		0045	Courtesy Code	N/A
23	2	IS	O		0046	Credit Rating	N/A
24	2	IS	O	Y	0044	Contract Code	N/A
25	8	DT	O	Y		Contract Effective Date	N/A
26	12	NM	O	Y		Contract Amount	N/A
27	3	NM	O	Y		Contract Period	N/A
28	2	IS	O		0073	Interest Code	N/A
29	1	IS	O		0110	Transfer to Bad Debt Code	N/A
30	8	DT	O			Transfer to Bad Debt Date	N/A
31	10	IS	O		0021	Bad Debt Agency Code	N/A
32	12	NM	O			Bad Debt Transfer Amount	N/A
33	12	NM	O			Bad Debt Recovery Amount	N/A
34	1	IS	O		0111	Delete Account Indicator	N/A
35	8	DT	O			Delete Account Date	N/A
36	3	IS	O		0112	Discharge Disposition	See Notes
37	25	CM	O		0113	Discharged to Location	N/A
38	250	CE	O		0114	Diet Type	N/A
39	2	IS	O		0115	Servicing Facility	N/A
40	1	IS	B		0116	Bed Status	N/A

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
41	2	IS	O		0117	Account Status	N/A
42	80	PL	O			Pending Location	N/A
43	80	PL	O			Prior Temporary Location	N/A
44	26	TS	O			Admit Date/Time	See Notes
45	26	TS	O			Discharge Date/Time	See Notes
46	12	NM	O			Current Patient Balance	N/A
47	12	NM	O			Total Charges	N/A
48	12	NM	O			Total Adjustments	N/A
49	12	NM	O			Total Payments	N/A
50	250	CX	O		0203	Alternate Visit ID	N/A
51	1	IS	O		0326	Visit Indicator	See Notes
52	250	XCN	B	Y	0010	Other Healthcare Provider	N/A

D.13.1 Field Definitions

D.13.1.1 PV1-1 Set ID – PV1

Definition:	This field contains the number that identifies this transaction. For the first occurrence of the segment, the sequence number shall be one, for the second occurrence, the sequence number shall be two, etc.
Example:	**1**

D.13.1.2 PV1-2 Patient Class

Definition:	This field is used to categorize patients by the type of admission.	
Tables:	**Value**	**Description**
	I	Inpatient
	O	Outpatient
Example:	**I**	

D.13.1.3 PV1-3 Assigned Patient Location

SEQ	DT	TBL#	Component Name	CCR

1	IS		Point of Care	Station Number
2	IS		Room	N/A
3	IS		Bed	N/A
4	HD		Facility	N/A
5	IS		Location Status	N/A
6	IS		Person Location Type	Clinic Stop Code (for outpatients)
7	IS		Building	N/A
8	IS		Floor	N/A
9	ST		Location Description	N/A

Definition:	This field identifies the station where the admission took place.	
	• Inpatient:	Station number for inpatient admissions is returned by the $$SITE^VASITE function and its suffix is removed.
	• Outpatient:	IEN of the station for outpatient visits is returned by the ENCEVENT^ PXKENC procedure. The station number is extracted from the corresponding record of the MEDICAL CENTER DIVISION file (#40.8) and stored "as is" (potentially, with the suffix). Outpatient visits also have the *Person Location Type* component set to the clinic stop code.
Format:	• Inpatient:	<Station Number (without suffix)>
	• Outpatient:	<Station Number>**^^^^^**<Clinic Stop Code>
Example:	• Inpatient:	**499**
	• Outpatient:	**499UX^^^^^203**

D.13.1.4 PV1-4 Admission Type

Definition:	• Inpatient:	N/A
	• Outpatient:	Admission Type
Tables:	**Value**	**Description**
	A	Ancillary
	C	Credit Stop

	P	Primary
	O	Occasion of Service
	S	Stop Code
Example:	**P**	

D.13.1.5 PV1-6 Prior Patient Location

SEQ	DT	TBL#	Component Name	CCR
1	IS		Point of Care	N/A
2	IS		Room	N/A
3	IS		Bed	IEN of the bed section (specialty) in the SPECIALTY file (#42.4)
4	HD		Facility	N/A
5	IS		Location Status	N/A
6	IS		Person Location Type	N/A
7	IS		Building	N/A
8	IS		Floor	N/A
9	ST		Location Description	Name of the bed section (the .01 field of the file #42.4)

Definition:	• Inpatient:	Bed section at the time of discharge
	• Outpatient:	N/A
Example:	**^^71^^^^^^LONG TERM PSYCHIATRY(>45 DAYS)**	

D.13.1.6 PV1-7 Attending Doctor

SEQ	DT	TBL#	Component Name	CCR

SEQ	DT	TBL#	Component Name	CCR
1	ST		ID Number	User IEN in the NEW PERSON file (#200)
2	FN		Family Name	N/A
3	ST		Given Name	N/A
4	ST		Second and further given names or initials thereof	N/A
5	ST		Suffix (e.g., JR or III)	N/A
6	ST		Prefix (e.g., DR)	N/A
7	IS	0360	Degree (e.g., MD)	N/A
8	IS	0297	Source Table	N/A
9	HD		Assigning Authority	N/A
10	ID	0200	Name Type Code	N/A
11	ST		Identifier Check Digit	N/A
12	ID	0061	Code identifying the check digit scheme employed	N/A
13	IS		Identifier Type Code	Provider Class Name
14	HD		Assigning Facility	N/A
15	ID	0465	Name Representation Code	N/A
16	CE	0448	Name Context	N/A
17	DR		Name Validity Range	N/A
18	ID	0444	Name Assembly Order	N/A

Definition:	• Inpatient:	N/A
	• Outpatient:	Attending Physician(s). Provider names are not used to ensure the patient privacy protection.
Example:	**2177^^^^^^^^^^^^^PHYSICIAN**	

D.13.1.7 PV1-19 Visit Number

SEQ	DT	TBL#	Component Name	CCR

1	ST		ID	IEN of the Visit
2	ST		Check Digit	N/A
3	ID	0061	Code identifying the check digit scheme employed	N/A
4	HD		Assigning Authority	N/A
5	ID	0203	Identifier Type Code	N/A
6	HD		Assigning Facility	N/A
7	DT		Effective Date	N/A
8	DT		Expiration Date	N/A

Definition:	This field contains the IEN of the visit and can be used to link up with the OBR segment for this visit.	
	• Inpatient:	IEN of the record of the `PTF CLOSE OUT file (#45.84)`
	• Outpatient:	IEN of the record of the `VISIT file (#9000010)`
Example:	**`8710273`**	

D.13.1.8 PV1-36 Discharge Disposition

Definition:	This field contains the…	
	• Inpatient:	Disposition Code of the patient at time of discharge
	• Outpatient:	N/A
Tables:	**Value**	**Description**
	1	REGULAR
	2	NBC OR WHILE ASIH
	3	EXPIRATION 6 MONTH LIMIT
	4	IRREGULAR
	5	TRANSFER
	6	DEATH WITH AUTOPSY
	7	DEATH WITHOUT AUTOPSY
Example:	**4**	

D.13.1.9 PV1-44 Admit Date/Time

Definition:	• Inpatient:	Admission Date/Time
	• Outpatient:	Visit Date/Time
Format:	YYYYMMDD[hhmm[ss]] [+|-zzzz]	
Example:	**200403020815-0800**	

D.13.1.10 PV1-45 Discharge Date/Time

Definition:	• Inpatient:	Discharge Date/Time
	• Outpatient:	N/A
Format:	YYYYMMDD[hhmm[ss]] [+|-zzzz]	
Example:	**200403020815-0800**	

D.13.1.11 PV1-51 Visit Indicator

Definition:	• Inpatient:	N/A
	• Outpatient:	Indicates if the visit has been deleted
Tables:	**Value**	**Description**
	0	Active
	1	Deleted
Example:	**0**	

D.13.2 Sample PV1 Segment

```
PV1|1|O|640^^^^^408|P|||10935^^^^^^^^^^^PHYSICIAN||||||||||
|8710273|||||||||||||||||||||||200403020815-0800||||||0
```

D.14 RXE – Pharmacy/Treatment Encoded Order Segment

Table 44 – Pharmacy/Treatment Encoded Order Segment

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
1	200	TQ	R			Quantity/Timing	See Notes
2	250	CE	R		0292	Give Code	See Notes
3	20	NM	R			Give Amount - Minimum	See Notes

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
4	20	NM	O			Give Amount - Maximum	See Notes
5	250	CE	R			Give Units	See Notes
6	250	CE	O			Give Dosage Form	See Notes
7	250	CE	O	Y		Provider's Administration Instructions	See Notes
8	200	CM	C			Deliver-to Location	N/A
9	1	ID	O		0167	Substitution Status	N/A
10	20	NM	C			Dispense Amount	See Notes
11	250	CE	C			Dispense Units	N/A
12	3	NM	O			Number of Refills	N/A
13	250	XCN	C	Y		Ordering Provider's DEA Number	N/A
14	250	XCN	O	Y		Pharmacist/Treatment Supplier's Verifier ID	N/A
15	20	ST	C			Prescription Number	See Notes
16	20	NM	C			Number of Refills Remaining	N/A
17	20	NM	C			Number of Refills/Doses Dispensed	See Notes
18	26	TS	C			D/T of Most Recent Refill or Dose Dispensed	See Notes
19	10	CQ	C			Total Daily Dose	See Notes
20	1	ID	O		0136	Needs Human Review	See Notes
21	250	CE	O	Y		Pharmacy/Treatment Supplier's Special Dispensing Instructions	See Notes
22	20	ST	C			Give Per (Time Unit)	See Notes
23	6	ST	O			Give Rate Amount	See Notes
24	250	CE	O			Give Rate Units	See Notes
25	20	NM	O			Give Strength	N/A
26	250	CE	O			Give Strength Units	N/A
27	250	CE	O	Y		Give Indication	See Notes
28	20	NM	O			Dispense Package Size	N/A
29	250	CE	O			Dispense Package Size Unit	N/A

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
30	2	ID	O		0321	Dispense Package Method	See Notes
31	250	CE	O	Y		Supplementary Code	N/A

D.14.1 Field Definitions

D.14.1.1 RXE-1 Quantity/Timing

SEQ	DT	TBL#	Component Name	CCR
1	CQ		Quantity	N/A
2	CM		Interval	N/A
3	ST		Duration	N/A
4	TS		Start Date/Time	N/A
5	TS		End Date/Time	N/A
6	ST		Priority	N/A
7	ST		Condition	N/A
8	TX		Text	
9	ID	0472	Conjunction	N/A
10	CM		Order Sequencing	N/A
11	CE		Occurrence Duration	N/A
12	NM		Total Occurrences	N/A

Definition:	This field is used by the pharmacy supplier to express the fully coded version of the drug or treatment timing.	
	• Inpatient:	*Text* element of this field contains the Schedule
	• Outpatient:	""
	• Non-VA Meds:	`dosage^schedule^^start date^discontinued date^^^medication route`
Example:	• Inpatient:	`^^^^^^^Comprehensive Met Panel results from HINES DEVELOPMENT`
	• Outpatient:	""
	• Non-VA Meds:	

D.14.1.2 RXE-2 Give Code

SEQ	DT	TBL#	Component Name	CCR
1	ST		Identifier	NDC
2	ST		Text	VA Product name
3	ST		Name of Coding System	**PSNDF**
4	ST		Alternate Identifier	NDF IEN concatenated with the VA drug class code
5	ST		Alternate Text	Generic Name
6	ST		Name of Alternate Coding System	**99PSD**

Definition:	This field identifies the medical substance provided to the patient.	
Format:	• Non-VA Meds	`NDC code^VA Product Name^PSNDF^NDF IEN concatenated with the VA drug class code^Generic name^99PSD`
Example:	• Non-VA Meds:	
	• Other	**`0002-1615-02^MAGNESIUM SULFATE 50% 1GM/2ML AMP^PSNDF^31-TN406^MAGNESIUM SO4 4MEQ/ML INJ^99PSD`**
Note:	• Non-VA Meds	If no IEN for the DRUG file (#50) exists for the Non-VA med drug, RXE-2 will contain data in RXE-2-5 only: the Orderable Item and Dose Form

D.14.1.3 RXE-3 Give Amount - Minimum

Definition:	This field contains the ordered amount. This field is required but it is not used by the Clinical Case Registries.
Example:	**“”**

D.14.1.4 RXE-4 Give Amount - Maximum

Definition:	• Inpatient:	N/A

	• Outpatient:	Maximum Number of Refills
Example:	**5**	

D.14.1.5 RXE-5 Give Units

SEQ	DT	TBL#	Component Name	CCR
1	ST		Identifier	N/A
2	ST		Text	N/A
3	ST		Name of Coding System	N/A
4	ST		Alternate Identifier	`Drug Unit IEN (IEN of the record of the DRUG UNITS file (#50.607)).`
5	ST		Alternate Text	`Drug Unit Name (value of the .01 field of the DRUG UNITS file (#50.607)).`
6	ST		Name of Alternate Coding System	**99PSU**

Definition:	This field contains the units for the `Give Amount` field.
Example:	**^^^130^MIC/1.5ML^99PSU**

D.14.1.6 RXE-6 Give Dosage Form

Definition:	• Inpatient:	N/A
	• Outpatient:	Release Date/Time
Format:	`YYYYMMDD[hhmm[ss]] [+|-zzzz]`	
Example:	**200403020815-0800**	

D.14.1.7 RXE-7 Provider's Administration Instructions

SEQ	DT	TBL#	Component Name	CCR

SEQ	DT	TBL#	Component Name	CCR
1	ST		Identifier	N/A
2	ST		Text	SIG
3	ST		Name of Coding System	N/A
4	ST		Alternate Identifier	N/A
5	ST		Alternate Text	N/A
6	ST		Name of Alternate Coding System	N/A

Definition:	• Inpatient:	N/A
	• Outpatient:	Ordering provider's instructions to the person administering the drug. This field corresponds to the SIG, and it is free text.
	• Non-VA Meds:	
Format:	`^Disclaimer text` (Limited to 4000 characters)	
Example:	**`^APP 1 PATCH TO SKIN QAM AND REMOVE HS (TO REPLACE NITROGLYCERIN 6.5MG SA CAP)`**	

D.14.1.8 RXE-10 Dispense Amount

Definition:	• Inpatient:	N/A
	• Outpatient:	This field contains the amount dispensed. Valid entries are between 1 and 99999999 with up to 2 decimal places allowed.
Format:	`NNNNNNNN[.N[N]]`	
Example:	**`900.75`**	

D.14.1.9 RXE-15 Prescription Number

Definition:	• Inpatient:	N/A
	• Outpatient:	Refill Indicator
	• Non-VA Meds:	CPRS order number
Tables:	**Value**	**Description**
	1	Refill
	2	Partial
Example:	**`1`**	

D.14.1.10 RXE-17 Number of Refills/Doses Dispensed

Definition:	• Inpatient:	N/A
	• Outpatient:	Refill Number
Example:	**3**	

D.14.1.11 RXE-18 D/T of Most Recent Refill or Dose Dispensed

Definition:	• Inpatient:	Last date/time when the dose should be given (stop date/time)
	• Outpatient:	Date/time when the most recent fill/refill was dispensed (fill date/time)
Format:	`YYYYMMDD[hhmm[ss]] [+|-zzzz]`	
Example:	**`200403020815-0800`**	

D.14.1.12 RXE-19 Total Daily Dose

SEQ	DT	TBL#	Component Name	CCR
1	NM		Quantity	
2	CE		Units	N/A

Definition:	• Inpatient:	N/A
	• Outpatient:	Total Daily Dose. Valid entries range from 1 to 90.
Example:	**15**	

D.14.1.13 RXE-20 Needs Human Review

Definition:	• Inpatient:	N/A
	• Outpatient:	Indicator of whether the drug has been transmitted to CMOP
Example:	**Y**	

D.14.1.14 RXE-21 Pharmacy/Treatment Supplier's Special Dispensing Instructions

SEQ	DT	TBL#	Component Name	CCR

SEQ	DT	TBL#	Component Name	CCR
1	ST		Identifier	
2	ST		Text	N/A
3	ST		Name of Coding System	N/A
4	ST		Alternate Identifier	N/A
5	ST		Alternate Text	N/A
6	ST		Name of Alternate Coding System	N/A

Definition:	• Inpatient:	Medication Route
	• Outpatient:	Clinic Stop Code
	• Non-VA Meds:	Pharmacy/Treatment Supplier's Special Dispensing Instructions
Format:	• Non-VA Meds:	`Clinic Stop Code^^^Clinic IEN & Clinic Name`
Example:	• Inpatient:	**`Oral`**
	• Outpatient:	**`208`**
	• Non-VA Meds:	

D.14.1.15 RXE-22 Give Per (Time Unit)

Definition:	• Inpatient:	N/A
	• Outpatient:	Last Dispensed Date/Time
Format:	`YYYYMMDD[hhmm[ss]] [+|-zzzz]`	
Example:	**`200403020815-0800`**	

D.14.1.16 RXE-23 Give Rate Amount

Definition:	• Inpatient:	N/A
	• Outpatient:	Unit Cost
Example:	**`30.45`**	

D.14.1.17 RXE-24 Give Rate Units

SEQ	DT	TBL#	Component Name	CCR

SEQ	DT	TBL#	Component Name	CCR
1	ST		Identifier	
2	ST		Text	N/A
3	ST		Name of Coding System	N/A
4	ST		Alternate Identifier	N/A
5	ST		Alternate Text	N/A
6	ST		Name of Alternate Coding System	N/A

Definition:	• Inpatient:	Units per Dose. Valid entries range from 0 to 30, with up to 2 decimal places.
	• Outpatient:	N/A
Format:	NN[.N[N]]	
Example:	**12.25**	

D.14.1.18 RXE-27 Give Indication

SEQ	DT	TBL#	Component Name	CCR
1	ST		Identifier	
2	ST		Text	
3	ST		Name of Coding System	N/A
4	ST		Alternate Identifier	N/A
5	ST		Alternate Text	N/A
6	ST		Name of Alternate Coding System	N/A

Definition:	• Inpatient:	N/A
	• Outpatient:	Patient Status
Example:	**6^OTHER FEDERAL**	

D.14.1.19 RXE-30 Dispense Package Method

Definition:	• Inpatient:	N/A

	• Outpatient:	Mail/Window
Tables:	**Value**	**Description**
	AD	Automatic Dispensing – Mail
	TR	Traditional – Window
Example:	**TR**	

D.14.2 Sample RXE Segments

D.14.2.1 Inpatient

```
RXE|^^^^^^^QID PRN|17478-0216-12^NAPHAZOLINE HCL 0.1%
SOLN,OPH^PSNDF^900-OP800^NAPHAZOLINE HCL 0.1% OPH
SOLN^99PSD|""||||||||||||||200505301100-0800|||BOTH EYE|||1
```

D.14.2.2 Outpatient

```
RXE|""|00056-0510-30^EFAVIRENZ 600MG TAB^PSNDF^3528-AM800
^EFAVIRENZ 600MG TAB^99PSD|""|6|^^^20^MG^99PSU|20050302|^TAKE
ONE TABLET BY MOUTH EVERY DAY|||30|||||1||4|20050228|30|Y|324
|200503021422-0800|8.0047||||3^SC LESS THAN 50%|||AD
```

D.14.2.3 Non-VA Meds

```
RXE|30 MILLILITERS^EVERY DAY AS NEEDED^^20070101^20070610083028-
0500^^^MOUTH|00395-1670-16^MILK OF MAGNESIA^PSNDF^2206-
GA108^MILK OF MAGNESIA^99PSD|||||**IF NO IMPROVEMENT IN 12 HOURS
CALL MD**|||||||3359826||||||323^^^1175&HBPC–PHARMACY
```

D.15 ZRD – Rated Disabilities Segment

Table 45 – Rated Disabilities Segment

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
1	4	SI	R			Set ID – ZRD	See Notes
2	4	CE	R			Disability Condition	See Notes
3	3	NM	R			Disability %	See Notes
4	1	IS	O		VA001	Service Connected	See Notes
5	30	ST	O			Service Connected Conditions	N/A
6	3	NM	O			Percentage	N/A
7	1	IS	O		0136	Service Dental Injury	N/A

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
8	1	IS	O		0136	Service Teeth Extracted	N/A
9	8	DT	O			Date of Dental Treatment	N/A
10	100	ST	O			Condition	N/A
11	8	DT	O			Date Condition First Noted	N/A

D.15.1 ZRD-1 Set ID – ZRD

Definition:	This field contains the number that identifies this transaction. For the first occurrence of the segment, the sequence number shall be one, for the second occurrence, the sequence number shall be two, etc.
Example:	**2**

D.15.2 ZRD-2 Disability Condition

SEQ	DT	TBL#	Component Name	CCR
1	ST		Identifier	DX Code
2	ST		Text	Condition Name
3	ST		Name of Coding System	N/A
4	ST		Alternate Identifier	N/A
5	ST		Alternate Text	N/A
6	ST		Name of Alternate Coding System	N/A

Definition:	This field holds the disability condition for this patient.
Code	See the DISABILITY CONDITION file (#31) for possible values of the *DX Code* and *Condition Name*. Some examples are provided below:

Code	Condition Name
5000	OSTEOMYELITIS
5001	BONE DISEASE
5002	RHEUMATOID ARTHRITIS
5003	DEGENERATIVE ARTHRITIS
5004	ARTHRITIS

Example:	**5002^RHEUMATOID ARTHRITIS**

D.15.3 ZRD-3 Disability %

Definition:	This field holds the percentage at which the VA rated this disability for this patient.
Format:	Values range from 0 to 100.
Example:	**45**

D.15.4 ZRD-4 Service Connected

Definition:	This field indicates if the disability is service connected.	
Code	**Value**	**Description**
	0	Not Service Connected
	1	Service Connected
Example:	**1**	

D.15.5 Sample ZRD Segment

```
ZRD|1|7709^HODGKINS DISEASE|100|1
```

D.16 ZSP – Service Period Segment

Table 46 – Service Period Segment

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
1	4	SI	R			Set ID – ZSP	See Notes
2	1	ID	R		VA001	Service Connected?	See Notes
3	3	NM	O			Service Connected Percentage	See Notes
4	2	IS	O		VA011	Period of Service	See Notes
5	1	ST	O			Vietnam Service Indicated	See Notes
6	1	ID	O		VA001	Permanent & Total Disability	See Notes
7	1	ID	O		VA001	Unemployable	See Notes
8	26	TS	O			SC Award Date	See Notes

D.16.1 Field Definitions

D.16.1.1 ZSP-1 Set ID – ZSP

Definition:	This field holds the Set ID. The set ID is 1 by default.
Example:	**1**

D.16.1.2 ZSP-2 Service Connected?

Definition:	This field indicates if the patient condition is service connected.	
Code	**Value**	**Description**
	0	Not Service Connected
	1	Service Connected
Example:	**0**	

D.16.1.3 ZSP-3 Service Connected Percentage

Definition:	This field holds the percentage of service connection.
Format:	Values range from 0 to 100.
Example:	**60**

D.16.1.4 ZSP-4 Period of Service

Definition:	This field holds the period of service that best describes the patient.	
Tables:	**Value**	**Description**
	0	KOREAN
	1	WORLD WAR I
	2	WORLD WAR II
	3	SPANISH AMERICAN
	4	PRE-KOREAN
	5	POST-KOREAN
	6	OPERATION DESERT SHIELD
	7	VIETNAM ERA
	8	POST-VIETNAM
	9	OTHER OR NONE
		...
	Y	CAV/NPS
	N	MERCHANT MARINE

Example:	**9**

D.16.1.5 ZSP-5 Vietnam Service Indicated

Definition:	This field indicates if the patient served in Vietnam.	
Tables:	**Value**	**Description**
	""	
	N	No
	U	Unknown
	Y	Yes
Example:	**N**	

D.16.1.6 ZSP-6 Permanent & Total Disability

Definition:	This field indicates if the patient is permanently and totally disabled due to a service-connected condition.	
Tables:	**Value**	**Description**
	0	Not P&T Disabled
	1	P&T Disabled
Example:	**0**	

D.16.1.7 ZSP-7 Unemployable

Definition:	This field indicates if the patient is unemployable due to a service connected condition.	
Tables:	**Value**	**Description**
	0	Employable
	1	Unemployable
Example:	**1**	

D.16.1.8 ZSP-8 SC Award Date

Definition:	This field contains the date on which the service connection is effective. If no date has been entered, the null string will be sent.
Format:	YYYYMMDD
Example:	**19761205**

D.16.2 Sample ZSP Segment

```
ZSP|1|1|30|8|""|0|0|19700325
```

D.17 ZIN – Purchased Care Inpatient Segment

Table 47 – Inpatient Segment

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
1	10	NM	R			Key	See Notes
2	8	DT	O			Treatment "From" Date	See Notes
3	8	DT	O			Treatment "To" Date	See Notes
4	2	NM	O			Discharge Type Code	See Notes
5	9	ST	O			Billed Charges	See Notes
6	8	ST	O			Amount Paid	See Notes
7	8	DT	R			Date Finalized	See Notes
8	30	ST	O			Discharge DRG	See Notes
9	8	DT	O			Date of Admission	See Notes
10	8	DT	O			Date of Discharge	See Notes
11	5	NM	O			Covered Days	See Notes
12	7	ST	O			ICD 1	See Notes
13	7	ST	O			ICD 2	See Notes
14	7	ST	O			ICD 3	See Notes
15	7	ST	O			ICD 4	See Notes
16	7	ST	O			ICD 5	See Notes
17	6	ST	O			Procedure 1	See Notes
18	6	ST	O			Procedure 2	See Notes
19	6	ST	O			Procedure 3	See Notes
20	6	ST	O			Procedure 4	See Notes
21	6	ST				Procedure 5	See Notes

D.17.1 Field Definitions

D.17.1.1 ZIN-1 Key

Definition:	This is the IEN in the FEE BASIS INVOICE file (#162.5). This is a unique key representing the inpatient record for the patient.
Example:	**1567**

D.17.1.2 ZIN-2 Treatment "From" Date

Definition:	This is the TREATMENT FROM DATE (#5) in the FEE BASIS INVOICE file (#162.5). This is the starting date for the invoice.
Example:	**20110228**

D.17.1.3 ZIN-3 Treatment "To" Date

Definition:	This is the TREATMENT TO DATE (#6) in the FEE BASIS INVOICE file (#162.5). This is the ending date for the invoice.
Example:	**20110228**

D.17.1.4 ZIN-4 Discharge Type Code

Definition:	This is the DISCHARGE TYPE CODE (#6.5) in the FEE BASIS INVOICE file (#162.5). It is a pointer to the FEE BASIS DISPOSITION CODE file (#162.6). This is the type of discharge associated with the invoice.	
Code:	**Value**	**Description**
	1	TO HOME OR SELF CARE
	2	TO ANOTHER SHORT-TERM FACILITY
	3	TO SKILLED NURSING FACILITY
	4	TO INTERMEDIATE NURSING FACILITY
	5	TO ANOTHER TYPE OF FACILITY
	6	TO HOME FOR HOME HEALTH SERVICES
	7	LEFT AGAINST MEDICAL ADVICE
	8	DIED
	9	STILL A PATIENT
Example:	**4**	

D.17.1.5 ZIN-5 Billed Charges

Definition:	This is the BILLED CHARGES field (#6.6) in the FEE BASIS INVOICE file (#162.5). It is the amount that the VA was initially billed by the vendor for an inpatient stay.
Example:	**1284.91**

D.17.1.6 ZIN-6 Amount Paid

Definition:	This is the AMOUNT PAID field (#8) in the FEE BASIS INVOICE file (#162.5). It is the amount actually paid to the vendor for the service provided.
Example:	**1284.91**

D.17.1.7 ZIN-7 Date Finalized

Definition:	This is the DATE FINALIZED field (#19) in the FEE BASIS INVOICE file (#162.5). It is the date the invoice was vouchered by Fiscal.
Example:	**20110228**

D.17.1.8 ZIN-8 Discharge DRG

Definition:	This is the external value of the DISCHARGE DRG field (#24) in the FEE BASIS INVOICE file (#162.5). It is the grouped DRG.
Example:	**DRG202**

D.17.1.9 ZIN-9 Date of Admission

Definition:	This is the DATE OF ADMISSION field (#3.5) in the VA FORM 10-7078 file (#162.4).
Example:	**20110228**

D.17.1.10 ZIN-10 Date of Discharge

Definition:	This is the DATE OF DISCHARGE field (#4.5) in the VA FORM 10-7078 file (#162.4).
Example:	**20110228**

D.17.1.11 ZIN-11 Covered Days

Definition:	This is the COVERED DAYS field (#54) in the FEE BASIS INVOICE file (#162.5). The number of inpatient days that will be paid.
Example:	**1**

D.17.1.12 ZIN-12 ICD 1

Definition:	This is the ICD1 field (#30) in the FEE BASIS INVOICE file (#162.5). The first valid ICD code associated with this payment.
Example:	303.00

D.17.1.13 ZIN-13 ICD 2

Definition:	This is the ICD2 field (#31) in the FEE BASIS INVOICE file (#162.5). The second valid ICD code associated with this payment.
Example:	303.00

D.17.1.14 ZIN-14 ICD 3

Definition:	This is the ICD3 field (#32) in the FEE BASIS INVOICE file (#162.5). The third valid ICD code associated with this payment.
Example:	303.00

D.17.1.15 ZIN-15 ICD 4

Definition:	This is the ICD4 field (#33) in the FEE BASIS INVOICE file (#162.5). The fourth valid ICD code associated with this payment.
Example:	303.00

D.17.1.16 ZIN-16 ICD 5

Definition:	This is the ICD5 field (#34) in the FEE BASIS INVOICE file (#162.5). The fifth valid ICD code associated with this payment.
Example:	303.00

D.17.1.17 ZIN-17 Procedure 1

Definition:	This is the PROC1 field (#40) in the FEE BASIS INVOICE file (#162.5). The first valid procedure code associated with this payment.
Example:	`94.68`

D.17.1.18 ZIN-18 Procedure 2

Definition:	This is the PROC2 field (#41) in the FEE BASIS INVOICE file (#162.5). The second valid procedure code associated with this payment.
Example:	`94.68`

D.17.1.19 ZIN-19 Procedure 3

Definition:	This is the PROC3 field (#42) in the FEE BASIS INVOICE file (#162.5). The third valid procedure code associated with this payment.
Example:	`94.68`

D.17.1.20 ZIN-20 Procedure 4

Definition:	This is the PROC4 field (#43) in the FEE BASIS INVOICE file (#162.5). The fourth valid procedure code associated with this payment.
Example:	`94.68`

D.17.1.21 ZIN-21 Procedure 5

Definition:	This is the PROC5 field (#44) in the FEE BASIS INVOICE file (#162.5). The fifth valid procedure code associated with this payment.
Example:	`94.68`

D.17.2 Sample ZIN Segment

```
ZIN|36520|20040408|20040409|1|9153.70|6445.16|20040817|DRG202|20
040408|20040409|1|571.2|456.20|456.8|305.1|303.90|42.33|44.43
```

D.18 ZSV – Purchased Care Outpatient Segment

Table 48 – Outpatient Segment

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
1	28	ST	R			Key	See Notes
2	8	DT	O			Date of Treatment	See Notes
3	2	NM	O			Fee Program Code	See Notes
4	5	ST	R			Service Provided (CPT code)	See Notes
5	200	ST	O			Purpose of Visit	See Notes
6	7	ST	O			Primary Diagnosis	See Notes
7	60	ST	O			Place of Service	See Notes

D.18.1 Field Definitions

D.18.1.1 ZSV-1 Key

Definition:	This is a combination of 4 IENs: FEE BASIS PAYMENT file (#162), sub-file #162.01, sub-file #162.02, and #162.03. This is a unique key representing the outpatient record for the patient.
Example:	**4561-1-2-1**

D.18.1.2 ZSV-2 Date of Treatment

Definition:	This is the INITIAL TREATMENT DATE (#.01) in the FEE BASIS PAYMENT file (#162), sub-file #162.02. The date that the treatment/service took place.
Example:	**20110228**

D.18.1.3 ZSV-3 Fee Program Code

Definition:	This is the internal value of the *FEE PROGRAM field (#1.5) in the FEE BASIS PAYMENT file (#162). It is a pointer to the FEE BASIS PROGRAM file (#161.8). This is the Fee Basis program that this payment is related to.	
Code:	**Value**	**Description**
	2	OUTPATIENT
	3	PHARMACY
	4	COMP & PENSION
	5	DENTAL

	6	CIVIL HOSPITAL
	7	CONTRACT NURSING HOME
	8	CHAMPVA
	9	CONTRACT READJUSTMENT COUNSELING
	10	CONTRACT HALFWAY HOUSES
	11	HOME HEALTH SERVICES
	12	OTHER INSTITUTIONAL SERVICES
	13	DIALYSIS
	14	OXYGEN SERVICES
	15	STATE HOME
Example:	**4**	

D.18.1.4 ZSV-4 Service Provided (CPT code)

Definition:	This is the SERVICE PROVIDED field (#.01) in the FEE BASIS PAYMENT file (#162), sub-file #162.03. It is a pointer to the CPT file (#81). It represents the outpatient and ancillary service provided to the Fee Basis patient.
Example:	**74170**

D.18.1.5 ZSV-5 Purpose of Visit

Definition:	This is the PURPOSE OF VISIT field (#16) in the FEE BASIS PAYMENT file (#162), sub-file #162.03. It is the purpose that the veteran received the service provided.
Example:	OPT SERVICES/TREATMENT FOR NSC DISABILITIES

D.18.1.6 ZSV-6 Primary Diagnosis

Definition:	This is the PRIMARY DIAGNOSIS field (#28) in the FEE BASIS PAYMENT file (#162), sub-file #162.03. It is the primary diagnosis of the patient.
Example:	592.0

D.18.1.7 ZSV-7 Place of Service

Definition:	This is the PLACE OF SERVICE field (#30) in the FEE BASIS PAYMENT file (#162), sub-file #162.03. It is where the service was administered to the veteran.
Example:	**1284.91**

D.18.2 Sample ZSV Segment

```
ZSV|2184-169-1-1|20040509||74170|OPT SERVICES/TREATMENT FOR NSC
DISABILITIES|592.0|OUTPATIENT HOSPITAL (22)
```

D.19 ZRX – Purchased Care Drug Segment

Table 49 – Drug Segment

SEQ	LEN	DT	OPT	RP/#	TBL#	Field Name	CCR
1	16	ST	R			Key	See Notes
2	8	ST	O			Prescription Number	See Notes
3	8	DT	O			Date Rx Filled	See Notes
4	45	ST	R			Drug Name	See Notes
5	40	ST	O			Generic Drug Name	See Notes
6	20	ST	O			Drug Strength	See Notes
7	15	ST	O			Drug Quantity	See Notes

D.19.1 Field Definitions

D.19.1.1 ZRX-1 Key

Definition:	This is a combination of 2 IENs: FEE BASIS PHARMACY INVOICE file (#162.1), and sub-file #162.11. This is a unique key representing the drug record for the patient.

Example:	**6543-1**

D.19.1.2 ZRX-2 Prescription Number

Definition:	This is the PRESCRIPTION NUMBER field (#.01) in the FEE BASIS PHARMACY INVOICE file (#162.1), sub-file #162.11.
Example:	**1234567**

D.19.1.3 ZRX-3 Date Rx Filled

Definition:	This is the DATE PRESCRIPTION FILLED field (#2) in the FEE BASIS PHARMACY INVOICE file (#162.1), sub-file #162.11.
Example:	**19931221**

D.19.1.4 ZRX-4 Drug Name

Definition:	This is the DRUG NAME field (#1) in the FEE BASIS PHARMACY INVOICE file (#162.1), sub-file #162.11.
Example:	CONDYLOX

D.19.1.5 ZRX-5 Generic Drug Name

Definition:	This is the GENERIC DRUG field (#9) in the FEE BASIS PHARMACY INVOICE file (#162.1), sub-file #162.11.
Example:	PODOFILOX 0.5% TOP SOLN

D.19.1.6 ZRX-6 Drug Strength

Definition:	This is the STRENGTH field (#1.5) in the FEE BASIS PHARMACY INVOICE file (#162.1), sub-file #162.11.
Example:	0.5%

D.19.1.7 ZRX-7 Drug Quantity

Definition:	This is the QUANTITY field (#1.6) in the FEE BASIS PHARMACY INVOICE file (#162.1), sub-file #162.11.
Example:	**30**

D.19.2 Sample ZRX Segment

```
ZRX|6543-1|1234567|19931221|CONDYLOX|PODOFILOX 0.5% TOP SOLN|0.5%|1
```

D.20 HL7 Tables

Table 50 – HL-7 Tables

Table	Type	Name	Value	Description
0001	**User**	**Administrative sex**	A	Ambiguous
			F	Female
			M	Male
			N	Not applicable
			O	Other
			U	Unknown
0004	**User**	**Patient class**	B	Obstetrics
			C	Commercial Account
			E	Emergency
			I	Inpatient
			N	Not Applicable
			O	Outpatient
			P	Preadmit
			R	Recurring patient
			U	Unknown
0005	**User**	**Race**	1002-5	American Indian or Alaska Native
			2028-9	Asian
			2054-5	Black or African American

Table	Type	Name	Value	Description
			2076-8	Native Hawaiian or Other Pacific Islander
			2106-3	White
			2131-1	Other Race
0008	**HL7**	**Acknowledgment code**	AA	Original mode: Application Accept - Enhanced mode: Application acknowledgment: Accept
			AE	Original mode: Application Error - Enhanced mode: Application acknowledgment: Error
			AR	Original mode: Application Reject - Enhanced mode: Application acknowledgment: Reject
			CA	Enhanced mode: Accept acknowledgment: Commit Accept
			CE	Enhanced mode: Accept acknowledgment: Commit Error
			CR	Enhanced mode: Accept acknowledgment: Commit Reject
0061	**HL7**	**Check digit scheme**	ISO	ISO 7064: 1983
			M10	Mod 10 algorithm
			M11	Mod 11 algorithm
			NPI	Check digit algorithm in the US National Provider Identifier
0078	**User**	**Abnormal Flags**	<	Below absolute low-off instrument scale
			>	Above absolute high-off instrument scale
			A	Abnormal (applies to non-numeric results)
			AA	Very abnormal (applies to non-numeric units, analogous to panic limits for numeric units)
			B	Better--use when direction not relevant
			D	Significant change down

Table	Type	Name	Value	Description
			H	Above high normal
			HH	Above upper panic limits
			I	Intermediate*
			L	Below low normal
			LL	Below lower panic limits
			MS	Moderately susceptible*
			N	Normal (applies to non-numeric results)
			null	No range defined, or normal ranges don't apply
			R	Resistant*
			S	Susceptible*
			U	Significant change up
			VS	Very susceptible*
			W	Worse--use when direction not relevant
0085	**HL7**	**Observation result status codes interpretation**	C	Record coming over is a correction and thus replaces a final result
			D	Deletes the OBX record
			F	Final results; Can only be changed with a corrected result.
			I	Specimen in lab; results pending
			N	Not asked; used to affirmatively document that the observation identified in the OBX was not sought when the universal service ID in OBR-4 implies that it would be sought.
			O	Order detail description only (no result)
			P	Preliminary results
			R	Results entered -- not verified
			S	Partial results
			U	Results status change to final without retransmitting results already sent as “preliminary” (e.g., radiology changes

Table	Type	Name	Value	Description
				status from preliminary to final)
			W	Post original as wrong, e.g., transmitted for wrong patient
			X	Results cannot be obtained for this observation
0103	**HL7**	**Processing ID**	D	Debugging
			P	Production
			T	Training
0125	**HL7**	**Value type**	AD	Address
			CE	Coded Entry
			CF	Coded Element With Formatted Values
			CK	Composite ID With Check Digit
			CN	Composite ID And Name
			CP	Composite Price
			CX	Extended Composite ID With Check Digit
			DT	Date
			ED	Encapsulated Data
			FT	Formatted Text (Display)
			MO	Money
			NM	Numeric
			PN	Person Name
			RP	Reference Pointer
			SN	Structured Numeric
			ST	String Data.
			TM	Time
			TN	Telephone Number
			TS	Time Stamp (Date & Time)
			TX	Text Data (Display)
			XAD	Extended Address
			XCN	Extended Composite Name And

Table	Type	Name	Value	Description
				Number For Persons
			XON	Extended Composite Name And Number For Organizations
			XPN	Extended Person Name
			XTN	Extended Telecommunications Number
0136	**HL7**	**Yes/no indicator**	N	No
			Y	Yes
0155	**HL7**	**Accept/application acknowledgment conditions**	AL	Always
			ER	Error/reject conditions only
			NE	Never
			SU	Successful completion only
0203	**User**	**Identifier type**	AM	American Express
			AN	Account number
			BA	Bank Account Number
			BR	Birth registry number
			BRN	Breed Registry Number
			DI	Diner's Club card
			DL	Driver's license number
			DN	Doctor number
			DR	Donor Registration Number
			DS	Discover Card
			EI	Employee number
			EN	Employer number
			FI	Facility ID
			GI	Guarantor internal identifier
			GN	Guarantor external identifier
			HC	Health Card Number
			JHN	Jurisdictional health number (Canada)
			LN	License number

Table	Type	Name	Value	Description
			LR	Local Registry ID
			MA	Medicaid number
			MC	Medicare number
			MCN	Microchip Number
			MR	Medical record number
			MS	MasterCard
			NE	National employer identifier
			NH	National Health Plan Identifier
			NI	National unique individual identifier
			NNxxx	National Person Identifier where xxx is the ISO table 3166 3-character (alphabetic) country code
			NPI	National provider identifier
			PEN	Pension Number
			PI	Patient internal identifier
			PN	Person number
			PRN	Provider number
			PT	Patient external identifier
			RR	Railroad Retirement number
			RRI	Regional registry ID
			SL	State license
			SR	State registry ID
			SS	Social Security number
			U	Unspecified
			UPIN	Medicare/HCFA's Universal Physician Identification numbers
			VN	Visit number
			VS	VISA
			WC	WIC identifier
			WCN	Workers' Comp Number
			XX	Organization identifier

Table	Type	Name	Value	Description
0207	**HL7**	**Processing mode**	A	Archive
			I	Initial load
			R	Restore from archive
			T	Current processing, transmitted at intervals (scheduled or on demand). This is the default mode (if the value is omitted).
0301	**HL7**	**Universal ID type**	DNS	An Internet dotted name. Either in ASCII or as integers
			GUID	Same as UUID.
			HCD	The CEN Healthcare Coding Scheme Designator. (Identifiers used in DICOM follow this assignment scheme.)
			HL7	Reserved for future HL7 registration schemes
			ISO	An International Standards Organization Object Identifier
			L, M, N	These are reserved for locally defined coding schemes.
			Random	Usually a base64 encoded string of random bits. The uniqueness depends on the length of the bits. Mail systems often generate ASCII string "unique names," from a combination of random bits and system names.
			UUID	The DCE Universal Unique Identifier
			x400	An X.400 MHS format identifier
			x500	An X.500 directory name
0362	**User**	**Sending/receiving facility**	NNN	Station number from the INSTITUTION file (#4) without suffix.
VA001	**Local**	**Yes/No**	0	No
			1	Yes

Appendix Glossary[3]

A	B	C	D	E	F	G	H	I		K	L	M
N	O	P		R	S	T	U	V		X		
0-9												

Control-click character to see entries; missing character means no entries for that character.

Term or Acronym	Description
0 - 9	
508	*See* Section 508

Term or Acronym	Description
A	
AAC	*See* Corporate Data Center Operations**.**
Access Code	With each sign-on to VistA, the user must enter two codes to be recognized and allowed to proceed: the Access Code and Verify Code. The Access Code is assigned by IRM Service and is used by the computer to recognize the user. Each user has a unique access code. The only way this code can be changed is for the IRM Service to edit it. When the code is established by IRM, it is encrypted; that is, it is "scrambled" according to a cipher. The code is stored in the computer only in this encrypted form. Thus, even if the access code is viewed, the viewer cannot determine what the user actually types to tell the computer this code. *See also* Verify Code.
Acquired Immunodeficiency Syndrome (AIDS)	AIDS is a disease of the human immune system caused by the human immunodeficiency virus (HIV). This condition progressively reduces the effectiveness of the immune system and leaves individuals susceptible to opportunistic infections and tumors.
ADPAC	*See* Automated Data Processing Application Coordinator**.**
AIDS	*See* Acquired Immunodeficiency Syndrome**.**
AITC	*See* Austin Information Technology Center
AMIS	*See* Automated Management Information System
Antiretroviral (medications)	Medications for the treatment of infection by retroviruses, primarily HIV. *See also* Highly Active Antiretroviral Therapy.

[3] Document revision for Patch ROR*1.5*10, January 2010, added/expanded many definitions and much explanatory material.

Term or Acronym	Description
API	See Application Program Interface.
Application Program Interface (API)	The interface (calling conventions) by which an application program accesses operating system and other services. An API is defined at source code level and provides a level of abstraction between the application and the kernel (or other privileged utilities) to ensure the portability of the code. An API can also provide an interface between a high level language and lower level utilities and services which were written without consideration for the calling conventions supported by compiled languages. In this case, the API's main task may be the translation of parameter lists from one format to another and the interpretation of call-by-value and call-by-reference arguments in one or both directions. *See also* 11, **Application Program Interfaces.**
ARV	*See* Antiretroviral (medications).
Austin Automation Center (AAC)	*See* Corporate Data Center Operations
Austin Information Technology Center (AITC)	AITC is a recognized, award-winning Federal data center within the Department of Veterans Affairs (VA). It provides a full complement of cost-efficient e-government solutions to support the information technology (IT) needs of customers within the Federal sector. AITC has also implemented a program of enterprise “best practice” initiatives with major vendor partners that ensures customers receive enhanced, value-added IT services through the implementation of new technologies at competitive costs.
Automated Data Processing Application Coordinator (ADPAC)	The ADPAC is the person responsible for planning and implementing new work methods and technology for employees throughout a medical center. ADPACs train employees and assist users when they [Run] into difficulties, and needs to know how all components of the system work. ADPACs maintain open communication with their supervisors and Service Chiefs, as well as their counterparts in Fiscal and Acquisitions and Materiel Management (A&MM), or Information Resource Management (IRM).
Automated Management Information System (AMIS)	The VHA Decision Support System (DSS) is a national automated management information system based on commercial software to integrate data from clinical and financial systems for both inpatient and outpatient care. The commercial software is utilized with interfaces developed to transport data into the system from the Veterans Health Information Systems and Technology Architecture (VistA), the National Patient Care Database (NPCD), the Patient Treatment File (PTF), and various VA financial information systems. The VHA began implementation of DSS in 1994. Full implementation was completed in

Term or Acronym	Description
	1999 and DSS is now used throughout the VA healthcare system.

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Term or Acronym	Description
	B
B-Type Option	In **VistA**, an option designed to be run only by the RPC Broker, and which cannot be run from the menu system.
Borland® Delphi®	*See* Delphi

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Term or Acronym	Description
	C
CCOW	*See* Clinical Context Object Workgroup
CCR	*See* Clinical Case Registries
CDC	*See* Centers for Disease Control and Prevention
CDCO	*See* Corporate Data Center Operations
Center for Quality Management in Public Health (CQM)	CQM, based in the VA Palo Alto Health Care System, functions as part of the VA Public Health Strategic Health Care Group at VA Central Office in Washington, DC. CQM was first established with a primary focus on HIV care; the mission expanded to include Hepatitis C issues in January 2001. In line with the mission of its organizational parent, the CQM mission further expanded to include work on various issues and conditions with public health significance, including operational support and management of data from the Clinical Case Registries (CCR) software.
Centers for Disease Control and Prevention (CDC)	The CDC is one of the major operating components of the United States Department of Health and Human Services. It includes a number of Coordinating Centers and Offices which specialize in various aspects of public health, as well as the National Institute for Occupational Safety and Health (NIOSH). *See* http://www.cdc.gov/about/organization/cio.htm
Center for Quality Management in Public Health (CQM)	CQM, based in the VA Palo Alto Health Care System, functions as part of the VA Public Health Strategic Health Care Group at VA Central Office in Washington, DC. CQM was first established with a primary focus on HIV care; the mission expanded to include Hepatitis C issues in January 2001. In line with the mission of its organizational parent, the CQM mission further expanded to include work on various issues and conditions with public health significance, including operational support and management of data from the Clinical Case Registries (CCR) software.

Term or Acronym	Description
Clinical Case Registries (CCR)	**The Clinical Case Registries (**CCR) application collects data on the population of veterans with certain clinical conditions, namely Hepatitis C and Human Immunodeficiency Virus (HIV) infections.
Clinical Context Object Workgroup (CCOW)	CCOW is an HL7 standard protocol designed to enable disparate applications to synchronize in real-time, and at the user-interface level. It is vendor independent and allows applications to present information at the desktop and/or portal level in a unified way. CCOW is the primary standard protocol in healthcare to facilitate a process called "Context Management." Context Management is the process of using particular "subjects" of interest (e.g., user, patient, clinical encounter, charge item, etc.) to 'virtually' link disparate applications so that the end-user sees them operate in a unified, cohesive way. Context Management can be utilized for both CCOW and non-CCOW compliant applications. The CCOW standard exists to facilitate a more robust, and near "plug-and-play" interoperability across disparate applications. Context Management is often combined with Single Sign On applications in the healthcare environment, but the two are discrete functions. Single Sign On is the process that enables the secure access of disparate applications by a user through use of a single authenticated identifier and password.
Comma-Delimited Values (CDV)	*See* Comma-Separated Values
Comma-Separated Values (CSV)	“Separated” or “delimited” data files use specific characters (delimiters) to separate its values. Most database and spreadsheet programs are able to read or save data in a delimited format. The comma-separated values file format is a delimited data format that has fields separated by the comma character and records separated by newlines. Excel can import such a file and create a spreadsheet from it.
Computerized Patient Record System (CPRS)	A Computerized Patient Record (CPR) is a comprehensive database system used to store and access patients’ healthcare information. CPRS is the Department of Veterans Affairs electronic health record software. The CPRS organizes and presents all relevant data on a patient in a way that directly supports clinical decision making. This data includes medical history and conditions, problems and diagnoses, diagnostic and therapeutic procedures and interventions. Both a graphic user interface version and a character-based interface version are available. CPRS provides a single interface for health care providers to review and update a patient’s medical record, and to place orders, including medications, special procedures, x-rays, patient care nursing orders, diets, and laboratory tests. CPRS is flexible enough to be implemented in a wide variety of settings for a broad spectrum of health care workers, and provides a consistent, event-driven, Windows-

Term or Acronym	Description
	style interface.
Contextor software	Sentillion *Contextor* can be embedded within an application to implement most of CCOW's context participant behaviors. *Contextor* is compatible with any CCOW-compliant context manager and is designed to simplify writing applications that support the CCOW standard. It includes these development environment components: • CCOW-compliant code samples of Windows and Web applications • Development-only version of Sentillion Context Manager • Development tools for simulating and observing the behavior of a context-enabled desktop • Configuration and administration tool
Corporate Data Center Operations (CDCO)	Federal data center within the Department of Veterans Affairs (VA). As a franchise fund, or fee-for-service organization, CDCO-Austin provides cost-efficient IT enterprise solutions to support the information technology needs of customers within the Federal sector. *Formerly* the Austin Automation Center (AAC); *formerly* the Austin Information Technology Center (AITC). *See* http://www.aac.va.gov/index.php.
CPRS	*See* Computerized Patient Record System
CPT	*See* Current Procedural Terminology
CQM	*See* Center for Quality Management in Public Health
CSV	*See* Comma-Separated Values
Current Procedural Terminology (CPT)	CPT® is the most widely accepted medical nomenclature used to report medical procedures and services under public and private health insurance programs. CPT codes describe a procedure or service identified with a five-digit CPT code and descriptor nomenclature. The CPT code set accurately describes medical, surgical, and diagnostic services and is designed to communicate uniform information about medical services and procedures among physicians, coders, patients, accreditation organizations, and payers for administrative, financial, and analytical purposes. The current version is the CPT 2009. *Note:* CPT® is a registered trademark of the American Medical Association.

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Term or Acronym	Description
	D
Database Integration Agreement (DBIA)	**M** code is not "compiled and linked," so any code is open to anyone to call. The same is true for the data. This permits an incredible level of integration between applications, but it is "too open" for some software architects' liking. The VA has instituted Database Integration Agreements to enforce

Term or Acronym	Description
	external policies and procedures to avoid unwanted dependencies.
Data Dictionary	A data structure that stores meta-data, i.e. data about data. The term "data dictionary" has several uses; most generally it is thought of as a set of data descriptions that can be shared by several applications. In practical terms, it usually means a table in a database that stores the names, field types, length, and other characteristics of the fields in the database tables.
DBIA	*See* Database Integration Agreement
Delphi	Delphi® is a software development package, formerly from Borland® and now developed by Embarcadero Technologies.® This is the software that was used to produce the CCR application. *See also* http://www.embarcadero.com/products/delphi
DFN	*See* File Number

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Term or Acronym	Description
E	
Epoetin	Epoetin Alfa is used for treating anemia in certain patients with kidney failure, HIV, or cancer.
Extensible Mark-up Language (XML)	An initiative from the W3C defining an "extremely simple" dialect of SGML suitable for use on the World-Wide Web.
Extract Data Definition	A set of file and field numbers which identify the data that should be retrieved during the extraction process.
Extract Process	This process is run after the update process. This function goes through patients on the local registry and, depending on their status, extracts all available data for the patient since the last extract was run. This process also updates any demographic data held in the local registry for all existing patients that have changed since the last extract. The extract transmits any collected data for the patient to the national database via HL7.

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Term or Acronym	Description
F	
FDA	*See* **Food and Drug Administration**
File Number	In VistA, the local/facility patient record number (patient file internal entry number).
FileMan	FileMan is a set of M utilities written in the late 1970s and early 1980s which allow the definition of data structures, menus and security, reports, and

Term or Acronym	Description
	forms. Its first use was in the development of medical applications for the Veterans Administration (now the Department of Veterans Affairs). Since it was a work created by the government, the source code cannot be copyrighted, placing that code in the public domain. For this reason, it has been used for rapid development of applications across a number of organizations, including commercial products.
File Transfer Protocol (FTP)	FTP is a client-server protocol which allows a user on one computer to transfer files to and from another computer over a network. It is defined in STD 9, RFC 959.
Food and Drug Administration (FDA)	FDA is an agency of the United States Department of Health and Human Services and is responsible for regulating and supervising the safety of foods, dietary supplements, drugs, vaccines, biological medical products, blood products, medical devices, radiation-emitting devices, veterinary products, and cosmetics. The FDA also enforces section 361 of the Public Health Service Act and the associated regulations, including sanitation requirements on interstate travel as well as specific rules for control of disease on products ranging from pet turtles to semen donations for assisted reproductive medicine techniques.
FTP	*See* File Transfer Protocol
Function key	A key on a computer or terminal keyboard which can be programmed so as to cause an operating system command interpreter or application program to perform certain actions. On some keyboards/computers, function keys may have default actions, accessible on power-on. For example, **<F1>** is traditionally the function key used to activate a help system.

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Term or Acronym	Description
	G
Globals	M uses globals, variables which are intrinsically stored in files and persist beyond the program or process completion. Globals appear as normal variables with the caret character in front of the name. For example, the **M** statement… `SET ^A("first_name")="Bob"` …will result in a new record being created and inserted in the file structure, persistent just as a file persists in an operating system. Globals are stored, naturally, in highly structured data files by the language and accessed only as **M** globals. Huge databases grow randomly rather than in a forced serial order, and the strength and efficiency of **M** is based on its ability to handle all this flawlessly and invisibly to the programmer.

Term or Acronym	Description
	For all of these reasons, one of the most common **M** programs is a database management system. FileMan is one such example. **M** allows the programmer much wider control of the data; there is no requirement to fit the data into square boxes of rows and columns.
Graphical User Interface (GUI)	A graphical user interface (or GUI, often pronounced "gooey") is a graphical (rather than purely textual) user interface to a computer. A GUI is a particular case of user interface for interacting with a computer which employs graphical images and widgets in addition to text to represent the information and actions available to the user. Usually the actions are performed through direct manipulation of the graphical elements. A GUI takes advantage of the computer's graphics capabilities to make the program easier to use. *Sources:* http://en.wikipedia.org/wiki/GUI http://www.webopedia.com/TERM/G/Graphical_User_Interface_GUI.html *See also* User Interface
GUI	*See:* Graphical User Interface

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Term or Acronym	Description
	H
HAART	*See* Highly Active Antiretroviral Treatment
Health Level 7 (HL7)	One of several American National Standards Institute (ANSI)–accredited Standards Developing Organizations operating in the healthcare arena. "Level Seven" refers to the highest level of the International Standards Organization's (ISO) communications model for Open Systems Interconnection (OSI)— the application level. The application level addresses definition of the data to be exchanged, the timing of the interchange, and the communication of certain errors to the application. The seventh level supports such functions as security checks, participant identification, availability checks, exchange mechanism negotiations and, most importantly, data exchange structuring. HL7 focuses on the interface requirements of the entire health care organization. Source: http://www.hl7.org/about/index.cfm.
Hep C; HEPC	Hepatitis C; the Hepatitis C Registry
Hepatitis C	A liver disease caused by the hepatitis C virus (HCV). HCV infection sometimes results in an acute illness, but most often becomes a chronic condition that can lead to cirrhosis of the liver and liver cancer. *See* http://www.cdc.gov/hepatitis/index.htm

Term or Acronym	Description
Highly Active Antiretroviral Treatment (HAART)	Antiretroviral drugs are medications for the treatment of infection by retroviruses, primarily HIV. When several such drugs, typically three or four, are taken in combination, the approach is known as highly active antiretroviral therapy, or HAART. The American National Institutes of Health and other organizations recommend offering antiretroviral treatment to all patients with AIDS.
HIV	*See* Human Immunodeficiency Virus
HL7	*See* Health Level 7
HTML	*See* Hypertext Mark-up Language
Human Immunodeficiency Virus (HIV)	HIV is a lentivirus (a member of the retrovirus family) that can lead to acquired immunodeficiency syndrome (AIDS), a condition in humans in which the immune system begins to fail, leading to life-threatening opportunistic infections. HIV is different from most other viruses because it attacks the immune system. The immune system gives our bodies the ability to fight infections. HIV finds and destroys a type of white blood cell (T cells or CD4 cells) that the immune system must have to fight disease. See http://www.cdc.gov/hiv/topics/basic/index.htm.
hypertext	A term coined around 1965 for a collection of documents (or "nodes") containing cross-references or "links" which, with the aid of an interactive browser program, allow the reader to move easily from one document to another.
Hypertext Mark-up Language (HTML)	A hypertext document format used on the World-Wide Web. HTML is built on top of SGML. "Tags" are embedded in the text. A tag consists of a "<", a "directive" (in lower case), zero or more parameters and a ">". Matched pairs of directives, like "<title>" and "</title>" are used to delimit text which is to appear in a special place or style.

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I	

Term or Acronym	Description
ICD-9	*International Statistical Classification of Diseases and Related Health Problems*, ninth edition (commonly abbreviated as "ICD-9") provides numeric codes to classify diseases and a wide variety of signs, symptoms, abnormal findings, complaints, social circumstances and external causes of injury or disease. Every health condition can be assigned to a unique category and given a code, up to six characters long. Such categories can include a set of similar diseases. The "-9" refers to the ninth edition of these codes; the tenth edition has been published, but is not in widespread use at this time. *See also* Current Procedural Terminology
ICN	*See* Integration Control Number
ICR	See Immunology Case Registry
IEN	*See* Internal Entry Number
Immunology Case Registry (ICR)	Former name for Clinical Case Registries HIV (CCR:HIV).
Information Resources Management (IRM)	The service which is involved in planning, budgeting, procurement and management-in-use of VA's information technology investments.
Integration Control Number (ICN)	The national VA patient record number.
Interface	An interface defines the communication boundary between two entities, such as a piece of software, a hardware device, or a user.
Internal Entry Number (IEN)	The number which uniquely identifies each item in the VistA database.
IRM, IRMS	*See* Information Resources Management
iterator	An object or routine for accessing items from a list, array or stream one at a time.

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Term or Acronym	Description
K	
!KEA	Terminal emulation software. No longer in use in VHA; replaced by *Reflection*.

Term or Acronym	Description
Kernel	The VistA software that enables VistA applications to coexist in a standard operating system independent computing environment.
Keys	*See* Security Keys

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Term or Acronym	Description
	L
Laboratory Information Manager (LIM)	Manager of the laboratory files in VistA. Additional duties include creation of new tests, interface set-up and maintenance of instruments, coordination with staff outside of lab to create quick orders, order sets and other Computerized Patient Record System functions.
Local Registry	The local file of patients that were grandfathered into the registry or have passed the selection rules and been added to the registry.
Local Registry Update	This process adds new patients (that have had data entered since the last update was run and pass the selection rules) to the local registry.
Logical Observation Identifiers Names and Codes (LOINC)	LOINC© is designed to facilitate the exchange and pooling of clinical results for clinical care, outcomes management, and research by providing a set of universal codes and names to identify laboratory and other clinical observations. The Regenstrief Institute, Inc., an internationally renowned healthcare and informatics research organization, maintains the LOINC database and supporting documentation. *See* http://loinc.org/
LOINC	*See* Logical Observation Identifiers Names and Codes

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Term or Acronym	Description
	M
M	**M** is a procedural, interpreted, multi-user, general-purpose programming language designed to build and control massive databases. It provides a simple abstraction that all data values are strings of characters, and that all data can be structured as multiple dimensional arrays. MUMPS data structures are sparse, using strings of characters as subscripts. **M** was formerly (and is still commonly) called MUMPS, for *Massachusetts General Hospital Utility Multiprogramming System*.
Massachusetts General Hospital Utility Multi-Programming	*See* M.

Term or Acronym	Description
System	
Message (HL7)	An Individual message is, according to the HL7 standard, an "atomic unit of data transferred between systems." HL7 defines a series of electronic messages to support administrative, logistical, financial as well as clinical processes. Since 1987 the standard has been updated regularly. Structurally all individual message contains a header. Some contains body and others don't. All HL7 messages are made up of segments, composites and primitive data types. An HL7 message consists of the following data elements: Message type, Message event and Message structure. The standard also allows, however, the notion of a logical message, whose data is physically broken down to more than one individual messages and correlated together using a logical message id in message headers. The breakup of a message into individual messages is driven primarily by message length negotiated between parties engaging in message exchanges. *Sources:* http://publib.boulder.ibm.com/infocenter/wbihelp/v6rxmx/index.jsp?topic=/com.ibm.wbia_adapters.doc/doc/healthcare/hl7mst34.htm and http://www.hl-7.org/HL7-messages.asp.
MDI	*See* Multiple Document Interface
Medical SAS Datasets	The VHA Medical SAS Datasets are national administrative data for VHA-provided health care utilized primarily by veterans, but also by some non-veterans (e.g., employees, research participants).
Message (HL7)	A *message* is the atomic unit of data transferred between systems. It is comprised of a group of segments in a defined sequence. Each message has a message type that defines its purpose. For example, the ADT (admissions/discharge/transfer) Message type is used to transmit portions of a patient's ADT data from one system to another. A three character code contained within each message identifies its type. *Source:* Health Level Seven, Health Level Seven, Version 2.3.1, copyright 1999, p. E-18., quoted in http://www.va.gov/vdl/VistA_Lib/Infrastructure/Health_Level_7_(HL7)/hl71_6p93sp.doc.
Middleware	In computing, middleware consists of software agents acting as an intermediary between different application components. It is used most often to support complex, distributed applications. The software agents involved may be one or many.
Multiple Document Interface (MDI)	MDI is a Windows function that allows an application to display and lets the user work with more than one document at the same time. This interface improves user performance by allowing them to see data coming from

Term or Acronym	Description
	different documents, quickly copy data from one document to another and many other functions. These files have the .MDI filename extension.
MUMPS	*See* M

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Term or Acronym	Description
	N
Namespace	A logical partition on a physical device that contains all the artifacts for a complete M system, including globals, routines, and libraries. Each namespace is unique, but data can be shared between namespaces with proper addressing within the routines. In VistA, namespaces are usually dedicated to a particular function. The **ROR** namespace, for example, is designed for use by CCR.
National Case Registry (NCR)	All sites running the CCR software transmit their data to the central database for the registry.
National Patient Care Database (NPCD)	The NPCD is the source data for the VHA Medical SAS Datasets. NPCD is the VHA's centralized relational database (a data warehouse) that receives encounter data from VHA clinical information systems. It is updated daily. NPCD records include updated patient demographic information, the date and time of service, the practitioner(s) who provided the service, the location where the service was provided, diagnoses, and procedures. NPCD also holds information about patients' assigned Primary Care Provider and some patient status information such as exposure to Agent Orange, Ionizing Radiation or Environmental Contaminants, Military Sexual Trauma, and Global Assessment of Functioning.
NPCD	*See* National Patient Care Database

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Term or Acronym	Description
	O
Office of Information and Technology Field Office (OI&TFO)	As directed by the Chief Information Officer (CIO), the Office of Information & Technology (OI&T) delivers available adaptable, secure and cost effective technology services to the Department of Veterans Affairs (VA) and acts as a steward for all VA's IT assets and resources. Field Offices are located at various sites around the nation.
OIFO	*See* Office of Information and Technology Field Office

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OI&TFO	*See* Office of Information and Technology Field Office
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	P
peginterferon	Peginterferon alfa-2b is made from human proteins that help the body fight viral infections. Peginterferon alfa-2b is used to treat chronic hepatitis C in adults, often in combination with another medication called ribavirin.
Protocol	A protocol is a convention or standard that controls or enables the connection, communication, and data transfer between two computing endpoints. In its simplest form, a protocol can be defined as the rules governing the syntax, semantics, and synchronization of communication. Protocols may be implemented by hardware, software, or a combination of the two.
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Term or Acronym	Description
	R
Reflection	**Terminal emulation software** used to connect personal computers to mainframe servers made by IBM, Hewlett Packard and other manufacturers running UNIX, VMS and other operating systems.
Registry	The VHA Registries Program supports the population-specific data needs of the enterprise including (but not limited to) the Clinical Case Registries, Oncology Tumor Registry, Traumatic Brain Injury Registry, Embedded Fragment Registry and Eye Trauma Registry.
Registry Medication	A defined list of medications used for a particular registry.
Remote Procedure Call (RPC)	A type of protocol that allows one program to request a service from a program located on another computer network. Using RPC, a system developer need not develop specific procedures for the server. The client program sends a message to the server with appropriate arguments and the server returns a message containing the results of the program executed. In this case, the GUI client uses an RPC to log the user on to **VistA**. And to call up, and make changes to, data that resides on a **VistA** server. *See also* Remote Procedure Call (RPC) Broker
Remote Procedure Call (RPC) Broker	A piece of middleware software that allows programmers to make program calls from one computer to another, via a network. The RPC Broker establishes a common and consistent foundation for client/server applications being written under the VistA umbrella. The RPC Broker acts

Term or Acronym	Description
	as a bridge connecting the client application front-end on the workstation (in this case, the Delphi Query Tool application) to the M –based data and business rules on the server. It serves as the communications medium for messaging between VistA client/server applications. Upon receipt, the message is decoded, the requested remote procedure call is activated, and the results are returned to the calling application. Thus, the RPC Broker helps bridge the gap between the traditionally proprietary VA software and other types of software. *See also* Remote Procedure Call (RPC)
Retrovirus	Any of a family of single-stranded RNA viruses having a helical envelope and containing an enzyme that allows for a reversal of genetic transcription, from RNA to DNA rather than the usual DNA to RNA, the newly transcribed viral DNA being incorporated into the host cell's DNA strand for the production of new RNA retroviruses: the family includes the AIDS virus and certain oncogene-carrying viruses implicated in various cancers.
ribavirin	Ribavirin is an antiviral medication. Ribavirin must be used together with an interferon alfa product (such as Peginterferon)to treat chronic hepatitis C.
Roll-and-scroll, roll'n'scroll	"Scrolling" is a display framing technique that allows the user to view a display as moving behind a fixed frame. The scrolling action typically causes the data displayed at one end of the screen to move across it, toward the opposite end. When the data reach the opposite edge of the screen they are removed (i.e., scroll off of the screen). Thus, old data are removed from one end while new data are added at the other. This creates the impression of the display page being on an unwinding scroll, with only a limited portion being visible at any time from the screen; i.e., the display screen is perceived as being stationary while the displayed material moves (scrolls) behind it. Displays may be scrolled in the top-bottom direction, the left-right direction, or both. Traditionally, VistA data displays have been referred to as "roll-and-scroll" for this reason.
ROR	The ROR namespace in M, used for the CCR application and related **VistA** data files.
Routine	A set of programming instructions designed to perform a specific limited task.
RPC	*See* Remote Procedure Call (RPC)
RPC Broker	*See* Remote Procedure Call Broker

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Term or Acronym	Description
S	

Term or Acronym	Description
Section 508	Section 508 of the Rehabilitation Act as amended, 29 U.S.C. Section 794(d), requires that when Federal agencies develop, procure, maintain, or use electronic and information technology, they shall ensure that this technology is accessible to people with disabilities. Agencies must ensure that this technology is accessible to employees and members of the public with disabilities to the extent it does not pose an "undue burden." Section 508 speaks to various means for disseminating information, including computers, software, and electronic office equipment. The Clinical Case Registry must be 508 compliant, able to extract data as needed including SNOMED codes.
Security Keys	Codes which define the characteristic(s), authorization(s), or privilege(s) of a specific user or a defined group of users. The VistA option file refers to the security key as a "lock." Only those individuals assigned that "lock" can used a particular VistA option or perform a specific task that is associated with that security key/lock.
Selection Rules	A pre-defined set of rules that define a registry patient.
Sensitive Information	Any information which requires a degree of protection and which should be made available only to authorized system users.
Server	In information technology, a server is a computer system that provides services to other computing systems—called clients—over a network. The server is where VistA M-based data and Business Rules reside, making these resources available to the requesting server.
SGML	*See* Standardized Generic Markup Language
Single Sign On (SSO)	Single Sign On is the process that enables the secure access of disparate applications by a user through use of a single authenticated identifier and password.
Site Configurable	A term used to refer to features in the system that can be modified to meet the needs of each local site.
SNOMED	*See* Systematized Nomenclature of Medicine
SQL	*See* Structured Query Language
Standardized Generic Markup Language (SGML)	A generic markup language for representing documents. SGML is an International Standard that describes the relationship between a document's content and its structure. SGML allows document-based information to be shared and re-used across applications and computer platforms in an open, vendor-neutral format.
Structured Query Language (SQL)	An industry-standard language for creating, updating and, querying relational database management systems. SQL was developed by IBM in the 1970s for use in System R. It is the de facto standard as well as being an ISO and ANSI standard. It is often embedded in general purpose programming languages.
Systematized Nomenclature of	SNOMED is a terminology that originated as the systematized nomenclature of pathology (SNOP) in the early 1960s under the guidance of the College of

Term or Acronym	Description
Medicine (SNOMED)	American Pathologists. In the late 1970s, the concept was expanded to include most medical domains and renamed SNOMED. The core content includes text files such as the concepts, descriptions, relationships, ICD-9 mappings, and history tables. SNOMED represents a terminological resource that can be implemented in software applications to represent clinically relevant information comprehensive (>350,000 concepts) multi-disciplinary coverage but discipline neutral structured to support data entry, retrieval, maps etc.

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T	
Technical Services Project Repository (TSPR)	The TSPR is the central data repository and database for VA Health IT (VHIT) project information. *See* http://tspr.VistA.med.va.gov/tspr/default.htm
Terminal emulation software	A program that allows a personal computer (PC) to act like a (particular brand of) terminal. The PC thus appears as a terminal to the host computer and accepts the same escape sequences for functions such as cursor positioning and clearing the screen. Attachmate *Reflection* is widely used in VHA for this purpose.
Tool tips	Tool tips are "hints" assigned to menu items which appear when the user "hovers" the mouse pointer over a menu.
TSPR	*See* Technical Services Project Repository

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Term or Acronym	Description
U	
Update Process	When patient records are first selected by the CCR, their status is marked as Pending. These patient records are identified via the automatic nightly registry update process and must be validated before being confirmed in the registry.
User Interface (UI)	A user interface is the means by which people (the users) interact with a particular machine, device, computer program or other complex tool (the system). The user interface provides one or more means of: • Input, which allows the users to manipulate the system • Output, which allows the system to produce the effects of the users' manipulation

Term or Acronym	Description
	The interface may be based strictly on text (as in the traditional "roll and scroll" IFCAP interface), or on both text and graphics. In computer science and human-computer interaction, the user interface (of a computer program) refers to the graphical, textual and auditory information the program presents to the user, and the control sequences (such as keystrokes with the computer keyboard and movements of the computer mouse) the user employs to control the program. *See also* Graphical User Interface

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	V
VERA	*See* Veterans Equitable Resource Allocation
Vergence	*Vergence*® software from Sentillion provides a single, secure, efficient and safe point of access throughout the healthcare enterprise, for all types of caregivers and applications. *Vergence* unifies single sign-on, role-based application access, context management, strong authentication and centralized auditing capabilities into one fully integrated, out-of-the box clinical workstation solution. *See* http://www.sentillion.com/solutions/datasheets/Vergence-Overview.pdf.
Verify Code	With each sign-on to VistA, the user must enter two codes to be recognized and allowed to proceed: the *Access Code* and *Verify Code*. Like the Access Code, the Verify Code is also generally assigned by IRM Service and is also encrypted. This code is used by the computer to verify that the person entering the access code can also enter a second code correctly. Thus, this code is used to determine if users can verify who they are. *See also* Access Code
Veterans Equitable Resource Allocation (VERA)	Since 1997, the VERA System has served as the basis for allocating the congressionally appropriated medical care budget of the Department of Veterans Affairs (VA) to its regional networks. A 2001 study by the RAND Corporation showed that "[in] spite of its possible shortcomings, VERA appeared to be designed to meet its objectives more closely than did previous VA budget allocation systems." *See* http://www.rand.org/pubs/monograph_reports/MR1419/
Veterans Health Information Systems and Technology Architecture (VistA)	VistA is a comprehensive, integrated health care information system composed of numerous software modules. *See* http://www.va.gov/VistA_monograph/docs/2008VistAHealtheVet_Monograph.pdf and http://www.virec.research.va.gov/DataSourcesName/VISTA/VISTA.htm.

Term or Acronym	Description
Veterans Health Administration (VHA)	VHA administers the United States Veterans Healthcare System, whose mission is to serve the needs of America's veterans by providing primary care, specialized care, and related medical and social support services.
VHA	*See* Veterans Health Administration
Veterans Integrated Service Network (VISN)	VHA organizes its local facilities into networks called VISNS (VA Integrated Service Networks). At the VISN level, VistA data from multiple local facilities may be combined into a data warehouse.
VISN	*See* Veterans Integrated Service Network
VistA	*See* Veterans Health Information Systems and Technology Architecture

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X	
XML	*See* Extensible Mark-up Language

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