



Clinical Case Registries
Immunology Case Registry
Technical Manual/Security Guide



ROR*1*5

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Department of Veterans Affairs

VistA Health System Design and Development

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Preface

The Veterans Health Information System and Architecture (VistA) *Clinical Case Registries: Immunology Case Registry Technical Manual/Security Guide* provides assistance for installation, implementation, and maintenance of the CCR: ICR software.

Orientation

Pre-installation Information section provides information needed prior to installing ROR*1.0*5.

Installation Instructions section contains instructions and examples of ROR*1.0*5 installation process.

Implementation Instructions provides directions for implementing ICR.

Recommended Users

The Information Resource Management (IRM) staff is required for install and support of ROR*1*5.

Related Manuals

Clinical Case Registries: Immunology Case Registry Installation Guide

Clinical Case Registries: Immunology Case Registry User Manual

Software and Manual Retrieval

The CCR: ICR software files, Installation and Implementation Guide (i.e., ROR1_5IG.PDF) are available on the following Office of Information Field Offices (OIFOs) ANONYMOUS SOFTWARE directories:

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

File Name	Contents	Retrieval Format	File Size
ROR1_0P5.KID	KIDS build	ASCII	2,621 KB
ROR1_0P5GUI.ZIP	Zipped GUI distributive	BINARY	4,347 KB
ROR1_0P5DOC.ZIP	Zipped DOC distributive Includes both PDF and DOC formats: <ul style="list-style-type: none">▶ Release Notes (ROR1_0P5RN)▶ Installation Guide (ROR1_0P5IG)▶ Technical Manual (ROR1_0P5TM)▶ User Manual (ROR1_0P5UM)	BINARY	9956 KB

VistA Intranet

Online documentation for this product is available on the intranet at the following address:
<http://www.va.gov/vdl/>. This address takes you to the VistA Documentation Library (VDL), which has a listing of all the clinical software manuals. Click on the Clinical Case Registries link, and it will take you to the CCR: ICR documentation.

You can also access the CCR: ICR home page by using the following address:

<http://vista.med.va.gov/clinicalspecialties/>, then click on Immunology Case Registry link.

Screen Displays and Text Notes

The user's response in this manual is in bold type, but 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 **Return** (or **Enter** for some keyboards). 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 and scroll part of the system, Help frames may be accessed from most prompts by entering one, two, or three question marks (? , ?? , ???).

Within the examples representing actual terminal dialogues, the author may offer information about the dialogue. You can find this information enclosed in brackets, for example, {*type ward name here*}, and it will not appear on the screen.

Computer dialogue appears in *Courier* font.

The following boxed format highlights special details about the topic being addressed:



This boxed format highlights special details about the current topic.

Introduction

Overview

The primary goal of the Immunology Case Registry is to enhance the existing automated data collection system to transform it from an administrative database into a clinically relevant tool for patient management. The enhanced Immunology Case Registry will provide three main improvements:

1. Automated identification of new Human Immunodeficiency Virus (HIV) and Clinical Acquired Immunodeficiency Syndrome (AIDS) patients through a local VistA program
2. Efficient transmission of local VistA data to the HIV Registry through a change from Mailman to HL7 transmissions
3. Improved reporting formats for clinical use on both the national and local levels

The new system provides patient clinical data containing divisional information to be transferred to the national database.

Data from the Immunology Case Registry is used to monitor system-wide expenditures on HIV care, as well as to monitor national trends in adverse events, patient safety, quality of care and disease evolution across a large population of HIV patients. This enhanced CCR: ICR software also accomplishes the following:

- Facilitate tracking of patient outcomes relating to antiretroviral Drug treatment (including those who defer or refuse treatment).
- Identify and track important trends in treatment response, adverse events, time on therapy.

-
- Match resources to clinical needs and utilization at local, VISN, and national levels.
 - Monitor quality of care using both process and patient outcome measures.
 - Verify workload for VERA reimbursement.

The Immunology Case Registry, V. 3.0 software will continue to automatically collect and update the local Immunology Case Registry list of patients with HIV. All these patients will have passed the pre-defined selection rules that identify a patient with HIV (i.e., ICD-9 code relating to HIV infection or positive resulted HIV-related lab test). Patients identified as possible HIV positive are placed in a pending state awaiting confirmation by local clinical staff. CCR: ICR data extraction and transmission will continue to be run automatically at night. The HIV Coordinator will have the ability to add patients to the local Immunology Case Registry list who have been missed through the automated capture process. In addition, functionality will be available to inactivate patients erroneously added to the Immunology Case Registry via the automated or manual process.

Each night a background process will transmit a set of predefined data via HL7 to the national HIV CCR: ICR for every active and recently inactivated patient in the local Immunology Case Registry. The CCR: ICR software creates a limited set of database elements to be stored locally in the VistA system, and focuses on assuring that a local listing is complete and accurate, that the desired data elements are extracted, and that data elements are appropriately transmitted to the HIV Immunology Case Registry.

Implementation and Maintenance

Implementation

Please refer to the *Clinical Case Registries: Immunology Case Registry Installation Guide* for additional information about installing and implementing the software.

Installation Summary

There are several pieces of information that must be obtained before the implementation of the package. Below is a list of the required information.

- Ensure the IRM doing the install has the IMRA and ROR VA IRM security keys.
- Ensure via the lab ADPAC (or whomever maps Lab LOINC codes at the facility) that the following LOINC codes are mapped to HIV related lab tests:

HIV 1 AB	14092-1, 16974-8, 16975-5, 21007-0, 22356-0, 29327-4, 29893-5, 32571-2, 33866-5, 5220-9, 5221-7, 7917-8
HIV 1+2 AB	22357-8, 31201-7, 32602-5, 5223-3, 7918-6
HIV 2 AB	22358-6, 30361-0, 5224-1, 5225-8, 7919-4

 If you need assistance with the LOINC mapping process, a NOIS call may be entered to the Enterprise Vista Support - Health Data Systems team. This is a critical element that will ensure the correct patients are added into the CCR: ICR Registry.

- Load and install the patch ROR*1*5.

 In order to avoid termination/crashing of any running protocols that the ROR subscribes to, please **install during OFF-PEAK HOURS**. If you schedule the installation to automatically run during off-peak hours, please perform the actual scheduling process at the end of your business day.

 If you schedule the patch installation and then un-schedule it for any reason, please re-index the "AEP" cross-reference of the ENABLE PROTOCOLS field (#25) of the ROR REGISTRY PARAMETERS file (#798.1).

- Post-install routine of the patch schedules several tasks that search the data starting from 01/01/1985 until now and builds the registry. These tasks are processor intensive. Therefore, they will run during the off-peak hours only (from 8:00pm until 6:00am on weekdays and all weekends). The registry population tasks will be present in the system during the day but they will be in suspended state.
- The number of tasks and suspension parameters can be changed during the installation; however, they should be left as they are if a user is in doubt.
- When all registry population tasks finish, a VistA alert will be sent to the user who has initiated the installation and an e-mail notification will be sent to the AAC. The user should examine the logs, and if any serious errors were encountered during the registry population,

-
- they should be fixed, and the registry population process should be restarted using the [ROR SETUP] option.
- Only when the registry population is successfully completed, the "VA CCR: ICR" registry name can be entered into the TASK PARAMETERS field of the Clinical Case Registries nightly task (the [ROR TASK] option). The "VA CCR: ICR" (without double-quotes) should be added after the "VA HEPC" and separated from it by a comma.

 This step should not be performed in the mirror account.

- The 'RORICR SND' HL7 logical link must be started at this point. Please do not forget to enable 'Autostart' for it.

 The logical link MUST NOT be started in the test/training account.

- IRM should assign the appropriate security keys to the registry coordinators (either the ROR VA ICR USER or ROR VA ICR ADMIN).

The assignment of new security keys only allows access to the GUI software after the next run of the nightly task [ROR TASK]. If users want immediate access, use the Re-index the ACL cross-reference option in the Clinical Case Registries Maintenance [RORMNT MAIN] menu. Running this option will activate the keys immediately.

 The ROR VA ICR ADMIN key is enough to get full access to the software.

- IRM should now install the GUI for the coordinators and add the ICR Version Comparison Report [RORICR VERSION COMPARISON] to the ICR coordinators secondary menu; this marks the end of the installation as far as IRMs are concerned.
- Immunology Case Registry end-users need to run the Immunology Case Registry version comparison report now. This report shows all patients who are in Version 2.1 and not in Version 3.0 of the registry, all patients in Version 3.0 but not in Version 2.1, and all patients that appear in both versions of the registry (V.2.1 and V. 3.0).
- In addition, coordinators can delete any patients who have been added to Version 3.0 incorrectly using the GUI. Those patients that are in the Immunology Case Registry, V. 3.0 of the registry but not in V. 2.1 are marked as "pending" patients. The data for these patients will not be sent to AAC until someone confirms that they should be in the registry.

Maintenance

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

ACL	Re-index the ACL cross-reference
EAA	Edit 'Awaiting ACK' flag
ELS	Edit Lab Search Criteria
ERP	Edit Registry Parameters
PLF	Print Log Files
PP	Pending Patients

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 [ROR TASK] option). However, if you want the changes to be in effect immediately, you should rebuild this cross-reference manually.

Edit 'Awaiting ACK' flag

The AWAITING ACKNOWLEDGEMENT field of the ROR REGISTRY PARAMETERS file (#798.1) holds date/time of the last HL7 message sent to the Austin Automation Center (AAC). Upon successful receiving and processing of the corresponding application acknowledgement, the value of this field is deleted automatically.

If the message is sent, but the acknowledgement is not received, no further data transmissions will take place until the message expires after number of days defined by the DAYS TO WAIT FOR ACK field (1 by default). Then, the field will be cleared automatically, and the package will try to send another message.

Usually, you should not edit this field. However, if you are sure that there will be no acknowledgement from AAC, but it is ready to receive the message during the next night, you can delete the value of this field to resume regular data transmissions.

Edit Lab Search Criteria

This option allows you to enter the Lab Search criteria used by the Update process. However, these values should only be updated via a national directive.

Different sites use different values to indicate that a test result is positive (i.e., P, +, etc.), and this option allows sites to enter LOINC and/or NLT codes along with the values for positive results. Prior to the installation of the Clinical Registries system, IRMs must get the LOINC codes used and values to indicate positive results from the lab staff for HIV.

Edit Registry Parameters

This option allows you to edit the registry parameters. These values can alter the way the system works on a site-by-site basis. The majority of these values will be set during installation. If in doubt, these entries should not be edited. This option would typically be run in between phase one and phase two of the installation to enter Log Event Types and Coordinators.

You will first have to select a registry. The Registry Updated Until prompt and the Data Extracted Until prompt dates will be entered during the installation of the system; they will be subsequently updated during the daily update and extract processes. These fields should only be edited in situations such as a system failure. The "Extract Period for New Patient" prompt is the number of days subtracted from the date a new patient first selection rule was passed that the extract process uses when extracting data. This number is set into this field upon installation and should only be changed if a directive is issued.

The Enable Log field allows you to turn the log on or off. The log holds information about updates and extracts, contains date information, warnings, and error data.

The "Log Events" 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:

1. Debug
2. Information
3. Data Quality
4. Warning
5. Database Error
6. Error

Debug messages: are intended for registry troubleshooting. No such messages are generated at this time. This value is reserved for future use.

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 (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 Events" 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 Events" multiple.

You may enter a new LOG EVENTS, 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.

Debug messages are exclusions from this rule (they are not logged if "ENABLE LOG" is set to "Yes" and this multiple is empty). Their recording can be enabled only explicitly.

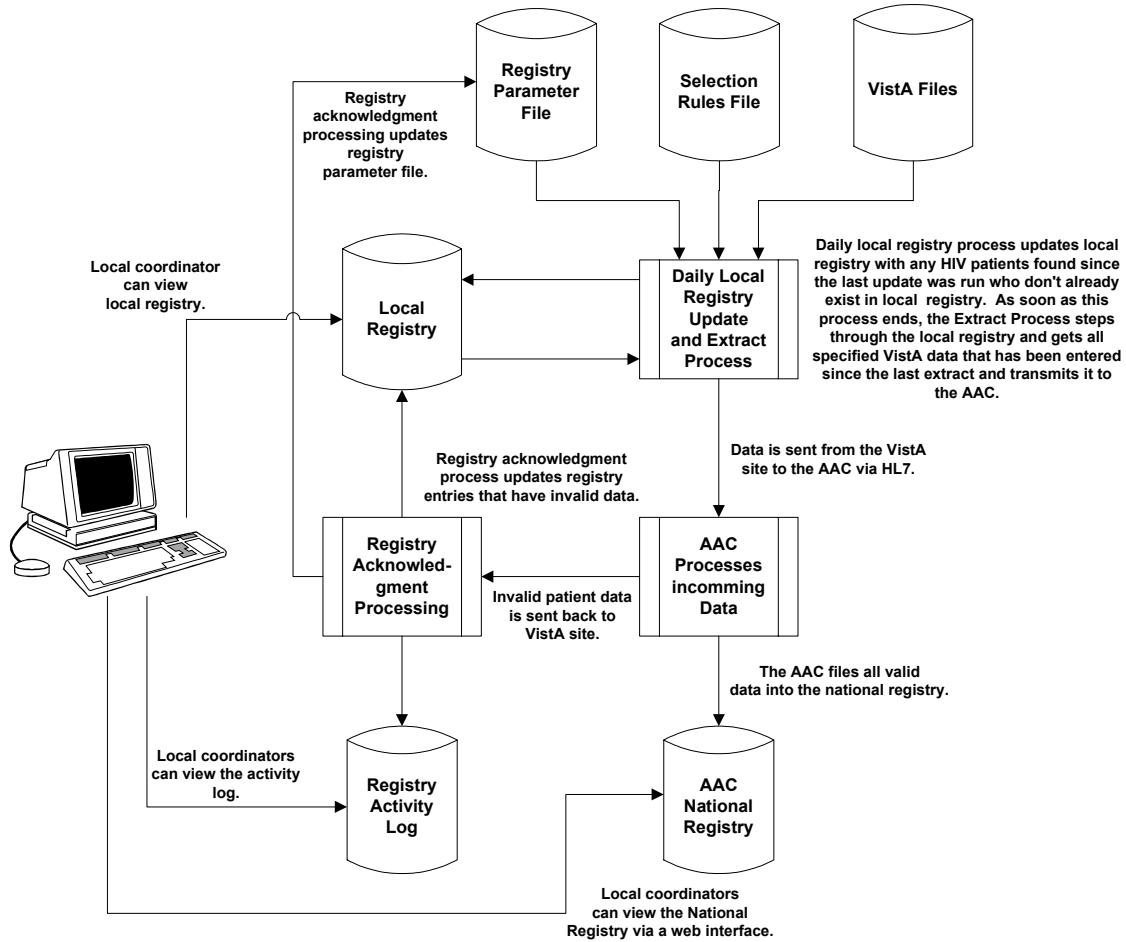
Print Log Files

This option allows you to print the log files and uses standard spooling and device selection. It provides a history of all events that have occurred within the Registry during the last two weeks.

Pending Patients

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

Process Overview



CCR:ICR Files

The following is a listing of the files exported with the CCR:ICR software.

Files	Descriptions
ROR LOCAL REGISTRY (#798)	The ROR LOCAL REGISTRY file contains records of local registries. Each record associates a patient with a registry and contains registry specific and additional service information.
ROR REGISTRY PARAMETERS (#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.
ROR SELECTION RULE (#798.2)	The ROR SELECTION RULES file contains definitions of the selection rules that are used to screen patients for addition to the registries.
ROR PENDING PATIENT (#798.3)	The ROR PENDING PATIENT 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.
ROR PATIENT (#798.4)	The ROR PATIENT file contains patient information that is common for all local registries (mostly, demographic information).
ROR HDT TASK (#798.5)	Several data extraction tasks can be defined to speed up the historical data extraction process. Records of this file contain task parameters and data indicating the current state of the tasks.
ROR LOG (#798.7)	The ROR LOG file is used for recording different kinds of events (errors, debug messages, etc.) that are generated by registry processes.
ROR TASK (#798.8)	The ROR TASK file enhances the functionality of Taskman and supports the package API's used by the GUI to schedule and control the tasks, and view and print the reports.
ROR LIST ITEM (#799.1)	This file contains code sets used within different registries.
ROR REPORT PARAMETERS (#799.12)	The ROR REPORT PARAMETERS file stores the report definitions that are used by the ROR REPORT SCHEDULE remote procedure to schedule the reports.
ROR XML ITEM (#799.31)	The ROR XML ELEMENT file contains a list of XML tags and attributes that can be used in the reports.
ROR DATA AREA (#799.33)	The ROR DATA AREA stores codes and names of the data areas referenced by the HL7 SEGMENT (the ROR REGISTRY PARAMETERS file) and the EVENT (the ROR PENDING PATIENT file) multiples.
ROR ICR STUDY (#799.4)	The ROR ICR STUDY file stores the patients' data specific to the

Files	Descriptions
	Immunology Case Registry (ICR).
ROR AIDS INDICATOR DISEASE (#799.49)	The ROR AIDS INDICATOR DISEASE file contains definitions of the AIDS indicator diseases referenced by the Part VIII of the HIV CDC form.
ROR Generic Drug (#799.51)	This file contains a list of registry specific generic drugs. For example, the ARV (anti-retroviral) drugs associated with the Immunology Case Registry are stored here.

Globals

No new globals are exported/allocated by the patch.

Routines

The following routines are included in the CCR: ICR software.

Routine	Description
ROR	CLINICAL CASE REGISTRIES
ROR01	CLINICAL CASE REGISTRIES (TEMP. GLOBALS)
ROR02	CLINICAL CASE REGISTRIES (VARIABLES)
ROR10	NIGHTLY TASK UTILITIES
RORACK	ACKNOWLEDGEMENT PROCESSING
RORACK01	ACKNOWLEDGEMENT PROCESSING
RORAPI01	CLINICAL REGISTRIES API
RORDD	DATA DICTIONARY UTILITIES
RORDD01	DATA DICTIONARY UTILITIES
RORENV01	ENVIRONMENT CHECK ROUTINE (VA HEPC)
RORENV02	ENVIRONMENT CHECK ROUTINE (ROR*1.0*2)
RORERR	ERROR PROCESSING
RORERR10	AAC ERROR MESSAGES (000000-050000)
RORERR11	AAC ERROR MESSAGES (050000-100000)
RORERR12	AAC ERROR MESSAGES (100000-150000)
RORERR20	LIST OF ERROR MESSAGES
ROREVT01	EVENT PROTOCOLS
ROREXPR	PREPARATION FOR DATA EXTRACTION
ROREXT	DATA EXTRACT & TRANSMISSION
ROREXT01	EXTRACTION & TRANSMISSION PROCESS

Routine	Description
ROREXT02	DEFAULT MESSAGE BUILDER
ROREXTUT	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
RORHDTAC	DATA EXTRACTION ACTION CONFIRMATIONS
RORHDTUT	HISTORICAL DATA EXTRACTION 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,OBX
RORHL121	HL7 MICROBIOLOGY DATA: OBR,OBX
RORHL13	HL7 MEDICAL PROCEDURES (EKG): OBR,OBX
RORHL14	HL7 ALLERGY DATA: OBR,OBX
RORHL15	HL7 IV DATA: OBR, OBX
RORHL16	HL7 VITALS DATA: OBR,OBX
RORHL17	HL7 Problem List: OBR,OBX
RORHL21	HL7 PATIENT DATA (ICR): PID
RORHL7	HL7 UTILITIES
RORHL7A	HL7 UTILITIES
RORHLUT1	HL7 UTILITIES (HIGH LEVEL)
RORICR01	ICR-SPECIFIC LAB DATA POST-PROCESSOR

Routine	Description
RORICR02	ICR-SPECIFIC REGISTRY UPDATE CODE
RORICR03	CONVERSION OF THE FILE #158
RORICREX	ICR-SPECIFIC MESSAGE BUILDER
RORICRUT	ICR UTILITIES
RORKIDS	INSTALL UTILITIES (LOW-LEVEL)
RORLOCK	LOCKS AND TYRANSACTIONS
RORLOG	LOG FILE MANAGEMENT
RORLOG01	LOG FILE MANAGEMENT (UTILITIES)
RORNTEG	ISC/XTSUMBLD KERNEL - Package checksum checker
RORP003	PATCH INSTALL ROUTINE (ROR*1.0*3)
RORP004	PATCH INSTALL ROUTINE (ROR*1.0*4)
RORP005	PATCH INSTALLATION ROUTINE (ROR*1.0*5)
RORP005B	PATCH INSTALLATION UTILITIES (ROR*1.0*5)
RORPOS01	POST-INSTALL ROUTINE (VA HEPC)
RORPOS02	POST-INSTALL ROUTINE (ROR*1.0*2)
RORPOS03	POST-INSTALL UTILITIES (ROR*1.0*2)
RORPOSU1	POST-INSTALL UTILITIES (HIGH-LEVEL)
RORPRE01	PRE-INSTALL ROUTINE (VA HEPC)
RORPUT01	EDIT LOINC AND DRUG CODE MULTIPLES
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
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

Routine	Description
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 (IN)ACTIVATE/DELETE
RORRP031	RPC: LOCAL LAB TEST NAMES
RORRP032	RPC: LOCAL DRUG NAMES
RORRP033	RPC: ICR PATIENT LOAD
RORRP034	RPC: ICR PATIENT SAVE/CANCEL
RORRP035	RPC: GENERIC DRUG NAMES
RORRP1	MANUAL REGISTRY UPDATE
RORRP10	SET/GET GUI SETTINGS RPC
RORRP2	CLINICAL REGISTRIES - REMOTE PROCEDURES
RORRP3	ACTIVATE/INACTIVATE
RORRP4	RPC: REGISTRY PATIENTS REPORT
RORRP5	CLINICAL REGISTRIES PATEINT SEARCH RPC
RORRP6	CLINICAL REGISTRIES - REMOTE PROCEDURES
RORRP7	ACTIVITY LOG RPC
RORRP8	PATIENT SENSITIVITY CHECKS RPC
RORRP9	HEPC DRUG THERAPY LIST RPC
RORSET01	REGISTRY SETUP ROUTINE (VA HEPC)
RORSETU1	SETUP UTILITIES (USER INTERFACE)
RORSETU2	SETUP UTILITIES (REGISTRY)
RORTSITE	PREPARE TEST SITES FOR GOING LIVE
RORTSK	TASK MANAGER
RORTSK01	(SUB)TASK UTILITIES
RORTSK02	TASK MANAGER UTILITIES
RORTSK03	TASK MANAGER OVERFLOW CODE
RORTSK10	REPORT RETRIEVING UTILITIES
RORTSK11	REPORT CREATION UTILITIES
RORTXT	TEXT RESOURCE UTILITIES
RORUPD	REGISTRY UPDATE
RORUPD01	PROCESSING OF THE FILES
RORUPD04	PROCESSING OF THE LAB DATA
RORUPD05	REGISTRY UPDATE (MULTITASK)

Routine	Description
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)
RORUPDUT	REGISTRY UPDATE UTILITIES
RORUPEX	SELECTION RULE EXPRESSION PARSER
RORUPP01	PENDING PATIENTS (ERRORS)
RORUPP02	PENDING PATIENTS (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
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
RORVM001	MAINTENANCE OPTIONS
RORX000	DUMMY REPORT
RORX001	LIST OF REGISTRY PATIENTS
RORX002	CURRENT INPATIENT LIST
RORX003	GENERAL UTILIZATION AND DEMOGRAPHICS
RORX003A	GENERAL UTILIZATION AND DEMOGRAPHICS
RORX004	CLINIC FOLLOW UP
RORX005	INPATIENT & OUTPATIENT UTILIZATION

Routine	Description
RORX005A	INP & OUT UTILIZATION (QUERY)
RORX005B	INPT & OUT UTILIZATION (SORT)
RORX005C	INP & OUT UTILIZATION (STORE)
RORX005U	INP & OUT UTILIZATION (UTILITIES)
RORX006	LAB UTILIZATION
RORX006A	LAB UTILIZATION (QUERY & SORT)
RORX006C	LAB UTILIZATION (STORE)
RORX007	RADIOLOGY UTILIZATION
RORX007A	RADILOGY UTILIZATION (OVERFLOW)
RORX008	VERA REIMBURSEMENT REPORT
RORX008A	VERA REIMBURSEMENT REPORT
RORX009	PHARMACY PRESCRIPTION UTILIZATION
RORX009A	PRESCRIPTION UTILIZ. (QUERY & SORT)
RORX009C	PRESCRIPTION UTILIZ. (STORE)
RORX010	VIRAL LOAD AND CD4 BY RANGE REPORT
RORX011	PATIENT DRUG HISTORY
RORX012	COMBINED RX AND LAB REPORT
RORX012A	COMBINED RX AND LAB (QUERY & STORE)
RORX013	DIAGNOSIS CODES REPORT
RORX013A	DIAGNOSIS CODES (QUERY & SORT)
RORX013C	DIAGNOSIS CODES (STORE)
RORX014	ARV COMBINATION REPORT
RORX014A	ARV COMBINATION REPORT (QUERY & SORT)
RORXU001	REPORT UTILITIES
RORXU002	REPORT BUILDER UTILITIES
RORXU003	REPORT BUILDER UTILITIES
RORXU004	REPORT UTILITIES (STATISTICS)
RORXU005	REPORT BUILDER UTILITIES
RORXU006	REPORT PARAMETERS
RORXU007	REPORT PARAMETERS

Exported Options

The menu and options exported by Patch ROR*1*5 are all located in the ROR namespace. Individual options can be viewed by using the Kernel option XUINQUIRE (Inquire). This option is found on the menu XUMAINT (Menu Management), which is a sub-menu of the EVE (Systems Manager Menu) option.

A diagram of the structure of the CCR: ICR menu and its options can be produced by using the Kernel option XUUSERACC (Diagram Menus). Choosing XUUSERACC permits you to further select XUUSERACC1 or XUUSERACC2 menu diagrams with entry/exit actions or abbreviated menu diagrams. This option is found on the menu XUMAINT (Menu management), which is a sub-menu of the EVE (Systems Manager Menu) option.

Options

Option Name	Description
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).
ROR SETUP	This option allows the user to enter parameters of the registry setup process and schedule the task that will populate the registry.
RORICR VERSION COMPARISON	Provides a detailed comparison between the new version of the CCR: ICR and ICR 2.1.
RORMNT ACL REINDEX	The 'Re-index the ACL cross-reference' 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.
RORMNT AWAITING ACK	This option can be used for editing the 'AWAITING ACKNOWLEDGEMENT' field in the 'REGISTRY PARAMETERS' file.
RORMNT MAIN	Used as a link for menu items

XINDEX

XINDEX is a routine that produces a report called the VA Cross-Reference. This report is a technical and 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*.

Archiving and Purgung

Archiving

There are no archiving functions necessary with the CCR: ICR software.

Purgung

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

ROR LOG file entries (#798.7) are automatically purged 14 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.

Protocols

There are two Protocols installed with Patch ROR*1*5:

- RORICR-SITE-DRIVER
- RORICR-SITE-SUBSCRIBER

Application Programmer Interfaces (APIs)

Two APIs are supplied within the Clinical Registries system. The first of these APIs will return a list of veterans who are on a given registry (e.g., Hepatitis C, ICR, etc.). The other API will return all the registries within which a given patient exists.

External Interfaces

The ICR National Database will have an HL7 interface. This interface will receive all HIV data transmissions sent from all sites nationally, convert the data, and enter it into an SQL-enabled database.

External Relations

Before Patch 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
Clinical Case Registries V. 1.0	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

Required Patches

Before the installation of ROR*1*5, the following patches **must** be installed:

Application Name	Patches
Clinical Case Registries	ROR*1.0*1
	ROR*1.0*2
	ROR*1.0*3
	ROR*1.0*4
Health Level (HL7) V. 1.6	HL*1.6*56
	HL*1.6*57
Lab	LA*5.2*69
Medicine	MC*2.3*34
Pharmacy	PSN*4*79
Scheduling	SD*5.3*131

Database Integration Agreements (DBIAs)

The following is a list of approved DBIAs for CCR: ICR:

File Name	File Number	Access	DBIA	Comment
PATIENT	2	Browse IENs	#10035	Supported
		.02, .03, .06, .09, .351, 63	#10035	Supported
		.1112, .301, .302, .323	#10061	Supported; 6^VADPT
		991.01	#2701	Supported; \$\$GETICN^MPIF001
		-9 node	#2762	Private
		.3721 (multiple)	#174	Controlled
		.6	#3301	Private
PATIENT	2		#263	EN^VAFHLPID
CLINIC STOP	40.7	^DIC(40.7,D0,0) .01, 1, 2 ^DIC(40.7,'C',X,DA)	# 93-C	Direct global read.
SPECIALTY	42.4	^DIC(42.4,D0,0) .01	# 997	Controlled; Direct global read.
PTF	45		#418	Controlled.
		80 “AAD”	#3157	RPC^DGPTFAPI (supported)
			#3545	Private.

File Name	File Number	Access	DBIA	Comment
PTF	45	Access to multiple fields	#92	Controlled
DRUG	50	All fields and x-refs.	#221-A	Global read access.
VA GENERIC	50.6	^PSNDF(D0,0) .01	#2016	Direct global read.
PRESCRIPTION	52	R/W access to all fields.	#1977	Controlled.
PRESCRIPTION	52	^PSRX(D0,0) 1, 3, 5, 6, 7, 8, 10, 17, 100 ^PSRX(D0,2) 22, 26 ^PSRX(D0,1,D1,0) .01,1 ,1.1, 1.2 ^PSRX(D0,3) 101	90-A	Controlled; read with Fileman.
IV ADDITIVES	52.6	^PS(52.6, .01, 1, 2 , 7, 12	436	Controlled
IV SOLUTIONS	52.7	^PS(52.7, .01, 1, 2, 7, 8	437	Controlled
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	Controlled.

File Name	File Number	Access	DBIA	Comment
PHARMACY PATIENT	55	^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	Direct global read.
PHARMACY PATIENT	55	^PS(55,D0,'P',D1,0) .01 ^PS(55,DFN,'P','A',DATE	# 90-B	Controlled; Read w/fileman
OUTPATIENT SITE	59	^PS(59,D0,0) .01, .06 ^PS(59,D0,INI) 100	# 1876	Controlled; direct global read.
LAB	60	^LAB(60,D0,0) .01, 1, 4, 5 ^LAB(60,'B', ^LAB(60,'C', ^LAB(60,D0,2)	# 91-A	Controlled; Direct global read.
TOPOGRAPHY	61	^LAB(61 .01 ^LAB(61,D0,0) .01	# 91-C	Direct global read.
COLLECTION SAMPLE	62	^LAB(62,0 .01	#2210	Direct global read.
LAB DATA	63		#67-C	Surgical pathology for liver biopsy
			#2503	Direct global read.
			#91-B	Direct global read.
			#3465	Autopsy node (private)
			#3556	\$\$GCPR^LA7QRY
LAB DATA	63		#4343	SPATH^LA7UTL03
LAB DATA	63		#4344	CPATH^LA7UTL03
LAB DATA	63		#4335	GETDATA^LA7UTL1 A
LABORATORY SITE	69.9	95.3	#3557	Environment check routine

File Name	File Number	Access	DBIA	Comment
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	Controlled; direct global read.
RAD/NUC MED PROCEDURES	71	^RAMIS(71,D0,0) .01, 9 , 10 ^RAMIS(71,'D',X,DA) 9	118-B	Controlled; direct global read.
EXAMINATION STATUS	72	^RA(72,D0,0) .01 ^RA(72,'B',X,DA) .01 ^RA(72,'AA',	# 118-D	Controlled; Direct global read.
RAD/NUC MED REPORTS	74	^RARPT(5 ^RARPT(D0,"R", .01 ^RARPT(D0,"I", .01 ^RARPT(D0,"H", .01	# 15-C	Private; Read w/Fileman.
ICD DIAGNOSIS	80	^ICD9(D0,0) .01	#113-B	Read w/Fileman.
LAB LOINC	95.3	.01 "B"	#3557	Private.
PROTOCOL	101	.01, 4	#872	Controlled; direct read in the screen; pointed to

File Name	File Number	Access	DBIA	Comment
GMRV VITAL MEASUREMENT	120.5		#1446	Controlled. EN1^GMRVUTO
ELECTROCARD IOGRAM (EKG)	691.5		#3780	GET^ MCARAPI
ELECTROCARD IOGRAM (EKG)	691.5		#3854	GET^ MDAPI1
VISIT	9000010		#1905	Controlled.
		Returns selected visits.	# 1900-F	Controlled; SELECTED^VSIT
		Look up a visit and return its information.	1900-G	Controlled
			#1906	Controlled.
VISIT	9000010		#1889-F	Controlled. ENCEVENT^PXKENC
VISIT	9000010	Access to the 'AA' x-ref	3094	Controlled.
V POV	9000010.07		#1554	POV^PXAPIIB (private)
PROBLEM	9000011		#928	ACTIVE^GMPLUTL (controlled)
		"Modified"	#2644	Controlled; \$\$MOD^GMPLUTL3
		Fileman captioned output of entire PROBLEM record.	# 2308	Direct global read.
			#2977	GETFLDS^GMPLEDT 3 (controlled)
			#1181	Subscription to the DGPM MOVEMENT EVENTS protocol
	9000010.18 9000010.23 9000010.11 9000010.16 9000010.07 9000010.06 9000010.12 9000010.15 9000010 9000010.13 9000010		#1298	Subscription to the PXK VISIT DATA EVENT protocol
			#3565	Subscription to the LR7O ALL EVSEND RESULTS

Internal Relations

There are no internal relations with this software.

Package-wide Variables

There are no package-wide variables in this software

Software Product Security

The ICR transmits data to the national database through the VA network. This network has security protection in place. Local coordinators will have their security keys amended by a local IRM to allow them to have access to the local registry functionality. No other users will be able to access the local registry unless they are set up in this method. All patients' Social Security Numbers (SSNs) are encrypted before transmission to an agreed-upon standard. The fields sent to AAC become readable upon receipt of the data; however, only high-level users have access to the unencrypted fields when viewing the national database.

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)
Missing HL7 ACK (an e-mail is also sent to the mail group)	Coordinators
Manual addition/reactivation of a patient without selection rules	GUI user
Manual inactivation of a patient with selection rules	GUI user
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

Remote Systems

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

Contingency Planning

Sites utilizing the CCR: ICR 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).

Interfacing

No interfacing is used in the CCR: ICR software.

Electronic Signatures

No electronic signatures are used in the CCR: ICR software.

Security Keys

The following two security keys will be available:

1. **ROR VA ICR ADMIN** This key allows access to the complete CCR: ICR GUI system.
2. **ROR VA ICR USER** This key allows access to just the reports and the activity log.



Only users having these keys can access the records of the ROR LOCAL REGISTRY and ROR PATIENT files via FileMan.

HL7 Specifications

HL7 specifications can be found at:

<http://tspr.vista.med.va.gov/warboard/ProjectDocs/ImmunologyCaseRegistry/ICR%20v%203.0%20HL7%20rev%205.0.doc>

Appendix A – Extract Elements

The following extract elements chart specifies what field values to extract and transmit to the national registry. National registry coordinators are required to specify exactly what data elements, for each patient, they want to have extracted and transmitted to the national registry.

Demographic Data				
Element	Multiple	HL7 SEGMENT	File	Field
Patient ID (DFN)		PID-3	#2	IEN
Station		PID-3	#4	#99
Patient ICN		PID-2	#2	#991.01
Patient DOB		PID-7	#2	#.03
SSN		PID-19	#2	#.09
Pseudo SSN Indicator		PID-19		
Veteran Era of Service		ZSP-4	#2	#.323
Service Connected		ZSP-2	#2	#.301
Service Connected Comb %		ZSP-3	#2	#.302
Service Connected Codes (Rated Disabilities)	M1	ZRD-2	#2.04	#.01
Service Connected %	M1	ZRD-2	#2	#.302
Sex		PID-8	#2	#.02
New Race	M2	PID-10	#2.02	#.01
Collection Method	M2	PID-10	#2.02	#.02
New Ethnicity	M3	PID-22	#2.06	#.01
Collection Method	M3	PID-22	#2.06	#.02
ZIP		PID-11	#2	#.1112
Date of Death		PID-29	#2	#.351
Local ICR Data				
Element	Multiple	HL7 SEGMENT	File	Field
Patient ID (DFN)		CSR-4	#2	IEN
ICR Station		CSR-3	#4	#99
Date Entered into ICR		CSR-6	#798	#1
Date of Last Extraction		CSS-2	#798	#9.2
Cat 4 Aids (Date)		CSR-9	#799. 4	#.03

CDC Form Completed		CSR-11	#799. 4	#9.01
New Patient		CSP-1	#798	#3
ICR Evidence of Positive HIV Diagnosis		CSR-10	#798	#1001
Risk factor		CSR-12	#158	#120
Inactivation Date		CSR-15	#798	#2
ICR Reason for Inactivation		CSR-16	#798	#1000
Re-activation Date/Time		CSP-2	#798	#7

Outpatient Visits

Element	Multiple	HL7 SEGMENT	File	Field
Station/Division		PV1-3	#44	#3
Automated Management Information System (AMIS) Clinic Stop Code		PV1-3	#9000010	#.08
				#1
Date/Time of Visit		PV1-44	#9000010	#.01
Encounter Provider		PV1-7	#9000010.06	#.01
Encounter Provider Class		PV1-7	#200	#53.5
Delete Flag		PV-51		
Visit Date and Time		OBR-7	#9000010	#.01
ICD 9 Codes (infinite)	M1	OBX-5	9000010.07	#.01
CPT Code (infinite)	M2	OBX-5	# 9000010.18	#.01
Procedure Provider	M2	OBX-16	# 9000010.18	#1204
CPT Code Provider Class	M2	OBX-16	#200	#53.5

Admissions

Element	Multiple	HL7 SEGMENT	File	Field
Station/Division		PV1-3		
Admission date/time		PV1-44	#45	#2
Admission diagnosis		OBX-5	#45	#80
Discharge date		PV1-45	#45	#70

Bed Section at discharge		PV1-6	#45	#71 points to 42.4 get .01
Type of disposition		PV1-36	#45	#72
Admission Date and Time		OBR-7	#45	#2
Primary Discharge Diagnosis		OBX-5	#45	#79
Discharge Diagnosis Codes		OBX-5	#45	#79.16 – 79.24 (nine codes)
Bed section History (movements)	M1			
Bed section Start date	M1	OBX-14	First one uses #45 All others in the multiple use #45.02 of the previous entry in the multiple	#2 #10
Bed Section	M1	OBX-6	#45.02	#2
Bed Section End Date	M1	OBX-12	#45.02	#10
Diagnosis Codes	M1	OBX-5	#45.02	#5-9 and #11-15
Surgical procedures	M2			
- Date of Procedures	M2	OBX-14	#45.01	#.01
- Procedures	M2	OBX-5	#45.01	#8,9,10,1 1, and 12
Other procedures				
Date of other procedures	M3	OBX-14	# 45.05	# .01
Bed Section/Specialty	M3	OBX-6	#45.05	#1
Procedures	M3	OBX-5	#45.05	#4,5,6,7, and 8

Outpatient Drugs

Element	Multiple	HL7 SEGMENT	File	Field
Local Drug Name	M1	RXE-2	#52	#6
Placer Order #		ORC-2	IEN	

National Drug Code #	M1	RXE-2	#52	#6 (points to file #50 to get Internal #)
National Drug Name	M1	RXE-2	#52	#6 (points to file #50 to get external #)
Last Dispensed Date	M1	RXE-22	#52.1	#10.1
Order Start Date/Issue date		ORC-15	#52	#1
Refill Number	M1	RXE-17	Counter	
Maximum Number of Refills	M1	RXE-4	#52	#9
Last Dispensed Date	M1	RXE-22	#52.1	#10.1
Order Start Date/Issue date		ORC-15	#52	#1
Refill Number	M1	RXE-17	Counter	
Maximum Number of Refills	M1	RXE-4	#52	#9
Dispensed Amount/Quantity	M1	RXE-10	#52.1	#1
Days Supply	M1	RXE-19	#52.1	#1.1
Patient Status	M1	RXE-27	#53	#.01
Clinic Stop Code	M1	RXE-21	#52	#5 This points to #44, Stop code is field #8.
Unit Cost	M1	RXE-23	#52	#17
VA Drug Class	M1	RXE-2	#50	#2
SIG	M1	RXE-7	#52	#10
Refill Release Date and Time	M1	RXE-6	#52.1	#17
Release Date/Time		ORC-9	#52	#31
Refill Date/Time	M1	RXE-18	#52.1	#.01
CMOP Y/N	M1	RXE-20	Get from code	
VA Product Name	M1	RXE-2	#50.68	#.01

VA Drug Code	M1	RXE-2	#50.6	.001
Ordering Provider		ORC-12	#52	#4
VA person class code		ORC-12	#200	#53.5
Station/Division		ORC-17	#52	#5
Mail/Window	M1	RXE-30	#52.1	#2

Inpatient Drugs

Element	Multiple	HL7 SEGMENT	File	Field
Drug Name ~ Coding System		RXE-2	#52	#6
Placer Order #		ORC-2	IEN	
NDC		RXE-2		
VA Drug Class		RXE-2	#50	#2
Order start date		ORC-15	#55.06	#10
Units/Dose		RXE-24	#55.07	#.02
Schedule		RXE-1	#55.06	#26
Medication route		RXE-21	#55.06	#3
Stop Date/Time		RXE-18	#55.06	#34
VA Product Name		RXE-2	#50.68	#.01
VA Drug Code		RXE-2	#50.6	#.001
Ordering Provider		ORC-12	#55.06	#20
VA person class code		ORC-12	#200	#53.5
Station/Division		ORC-17	#55.06	#9

Surgical Pathology

Element	Multiple	HL7 SEGMENT	File	Field
Date		OBR-7	#63.08	#.01
Accession Number (identifies record)		OBR-3	#63.08	#.06
Division		OBR-44	#60.08	#.08
Specimen	M1	OBX-5	#63.08	#.012
Brief clinical history	M2	OBX-5	#63.08	#.013
Preoperative diagnosis	M3	OBX-5	#63.08	#.014
Operative findings	M4	OBX-5	#63.08	#.015
Postoperative diagnosis	M5	OBX-5	#63.08	#.016

Date report completed		OBR-8	#63.08	#.03
Surgeon/Physician		OBR-16	#63.08	#.07
Gross description	M6	OBX-5	#63.08	#1
Microscopic Description	M7	OBX-5	#63.08	#1.1
Surgical Path Diagnosis	M8	OBX-5	#63.08	#1.4
ICD diagnosis	M9	OBX-5	#63.08	#80
Cytopathology				
Element	Multiple	HL7 SEGMENT	File	Field
Date		OBR-7	#63.09	#.01
Accession Number (identifies record)		OBR-3	#63.09	#.06
Division		OBR-44	#63.09	#.08
Specimen	M1	OBX-5	#63.09	#.012
Brief clinical history	M2	OBX-5	#63.09	#.013
Preoperative diagnosis	M3	OBX-5	#63.09	#.014
Operative findings	M4	OBX-5	#63.09	#.015
Postoperative diagnosis	M5	OBX-5	#63.09	#.016
Cytopathology Diagnosis	M6	OBX-5	#63.09	#1.4
ICD Diagnosis	M7	OBX-5	#63.09	#80
Autopsy				
Element	Multiple	HL7 SEGMENT	File	Field
Autopsy Date		OBR-7	#63	#11
Accession Number (identifies record)		OBR-3	#63	#14
Division		OBR-44	#63	#14.1
Radiology				
Element	Multiple	HL7 SEGMENT	File	Field
Exam Date/Date of Procedure		OBR-7	#70.02	#2
Case Number (identifies record)		OBR-3	#70.2	#3
CPT-4 Procedure Code		OBR-4	#71	#9
Procedure Name		OBR-4	#71	#.01
Station		OBR-44	#70.02	#3
Ordering Provider		OBR-16	#70.03	#14

VA Person class code		OBR-16	#200	#53.5
Results – Report Text	M1	OBX-5	#74	#200
Results – Impression Text	M2	OBX-5	#74	#300
Results – Clinical History	M3	OBX-5	#70.3	#400
Lab Tests				
Element	Multiple	HL7 SEGMENT	File	Field
LOINC Code		OBX-3	#60.01	#95.3
Accession Number (identifies record)		OBR-3	# 63.04	# .06
Date Specimen Taken/Accession Date		OBR-7	#63.04	#.01
Name of Test		OBX-3	#60	#.01
Flag on Values		OBX-8	Dependent on test	\$P(^LR(D0,"C H",,D1,n),2)
NLT Code		OBX-3	#63.04	#.35
Result		OBX-5	#63.04	Dependant on Test
Range High		OBX-7	#60.01	#1
Range Low		OBX-7	#60.01	#2
Units		OBX-6	#60.01	#6
Site/Specimen		OBX-3	#61	#.01
Station		OBX-15	#60.11	#.01
Comments	M1	OBX-5	#63.04	#.99
Microbiology				
Element	Multiple	HL7 SEGMENT	File	Field
Accession date		OBR-7	#63.05	#.01
Accession Number (identifies record)		OBR-3	#63.05	#.06
Source		OBR-13	#61	#.01
Sample type		OBR-20	#62	#.1
Division		OBR-44	#63.05	#.08
BAC				
Sputum Screen		OBR-21	63.05	11.58
Urine Screen		OBR-11	63.05	11.57
Sterility Control		OBR-25	63.05	11.51
BACT				

Bact RPT Remark	M1	OBX-5	63.33	.01
GRAM				
Gram Stain	M2	OBX-5	63.29	.01
ORG				
Organism	M3	OBX-5	63.3	.01
Quantity	M3	OBX-6	63.3	1
ORGCOM				
Comment	M3.1	OBX-5	63.31	.01
ORGANTI				
Fixed Field Antibiotic Name	M3.2	OBX-5	63.3	5 – 60
Fixed Field Antibiotic Result	M3.2	OBX-5	63.3	5 – 60
Open Field Antibiotic Name	M3.2	OBX-5	63.3	Open
Open Field Antibiotic Result	M3.2	OBX-5	63.3	Open
Antibody	M3.2	OBX-5	63.32	.01
Mic	M3.2	OBX-7	63.32	1
Mbc	M3.2	OBX-7	63.32	2
PAR				
Parasite	M4	OBX-5	63.34	.01
Stage Code's 'T' FOR TROPHOZOITES; 'C' FOR CYSTS 'E' FOR EGGS 'L' FOR LARVAE 'S' FOR SCHIZONTES 'G' FOR GAMETES 'M' FOR MICROFILARIA 'A' FOR ADULTS 'R' FOR RHABDITIFORM LARVAE 'F' FOR FILARIFORM LARVAE	M4.1	OBX-5	63.35	.01
Quantity	M4.1	OBX-6	63.35	1

Comment	M4.1.1	OBX-5	63.351	.01
PARRPT				
Parasite RPT Remark	M5	OBX-5	63.36	.01
COMPS				
Specimen Comment	M6	OBX-5	63.05	.99
FUNG				
Fungus/Yeast	M7	OBX-5	63.37	.01
Quantity	M7	OBX-6	63.37	1
FUNGCOM				
Comment	M7.1	OBX-5	63.372	.01
MYCO				
Mycobacterium	M8	OBX-5	63.39	.01
Quantity	M8	OBX-6	63.39	1
Fixed Myco-Antibiotic Name	M8.1	OBX-5	63.39	5 – 55
Fixed Myco-Antibiotic Result	M8.1	OBX-5	63.39	5 – 55
Open Myco-Antibiotic Name	M8.1	OBX-5	63.9	Open
Open Myco-Antibiotic Result	M8.1	OBX-5	63.39	Open
Comment	M8.2	OBX-5	63.34	.01
VIRUS				
Virus	M9	OBX-5	63.43	.01
PARA SMEAR/PREP				
Para SP	M10	OBX-5	63.341	.01
BACT SMEAR/PREP				
Bact SP	M10	OBX-5	63.291	.01

Medical Procedures (EKG)

Element	Multiple	HL7 SEGMENT	File	Field
Date (RDX)		OBR-6	#691.5	#.01
ID (identifies record)		OBR-3	#691.5	.02
Confirmation Status (S)		OBR-25	#691.5	#11
Interpretation (Rhythm)	M1	OBX-5	#691.54	#.01
Code Modifier	M1	OBX-4	#691.54	#1
Auto-Instrument Diagnosis (WL)	M2	OBX-5	#691.5	#20

Automated Instrument Data (D)		OBR-7	#691.5	#21
Division		OBR-44	#691.5	#18
Allergy				
Element	Multiple	HL7 SEGMENT	File	Field
Reactant		OBR-13	#120.8	#.02
IEN (identified record)		OBR-3	#120.8	#.001
Drug ingredients	M1	OBX-5	#120.802	#.01
VA drug class	M2	OBX-5	#120.803	#.01
Allergy type		OBR-20	#120.8	#3.1
Origination date/time		OBR-7	#120.8	#4
Originator		OBR-16	#120.8	#5
VA person class code		OBR-16	#200	#53.5
Observed/historical		OBR-25	#120.8	#6
Reactions	M3	OBX-5	#120.81	#.01
Reactions Date entered	M3	OBX-12	#120.81	#3
IV Data				
Element	Multiple	HL7 SEGMENT	File	Field
START DATE/TIME		OBR-7	#55.01	#.02
STOP DATE/TIME		OBR-8	#55.01	#.03
Order Number (identifies record)		OBR-3	#55.01	#.01
Type		OBR-40	#55.01	#.04
Infusion Rate		OBR-20	#55.01	#.08
Schedule		OBR-13	#55.01	#.09
Division		OBR-44	#55.01	#9
Other Print Info	M1	OBX-5	#55.01	#31
Additive	M2	OBX-5	#55.02	#.01
Strength	M2	OBX-7	#55.02	#.02
Solution	M3	OBX-5	#55.11	#.01
Volume	M3	OBX-7	#55.11	#1
Vitals				
Element	Multiple	HL7 SEGMENT	File	Field
Vitals Indicator		OBR-4		

Vital Type	M1	OBX-3	#120.5	#.03
IEN (Identifies Record)	M1	OBX-4	IEN	
Rate	M1	OBX-5	#120.5	#1.2
Quality	M1	OBX-5	#120.5	#
Qualifiers	M1	OBX-5	#120.5	#5
Unit	M1	OBX-6	#120.5	#1.2
Body Mass	M1	OBX-7	#120.5	#
Date of Measurement	M1	OBX-14	#120.5	#.01
Problem List				
Element	Multiple	HL7 SEGMENT	File	Field
NMBR	M1	OBR-3	9000011	.07
Date Entered	M1	OBR-6	9000011	.08
Date of Onset	M1	OBR-7	9000011	.13
Date Resolved	M1	OBR-8	9000011	1.07
Diagnosis	M1	OBR-13	9000011	.01
Date Recorded	M1	OBR-14	9000011	1.09
Recording Provider	M1	OBR-16	9000011	1.04
Date Last Modified	M1	OBR-22	9000011	.03
Status	M1	OBR-25	9000011	.12
Provider Narrative	M1	OBX-5	9000011	.05
Problem (Expression)	M1	OBX-5	9000011	1.01
Note Facility	M2	OBX-4	9000011.11	.01
Note Number	M2	OBX-4	9000011.1111	.01
Note Narrative	M2	OBX-5	9000011.1111	.03
Status	M2	OBX-4	9000011.1111	.04

Appendix B – Data Validation and Error Messaging

Demographics

This demographic data set will always occur once within each patient's group of extract data. Each group of patient data is put together to form the HL7 message.

Patient ID (DFN)

Business Rule	Error Code
If DFN is non-numeric - Error Message: Non-numeric DFN.	010301 - Non-numeric DFN.

Station

Business Rule	Error Code
If station non-numeric - Error Message: Non-numeric station number.	010302 - Non-numeric station number.
If station longer than three characters – Error message: Station longer than three characters.	010303 - Station longer than three characters

Patient ICN

Business Rule	Error Code
If ICN non-numeric - Error Message: Non-numeric ICN.	010201 - Non-numeric ICN
If ICN longer than 16 characters - Error Message: ICN longer than 16 characters.	010202 - ICN longer than 16 characters

Date of Birth

Business Rule	Error Code
If non-numeric - Error Message: Non-numeric date of birth.	010701 - Non-numeric Date of Birth
If not formatted to YYYYMMDD - Error Message: Date of Birth formatted incorrectly.	010702 - Date of Birth formatted incorrectly



If there is no day, set the day to '00'. If there is no month and no day, set the month and day to '0000'.

Social Security Number

Business Rule	Error Code
If non-numeric - Error Message: Non-numeric SSN.	011901 - Non-numeric SSN
If longer than nine characters in length - Error Message: SSN longer than nine characters.	011902 - SSN longer than nine characters
SSN shorter than nine characters in length - Error Message: SSN shorter than nine characters.	011903 - SSN shorter than nine characters



This value will be scrambled at the sending site and remain scrambled at AAC.

Pseudo Social Security Number

Business Rule	Error Code
If not null or the letter 'P' - Error Message: Invalid pseudo SSN indicator.	011904 - Invalid Pseudo SSN indicator

Veteran Era of Service

Business Rule	Error Code
If non-alphanumeric - Error Message: Veteran era of service is non-alphanumeric.	020401 - Veteran era of service is non-alphanumeric
If longer than one character - Error Message: Veteran Era of Service longer than one character.	020402 - Veteran era of service longer than one character



Era of Service is also referred to as "Period of Service". AAC will need an Era of Service table to resolve these key values.

Service Connected

Business Rule	Error Code
If not 'Y' or 'N' – Error message: Service connected indicator invalid.	020201 – Service connected indicator invalid

Service Connected Combined %

Business Rule	Error Code
If value exists and non-numeric – Error message: Service connected Combined % value non-numeric.	020301 - Service connected combined % value non-numeric
If value exists and is greater than 100 – Error message: Service connected % over 100.	020301 - Service Connected Combined % value over 100

Service Connected Codes (Rated Disabilities)

Service connected codes and Service connected % for a repeating group that can exist with the patient demographics entry. There can be zero or many of these groups.

Business Rule	Error Code
If smaller than zero or greater than 9999 – Error message: Service Connected Codes (Rated Disability) out of bounds.	030201 - Service Connected Codes (Rated Disability) out of bounds



AAC will need a table to resolve these codes against a long description taken from VistA file #31.
AAC must do an additional test on their end against this table of codes

Service Connected %

Business Rule	Error Code
If value exists and non-numeric – Error message: Service connected Combined % value non-numeric.	030301 - Service Connected % value non-numeric
If value exists and is greater than 100 – Error message: Service connected % over 100.	030302 - Service connected % over 100

Sex

Business Rule	Error Code
If value not 'M' or 'F' or Null – Error message: Invalid sex value.	010801 - Invalid Sex value



Null equates to 'Unknown'.

Race

Patient Race

If old Race is sent:

Business Rule	Error Code
If not number between 1 and 18 – Error message: Invalid race indicator.	011001: Invalid Race indicator



AAC will need to have a Race table to resolve these values.

If new Race is sent:

Business Rule	Error Code
	011001 - Invalid Race indicator

Patient Race Collection Method

Business Rule	Error Code
If not number between 1 and 18 – Error message: Invalid race indicator.	011002 - Invalid Race Collection Method

Patient Ethnicity

Business Rule	Error Code
If not number between 1 and 4 – Error message: Invalid race indicator.	012201 - Invalid Ethnicity indicator



AAC will need to have a Race table to resolve these values.

Patient Ethnicity Collection Method

Business Rule	Error Code
If not number between 1 and 4 – Error message: Invalid race indicator.	012202 - Invalid Ethnicity collection method



AAC will need to have a Race table to resolve these values.

Zip Code

Business Rule	Error Code
If not nine characters long – Error message: Invalid zip code length.	011101 - Invalid Zip code length
If not numeric – Error message: Zip code contains non-numeric character(s).	011102 - Zip code contains non-numeric characters

Date of Death

Business Rule	Error Code
If non-numeric - Error Message: Non-numeric date of death.	012901 - Non-numeric date of death
If not formatted to YYYYMMDD - Error Message: Date of death formatted incorrectly.	012902 - Date of death formatted incorrectly



If there is no day set the day to '00'. If there is no month and no day set the month and day to '0000'.

Date of Death Transform Code

Created at AAC.

Local ICR Data

This local CCR: ICR data set will always occur once within each patients group of extract data.

Patient ID (DFN)

Business Rule	Error Code
Numeric - Error message: Non-numeric DFN.	040401 - Non-numeric DFN

Station (ICR Site)

Business Rule	Error Code
If non-numeric - Error message: Non-numeric station number.	040301 - Non-numeric station number
If greater than 999 - Error message: Station longer than 3 characters.	040302 - Station number longer than three characters

Date Entered into the ICR

Business Rule	Error Code
If not in date format – Error message: Date entered into ICR has invalid format.	040601 - Date entered into registry has invalid format



This date will be converted before transmission to the format YYYYMMDD. If no day is available, the day will be transferred as '00'. If no day and no month are present, the month and day will be sent as '0000'.

Date of Last Extraction

Business Rule	Error Code
If not in date format – Error message: Date of last extraction has invalid format.	060201 - Date of last extraction has invalid format



This date will be converted before transmission to the format YYYYMMDD. If no day is available, the day will be transferred as '00'. If no day and no month are present, the month and day will be sent as '0000'.

Date of AIDS (Cat 4)

Business Rule	Error Code
If not in date format – Error message: Date of AIDS has invalid format.	040901 - Date of AIDS (Cat 4) has invalid format



This date will be converted before transmission to the format YYYYMMDD. If no day is available, the day will be transferred as '00'. If no day and no month are present, the month and day will be sent as '0000'.

Date CDC Form Complete

Business Rule	Error Code
If not in date format – Error message: Date CDC form complete has invalid format.	041101 - Date CDC form complete has invalid format



This date will be converted before transmission to the format YYYYMMDD. If no day is available, the day will be transferred as '00'. If no day and no month are present, the month and day will be sent as '0000'.

New Patient

Business Rule	Error Code
0-3 – Error message: Invalid new patient field.	050101 - Invalid new patient field



0=No, 1=Automatically added, 2=Manually added and 3=Reactivated.

ICR Evidence of Positive HIV Diagnosis

Business Rule	Error Code
If not 1-3 – Error message: Invalid ICR supporting evidence field.	041001 - Invalid ICR supporting evidence field



1=HIV antibody test or HIV viral load result from another VA, 2=HIV antibody test or HIV viral load result from outside VA or 3=Other.

Risk Factor (Multiple)

Business Rule	Error Code
If not 1-13 – Error message: Invalid Risk Factor value.	041201: Invalid Risk Factor

Inactivation Date

Business Rule	Error Code
If not in date format – Error message: Inactivation date has invalid format.	041501 - Inactivation date has invalid format



This date will be converted before transmission to the format YYYYMMDD. If no day is available, the day will be transferred as '00'. If no day and no month are present, the month and day will be sent as '0000'.

ICR Reason for Inactivation

Business Rule	Error Code
If not 1-3 – Error message: Invalid ICR reason for inactivation.	041601 - Invalid ICR reason for inactivation



1=Manually erroneously entered in error, 2=Miscoded ICD-9, or 3=Other.

Reactivation Date

Business Rule	Error Code
If not date format – Error message: Reactivation date has invalid format.	050201 - Reactivation date has invalid format



This date will be converted before transmission to the format YYYYMMDD. If no day is available, the day will be transferred as '00'. If no day and no month are present, the month and day will be sent as '0000'.

Outpatient Visits

Station/Division

Business Rule	Error Code
If non-numeric - Error message: Non-numeric station number.	120301 - Non-numeric Station number
If greater than 999 - Error message: Station longer than three characters.	120302 - Station longer than three characters

Delete Flag

Business Rule	Error Code
If not 1 or 0 – Error message: Invalid Delete flag.	125101 – Invalid Delete Code

AMIS Clinic Stop Code

Business Rule	Error Code
If non-numeric - Error message: Non-numeric station number	120303 – Invalid AMIS Clinic Stop Code
Must be between 1 and 999	

Date of Visit

Business Rule	Error Code
If not in date format – Error message: Inactivation date has invalid format.	PV1: 124401 – Invalid Date of Visit OBR: 090705 – Invalid Date of Visit

Encounter Provider

Business Rule	Error Code
If not an integer – Error message: Non-integer provider ID.	120701 – Invalid Provider code

Encounter Provider Class

Business Rule	Error Code
If not an integer – Error message: Non-integer provider class.	120702 – Invalid Provider Class



AAC will need a table to resolve these codes against a long description taken from VistA file #7.

ICD9 Codes M1

Business Rule	Error Code and Message
If not between 1 and 7 characters in length: Invalid ICD9 length.	100502 – Invalid ICD code
If the code does not contain a decimal point: ICD9 code dose not contain a decimal point.	100502 – Invalid ICD code

CPT Code M2

Business Rule	Error Code
If not between 1 and 5 characters in length: Invalid ICD9 length.	100503 – Invalid CPT code

Procedure Provider M2

Business Rule	Error Code
If not an integer – Error message: Non-integer provider ID.	101601 – Invalid CPT Procedure Provider

CPT Code Provider Class M2

Business Rule	Error Code
If not an integer – Error message: Non-integer provider class.	101602 – Invalid CPT Provider Class



AAC will need a table to resolve these codes against a long description taken from VistA file #7.

Admissions

Station/Division

Business Rule	Error Code
If non-numeric - Error message: Non-numeric station number.	120301 - Non-numeric Station number
If greater than 999 - Error message: Station longer than 3 characters.	120302 - Station longer than 3 characters

Admission Date

Business Rule	Error Code
If not in date format – Error message: Inactivation date has invalid format.	PV1: 124401 – Invalid Date of Visit OBR: 090705 – Invalid Date of Visit

Admission Diagnosis

Business Rule	Error Code
If not between 1 and 7 characters in length: Invalid ICD9 length.	100504 - Invalid Admission Diagnosis
If the code does not contain a decimal point: ICD9 code dose not contain a decimal point.	100504 - Invalid Admission Diagnosis

Discharge Date

Business Rule	Error Code
If not in date format – Error message: Inactivation date has invalid format.	124501 – Invalid Discharge Date

Bed Section at Discharge

Business Rule	Error Code
If not between 3 and 30 characters in length: Invalid Bed Section at Discharge length.	120601 – Invalid Bed Section at Discharge Date

Type of Disposition

Business Rule	Error Code
If not between 1 and 7 characters in length: Invalid Type of Disposition.	123601 - Invalid Type of Disposition

AAC will need to transform these codes using the following:

- 1 - For Regular**
- 2 - For NBC or While Asih**
- 3 - For Expiration 6 Month Limit**
- 4 - For Irregular**
- 5 – For Transfer**
- 6 - For Death With Autopsy**
- 7 - For Death Without Autopsy**

Primary Discharge Diagnosis

Business Rule	Error Code
If not between 1 and 7 characters in length: Invalid ICD9 length.	100505 - Invalid Primary Discharge Diagnosis
If the code does not contain a decimal point: ICD9 code dose not contain a decimal point.	100505 - Invalid Primary Discharge Diagnosis

Discharge Diagnosis Codes

Business Rule	Error Code
If not between 1 and 7 characters in length: Invalid ICD9 length.	100506 - Invalid Discharge Diagnosis Code(s)
If the code does not contain a decimal point: ICD9 code dose not contain a decimal point.	100506 - Invalid Discharge Diagnosis Code(s)

Bed Section History (Multiple)

Bed Section Start Date

Business Rule	Error Code
If not in date format – Error message: Inactivation date has invalid format.	101401 - Invalid Bed Section Start Date

Bed Section

Business Rule	Error Code
If not between 3 and 30 characters in length: Invalid Bed Section at Discharge length.	100603 - Invalid Bed Section

Bed Section End Date

Business Rule	Error Code
If not in date format – Error message: Inactivation date has invalid format.	050201: Reactivation date has invalid format

Diagnosis Codes x 10

Business Rule	Error Code
If not between 1 and 7 characters in length: Invalid ICD9 length.	050201: Reactivation date has invalid format
If the code does not contain a decimal point: ICD9 code dose not contain a decimal point.	

Surgical Procedures (Multiple)

Date of Procedures

Business Rule	Error Code
If not in date format – Error message: Inactivation date has invalid format.	101402 - Invalid Date of Surgical Procedure

Procedures x 5

Business Rule	Error Code
If not between 1 and 6 characters in length: Invalid Procedure code length.	100508 - Invalid Surgical Procedure Code(s)
If the code does not contain a decimal point: Procedure code dose not contain a decimal point.	100508 - Invalid Surgical Procedure Code(s)

Other Procedures (Multiple)

Date of Other Procedures

Business Rule	Error Code
If not in date format – Error message: Inactivation date has invalid format.	101403 - Invalid Date of Other Procedures

Bed Section/Specialty

Business Rule	Error Code
If not between 3 and 30 characters in length: Invalid Bed Section at Discharge length.	100604 - Invalid Bed Section/Specialty of Other Procedures

Procedures x 5

Business Rule	Error Code
If not between 1 and 6 characters in length: Invalid Procedure code length.	100509 - Invalid Other Procedure Code(s)
If the code does not contain a decimal point: Procedure code dose not contain a decimal point.	100509 - Invalid Other Procedure Code(s)

Outpatient Drugs

This Outpatient Drugs data set can occur zero to many times within each patients group of extracted data.

National Drug Code (NDC)

Business Rule	Error Code
If the NDC is small than five characters long or longer than 20 characters – Error message: NDC code has invalid length.	For RXE: 080201 - NDC code has invalid length

Example: 04767-9101-26.

Drug Name

Business Rule	Error Code
If name is smaller than one character or longer than 40 characters – Error message: Drug name has invalid length.	For RXE: 080202 - Drug name has invalid length

Example: VENLAFAKINE HCL 25MG TAB.

Last Dispensed Date

Business Rule	Error Code
If not date format – Error message: Reactivation date has invalid format.	082201 - Invalid Last Dispensed Date

Order Start Date

Business Rule	Error Code
If not date format – Error message: Order Start date has invalid format.	For ORC: 070401 - Order start date/time has invalid format



This date will be converted prior to transmission to the format YYYYMMDD. If no day is available, the day will be transferred as '00'. If no day and no month are present, the month and day will be sent as '0000'.

Refill Number

Business Rule	Error Code
If non-numeric – Error message: Refills number non-numeric.	081701 - Invalid Refill Number

Maximum Number of Refills

Business Rule	Error Code
If non-numeric – Error message: Maximum number of Refills non-numeric.	080401 - Invalid Maximum Number of Refills

Dispensed Amount

Business Rule	Error Code
If amount is not greater than zero – Error message: Amount value below valid range.	For RXE: 081001 - Amount value below valid range
If amount is longer than 11 characters – Error message: Amount has invalid length.	For RXE: 081002 - Amount has invalid length
If amount has more than two characters after the decimal point – Error message: Amount can only have two numbers after it decimal.	For RXE: 081003 - Amount can only have 2 decimal places
If the value before the decimal is larger than 99999999 – Error message: Invalid integer value.	For RXE: 081004 - Invalid integer value

Example: 30.

Days Supply

Business Rule	Error Code
If non-numeric between 1 – 90 – Error message: Days supply has invalid length.	For RXE: 081901 - Days supply has invalid length

Patient Status

Business Rule	Error Code
If not a string of characters between one and 25 characters – Error message: Patient Status has invalid length.	082701 - Invalid Patient Status

Amis Clinic Stop Code

Business Rule	Error Code
If non-numeric - Error message: Non-numeric station number.	082101 - Invalid Clinic Stop Code
Must be between one and 999.	082101 - Invalid Clinic Stop Code

Unit Cost

Business Rule	Error Code
If not numeric between 0 and 9999: Invalid Unit Code value.	082301 - Invalid Unit Cost

VA Drug Class

Business Rule	Error Code
If drug class value is smaller than one character or longer than five characters – Error message: VA Drug class has invalid length.	For RXE: 080203 - VA Drug class has invalid length

Example: XA515.

SIG

Business Rule	Error Code
This field will be a single field that can contain alphanumeric values and punctuation – it will be no longer than 245 characters long.	For RXE: 080701 - SIG has invalid length

Example: APP 1 PATCH TO SKIN QAM AND REMOVE HS (TO REPLACE NITROGLYCERIN 6.5MG SA CAP).

Released Date

Business Rule	Error Code
If not date format – Error message: Reactivation date has invalid format.	050201: Reactivation date has invalid format



This date will be converted prior to transmission to the format YYYYMMDD. If no day is available, the day will be transferred as '00'. If no day and no month are present, the month and day will be sent as '0000'.

Fill Date

The fill/date time and CMOP fields form a group that can occur zero to many times within each occurrence of an outpatient drugs entry.

Business Rule	Error Code
If not date format – Error message: Reactivation date has invalid format.	For RXE: 081801 - Fill date/time has invalid format



This date will be converted prior to transmission to the format YYYYMMDD. If no day is available, the day will be transferred as '00'. If no day and no month are present, the month and day will be sent as '0000'.

CMOP

Business Rule	Error Code
If not Null, 'Y' or 'N' – Error message: Invalid CMOP indicator.	For RXE: 082001 - Invalid CMOP indicator



Null='N'.

VA Product Name

Business Rule	Error Code
If name is shorter than three characters or longer than 64 characters – Error message: VA product name has an invalid length	For RXE: 080204 - VA Product name has an invalid length

Example: PHENOBARBITAL 18.5MG/5ML ELIXIR.

VA Drug Code

Business Rule	Error Code
If code smaller than one or greater than 99999999 – Error message: VA drug code out of range.	For RXE: 080205 - VA drug code out of range

Ordering Provider

Business Rule	Error Code
If not an integer – Error message: Non-integer provider ID.	For ORC: 071201 - Non-integer provider ID



This value (and all other providers being transmitted within this system) is concatenated with the Station number when the AAC receives data; this forms the unique provider ID.

Provider Class Code

Business Rule	Error Code
If not free test between 0 and 30 chars – Error message: Invalid provider class.	071202 - Invalid Provider Class Code

Station

Business Rule	Error Code
If station shorter than three characters or longer than seven – Error message: Station has invalid length.	For ORC: 071701 - Station has invalid length 071702 - Station contains non-alphanumeric characters 071801 - Station Division has invalid length
If station has any non-alphanumeric characters – Error message: Station contains non-alphanumeric characters.	

Mail/Window

Business Rule	Error Code
If mail window value not ‘AD’ or ‘FR’ – Error message: Invalid Mail/Window code.	For RXE: 083001 - Invalid Mail/Window code



‘TR’=Window, ‘AD’=Mail.

The values ‘TR’ and ‘AD’ are used, as there is no Mail/Window segment defined in HL7. Within VistA, these values are stored as ‘W’ and ‘M’. It is suggested that AAC convert back to these values before filing in Oracle.

Inpatient Drugs

This Inpatient Drugs data set can occur zero to many times within each patients group of extracted data.

National drug code (NDC)

Business Rule	Error Code
If the NDC is smaller than five characters long or longer than 20 characters – Error message: NDC code has invalid length.	For RXE: 080201 - NDC code has invalid length

Example: 04767-9101-26

Drug Name

Business Rule	Error Code
If name is smaller than one character or longer than 40 characters – Error message: Drug name has invalid length.	For RXE: 080202 - Drug name has invalid length

Example: VENLAFAXINE HCL 25MG TAB

VA Drug Class

Business Rule	Error Code
If drug class value is smaller than one character or longer than five characters – Error message: VA Drug class has invalid length.	For RXE: 080203 - VA Drug class has invalid length

Example: XA515

Order Start Date

Business Rule	Error Code
If not date format – Error message: Order Start date has invalid format.	For ORC: 070401 - Order start date/time has invalid format



This date will be converted prior to transmission to the format YYYYMMDD. If no day is available, the day will be transferred as '00'. If no day and no month are present, the month and day will be sent as '0000'. Time format is in the format HHMMSS.

Unit/Dose

Business Rule	Error Code
If not numeric – Error message: Non-numeric unit dose.	For RXE: 082402 - Unit/dose value out of range
If less than zero or larger than 30 – Error message: Unit/Dose value of valid range.	082403 - Unit/dose can only have 2 decimal places
If value has more than 2 decimals – Error message: Unit/Dose has too many decimals.	

Schedule

Business Rule	Error Code
If not between one and 70 characters long – Error message: Schedule has invalid length.	080101 - Invalid Schedule

Medication Route

Business Rule	Error Code
If not free text between 0 and 45 characters – Error message: Invalid Medication Route.	082102 - Invalid Medication Route

Stop date/time

Business Rule	Error Code
If not date format – Error message: Reactivation date has invalid format.	For RXE: 081802 - Stop date/time has invalid format



This date will be converted prior to transmission to the format YYYYMMDD. If no day is available, the day will be transferred as '00'. If no day and no month are present, the month and day will be sent as '0000'. Time format is in the format HHMMSS.

VA product name

Business Rule	Error Code
If name is shorter than three character or longer than 64 characters – Error message: VA product name has an invalid length.	For RXE: 080204 - VA Product name has an invalid length

Example: PHENOBARBITAL 18.5MG/5ML ELIXIR.

VA Drug Code

Business Rule	Error Code
If code smaller than one or greater than 99999999 – Error message: VA drug code out of range.	For RXE: 080205 - VA drug code out of range

Ordering Provider

Business Rule	Error Code
If not an integer – Error message: Non-integer provider ID.	For ORC: 071201 - Non-integer provider ID



This value (and all other providers being transmitted) is concatenated with the Station number when AAC receives data; this forms the unique provider ID.

Provider Class code

Business Rule	Error Code
If not an integer – Error message: Non-integer provider class	071202 - Invalid Provider Class Code

Station

Business Rule	Error Code
If station shorter than three characters or longer than seven – Error message: Station has invalid length.	For ORC: 071701 - Station has invalid length 071702 - Station contains non-alphanumeric characters 071801 - Station Division has invalid length
If station has any non-alphanumeric characters – Error message: Station contains non-alphanumeric characters.	

Surgical Pathology

Date

Business Rule	Error Code
If not date format – Error message: Surgical Pathology date has invalid format.	090706 - Invalid Surgical Pathology Date

Accession Number

Business Rule	Error Code
If not free text and between five and fifteen characters – Error message: Invalid Accession Number.	090301 - Invalid Surgical Pathology Accession Number

Station/Division

Business Rule	Error Code
If station shorter than three characters or longer than seven – Error message: Station has invalid length.	094413 - Surgical Pathology station non-alphanumeric 094414 - Surgical Pathology station less than 3 characters long 094415 - Surgical Pathology station longer than 7 characters long
If station has any non-alphanumeric characters – Error message: Station contains non-alphanumeric characters.	

Specimen (M1)

Business Rule	Error Code
If Specimen not between two and 75 characters – Error message: Specimen has invalid length.	100510 - Invalid Surgical Pathology Specimen

Brief Clinical History (M2)

This is a word processing field that is of indeterminate length.

Business Rule	Error Code
	100511 - Invalid Surgical Pathology Brief Clinical History

Preoperative Diagnosis (M3)

This is a word processing field that is of indeterminate length.

Business Rule	Error Code
	100512 - Invalid Surgical Pathology Preoperative Diagnosis

Operative Findings (M4)

This is a word processing field that is of indeterminate length.

Business Rule	Error Code
	100513 - Invalid Surgical Pathology Operative Findings

Postoperative Findings (M5)

This is a word processing field that is of indeterminate length.

Business Rule	Error Code
	100514 - Invalid Surgical Pathology Postoperative Findings

Date Report Completed

Business Rule	Error Code
If not date format – Error message: Reactivation date has invalid format.	090801 - Invalid Surgical Pathology Date report Completed

Surgeon/Physician

Business Rule	Error Code
If not an integer – Error message: Non-integer provider ID.	091602 - Invalid Surgical Pathology Physician



This value (and all other providers being transmitted) is concatenated with the Station number when AAC receives data; this forms the unique provider ID.

Gross Description (M6)

This is a word processing field that is of indeterminate length.

Business Rule	Error Code
	100515 - Invalid Surgical Pathology Gross Description

Microscopic Description (M7)

This is a word processing field that is of indeterminate length.

Business Rule	Error Code
	100516 - Invalid Surgical Pathology Microscopic Description

Surgical Path Diagnosis (M8)

This is a word processing field that is of indeterminate length.

Business Rule	Error Code
	100517 - Invalid Surgical Pathology Diagnosis

ICD Diagnosis (M9)

Business Rule	Error Code
If not between one and seven characters in length: Invalid ICD9 length.	100518 - Invalid Surgical Pathology ICD Diagnosis
If the code does not contain a decimal point: ICD9 code dose not contain a decimal point.	100518 - Invalid Surgical Pathology ICD Diagnosis

Cytopathology

Date

Business Rule	Error Code
If not date format – Error message: Cytopathology Pathology date has invalid format.	090707 - Invalid Cytopathology Date

Accession Number

Business Rule	Error Code
If not free text and between five and 15 characters – Error message: Invalid Accession Number.	090302 - Invalid Cytopathology Accession Number

Station/Division

Business Rule	Error Code
If station shorter than three characters or longer than seven – Error message: Station has invalid length.	094416 - Cytopathology station non-alphanumeric 094417 Cytopathology station less than 3 characters long 094418 - Cytopathology station longer than 7 characters long
If station has any non-alphanumeric characters – Error message: Station contains non-alphanumeric characters.	

Specimen (M1)

Business Rule	Error Code
If Specimen not between two and 75 characters – Error message: Specimen has invalid length.	100519 - Invalid Cytopathology Specimen

Brief Clinical History (M2)

This is a word processing field that is of indeterminate length.

Business Rule	Error Code
	100520 - Invalid Cytopathology Brief Clinical History

Preoperative Diagnosis (M3)

This is a word processing field that is of indeterminate length.

Business Rule	Error Code
	100521 - Invalid Cytopathology Preoperative Diagnosis

Operative Findings (M4)

This is a word processing field that is of indeterminate length.

Business Rule	Error Code
	100522 - Invalid Cytopathology Operative Findings

Postoperative Findings (M5)

This is a word processing field that is of indeterminate length.

Business Rule	Error Code
	100523 - Invalid Cytopathology Postoperative Findings

Cytopathology Diagnosis (M6)

This is a word processing field that is of indeterminate length.

Business Rule	Error Code
	100524 - Invalid Cytopathology Diagnosis

ICD Diagnosis (M7)

Business Rule	Error Code
If not between one and seven characters in length: Invalid ICD9 length.	100525 - Invalid Cytopathology ICD Diagnosis
If the code does not contain a decimal point: ICD9 code dose not contain a decimal point.	100525 - Invalid Cytopathology ICD Diagnosis

Autopsy

This Autopsy data set can occur zero to many times within each patients group of extracted data.

Autopsy Date

Business Rule	Error Code
If invalid format – Error message: Autopsy date has invalid format.	090702 - Autopsy date has invalid format



This date will be converted prior to transmission to the format YYYYMMDD. If no day is available, the day will be transferred as '00'. If no day and no month are present, the month and day will be sent as '0000'.

Accession Number

Business Rule	Error Code
If not free text and between five and 15 characters – Error message: Invalid Accession Number.	090303 - Invalid Autopsy Accession Number

Station

Business Rule	Error Code
If not alphanumeric – Error message: Autopsy station non-alphanumeric.	094404 - Autopsy station non-alphanumeric
If less than three characters long – Error message: Autopsy station less than three characters long.	094405 - Autopsy station less than three characters long
If longer than seven characters – Error message: Autopsy station longer than seven characters long.	094406 - Autopsy station longer than seven characters long
	094502 - Autopsy station division invalid length

Radiology

This Radiology data set can occur zero to many times within each patients group of extracted data.

Exam Date

Business Rule	Error Code
Invalid format – Error message: Exam date has invalid format.	090703 - Exam date has invalid format

Case Number

Business Rule	Error Code
If not a whole number between one and 99999 – Error message: Invalid Radiology case number.	090304 - Invalid Radiology Case Number

CPT-4 Procedure Code

Business Rule	Error Code
If not a valid code i.e., does not exists on the CPT-4 Procedure Code table – Error code: Radiology CPT code does not exist on the CPT-4 Procedure Code file.	090401 - Radiology CPT code does not exist on the CPT-4 Procedure Code File
If longer than five characters – Error message: CPT-4 Procedure code longer than five characters.	090402 - CPT-4 Procedure code longer than five characters
If shorter than five characters – Error message: CPT-4 Procedure code shorter than five characters.	090403 - CPT-4 Procedure code less than five characters
	090404 - Invalid procedure code type for CPT-4



AAC will need a CPT-4 table to resolve these values.

Procedure Name

Business Rule	Error Code
This field can be between one and 60 characters long if not – Error message: Invalid Procedure name.	090408 - Invalid Procedure Name

Station

Business Rule	Error Code
If not alphanumeric – Error message: Radiology station non-alphanumeric.	094407 - Radiology station non-alphanumeric
If less than three characters long – Error message: Radiology station less than three characters long.	094408 - Radiology station less than three characters long
If longer than seven characters – Error message: Radiology station longer than seven characters long.	094409 - Radiology station longer than seven characters long
	094501 - Radiology station division invalid length

Ordering Provider

Business Rule	Error Code
If not an integer – Error message: Non-integer provider ID.	091601 - Non-integer provider ID



This value (and all other providers being transmitted) is concatenated with the Station number when AAC receives data; this forms the unique provider ID.

VA Person Class

Business Rule	Error Code
If not an integer – Error message: Non-integer provide class.	091603 - Invalid Radiology Person Class Code



AAC will need a table to resolve these codes against a long description taken from VistA file #7.

Results – Report Text

This is a word processing field that is of indeterminate length.

Business Rule	Error Code
	100526 - Invalid Radiology Report Text

Results – Impression Text

This is a word processing field that is of indeterminate length.

Business Rule	Error Code
	100527 - Invalid Radiology Impression Text

Results – Clinical History

This is a word processing field that is of indeterminate length.

Business Rule	Error Code
	100528 - Invalid Radiology Clinical History

Lab Test

This Lab Test data set can occur zero to many times within each patients group of extracted data.

LOINC Code

Business Rule	Error Code
If code does not exist on the LOINC table – Error message: Code does not exist within LOINC table.	
If code not numeric – Error message: LOINC code not numeric.	
If code<1 – Error message: LOINC code smaller than 1.	
If code>9999999 – Error message: LOINC code bigger than 9999999.	



AAC will need national LOINC table.

Accession Number

Business Rule	Error Code
If not free text and between five and 15 characters – Error message: Invalid Accession Number.	090305 - Invalid Lab Accession Number

Date Specimen Taken/Accession Date

Business Rule	Error Code
Invalid format – Error message: Exam date has invalid format.	090704 - Accession date has invalid format

Name of Test

Business Rule	Error Code
If not between three and 40 characters long – Error message: Name of test has invalid length.	090306 - Invalid Lab Name of Test

Flag on Values

Business Rule	Error Code
Value should not be longer then five characters if it exists.	100801 - Invalid Lab Flag on Values

NLT Code

Business Rule	Error Code
If the code is shorter than five characters – Error message: NLT code shorter than five characters.	For OBR: 090406 - NLT code shorter than five characters For OBX: 100302 - NLT code shorter than five characters
Business rule: If code longer than 15 characters – Error message: NLT code longer than 15 characters.	For OBR: 090407 - NLT code longer than 15 characters For OBX: 100303 - NLT code longer than 15 characters

Result

Business Rule	Error Code
If code longer than 60 characters – Error message: Result longer than 60 characters.	100501 - Result longer than 60 characters

Range High

Business Rule	Error Code
If range longer than 50 characters – Error message: Range high longer than 50 characters.	100701 - Range High longer than 50 characters

Range Low

Business Rule	Error Code
If range longer than 50 characters – Error message: Range low longer than 50 characters.	100702 - Range Low longer than 50 characters

Units

Business Rule	Error Code
If units shorter than two characters – Error message: Units shorter than two characters.	100601 - Units shorter than two characters
If code longer than 10 characters – Error message: Units longer than 10 characters.	100602 - Units longer than 10 characters

Site/Specimen

Business Rule	Error Code
If site/specimen shorter than two characters – Error message: Site/specimen shorter than two characters.	101501 - Site/specimen shorter than two characters
If site/specimen longer than 80 characters – Error message: Site/specimen longer than 80 characters.	101502 - Site/specimen longer than 80 characters

Station

Business Rule	Error Code
If station not alphanumeric – Error message: Lab test station non-alphanumeric.	For OBR: 094410 - Lab station non-alphanumeric For OBX: 100803 - Lab station division invalid length
If station less than three characters long – Error message: Lab test station less than three characters long.	For OBR: 094411 - Lab station less than three characters long For OBX: 100803 - Lab station division invalid length
If station longer than seven characters – Error message: Lab test station longer than seven characters long.	For OBR: 094412 - Lab station longer than seven characters long For OBX: 100803 - Lab station division invalid length

Comments (M1)

The comment field can occur zero to many times within each occurrence of a lab test entry.

Business Rule	Error Code
: If comments shorter than one character – Error message: Comment shorter than one character.	100529 - Invalid Lab Comments
If comment longer than 68 characters – Error message: Comments longer than 68 characters.	100529 - Invalid Lab Comments

Example:

- 1) FREE TESTOSTERONE WITHIN NORMAL
REFERENCE RANGE.
- 2) LH/FSH NOT SENT OUT PER NEW POLICY
EFFECTIVE 7/19/99
- 3) SPECIMEN FROZEN. CONTACT LAB IF STILL NEEDED. TEST DONE A
VAMC- 10701 EAST BLVD- CLEVELAND, OH 44106
- 4) TEST PERFORMED AT ARUP LABS-500 CHIPETA
WAY-SLC, UTAH 84108

Microbiology

Accession Date

Business Rule	Error Code
Invalid format – Error message: Exam date has invalid format.	090708 - Invalid Microbiology Accession Date

Accession Number

Business Rule	Error Code
If not free text and between five and 15 characters – Error message: Invalid Accession Number.	090307 - Invalid Microbiology Accession Number

Source

Business Rule	Error Code
If not null and longer than 80 characters – Error message: Microbiology – Source of invalid length.	091301 - Invalid Microbiology Source

Sample Type

Business Rule	Error Code
If not null and longer than 30 characters – Error message: Microbiology – Sample type of invalid length.	092001 - Invalid Sample Type

Station

Business Rule	Error Code
If station non-alphanumeric – Error message: Lab test station non-alphanumeric.	094419 - Microbiology station non-alphanumeric
If station less than three characters long – Error message: Lab test station less than three characters long.	094420 - Microbiology station less than three characters long
If station longer than seven characters – Error message: Lab test station longer than seven characters long.	094421 - Microbiology station longer than seven characters long

Bac

Sputum Screen

Business Rule	Error Code
If not null and longer than 68 characters – Error message: Microbiology – Sputum Screen of invalid length.	092101 - Invalid Microbiology Sputum Screen

Urine Screen

Business Rule	Error Code
If not null and not equal to P or N – Error message: Microbiology – Invalid urine screen code.	091101 - Invalid Microbiology Urine Screen

Sterility Control

Business Rule	Error Code
If not null and not equal to P or N – Error message: Microbiology – Invalid urine screen code.	092501 - Invalid Microbiology Sterility Control

Bact

Bact RPT Remark (M1)

Business Rule	Error Code
If not null and longer than 68 characters – Error message: Microbiology - Bact remark of invalid length.	100530 - Invalid Microbiology Bact RPT Remark

Gram

Gram Stain (M2)

Business Rule	Error Code
If not null and longer than 68 characters – Error message: Microbiology - Gram Stain of invalid length.	100531 - Invalid Microbiology Gram Stain

Org

Organism (M3)

Business Rule	Error Code
If not null and longer than 68 characters – Error message: Microbiology –Org has invalid length.	100532 - Invalid Microbiology Organism

Quantity (M3)

Business Rule	Error Code
If not null and longer than 68 characters – Error message: Microbiology – Org Quantity of invalid length.	100605 - Invalid Microbiology Organism Quantity

Orgcom

Comment (M3.1)

Business Rule	Error Code
If not null and longer than 68 characters – Error message: Microbiology –Orgcom comment of invalid length.	100533 - Invalid Microbiology ORGCOM Comment

Org Antibody

Antibody (M3.2)

Business Rule	Error Code
If not null and longer than 20 characters – Error message: Microbiology –Organism antibody of invalid length.	100534 - Invalid Microbiology Antibody

Mic (ug/ml) (M3.2)

Business Rule	Error Code
If not null and smaller than .001 or greater than 1000 – Error message: Microbiology – Organism antibody Mic has invalid value.	100703 - Invalid Microbiology Antibody Mic/Mbc

Mbc (ug/ml) (M3.2)

Business Rule	Error Code
If not null and smaller than .001 or greater than 1000 – Error message: Microbiology – Organism antibody Mbc has invalid value.	100703 - Invalid Microbiology Antibody Mic/Mbc

Par

Parasite (M4)

Business Rule	Error Code
If not null and longer than 80 characters – Error message: Microbiology – Parasite has invalid length.	100535 - Invalid Microbiology Parasite

Stage Codes (M4.1)

Business Rule	Error Code
If not C, E, L, S, G, M, A, R or F – Error Message: Microbiology – Par has Invalid Stage code.	100536 - Invalid Microbiology Stage Codes

Quantity (M4.1)

Business Rule	Error Code
If not null and longer than 68 characters – Error message: Microbiology – Par Quantity of invalid length.	100606 - Invalid Microbiology Parasite Quantity

Comment (M4.1.1)

Business Rule	Error Code
If not null and longer than 68 characters – Error message: Microbiology – Par Comment of invalid length.	100537 - Invalid Microbiology Parasite Comment

Parrt

Parasite RPT Remark (M5)

Business Rule	Error Code
If not null and longer than 68 characters – Error message: Microbiology – Parasite Remark of invalid length.	100538 - Invalid Microbiology Parasite RPT Remark

Comps

Specimen Comment (M6)

Business Rule	Error Code
If not null and longer than 68 characters – Error message: Microbiology - Comps Specimen comment of invalid length.	100539 - Invalid Microbiology Specimen Comment

Medical Procedures (EKG)

Date

Business Rule	Error Code
Invalid format – Error message: Medical Procedure date has invalid format.	090601 - Invalid Medical Procedure Date (RDX)

ID

Business Rule	Error Code
If not free text between one and 10 characters – Error message: Medical Procedure ID has an invalid format.	090308 - Invalid Medical Procedures ID

Confirmation Status

Business Rule	Error Code
If not C or U– Error Message: Medical Procedures – Confirmation Status has Invalid code.	092502 - Invalid Medical Procedures Confirmation Status

Interpretation (rhythm) (M1)

Business Rule	Error Code
If not null and longer than 30 characters – Error message: Medical Procedures - Interpretation of invalid length.	100541 - Invalid Medical Procedures Interpretation (Rhythm)

Code Modifier (M1)

Business Rule	Error Code
If not equal to DEFINITE, PROBABLE, POSSIBLE, BORDERLINE, CONSIDER or CHANGES OR SERIAL – Error message: Medical Procedures – Code modifier invalid.	100401 - Code Modifier

Auto-Instrument Diagnosis (WL) (M2)

Indeterminate, as this field is a word processing field.

Business Rule	Error Code
	100540 - Invalid Medical Procedures Auto Instrument Diagnosis

Automated Instrument Data

Business Rule	Error Code
Date has invalid format – Error message: Exam date has invalid format.	

Station/Division

Business Rule	Error Code
If station not alphanumeric – Error message: Lab test station non-alphanumeric.	094422 - Medical Procedures station non-alphanumeric
If station less than three characters long – Error message: Lab test station less than three characters long.	094423 - Medical Procedures station less than three characters long
If station longer than seven characters – Error message: Lab test station longer than seven characters long.	094424 - Medical Procedures longer than seven characters long

Allergy

Reactant

Business Rule	Error Code
If not null and longer than 30 characters – Error message: Allergy - Reactant of invalid length.	091302 - Invalid Allergy Reactant

IEN

Business Rule	Error Code
If not numeric – Error message: Allergy IEN is not numeric.	090309 - Invalid Allergy IEN

Drug Ingredients (M1)

Business Rule	Error Code
If not null and longer than 64 characters – Error message: Allergy- Drug Ingredients of invalid length.	100542 - Invalid Allergy Drug Ingredients

VA Drug Class (M2)

Business Rule	Error Code
If drug class value is smaller than one character or longer than five characters – Error message: Allergy - VA Drug class has invalid length.	100543 - Invalid Allergy VA Drug Class

Example: XA515

Allergy Type

Business Rule	Error Code
If allergy Type value is longer than five characters – Error message: Allergy has invalid length.	092002 - Invalid Allergy Type

Origination date

Business Rule	Error Code
Invalid format – Error message: Exam date has invalid format.	090710: Invalid Allergy Origination Date

Originator

Business Rule	Error Code
If not an integer – Error message: Non-integer provider ID.	091604 - Invalid Allergy Originator



This value (and all other providers being transmitted) is concatenated with the Station number when AAC receives data; this forms the unique provider ID.

VA Person Class Code

Business Rule	Error Code
If not an integer – Error message: Non-integer provide class.	091605 - Invalid Allergy Originator Class Code



AAC will need a table to resolve these codes against a long description taken from VistA file #7.

Observed/Historical

Business Rule	Error Code
If not 'o' (for observed) or 'h' (for historical) – Error message: Allergy – Observed/Historical has an invalid code.	092503 - Invalid Allergy Observed/Historical

Reactions (M3)

Business Rule	Error Code
If not null and longer than 30 characters – Error message: Allergy - Reactions of invalid length.	100544 - Invalid Allergy Reactions

Date Entered (M3)

Business Rule	Error Code
Invalid format – Error message: Exam date has invalid format.	101202 - Invalid Reactions Date Entered

IV Data

Start Date

Business Rule	Error Code
Invalid format – Error message: Exam date has invalid format.	090711 - Invalid IV Start Date

Stop Date

Business Rule	Error Code
Invalid format – Error message: Exam date has invalid format.	090802 - Invalid IV Stop Date

Order Number

Business Rule	Error Code
If not free text and between five and 15 characters – Error message: Invalid Accession Number.	090310 - Invalid IV Order Number

Type

Business Rule	Error Code
If not A, P, H, S or C – Error message: IV Data – Type has an invalid code.	094001 - Invalid IV Type

AAC will need to translate these codes to the following values:

A - ADMIXTURE

P - FOR PIGGYBACK

H - FOR HYPERAL

S - FOR SYRINGE

C - FOR CHEMOTHERAPY

Infusion Rate

Business Rule	Error Code
If not null and longer than 30 characters – Error message: IV Data – Infusion rate of invalid length.	092003 - Invalid IV Infusion Rate

Schedule

Business Rule	Error Code
If not null and longer than 70 characters – Error message: IV Data – Schedule of invalid length.	091303 - Invalid IV Schedule

Station

Business Rule	Error Code
If station not alphanumeric – Error message: Lab test station non-alphanumeric.	094425 - IV station non-alphanumeric
If station less than three characters long – Error message: Lab test station less than three characters long.	094426 - IV station less than three characters long
If station longer than seven characters – Error message: Lab test station longer than seven characters long.	094427 - IV longer than seven characters long

Other Print Info (M1)

Business Rule	Error Code
If not null and longer than 60 characters – Error message: IV Data –Other print info has an invalid length.	100545 - Invalid IV Other Print Info

Additive (M2)

Business Rule	Error Code
If not null and longer than 30 characters – Error message: IV Data – Additive has an invalid length.	100546 - Invalid IV Additive

Strength (M2)

Business Rule	Error Code
If not null and longer than 30 characters – Error message: IV Data – Strength has an invalid length.	100704 - Invalid IV Additive Strength

Solution (M3)

Business Rule	Error Code
If not null and longer than 30 characters – Error message: IV Data – Solution has an invalid length.	100547 - Invalid IV Solution

Volume (M3)

Business Rule	Error Code
If not a number between .01-9999 – Error message: IV Data – Volume has an invalid value.	100704 - Invalid IV Solution Volume

Vitals Data

Vital Type

Business Rule	Error Code
Business rule: If not a between 0 and 50 characters.	Error Code: 100304 - Invalid Vitals Type.

IEN – Record ID

Business Rule	Error Code
Business rule: If not numeric	Error Code: 100405 - Invalid Vitals IEN.

Rate

Business Rule	Error Code
Business rule: If not numeric	Error Code: 100552 - Invalid Vitals Rate.

Qualifiers

Business Rule	Error Code
Business rule: If not between 0 and 50 characters	Error Code: 100554 - Invalid Vitals Qualifiers.

Unit

Business Rule	Error Code
Business rule: If not a numeric	Error Code: 100607- Invalid Vitals Unit.

Date of Measurement

Business Rule	Error Code
Business rule: If not a valid date	Error Code: 101404 - Invalid Vitals Date of Measurement.

Problem List

NMBR

Business Rule	Error Code
Business rule: If not a number between 1 - 999.99	Error Code: 090311 - Invalid Problem File NMBR.

Date Entered

Business Rule	Error Code
Business rule: Invalid date format	Error Code: 090602 - Invalid Problem List Date Entered.

Date of Onset

Business Rule	Error Code
Business rule: Invalid format	Error Code: 090712 - Invalid Problem List Date of Onset.

Date Resolved

Business Rule	Error Code
Business rule: Invalid format	Error Code: 090803 – Invalid Problem List Date Resolved.

Diagnosis

Business Rule	Error Code
Business rule: If not between 1 to 7 characters in length Or Business rule: If the code does not contain a decimal point:	Code: 091304 - Invalid Problem List Diagnosis Code(s).

Date Recorded

Business Rule	Error Code
Business rule: Invalid format	Error Code: 091401 - Invalid Problem List Date Recorded.

Recording Provider

Business Rule	Error Code
Business rule: If not an integer	Error Code: 091606 - Invalid Problem List Recording Provider.

VA Person Class Code (of Recoding Provider)

Business Rule	Error Code
Business rule: If not an integer	Error Code: 091607 - Invalid Problem List Recording Provider Class Code.

Date Last Modified

Business Rule	Error Code
Business rule: Invalid format	Error Code: 092201 – Invalid Problem List Date Last Modified.

Status

Business Rule	Error Code
Business rule: If not equal to F or R	Error Code: 092504 – Invalid Problem List Status.

Provider (Narrative)

Business Rule	Error Code
Business rule: If longer than 245 characters	Error Code: 100549 - Invalid Problem List Provider Narrative.

Problem (Expression)

Business Rule	Error Code
Business rule: If longer than 240 characters.	Error Code: 100550 - Invalid Problem List Problem (Expression).

Note Facility

Business Rule	Error Code
Business rule: If longer than 30 characters.	Error Code: 100402 – Invalid Note Facility.

Note Number

Business Rule	Error Code
Business rule: If smaller than 1 or higher than 999.	Error Code: 100403 – Invalid Note Number.

Note Narrative

Business Rule	Error Code
Business rule: If longer than 60 characters.	Error Code: 100551 – Invalid Note Narrative length.

Status

Business Rule	Error Code
Business rule: If not equal to F or R.	Error Code: 100404 - Invalid Note Narrative Status.

Glossary

Acronyms

Acronym	Description
AAC	Austin Automation Center
AIDS	Acquired Immunodeficiency Syndrome
AMIS	Automated Management Information System
API	Application Programmer Interface
ARV	Antiretroviral medications
CCR	Clinical Case Registries
CDC	Center for Disease Control
CPRS	Computerized Patient Record System
CPT	Current Procedural Terminology
DBIA	Database Integration Agreement
GUI	Graphical User Interface
HIV	Human Immunodeficiency Virus
HL7	Health Level Seven
ICD-9	International Classification of Diseases—Ninth edition
ICR	Immunology Case Registry
IN150	HIV Drug Class
IRMS	Information Resource Management Service
LOINC	Logical Observation Identifiers Names and Codes
NPCD	National Patient Care Database
OIFO	Office of Information Field Office

Acronym	Description
ROR	Registry of Registries
VHA	Veterans Health Administration
VISN	Veterans Integrated Service Networks
VistA	Veterans Health Information System and Technology Architecture
VERA	Veterans Equitable Resource Allocation

Definitions

Term	Description
Extract Data Definition	This is a set of file and field numbers that identify the data that should be extracted during the extraction process.
Extract Process	This process is run after the update process. This function goes through patients on the local ICR 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 ICR for all existing patients who have changed since the last extract. The extract transmits any collected data for the patient to the HIV Registry via HL7.
Kernel	The VistA software that enables VistA applications to coexist in a standard operating system independent computing environment.
Local ICR (registry list)	This is the local file of patients who have either passed the selection rules and, therefore, been added automatically or been added manually by a designated HIV Coordinator.
Local ICR Update	This process adds new patients (that have had data entered since the last update was run that pass the selection rules) to the local ICR.
National ICR	All local sites using the ICR software transmit their data nightly to this central database.
Selection Rules	Selection Rules are a predefined set of rules that define an HIV patient.