Virtual Patient Record (VPR) 1.0

Developer's Guide

July 2022

Department of Veterans Affairs (VA)

Office of Information and Technology (OIT)

Development, Security, and Operations (DSO)

Revision History

Date	Revision	Description	Author
07/05/2022	1.5	Updates: • Table 56: Updated "**Display Name**" and "**Primary Source Sub/File#**" columns for these entries: **VPR DEL FAMILY HX**, **VPR DEL HF VACC REFUSAL**, **VPR DEL ICR** (new), **VPR DEL PTF**, **VPR DEL SOCIAL HX**, **VPR DEL TIU DOCUMENT**, **VPR DEL V CPT**, **VPR DEL V EXAM**, **VPR DEL V POV**, **VPR DEL VACCINATION**, **VPR ELIGIBILITY** (new), **VPR ICR ADMINISTRATION** (new), **VPR ICR CONTRAINDICATION** (new), **VPR ICR EVENT** (new), **VPR ICR EXTENSION** (new), **VPR ICR OBSERVATION** (new), **VPR ICR REFUSAL** (new), and **VPR IMM MANUFACTURER** (new). • Updated Section 5.2.3.2, "Encounters (PCE):" **XTMP** check times. • Updated Figure 5: Added VPR ICR EVENT. • Updated Section 5.5.2, "Inquire to Entity File Option:" Figure 6. • Added Section 5.7, "Call To Populate:" Added sub-sections and figures.	Virtual Patient Record (VPR) Development Team
11/03/2021	1.4	Updates: • Table 34: Added the **locationName** and **locationUid** entries. • Table 36: Added the **displayOrder** and **vuid** entries. • Table 37: Added the **instructions** and **orderUid** entries. • Table 46: Added the **parent** entry. • Table 47: Added the **service** entry. • Table 52: Deleted **cpt** entry. • Table 56: Added the **VPR DEL FAMILY HX**, **VPR DEL HF VACC REFUSAL**, **VPR DEL PTF**, **VPR DEL SOCIAL HX**, **VPR DEL TIU DOCUMENT**, **VPR DEL V CPT**, **VPR DEL V EXAM**, **VPR DEL V POV**, **VPR DEL VACCINATION**, and **VPR**	Virtual Patient Record (VPR) Development Team

Date	Revision	Description	Author
		TEXT ONLY entries. • Table 58: Added the **TIU DOCUMENT ACTION EVENT** entry. • Added Sections 5.2.3, "Tasked Events," and 5.5.1, "VPR CONTAINER (#560.1) File." • Updated Sections 5.2: Added second paragraph, 5.2.2: Clarified first sentence, 5.3, 5.4, 5.4.1, and 5.5.2: Added option names. • Updated Figure 6. • Section 5.4: Added API details. • Updated Section 5.5: Intro text. • Added Section 5.6, "Monitoring and Troubleshooting."	
03/26/2021	1.3	Updates: • Updated "How to Use this Manual" section. • Section 5: VPR is currently populating **21** of the **30** SDA containers • Section 5.1: Add intro text. • Table 56: Corrected column title, delete some entries and added the following entries: **VPR ADMISSION MOVEMENT**, **VPR EDP CODE**, **VPR EDP EXTENSION**, **VPR EDP LOG**, **VPR LAB FACILITY**, **VPR MAS MOVEMENT TYPE**, **VPR MAS TRANSACTION TYPE**, **VPR MDD PROCEDURE**, **VPR PACKAGE**, **VPR PRF DBRS RECORD**, **VPR PRF HISTORY**, **VPR REFERRING PROVIDER**, **VPR SCH ADM EXTENSION**, **VPR VACC HF ADMIN**, **VPR VACC HF EXT**, **VPR VACC HF REFUSAL**, **VPR VCPT EXTENSION**, **VPR VFILE DELETE**, **VPR VISIT STUB**, and **VPR WARD LOCATION**. • Table 57: Deleted an entry. • Table 58: Added the following entries: **DG PTF ICD DIAGNOSIS NOTIFIER**, **DG SA FILE ENTRY NOTIFIER**, **DGPF PRF EVENT**, **GMRA VERIFY DATA**, and **WV PREGNANCY STATUS CHANGE EVENT**.	Virtual Patient Record (VPR) Development Team

Date	Revision	Description	Author
		• Section 5.3: added link to Section 5.2. • Section 5.3.2: Updated intro text. • Section 5.3.3: Updated bulleted list and example. • Deleted some content and an entry. • Section 5.5, "Generating Online Documentation:" Updated intro text. • Section 5.5.1: Updated title and intro text.	
06/13/2019	1.2	Updates for Patch VPR*1.0*10 and VPR*1.0*14: • Section 5, "HealthShare Interface." • Section 5.1, "Entity File VPR Entries." • Renamed/Updated Section 5.2, "Data Update Events." • Renamed/Updated Section 5.3, "VPR Subscription File and Indexes." • Renamed/Updated Section 5.4, "VPRHS Utilities." • Renumbered/Updated Section 5.4.1, " • ."	VPR Development Team

04/24/2019	1.1	Updates for Patch VPR*1.0*8 and VPR*1.0*14:
		• Updated stakeholders in the "Intended Audience" section.
		• Added Section 1.1, "Purpose."
		• Updated Section 1.2.
		• Moved Section 1.5, "Formatted Data," to follow Section 1.4.
		• Added explanatory text to Section 2.
		• Updated Sections 2.1 and 2.2.
		• Added the following "placeholder" sections for future content:
		  ○ Section 5, "HealthShare Interface."
		  ○ Section 5.1, "Entity (#1.5) File VPR Entries."
		  ○ Section 5.2, "File 560 and AVPR and ANEW Indices."
		  ○ Section 5.3, "Protocol Events."
		  ○ Section 5.4, "Generating Online Documentation."
			VPR Development Team

Date	Revision	Description	Author
09/25/2018	1.0	Updates for Patch VPR*1.0*8: • Created a new, separate Developer's Guide (this manual). • Moved other content to a new, separate Technical Manual. • Updated document to follow current documentation standards and style guidelines.	VPR Development Team
08/21/2018	0.13	Updates for Patch VPR*1.0*7: Added new data elements to tables. Pages: 25, 31-32, 51-52, 60, 63-64, 67, 78-80.	VPR Development Team
08/03/2015	0.12	Updates for Patch VPR*1.0*5: Moved ICRs to end, and data element lists from Routine section to new Appendix A & B. Pages: 7, 10, 21-87.	VPR Development Team
06/29/2015	0.11	Updates for Patch VPR*1.0*5: • Removed Patch descriptions. • Updated Data Domains, ICRs, and Checksums. Pages: 4-5, 8-9, 11-56.	VPR Development Team
01/16/2015	0.10	Updates for Patch VPR*1.0*4: • Updated the VPR*1.0*4 Data Domain section to include Consults. • Updated Routines section to include VPRDGMRC and VPRDPSO. • Updated the External Relationships section with changes to the ^USC(8932.1 ICB number • Updated checksums for VPRDGMRC and VPRDPSO. Pages: 6, 12, 43-44.	VPR Development Team
01/07/2015	0.09	Updates for Patch VPR*1.0*4: Updated the checksum for VPRDTST to reflect a last-minute change; Page: 45.	VPR Development Team
01/02/2015 to 01/06/2015	0.08	Updates for Patch VPR*1.0*4: • Updated dates in page footers and on the cover page; Pages: All. • Added a prerequisite instruction for installing VPR*1.0*4; Page: 4.	VPR Development Team

Date	Revision	Description	Author
		• Added a section describing VPR*1.0*4; Pages: 7-8. • Added two new ICRs to the External Relationships section; Page: 13. • Added a new routine (VPRTST) to the routine table; Page 41. • Updated checksums; Pages: 45-46. • Added a new option (VPR TEST XML) and new examples for VPR TEST XML and VPR TEST JSON; Pages: 47–50.	
09/11/2013 to 10/11/2013	0.07	Updates for Patch VPR*1.0*2: • Updated Title-page fonts to meet end-user documentation standards. • Updated revision date. • Updated footer to include package name (re end-user documentation standards). • Addressed reviewer suggestions and comments. • Added an installation and a software-availability section to provide information about how to retrieve software and documentation (re end-user documentation standards). • Added a legal-disclaimers section (re end-user documentation standards). • Corrected errors in the routines section; updated checksums. Pages: All.	VPR Development Team
07/24/2013	0.06	Updates for Patch VPR*1.0*2: • Updated title to reflect new patch. • Updated Overview to add JSON information. • Added a new (Formatted Data) section to discuss data formatting. • Added patch information for VPR*1.0*2. • Added JSON remote procedure call information. • Added JSON routines. • Corrected capitalization in routines table. • Added a JSON example placeholder. • Added JSON checksums.	VPR Development Team

Date	Revision	Description	Author
		• Updated the glossary section. Pages: All.	
07/30/2012	0.05	Updates for Patch VPR*1.0*1: Updated checksum for VPRDPSOR; Page 27.	VPR Development Team
06/13/2012	0.04	Updates for Patch VPR*1.0*1: • Updated Clinical Procedures ICRs in Relationships, renumbered the table, increased row height when necessary; Pages 5-7. • Changed revised date; Pages 5-7. • Fixed typo; Page 11.	VPR Development Team
05/18/2012	0.03	Updates for Patch VPR*1.0*1: Added a paragraph about the VPR proxy; Page 2.	VPR Development Team
05/15/2012	0.02	Updates for Patch VPR*1.0*1: • Changed header colors from blue to black. • Corrected formatting issues. • Added hyperlinks to revision history. • Updated Overview to reflect changes with NwHIN. • Added new extract routines for Clinical Observations, Clinical Procedures, Insurance, Exams, Skin Tests, Patient Education. • Renamed Pharmacy Extract Medications. • Renamed Pharmacy Inpatient extract to Inpatient Meds. • Renamed Pharmacy Outpatient Extract Outpatient Meds. • Added Non-VA Meds and IV Fluids/Infusions extracts. • Added section for Implementation & Maintenance. • Added section for patch description. • Modified list of new routines. • Updated Routines List with new and modified extract routines. • Added section for Security Keys.	VPR Development Team

Date	Revision	Description	Author
		• Updated External relationships table. • Added section for Files. • Updated Routine List table with new/changed routines and reordered elements alphabetically. • Removed elements predecessor, successor, code from **VPRDPL** routine because they were never populated. Added elements acknowledgement [m], provider, and service to VPRDOR routine. • Added element category to **VPRDPXHF**. • Added element encounter to **VPRDXIM** routine. • Added elements **clinicStop**, **provider**, and **type** to **VPRDSDAM** routine (**clinicStop** was inadvertently missed in the previous version of this TM). • Added elements category, images and parent to **VPRDTIU** routine. • Updated Checksums table. • Added Options section. • Added a Glossary section. Pages: All.	
08/08/2011	0.01	VPR Version 1.0 Release. Initial document.	VPR Development Team

Table of Contents

List of figures

List of Tables

Orientation

How to Use this Manual

The *Virtual Patient Record (VPR) Developer's Guide* provides advice and instruction about the use of the following RPCs:

- VPR GET PATIENT DATA
- VPR GET PATIENT DATA JSON

This manual also describes the VPR interface with HealthShare.

REF: For VPR installation instructions in the VistA environment see the *Virtual Patient Record (VPR) Installation Guide* and any national patch description of the patch being released.

Intended Audience

The intended audience of this manual is all key stakeholders. The stakeholders include the following:

- Development, Security, and Operations (DSO)—VistA legacy development teams who use the VPR RPCs; specifically, Veterans Health Information Exchange (VHIE) and Joint Legacy Viewer (JLV).
- System Administrators—System administrators at Department of Veterans Affairs (VA) sites who are responsible for computer management and system security on the VistA M Servers.
- Information Security Officers (ISOs)—Personnel at VA sites responsible for system security.
- Product Support (PS).

Disclaimers

Software Disclaimer

This software was developed at the Department of Veterans Affairs (VA) by employees of the Federal Government in the course of their official duties. Pursuant to title 17 Section 105 of the United States Code this software is *not* subject to copyright protection and is in the public domain. VA assumes no responsibility whatsoever for its use by other parties, and makes no guarantees, expressed or implied, about its quality, reliability, or any other characteristic. We would appreciate acknowledgement if the software is used. This software can be redistributed and/or modified freely provided that any derivative works bear some notice that they are derived from it, and any modified versions bear some notice that they have been modified.

CAUTION: To protect the security of VistA systems, distribution of this software for use on any other computer system by VistA sites is prohibited. All requests for copies of Kernel for *non*-VistA use should be referred to the VistA site's local Office of Information Field Office (OIFO).

Documentation Disclaimer

This manual provides an overall explanation of and the functionality contained in Virtual Patient Record (VPR) 1.0; however, no attempt is made to explain how the overall VistA programming system is integrated and maintained. Such methods and procedures are documented elsewhere. We suggest you look at the various VA Internet and Intranet Websites for a general orientation to VistA. For example, visit the Office of Information and Technology (OIT) VistA Development Intranet website.

DISCLAIMER: The appearance of any external hyperlink references in this manual does *not* constitute endorsement by the Department of Veterans Affairs (VA) of this Website or the information, products, or services contained therein. The VA does *not* exercise any editorial control over the information you find at these locations. Such links are provided and are consistent with the stated purpose of this VA Intranet Service.

Documentation Conventions

This manual uses several methods to highlight different aspects of the material:

- Various symbols are used throughout the documentation to alert the reader to special information. Table 1 gives a description of each of these symbols:

Table 1: Documentation Symbol Descriptions

Symbol	Description
	**NOTE / REF:** Used to inform the reader of general information including references to additional reading material.
	**CAUTION / RECOMMENDATION / DISCLAIMER:** Used to caution the reader to take special notice of critical information.

- Descriptive text is presented in a proportional font (as represented by this font).
- Conventions for displaying **TEST** data in this document are as follows:
  - The first three digits (prefix) of any Social Security Numbers (SSN) begin with either "**000**" or "**666**".
  - Patient and user names are formatted as follows:
    - <*Application Name/Abbreviation/Namespace*>PATIENT,<*N*>
    - <*Application Name/Abbreviation/Namespace*>USER,<*N*>

    Where:
    - <*Application Name/Abbreviation/Namespace*> is defined in the Approved Application Abbreviations document.
    - <*N*> represents the first name as a number spelled out and incremented with each new entry.

    For example, in Virtual Patient Record (VPR) test patient and user names would be documented as follows:
    - VPRPATIENT,ONE; VPRPATIENT,TWO; VPRPATIENT,THREE; … VPRPATIENT,14; etc.
    - VPRUSER,ONE; VPRUSER,TWO; VPRUSER,THREE; … VPRUSER,14; etc.

- "Snapshots" of computer online displays (i.e., screen captures/dialogues) and computer source code, if any, are shown in a *non*-proportional font and enclosed within a box:
  - User's responses to online prompts are **bold** typeface and sometimes highlighted in yellow (e.g., **<Enter>**).
  - Emphasis within a dialogue box is **bold** typeface and highlighted in blue (e.g., STANDARD LISTENER: RUNNING).
  - Some software code reserved/key words are **bold** typeface with alternate color font.
  - References to "**<Enter>**" within these snapshots indicate that the user should press the **Enter** key on the keyboard. Other special keys are sometimes represented within **< >** angle brackets. For example, pressing the **PF1** key can be represented as pressing **<PF1>**.
  - Author's comments are displayed in italics or as "callout" boxes.

    NOTE: Callout boxes refer to labels or descriptions usually enclosed within a box, which point to specific areas of a displayed image.

- This manual refers to the MUMPS (M) programming language. Under the 1995 American National Standards Institute (ANSI) standard, M is the primary name of the MUMPS programming language, and MUMPS is considered an alternate name. This manual uses the name M.
- All uppercase is reserved for the representation of M code, variable names, or the formal name of options, field/file names, security keys, and RPCs (e.g., VPR GET PATIENT DATA).

  NOTE: Other software code (e.g., Delphi/Pascal and Java) variable names and file/folder names can be written in lower or mixed case.

Documentation Navigation

This document uses Microsoft® Word's built-in navigation for internal hyperlinks. To add **Back** and **Forward** navigation buttons to your toolbar, do the following:

1. Right-click anywhere on the customizable Toolbar in Word (*not* the Ribbon section).
2. Select **Customize Quick Access Toolbar** from the secondary menu.
3. Select the drop-down arrow in the "Choose commands from:" box.
4. Select **All Commands** from the displayed list.
5. Scroll through the command list in the left column until you see the **Back** command (green circle with arrow pointing left).

6. Select/Highlight the Back command and select Add to add it to your customized toolbar.
7. Scroll through the command list in the left column until you see the **Forward** command (green circle with arrow pointing right).
8. Select/Highlight the Forward command and select **Add** to add it to your customized toolbar.
9. Select **OK**.

You can now use these **Back** and **Forward** command buttons in your Toolbar to navigate back and forth in your Word document when clicking on hyperlinks within the document.

NOTE: This is a one-time setup and is automatically available in any other Word document once you install it on the Toolbar.

How to Obtain Technical Information Online

Exported VistA M Server-based software file, routine, and global documentation can be generated through the use of Kernel, MailMan, and VA FileMan utilities.

NOTE: Methods of obtaining specific technical information online is indicated where applicable under the appropriate topic.

REF: For further information, see the *VA FileMan Technical Manual*.

Help at Prompts

VistA M Server-based software provides online help and commonly used system default prompts. Users are encouraged to enter question marks at any response prompt. At the end of the help display, you are immediately returned to the point from which you started. This is an easy way to learn about any aspect of the software.

Obtaining Data Dictionary Listings

Technical information about VistA M Server-based files and the fields in files is stored in data dictionaries (DD). You can use the **List File Attributes** [DILIST] option on the **Data Dictionary Utilities** [DI DDU] menu in VA FileMan to print formatted data dictionaries.

REF: For details about obtaining data dictionaries and about the formats available, see the "List File Attributes" section in the "File Management" section in the *VA FileMan Advanced User Manual*.

Assumptions

This manual is written with the assumption that the reader is familiar with the following:

- VistA computing environment:
  - Kernel—VistA M Server software
  - VA FileMan data structures and terminology—VistA M Server software
- Microsoft Windows environment
- M programming language

Reference Materials

Readers who wish to learn more about Virtual Patient Record (VPR) should consult the following:

- *Virtual Patient Record (VPR) Installation Guide*
- *Virtual Patient Record (VPR) Technical Manual*
- *Virtual Patient Record (VPR) Developer's Guide* (this manual)

VistA documentation is made available online in Microsoft Word format and in Adobe Acrobat Portable Document Format (PDF). The PDF documents *must* be read using the Adobe Acrobat Reader, which is freely distributed by Adobe® Systems Incorporated at: http://www.adobe.com/

VistA software documentation can be downloaded from the VA Software Document Library (VDL) at: http://www.va.gov/vdl/

REF: VPR manuals are located on the VDL at: https://www.va.gov/vdl/application.asp?appid=197

VistA documentation and software can also be downloaded from the Product Support (PS) Anonymous Directories.

1 Introduction

1.1 Purpose

The purpose of this document is to provide technical information about the Virtual Patient Record (VPR) 1.0 software, specifically for developer use.

1.2 System Overview

VPR 1.0 was originally developed as a part of the Health Informatics Initiative's (hi^2's). It has been expanded to support VA's interfaces to InterSystems' Health Connect (HC) and HealthShare (HS).

VPR extracts patient data from domains at a local Veterans Health Information Systems and Technology Architecture (VistA) site to provide a cached view of the patient chart. It provides normalized fields with common field names and data structures across domains.

VPR includes four remote procedure calls (RPCs) that do the following:

- Extract data from VistA in Extensible Markup Language (XML) format.
- Extract VistA data in JavaScript Object Notation (JSON) format.
- Calculates checksums for data returned via the XML or JSON RPC.
- Returns the current VPR RPC version number.

1.3 Enhancements

VPR Patch VPR*1*8 extends the Virtual Patient Record (VPR) application, to provide a new method of retrieving patient health data from a VistA database.

VA FileMan Patch DI*22.2*9 released a new VA FileMan utility that provides the ability to map VistA files and fields to other data models and extract that data as XML or JSON objects. Patch VPR*1*8 populates the ENTITY (#1.5) file to map VistA data elements to InterSystems' Summary Data Architecture (SDA) model and use the supported calls to retrieve the requested data.

Patch VPR*1*8 also installs a mechanism to monitor clinical data events in VistA, to enable retrieval of updated information as a patient's data changes. This patch adds new PROTOCOL (#101) file entries and links to appropriate clinical application events; the file and record numbers modified will be collected in the VPR SUBSCRIPTION (#560) file until retrieved and updated.

1.4 Background

The VPR RPC for XML-formatted data extraction was initially installed in the Nationwide Health Information Network (NwHIN) namespace, which was called **NHIN**. The NwHIN client used most of the VPR's extract routines in production to get and share data. After this initial installation, VPR RPCs were installed in the VPR's own (**VPR**) namespace and renumbered as VPR Version 1.0. NwHIN could continue to use the extract routines in its **NHIN** namespace, but

would need to access VPR 1.0, or subsequent versions, to take advantage of future extract routine enhancements.

NOTE: After the VPR package installed its RPCs in its own (**VPR**) namespace with VPR 1.0, NwHIN began to use VPR 1.0 to take advantage of future extract-routine enhancements. The Virtual Lifetime Electronic Record (VLER) and Joint Legacy Viewer (JLV) are currently the primary users of the RPCs.

1.5 Formatted Data

VPR provides XML- and JSON-formatted data to support web applications that transmit data between themselves, servers, and users' browsers.

As its name suggests, XML uses markup to structure and serialize data. This human- and machine-readable format enjoys widespread use as a means of exchanging both text-based documents and structured data.

REF: Figure 1 contains a snippet of XML-formatted data.

JSON is also a human- and machine-readable data-interchange format; however, its creator focused on making it a vehicle for transmitting structured data, rather than narrative documents. Although it uses several JavaScript notation rules to represent structured data, JSON is programming-language agnostic: JSON parser libraries are available for programming languages that range from ActionScript to Visual Basic.

REF: You can find a comprehensive list of available parser libraries on the JSON.org website.

JSON supports **four** primitive and **two** structured data types:

- Primitive data types:
  - Text strings (quotation-mark delimiters)
  - Numbers
  - Booleans
  - Null

- Structured data types:
  - Objects
  - Arrays

These data types provide a fluid (free-form) way to serialize data transmissions. For example, developers can represent objects that encompass arrays and arrays that encompass objects. They can also include *non*-significant white space around JSON's structural elements (curly and block brackets, colons, and commas) to enhance human readability.

REF: Figure 3 contains a snippet of JSON-formatted data.

Like XML, JSON supports asynchronous JavaScript and XML (Ajax), which allows web applications to send and receive data to and from web pages. As a result, both formats are viable options for data interchanges involving web applications. Two notable cases in point are HMP, which uses JSON-formatted data, and NwHIN, which uses XML-formatted data.

2 Remote Procedure Calls

Table 2 lists the RPCs released with VPR 1.0:

Table 2: VPR Remote Procedure Calls

Remote Procedure Call	M Entry Point	Category
VPR GET CHECKSUM	CHECK^VPRDCRC	Supporting RPC
VPR DATA VERSION	VERSION^VPRD	Supporting RPC
VPR GET PATIENT DATA	GET^VPRD	Data Extract RPC
VPR GET PATIENT DATA JSON	GET^VPRDJ	Data Extract RPC

The purpose of the VPR application is to serve VistA data to developers for use in GUI or Web applications, formatted as XML or JSON. Because it does not store or manage any data of its own, VPR has no direct user interface; its user interface consists of these RPCs. A developer can call either the **VPR GET PATIENT DATA** or **VPR GET PATIENT DATA JSON** RPC to retrieve data as XML or JSON respectively, based on the input parameters described below. Specific input values and data returned for each clinical domain and format are described in Sections 0, "

XML Tables," and 4 "JSON Tables."

2.1 VPR GET CHECKSUM

The **VPR GET CHECKSUM** is a supporting RPC that retrieves data from VistA via **GET^VPRD** or **GET^VPRDJ** and calls the **VPRDCRC** routine to perform **CRC32** calculations. **VPRDCRC** then returns the calculations as checksum values. Use this RPC to determine if patient data has changed since the last extract was performed.

2.2 VPR DATA VERSION

The **VPR DATA VERSION** is a supporting RPC that gets the value of the current VPR RPC version and returns it as a string. Any application with the appropriate Integration Control Registration (ICR) can use this RPC to extract the RPC version from VPR software.

2.3 VPR GET PATIENT DATA

The **VPR GET PATIENT DATA** is a data extract RPC that retrieves data from VistA and returns it as XML in a ^TMP global. Applications with the appropriate ICRs can use this RPC to extract data from VistA. Developers can specify input parameters to determine the types and amounts of data the RPC will extract from VistA. Parameters include:

- Internal entry number (IEN) from PATIENT (#2) file (optionally data file number [DFN] or integration control number [ICN] for remote calls) [required parameter]
- The kinds of data to extract, which may include:
  - Allergies and reactions
  - Appointments
  - Clinical Procedures (medicine and cardiology)
  - Consults
  - Demographics
  - Documents
  - Education topics
  - Exams
  - Flags (Patient Record Flags)
  - Functional Independence Measurements
  - Health Factors
  - Immunizations
  - Insurance policies
  - Labs (by accession, order or panel, or individual result)
  - Medications
  - Observations (CLiO)

- Orders
- Problems
- Procedures (includes Radiology, Surgery, and Clinical Procedures)
- Radiology exams
- Skin tests
- Surgical procedures
- Visits and encounters
- Vitals
- Wellness Reminders

- (optional) The date and time from which to begin searching for data.
- (optional) The date and time at which to end searching for data.
- (optional) The maximum number of items to return per data type.
- (optional, but TYPE *must* also be defined when used) The identifier of a single item to return.
- List of name-value pairs, further refining the search.

The output from this RPC is a text array formatted as XML in the temporary global **^TMP("VPR",$J,n)**.

The text in Figure 1 contains a snippet of XML data returned in response to a **VPR GET PATIENT DATA** RPC call for vitals measurements for VPRTestPatient, One:

Figure 1: VPR GET PATIENT DATA RPC—Sample Returned XML-Formatted Data

```
<vital>
<entered value='3050316.115625' />
<facility code='998' name='ABILENE (CAA)' />
<location code='158' name='7A GEN MED' />
<measurements>
<measurement id='14871' vuid='4500634' name='BLOOD PRESSURE' value='168/68'
high='210/110' low='100/60' />
<measurement id='14869' vuid='4500636' name='PULSE' value='72' high='120'
low='60' >
<qualifiers>
<qualifier name='RADIAL' vuid='4688678' />
</qualifiers>
</measurement>
<measurement id='14872' vuid='4500635' name='PAIN' value='1' />
<measurement id='14870' vuid='4688725' name='RESPIRATION' value='18'
high='30' low='8' >
<qualifiers>
<qualifier name='SPONTANEOUS' vuid='4688706' />
</qualifiers>
</measurement>
<measurement id='14868' vuid='4500638' name='TEMPERATURE' value='99'
units='F' metricValue='37.2' metricUnits='C' high='102' low='95' >
<qualifiers>
<qualifier name='ORAL' vuid='4500642' />
</qualifiers>
</measurement>
</measurements
<taken value='3050316.1' />
</vital>
```

REF: To review the lists of data elements returned by the **VPR GET PATIENT DATA** RPC, see the “

XML Tables" section.

2.3.1 VPR TEST XML Option

The **View XML results** [VPR TEST XML] option loops around its DOMAIN and PATIENT prompts, making it easy for testers to display data for successive patients and domains. The option asks for a start date, if the data domain supports date filtering; if testers provide a start date, it also asks for a stop date. The option's start and stop parameters enable testers to limit data displays to a time-bound subset of available data. If testers do not provide a start date, the option does not ask for a stop date and displays all available data for the patient and domain testers specify.

Additional search filters may be entered, for domains that support them. If one of those domains is selected, testers may also see "FILTER" and "VALUE" prompts. An "ID" prompt may also appear, allowing a specific data item to be extracted and displayed. Testers can simply press **Enter** through any of these filters they do *not* wish to apply, and execution falls through to the extract and display.

Figure 2 is an example of the **View XML results** [VPR TEST XML] option, showing the data it returns (the results are truncated, with extra spaces removed).

Figure 2: VPR TEST XML Option—Sample Returned Output

```
Select OPTION NAME: VPR TEST XML <Enter> View XML results
 View XML results
 Select PATIENT NAME: AVIVAPATIENT,TWENTYONE <Enter>       2-14-34
666000001
  YES     SC VETERAN                    PROVIDER,EIGHTEEN  PRIMARY CARE
TEAM2
  Enrollment Priority: GROUP 3   Category: IN PROCESS    End Date:
 Select DOMAIN: VITALS
 Select START DATE: 11-1-2014 <Enter> (NOV 01, 2014)
 Select STOP DATE: 11-1-2014 <Enter> (NOV 01, 2014)
 Select TOTAL #items: <Enter>
 <results version='1.02' timeZone='-0700' >
 <vitals total='1' >
 <vital>
 <entered value='3141103.143428' />
 <facility code='500D' name='SLC-FO HMP DEV' />
 <location code='23' name='GENERAL MEDICINE' />
 <measurements>
 <measurement id='53157' vuid='4500634' name='BLOOD PRESSURE'
value='128/66'
 units='mm[Hg]' high='210/110' low='100/60' />
 <measurement id='53161' vuid='4688724' name='HEIGHT' value='71'
units='in'
 metricValue='180.34' metricUnits='cm' />
 <measurement id='53160' vuid='4500636' name='PULSE' value='92'
units='/min'
 high='120' low='60' />
 <measurement id='53164' vuid='4500635' name='PAIN' value='2' />
 <measurement id='53163' vuid='4500637' name='PULSE OXIMETRY' value='95'
 units='%' high='100' low='50' />
 <measurement id='53159' vuid='4688725' name='RESPIRATION' value='16'
 units='/min' high='30' low='8' />
 <measurement id='53158' vuid='4500638' name='TEMPERATURE' value='98.5'
```

```
units='F' metricValue'53162' vuid='4500639' name='WEIGHT'
```

2.4 VPR GET PATIENT DATA JSON

The **VPR GET PATIENT DATA JSON** is a data extract RPC that retrieves data from VistA and returns it as JSON-formatted documents in a **^TMP** global. Applications with appropriate ICRs can use this RPC to extract data from VistA. Developers can specify input parameters to determine the types and amounts of data the RPC will extract from VistA by entering the parameters as a list of name-value pairs. Some of the most commonly used parameters include:

- IEN from PATIENT (#2) file (optionally DFN; ICN for remote calls) [required]
- The kinds of data to extract, which may include:
  - Allergies and reactions
  - Appointments
  - Clinical Procedures (medicine and cardiology)
  - Consults
  - CPT procedures
  - Demographics
  - Documents
  - Education topics
  - Exams
  - Health Factors
  - Immunizations
  - Lab results
  - Medications
  - Observations (CLiO)
  - Orders
  - Problems
  - Purpose of visit (POV)
  - Radiology exams
  - Skin tests
  - Surgical procedures
  - Visits and admissions
  - Vitals

- The date and time from which to begin searching for data [optional].

- The date and time at which to stop searching for data [optional].
- The maximum number of items to return per data type [optional].
- The identifier of a single item to return [optional, but TYPE *must* also be defined when used].
- Additional name-value pairs, further refining the search [optional].

The RPC's output is a text array formatted as JSON in the temporary global **^TMP("VPR",$J,n)**.

Figure 3 contains a snippet of data returned in response to a **VPR GET PATIENT DATA JSON** RPC call for vitals measurements for VPRTestPatient, One—the same patient and data returned in the XML example (Figure 1).

Figure 3: VPR GET PATIENT DATA JSON RPC—Sample Returned JSON-Formatted Data


```
{"apiVersion":"1.01","params":{"domain":"DEV.HMPDEV.VAINNOVATIONS.US","sys
temId":"F484"},"data":{"updated":"20130718143517","totalItems":5,"items":[
{"displayName":"BP","facilityCode":"500D","facilityName":"SLC-FO HMP
DEV","high":"210\/110","kind":"Vital
Sign","localId":14871,"locationName":"7 WEST MEDICINE",
"locationUid":"urn:va:location:F484:158","low":"100\/60","observed":200503
161000,"result":"168\/68","resulted":20050316115625,"summary":"BLOOD
PRESSURE 168\/68mm[Hg]","typeCode":"urn:va:vuid:4500634","typeName":"BLOOD
PRESSURE","uid":"urn:va:F484:229:vital:14871","units":"mm[Hg]"}
,
{"displayName":"P","facilityCode":"500D","facilityName":"SLC-FO HMP
DEV","high":120,"kind":"Vital sign","localId":14869,"locationName":"7 WEST
MEDICINE","locationUid":"urn:va:location:F484:158","low":60,"observed":200
503161000,"qualifiers":[{"name":"RADIAL","vuid":4688678}],"result":72,"res
ulted":20050316115625,"summary":"PULSE 72
\/min","typeCode":"urn:va:vuid:4500636","typeName":"PULSE","uid":"urn:va:F
484:229:vital:14869","units":"\/min"}
,
{"displayName":"PN","facilityCode":"500D","facilityName":"SLC-FO HMP
DEV","kind":"Vital Sign","localId":14872,"locationName":"7 WEST
MEDICINE","locationUid":"urn:va:location:F484:158","observed":200503161000
,"result":1,"resulted":20050316115625,"summary":"PAIN 1
","typeCode":"urn:va:vuid:4500635","typeName":"PAIN","uid":"urn:va:F484:22
9:vital:14872","units":""}
,
{"displayName":"R","facilityCode":"500D","facilityName":"SLC-FO HMP
DEV","high":30,"kind":"Vital Sign","localId":14870,"locationName":"7 WEST
MEDICINE","locationUid":"urn:va:location:F484:158","low":8,"observed":2005
03161000,"qualifiers":[{"name":"SPONTANEOUS","vuid":4688706}],"result":18,
"resulted":20050316115625,"summary":"RESPIRATION 18
\/min","typeCode":"urn:va:vuid:4688725","typeName":"RESPIRATION","uid":"ur
n:va:F484:229:vital:14870","units":"\/min"}
```

REF: To review the lists of data elements returned by the **VPR GET PATIENT DATA JSON** RPC, see the "JSON Tables" section.

2.4.1 VPR TEST JSON Option

The **View JSON results** [VPR TEST JSON] option loops around its DOMAIN and PATIENT prompts, making it easy for testers to display data for successive patients and domains. The option asks for a start date. If testers provide a start date, it also asks for a stop date. The option's start and stop parameters enable testers to limit data displays to a time-bound subset of available data. If testers do *not* provide a start date, the option does *not* ask for a stop date and displays all available data for the patient and domain testers specify.

Figure 4 is an example of the **View JSON results** [VPR TEST JSON] option, showing the data it returns (the results are truncated, with extra spaces removed).

Figure 4: VPR TEST JSON Option—Sample Returned Output

```
Select OPTION NAME: VPR TEST JSON <Enter> View JSON results
View JSON results
Select PATIENT NAME: AVIVAPATIENT,TWENTYONE      2-14-
34    666000001    YES    SC VETERAN    PROVIDER,EIGHTEEN  PRIMARY CARE
TEAM2
Enrollment Priority: GROUP 3 Category: IN PROCESS    End Date:
Select DOMAIN: VITAL
Select START DATE: 11-1-2014 <Enter> (NOV 01, 2014)
Select STOP DATE: 11-1-2014 <Enter> (NOV 01, 2014)
Select TOTAL #items: <Enter>
{"apiVersion":"1.03","params":{"domain":"DEV.HMPDEV.VAINNOVATIONS.US","sys
temId":"F484"},
"data":{"updated":"20150106112207","totalItems":8,"items":[
{"displayName":"BP","facilityCode":"500D","facilityName":"SLC-FO HMP
DEV","high"
:"210\/110","kind":"Vital Sign","localId":53157,"locationName":"GENERAL
MEDICINE
","locationUid":"urn:va:location:F484:23","low":"100\/60","observed":20141
101190
3,"result":"128\/66","resulted":20141103143428,"summary":"BLOOD PRESSURE
128\/66
mm[Hg]","typeCode":"urn:va:vuid:4500634","typeName":"BLOOD
PRESSURE","uid":"urn
:va:vital:F484:237:53157","units":"mm[Hg]"}
,
{"displayName":"HT","facilityCode":"500D","facilityName":"SLC-FO HMP
DEV","kind"
:"Vital Sign","localId":53161,"locationName":"GENERAL
MEDICINE","locationUid":"u
rn:va:location:F484:23","metricResult":180.34,"metricUnits":"cm","observed
":2014
11011903,"result":71,"resulted":20141103143428,"summary":"HEIGHT 71
in","typeCod
e":"urn:va:vuid:4688724","typeName":"HEIGHT","uid":"urn:va:vital:F484:237:
53161"
```

```
,"units":"in"}
, {"displayName":"P","facilityCode":"500D","facilityName":"SLC-FO HMP
DEV","high":
120,"kind":"Vital Sign","localId":53160,"locationName":"GENERAL
MEDICINE","locationUid":"urn:va:location:F484:23","low":60,"observed"vital
:F484:237:53160","units":"\/min"}
,
{"displayName":"PN","facilityCode":"500D","facilityName":"SLC-FO HMP
DEV","kind"
:"Vital Sign","localId":53164,"locationName":"GENERAL
MEDICINE","locationUid":"u
rn:va:location:F484:23","observed":201411011903,"result":2,"resulted":2014
110314
3428,"summary":"PAIN 2
","typeCode":"urn:va:vuid:4500635","typeName":"PAIN","uid
":"urn:va:vital:F484:237:53164","units":""}
,
{"displayName":"PO2","facilityCode":"500D","facilityName":"SLC-FO HMP
DEV","high
":100,"kind":"Vital Sign","localId":53163,"locationName":"GENERAL
MEDICINE","loc
ationUid":"urn:va:location:F484:23","low":50,"observed":201411011903,"resu
lt":95
,"resulted":20141103143428,"summary":"PULSE OXIMETRY
95 %","typeCode":"urn:va:vu
id:4500637","typeName":"PULSE
OXIMETRY","uid":"urn:va:vital:F484:237:53163","uni
ts":"%"}
,
{"displayName":"R","facilityCode":"500D","facilityName":"SLC-FO HMP
DEV","high":
30,"kind":"Vital Sign","localId":53159,"locationName":"GENERAL
MEDICINE","locati
onUid":"urn:va:location:F484:23","low":8,"observed":201411011903,"result":
16,"re
sulted":20141103143428,"summary":"RESPIRATION 16
\/min","typeCode":"urn:va:vuid:
4688725","typeName":"RESPIRATION","uid":"urn:va:vital:F484:237:53159","uni
ts":"\
/min"}
,
{"displayName":"T","facilityCode":"500D","facilityName":"SLC-FO HMP
DEV","high":
102,"kind":"Vital Sign","localId":53158,"locationName":"GENERAL
MEDICINE","locat
ionUid":"urn:va:location:F484:23","low":95,"metricResult":36.9,"metricUnit
s":"C"
,"observed":201411011903,"result":98.5,"resulted":20141103143428,"summary"
:"TEMP
ERATURE 98.5
F","typeCode":"urn:va:vuid:4500638","typeName":"TEMPERATURE","uid":
"urn:va:vital:F484:237:53158","units":"F"}
,
{"displayName":"WT","facilityCode":"500D","facilityName":"SLC-FO HMP
DEV","kind"
:"Vital Sign","localId":53162,"locationName":"GENERAL
MEDICINE","locationUid":"u
```

```
rn:va:location:F484:23","metricResult":46.36,"metricUnits":"kg","observed"
:20141
1011903,"result":102,"resulted":20141103143428,"summary":"WEIGHT 102
lb","typeCo
de":"urn:va:vuid:4500639","typeName":"WEIGHT","uid":"urn:va:vital:F484:237
:53162
","units":"lb"}
]}}
```

3 XML Tables

The tables in this section list the data elements returned by the **VPR GET PATIENT DATA** RPC. All input parameters are optional to refine the extract, except for **TYPE**. All searches are performed reverse-chronologically to return the most recent data, unless otherwise noted.

3.1 Allergy/Adverse Reaction Tracking (GMRA)

Input parameters:	TYPE	"**reactions**" [required]
[optional]	START	VA FileMan date to filter on "**entered**"
	STOP	VA FileMan date to filter on "**entered**"
	MAX	Use *not recommended*, as reactions are *not* sorted
	ID	PATIENT ALLERGIES (#120.8) file IEN
	FILTER	none

Table 3: RPC: VPR GET PATIENT DATA —Allergy/Adverse Reaction Tracking (GMRA) Elements Returned

Elements	Attributes	Content
assessment	value	not done or nka
comment *	id	number
	enteredBy	NEW PERSON (#200) Name
	entered	VA FileMan **date.time**
	commentType	**O** or **E** (observed or error)
	commentText	string
drugClass *	name	VA DRUG CLASS (#50.605) Classification
	vuid	VA DRUG CLASS (#50.605) VUID
drugIngredient *	name	DRUG INGREDIENTS (#50.416) Name
	vuid	DRUG INGREDIENTS (#50.416) VUID
entered	value	VA FileMan **date.time**
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
id	value	PATIENT ALLERGIES (#120.8) ien
localCode	value	VA FileMan variable pointer
mechanism	value	**ALLERGY**, **PHARMACOLOGIC**, or **UNKNOWN**
name	value	string

Elements	Attributes	Content
reaction *	name	string
	vuid	number
removed	value	boolean (**1** or **0**)
severity	value	**MILD**, **MODERATE**, or **SEVERE**
source	value	**O** or **H** (observed or historical)
type	value	any combination of DFO
verified	value	any combination of DRUG, FOOD, OTHER
vuid	value	VUID number

* = may be multiple

3.2 Clinical Observations (MDC)

Input parameters: TYPE "**observations**" [required]

[optional] START VA FileMan date to filter on "**observed**"

STOP VA FileMan date to filter on "**observed**"

MAX use with caution, as search is performed chronologically

ID OBS (#704.117) file ID (#.01) value

FILTER none

Table 4: RPC: VPR GET PATIENT DATA—Clinical Observations (MDC) Elements Returned

Elements	Attributes	Content
bodySite	code	VUID number
	name	string
comment	value	string
entered	value	VA FileMan **date.time**
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
id	value	OBS (#704.117) ID
location	code	HOSPITAL LOCATION (#44) ien
	name	HOSPITAL LOCATION (#44) Name
method	code	VUID number

Elements	Attributes	Content
	name	string
name	value	string
observed	value	VA FileMan **date.time**
position	code	VUID number
	name	string
product	code	VUID number
	name	string
quality	code	VUID number
	name	string
range	value	**Unknown**, **Normal**, **Out of Bounds Low**, **Out of Bounds High**, **Low**, **High**
status	value	Verified
units	code	VUID number
	name	string
value	value	string
vuid	value	VUID number

3.3 Clinical Procedures (MC)

Input parameters: TYPE "**clinicalProcedures**" [required]
[optional] START VA FileMan date to filter on "**dateTime**"
STOP VA FileMan date to filter on "**dateTime**"
MAX number of most recent procedures to return
ID variable pointer to CP data file/item
FILTER("text") **1** or **0**, to include "content" text of report

Table 5: RPC: VPR GET PATIENT DATA—Clinical Procedures (MC) Elements Returned

Elements	Attributes	Content
category	value	CP
consult	value	CONSULT (#123) ien
dateTime	value	VA FileMan **date.time**
document *	id	TIU DOCUMENT (#8925) ien

Elements	Attributes	Content
	localTitle	TIU DOCUMENT DEFINITION (#8925.1) Name
	nationalTitle	TIU VHA ENTERPRISE STANDARD TITLE (#8926.1)
	vuid	VUID number
	content	word-processing text
encounter	value	VISIT (#9000010) ien
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
hasImages	value	boolean (**1** or **0**)
id	value	variable pointer
interpretation	value	**Normal**, **Abnormal**, **Borderline**, **Incomplete**, or **Machine Resulted**
location	code	HOSPITAL LOCATION (#44) ien
	name	HOSPITAL LOCATION (#44) Name
name	value	string
order	code	ORDER (#100) ien
	name	string
provider	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
	officePhone	NEW PERSON (#200) Office Phone
	analogPager	NEW PERSON (#200) Voice Pager
	fax	NEW PERSON (#200) Fax Number
	email	NEW PERSON (#200) Email Address
	taxonomyCode	PERSON CLASS (#8932.1) X12 Code
	providerType	PERSON CLASS (#8932.1) Provider Type
	classification	PERSON CLASS (#8932.1) Classification
	specialization	PERSON CLASS (#8932.1) Area of Specialization
	service	NEW PERSON (#200) Service/Section
requested	value	VA FileMan **date.time**
status	value	string

* = may be multiple

3.4 Clinical Reminders (PXRM)

Not all clinical reminders that may appear in CPRS will be available via this extract. Only the nationally exported "wellness" reminders, those marked for Patient usage and shown in MyHealtheVet, are processed and returned at run time.

Input parameters:	TYPE	"**reminders**" [required]
[optional]	START	none
	STOP	none
	MAX	none
	ID	REMINDER DEFINITION (#811.9) file ien
	FILTER	none

Table 6: RPC: VPR GET PATIENT DATA—Clinical Reminders (PXRM) Elements Returned

Elements	Attributes	Content
class	code	**N**
	name	**NATIONAL**
detail		word-processing text
due	value	VA FileMan **date.time**, **DUE NOW**, **N/A**, or **CNBD**
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
id	value	REMINDER DEFINITION (#811.9) ien
lastDone	value	VA FileMan **date.time**, or **UNKNOWN**
name	value	REMINDER DEFINITION (#811.9) Print Name
status	value	**DUE NOW**, **DUE SOON**, **NOT DUE**, **RESOLVED**, or **N/A**
summary		word-processing text

3.5 Consult/Request Tracking (GMRC)

Input parameters: TYPE "**consults**" [required]

[optional] START VA FileMan date to filter on "**requested**"

STOP VA FileMan date to filter on "**requested**"

MAX number of most recent consult requests to return

ID REQUEST/CONSULTATION (#123) file IEN

FILTER("text") **1** or **0**, to include "content" text of report

Table 7: RPC: VPR GET PATIENT DATA—Consult/Request Tracking (GMRC) Elements Returned

Elements	Attributes	Content
document *	id	TIU DOCUMENT (#8925) ien
	localTitle	TIU DOCUMENT DEFINITION (#8925.1) Name
	nationalTitle	TIU VHA ENTERPRISE STANDARD TITLE (#8926.1)
	vuid	VUID number
	content	word-processing text
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
id	value	REQUEST/CONSULTATION (#123) ien
name	value	string
orderID	value	ORDER (#100) ien
procedure	value	GMRC Procedure #123.3 Name or "**Consult**"
provider	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
	officePhone	NEW PERSON (#200) Office Phone
	analogPager	NEW PERSON (#200) Voice Pager
	fax	NEW PERSON (#200) Fax Number
	email	NEW PERSON (#200) Email Address
	taxonomyCode	PERSON CLASS (#8932.1) X12 Code
	providerType	PERSON CLASS (#8932.1) Provider Type
	classification	PERSON CLASS (#8932.1)1 Classification

Elements	Attributes	Content
	specialization	PERSON CLASS (#8932.1) Area of Specialization
	service	NEW PERSON (#200 Service/Section
provDx	code	ICD code
	name	ICD Description
	system	ICD or 10D
reason	value	word-processing text
requested	value	VA FileMan **date.time**
result	value	string
service	value	REQUEST SERVICES (#123.5) Name
status	value	ORDER STATUS (#100.01) Name
type	value	**C** or **P**
urgency	value	string

* = may be multiple

3.6 Functional Independence Measurements (RMIM)

The assessment scores are often entered by multiple clinicians. The set as a whole is *not* returned until all **18** numeric scores are available. A sub-total for each section of scores will also then be included.

Input parameters:	TYPE	"**functionalMeasurements**" [required]
[optional]	START	VA FileMan date to filter on "**admitted**", chronologically
	STOP	VA FileMan date to filter on "**admitted**", chronologically
	MAX	Use *not recommended*, as measurements are *not* sorted
	ID	FUNCTIONAL INDEPENDENCE (#783) file IEN
	FILTER("text")	**1** or **0**, to include "content" text of report

Table 8: RPC: VPR GET PATIENT DATA—Functional Independence Measurements (RMIM) Elements Returned

Elements	Attributes		Content
admitClass	value		**1**, **2**, or **3**
admitted	value		FileMan
assessment *	type		**admission**, **discharge**, **interim**, **follow up**, or **goals**
	cognitiveScore		number, **5-35**
	motorScore		number, **13-91**
	totalScore		number, **18-126**
	values	eat	number, **1-7**
		groom	number, **1-7**
		bath	number, **1-7**
		dressUp	number, **1-7**
		dressLo	number, **1-7**
		toilet	number, **1-7**
		bladder	number, **1-7**
		bowel	number, **1-7**
		transChair	number, **1-7**
		transToilet	number, **1-7**
		transTub	number, **1-7**
		locomWalk	number, **1-7**

Elements	Attributes		Content
		locomStair	number, **1-7**
		comprehend	number, **1-7**
		express	number, **1-7**
		interact	number, **1-7**
		problem	number, **1-7**
		memory	number, **1-7**
		walkMode	**W**, **C**, or **B** (walk, wheelchair, or both)
		comprehendMode	**A**, **V**, or **B** (auditory, visual, or both)
		expressMode	**V**, **N**, or **B** (vocal, non-vocal, or both)
care	value		CONTINUUM OF CARE, ACUTE, or SUBACUTE
case	value		number
discharged	value		VA FileMan date
document *	id		TIU DOCUMENT (#8925) ien
	localTitle		TIU DOCUMENT DEFINITION (#8925.1) Name
	nationalTitle		TIU VHA ENTERPRISE STANDARD TITLE (#8926.1)
	vuid		VUID number
	content		word-processing text
facility	code		INSTITUTION (#4) Station Number
	name		INSTITUTION (#4) Name
id	value		FUNCTIONAL INDEPENDENCE (#783) ien
impairmentGroup	value		string
interruption *	transfer		VA FileMan date
	return		VA FileMan date
interruptionCode	value		string
name	value		Functional Independence Measurement
onset	value		VA FileMan date

* = may be multiple

3.7 Integrated Billing (IB)

Input parameters: TYPE "**insurancePolicies**" [required]

[optional] START none

STOP none

MAX use *not recommended*, as policies are *not* sorted

ID none

FILTER("status") desired status codes, see ^**IBBDOC** for possible values

[default = "**RB**"]

Table 9: RPC: VPR GET PATIENT DATA—Integrated Billing (IB) Elements Returned

Elements	Attributes		Content
company	id		INSURANCE COMPANY (#36) ien
	name		INSURANCE COMPANY (#36) Name
	address	streetLine1	INSURANCE COMPANY (#36) Street Address [1]
		streetLine2	INSURANCE COMPANY (#36) Street Address [2]
		streetLine3	INSURANCE COMPANY (#36) Street Address [3]
		city	INSURANCE COMPANY (#36) City
		stateProvince	INSURANCE COMPANY (#36) State
		postalCode	INSURANCE COMPANY (#36) Zip
	telecom		INSURANCE COMPANY (#36) Phone Number
effectiveDate	value		VA FileMan **date.time**
expirationDate	value		VA FileMan **date.time**
facility	code		INSTITUTION (#4) Station Number
	name		INSTITUTION (#4) Name
groupName	value		GROUP PLAN (#355.3) Group Name
groupNumber	value		string
id	value		DFN;company id;Group Plan (#355.3) ien
insuranceType	code		TYPE OF PLAN (#355.1) ien
	name		TYPE OF PLAN (#355.1) Name
relationship	value		**PATIENT**, **SPOUSE**, **NATURAL CHILD**,

Elements	Attributes		Content
			EMPLOYEE, **ORGAN DONOR**, **INJURED PLAINTIFF**, **MOTHER**, **FATHER**, **SIGNIFICANT OTHER**, **LIFE PARTNER**, or **OTHER RELATIONSHIP**
subscriber	id		string
	name		string

3.8 Laboratory (LR)

Input parameters: TYPE "**labs**" [required]

[optional] START VA FileMan date to filter on "**collected**"

STOP VA FileMan date to filter on "**collected**"

MAX number of most recent accessions to return

ID LAB DATA (#63) file IEN string

FILTER("type") desired "type" code(s) [default = **CH**]

Table 10: RPC: VPR GET PATIENT DATA—Laboratory (LR) Elements Returned

Elements	Attributes	Content
collected	value	VA FileMan **date.time**
comment	value	string
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
groupName	value	accession number string
high	value	string
id	value	LAB DATA (#63) ien string
interpretation	value	**L**, **L***, **H**, **H***, or **NULL**
labOrderID	value	number
localName	value	LAB TEST (#60) Print Name
loinc	value	LOINC code
low	value	string
performingLab	value	string
provider	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name

Elements	Attributes	Content
	officePhone	NEW PERSON (#200) Office Phone
	analogPager	NEW PERSON (#200) Voice Pager
	fax	NEW PERSON (#200) Fax Number
	email	NEW PERSON (#200) Email Address
	taxonomyCode	PERSON CLASS (#8932.1) X12 Code
	providerType	PERSON CLASS (#8932.1) Provider Type
	classification	PERSON CLASS (#8932.1) Classification
	specialization	PERSON CLASS (#8932.1) Area of Specialization
	service	NEW PERSON (#200) Service/Section
orderID	value	ORDER (#100) ien
result	value	string
resulted	value	VA FileMan **date.time**
sample	value	COLLECTION SAMPLE (#62) Name
specimen	code	TOPOGRAPHY (#61) SNOMED Code
	name	TOPOGRAPHY (#61) Name
status	value	**completed** or **incomplete**
test	value	LAB TEST (#60) Name
type	value	**CH** or **MI**
units	value	string
vuid	value	VUID number

3.8.1 Accessions

The same results can also be returned grouped by the accessioned specimen; this is the only Lab domain that will return pathology data, and the recommended domain for retrieving microbiology results.

Input parameters:	TYPE	"**accessions**" [required]
[optional]	START	VA FileMan date to filter on "**collected**"
	STOP	VA FileMan date to filter on "**collected**"
	MAX	Number of most recent accessions to return
	ID	LAB DATA (#63) file IEN string
	FILTER("type")	desired "type" codes
	FILTER("text")	**1** or **0**, to include "content" text of report

Table 11: RPC: VPR GET PATIENT DATA—Accessions Elements Returned

Elements	Attributes	Content
collected	value	VA FileMan **date.time**
comment	value	string
document *	id	TIU DOCUMENT (#8925) ien
	localTitle	TIU DOCUMENT DEFINITION (#8925.1) Name
	nationalTitle	TIU VHA ENTERPRISE STANDARD TITLE (#8926.1)
	vuid	VUID number
	content	word-processing text
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
groupName	value	accession number string
id	value	LAB DATA (#63) ien string
labOrderID	value	number
name	value	ACCESSION (#68) Area
pathologist	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
	officePhone	NEW PERSON (#200) Office Phone
	analogPager	NEW PERSON (#200) Voice Pager

Elements	Attributes	Content
	fax	NEW PERSON (#200) Fax Number
	email	NEW PERSON (#200) Email Address
	taxonomyCode	PERSON CLASS (#8932.1) X12 Code
	providerType	PERSON CLASS (#8932.1) Provider Type
	classification	PERSON CLASS (#8932.1) Classification
	specialization	PERSON CLASS (#8932.1) Area of Specialization
	service	NEW PERSON (#200) Service/Section
provider	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
	officePhone	NEW PERSON (#200) Office Phone
	analogPager	NEW PERSON (#200) Voice Pager
	fax	NEW PERSON (#200) Fax Number
	email	NEW PERSON (#200) Email Address
	taxonomyCode	PERSON CLASS (#8932.1) X12 Code
	providerType	PERSON CLASS (#8932.1) Provider Type
	classification	PERSON CLASS (#8932.1) Classification
	specialization	PERSON CLASS (#8932.1) Area of Specialization
	service	NEW PERSON (#200 Service/Section
resulted	value	VA FileMan **date.time**
sample	value	COLLECTION SAMPLE (#62) Name
specimen	code	TOPOGRAPHY (#61) SNOMED Code
	name	TOPOGRAPHY (#61) Name
status	value	**completed** or **incomplete**
type	value	**CH**, **MI**, **CY**, **EM**, **SP**, or **AU**
value *	id	LAB DATA (#63) file ien string
	test	LAB TEST (#60) Name
	result	string
	interpretation	**L**, **L***, **H**, **H***, or **NULL**
	units	string
	low	string

Elements	Attributes	Content
	high	string
	localName	LAB TEST (#60) Print Name
	loinc	LOINC code
	vuid	VUID number
	order	ORDER (#100) ien
	performingLab	string

* = may be multiple

3.8.2 Panels

Results can also be returned grouped by order or panel within an accession. Because Lab can purge its order information, results are found by first searching the ORDER (#100) file then retrieving the associated results from the LAB DATA (#63) file.

Input parameters: TYPE "**panels**" [required]
[optional] START VA FileMan date to filter on **date order released**
STOP VA FileMan date to filter on **date order released**
MAX number of most recent orders to return
ID ORDER (#100) file IEN
FILTER("type") desired "type" codes

Table 12: RPC: VPR GET PATIENT DATA—Panels Elements Returned

Elements	Attributes	Content
collected	value	VA FileMan **date.time**
comment	value	string
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
groupName	value	accession number string
id	value	ORDER (#100) ien
labOrderID	value	ORDER (#100) Package Reference string
name	value	LAB TEST (#60) Name
order	code	ORDER (#100) ien

Elements	Attributes	Content
	name	LAB TEST (#60) Name
provider	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
	officePhone	NEW PERSON (#200) Office Phone
	analogPager	NEW PERSON (#200) Voice Pager
	fax	NEW PERSON (#200) Fax Number
	email	NEW PERSON (#200) Email Address
	taxonomyCode	PERSON CLASS (#8932.1) X12 Code
	providerType	PERSON CLASS (#8932.1) Provider Type
	classification	PERSON CLASS (#8932.1) Classification
	specialization	PERSON CLASS (#8932.1) Area of Specialization
	service	NEW PERSON (#200) Service/Section
resulted	value	VA FileMan **date.time**
sample	value	COLLECTION SAMPLE (#62) Name
specimen	code	TOPOGRAPHY (#61) SNOMED Code
	name	TOPOGRAPHY (#61) Name
status	value	**completed** or **incomplete**
type	value	**CH** or **MI**
value *	id	LAB DATA (#63) file ien string
	test	LAB TEST (#60) Name
	result	string
	interpretation	**L**, **L***, **H**, **H***, or **NULL**
	units	string
	low	string
	high	string
	localName	LAB TEST (#60) Print Name
	loinc	LOINC code
	vuid	VUID number
	performingLab	string

* = may be multiple

3.9 Orders (OR)

Most order views in CPRS include actions on orders as separate items; this extract returns only the current snapshot of each order found, unless the view requested is specific to actions (i.e., unsigned).

Input parameters:	TYPE	"**orders**" [required]
[optional]	START	VA FileMan date to filter on "**released**" or "**entered**"
	STOP	VA FileMan date to filter on "**released**" or "**entered**"
	MAX	number of most recent orders to return
	ID	ORDER (#100) file IEN string
	FILTER("view")	desired "view" code, see **^ORQ1** for possible values
		[default = **6** (Released Orders), sorted by "released"]

Table 13: VPR GET PATIENT DATA—Orders (OR) Elements Returned

Elements	Attributes	Content
acknowledgement *	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
	date	VA FileMan **date.time**
codingSystem	code	string (national code)
	name	**CPT**, **NLT**, or **LNC**
content		word-processing text
discontinued	date	VA FileMan **date.time**
	by	NEW PERSON (#200) ien
	byName	NEW PERSON (#200) Name
	reason	string
entered	value	VA FileMan **date.time**
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
group	value	DISPLAY GROUP (#100.98) Short Name
id	value	ORDER (#100) ien string
location	code	HOSPITAL LOCATION (#44) ien
	name	HOSPITAL LOCATION (#44) Name
name	code	ORDERABLE ITEMS (#101.43) ien

Elements	Attributes	Content
	name	ORDERABLE ITEMS (#101.43) Name
provider	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
	officePhone	NEW PERSON (#200) Office Phone
	analogPager	NEW PERSON (#200) Voice Pager
	fax	NEW PERSON (#200) Fax Number
	email	NEW PERSON (#200) Email Address
	taxonomyCode	PERSON CLASS (#8932.1) X12 Code
	providerType	PERSON CLASS (#8932.1) Provider Type
	classification	PERSON CLASS (#8932.1) Classification
	specialization	PERSON CLASS (#8932.1) Area of Specialization
	service	NEW PERSON (#200) Service/Section
released	value	VA FileMan **date.time**
resultID	value	string (corresponds to “id” in other domains)
service	value	PACKAGE (#9.4) Prefix
signatureStatus	value	**ON CHART** w/written orders, **ELECTRONIC**, **NOT SIGNED**, **NOT REQUIRED**, **ON CHART** w/printed orders, **NOT REQUIRED** due to cancel/lapse, **SERVICE CORRECTION** to signed order, **DIGITALLY SIGNED**, or **ON PARENT** order
signed	value	VA FileMan **date.time**
signer	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
	officePhone	NEW PERSON (#200) Office Phone
	analogPager	NEW PERSON (#200) Voice Pager
	fax	NEW PERSON (#200) Fax Number
	email	NEW PERSON (#200) Email Address
	taxonomyCode	PERSON CLASS (#8932.1) X12 Code
	providerType	PERSON CLASS (#8932.1) Provider Type
	classification	PERSON CLASS (#8932.1) Classification
	specialization	PERSON CLASS (#8932.1) Area of

Elements	Attributes	Content
		Specialization
	service	NEW PERSON (#200) Service/Section
start	value	VA FileMan **date.time**
status	code	ORDER STATUS (#100.01) Abbreviation
	name	ORDER STATUS (#100.01) Name
	vuid	ORDER STATUS (#100.01) VUID
stop	value	VA FileMan **date.time**
type	value	DISPLAY GROUP (#100.98) Mixed Name
vuid	value	VUID number

* = may be multiple

3.10 Patient Care Encounter (PX)

NOTE: All Patient Care Encounter (PCE) patient data file names all start with "**V**", which is short for VistA.

3.10.1 Exams

Input parameters:	TYPE	"**exams**" [required]
[optional]	START	VA FileMan date to filter on "**dateTime**"
	STOP	VA FileMan date to filter on "**dateTime**"
	MAX	number of most recent exams to return
	ID	V EXAM (#9000010.13) file IEN
	FILTER	none

Table 14: VPR GET PATIENT DATA—Exams Elements Returned

Elements	Attributes	Content
comment	value	string
dateTime	value	VA FileMan **date.time**
encounter	value	VISIT (#9000010) ien
facility	code	INSTITUTION (#4) Station Number

Elements	Attributes	Content
	name	INSTITUTION (#4) Name
id	value	V EXAM (#9000010.13) ien
name	value	EXAM (#9999999.15) Name
result	value	string

3.10.2 Education Topics

Input parameters: TYPE "**educationTopics**" [required]

[optional] START VA FileMan date to filter on "**dateTime**"

STOP VA FileMan date to filter on "**dateTime**"

MAX number of most recent education instances to return

ID V PATIENT ED (#9000010.16) file IEN

FILTER none

Table 15: VPR GET PATIENT DATA—Education Topics Elements Returned

Elements	Attributes	Content
comment	value	string
dateTime	value	VA FileMan **date.time**
encounter	value	VISIT (#9000010) ien
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
id	value	V PATIENT ED (#9000010.16) ien
name	value	EDUCATION TOPICS (#9999999.09) Name
result	value	string

3.10.3 Health Factors

Input parameters:	TYPE	"**healthFactors**" [required]
[optional]	START	VA FileMan date to filter on "**recorded**"
	STOP	VA FileMan date to filter on "**recorded**"
	MAX	number of most recent factors to return
	ID	V HEALTH FACTORS (#9000010.23) file IEN
	FILTER	none

Table 16: VPR GET PATIENT DATA—Health Factors Elements Returned

Elements	Attributes	Content
category	code	HEALTH FACTORS (#9999999.64) ien
	name	HEALTH FACTORS (#9999999.64) Category
comment	value	string
encounter	value	VISIT (#9000010) ien
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
id	value	V HEALTH FACTORS (#9000010.23) ien
name	value	HEALTH FACTORS (#9999999.64) Factor
recorded	value	VA FileMan **date.time**
severity	value	**MINIMAL**, **MODERATE**, or **HEAVY/SEVERE**

3.10.4 Immunizations

Input parameters: TYPE "**immunizations**" [required]

[optional] START VA FileMan date to filter on "**administered**"

STOP VA FileMan date to filter on "**administered**"

MAX Number of most recent immunizations to return

ID V IMMUNIZATION (#9000010.11) file IEN

FILTER none

Table 17: VPR GET PATIENT DATA—Immunizations Elements Returned

Elements	Attributes	Content
administered	value	VA FileMan **date.time**
bodySite	code	IMM ADMINISTRATION SITE (#920.3) HL7 Code
	name	IMM ADMINISTRATION SITE (#920.3) Site
comment	value	string
contraindicated	value	boolean (**1** or **0**)
cpt	code	CPT Code
	name	CPT Short Name
cvx	value	CVX Code
documentedBy	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
dose	value	string
encounter	value	VISIT (#9000010) ien
expirationDate	value	VA FileMan **date.time**
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
id	value	V IMMUNIZATION (#9000010.11) ien
location	value	HOSPITAL LOCATION (#44) Name
lot	value	IMMUNIZATION LOT (#9999999.41) Lot Number
manufacturer	value	IMMUNIZATION LOT (#9999999.41) Manufacturer
name	value	IMMUNIZATION (#9999999.14) Name

Elements	Attributes	Content
orderingProvider	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
provider	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
reaction	value	string
route	code	IMM ADMINISTRATION ROUTE (#920.2) HL7 Code
	name	IMM ADMINISTRATION ROUTE (#920.2) Route
series	value	PARTIALLY COMPLETE, COMPLETE, BOOSTER, SERIES 1-8
source	code	IMMUNIZATION INFO SOURCE (#920) HL7 Code
	name	IMMUNIZATION INFO SOURCE (#920) Source
units	value	string
vis [m]	date	VA FileMan date
	name	VACCINE INFORMATION STATEMENT (#920) Name
	editionDate	VA FileMan date
	language	string

3.10.5 Skin Tests

Input parameters:	TYPE	"**skinTests**" [required]
[optional]	START	VA FileMan date to filter on "**dateTime**"
	STOP	VA FileMan date to filter on "**dateTime**"
	MAX	Number of most recent skin tests to return
	ID	V SKIN TEST (#9000010.12) file IEN
	FILTER	none

Table 18: VPR GET PATIENT DATA—Skin Tests Elements Returned

Elements	Attributes	Content
comment	value	string
dateTime	value	VA FileMan **date.time**
encounter	value	VISIT (#9000010) ien
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
id	value	V SKIN TEST (#9000010.12) ien
name	value	SKIN TEST (#9999999.28) Name
result	value	string

3.11 Patient Record Flags (DGPF)

Input parameters:	TYPE	"**flags**" [required]
[optional]	START	none
	STOP	none
	MAX	none
	ID	DFN~PRF variable pointer string
	FILTER	none

Table 19: VPR GET PATIENT DATA—Patient Record Flags (DGPF) Elements Returned

Elements	Attributes	Content
approvedBy	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
assigned	value	FileMan **date.time**
category	value	**I** (**NATIONAL**) or **II** (**LOCAL**)
content		word-processing text
document	code	TIU DOCUMENT (#8925) ien
	name	TIU DOCUMENT DEFINITION (#8925.1) Name
id	value	DFN~PRF variable pointer string
name	value	PRF NATIONAL FLAG (#26.15) or PRF LOCAL FLAG (#26.11) Name
origSite	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
ownSite	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
reviewDue	value	VA FileMan date
type	value	PRF TYPE (#26.16) Name

3.12 Pharmacy (PS)

All meds may be requested by omitting any filters, but more commonly a single type of medications is pulled at a time, as shown in the following tables. The PS API sorts meds by expiration date and will include orders that expire on or after the START value but omit those that do not begin until after the STOP value. As each type is processed in sequence, use of MAX is discouraged with multiple types.

An alternate domain name is available for each med type that will instead run reverse-chronologically on the ORDER (#100) file, filtering by the "ordered" date without regard to medication type; thus, MAX may be safely used and return the most recent set of orders of the desired type(s). Set TYPE to "pharmacy" to use this method instead.

3.12.1 Inpatient (Unit Dose) Medications

Input parameters:	TYPE	"**meds**" [required]
[optional]	START	VA FileMan date to filter on "**expires**", chronologically
	STOP	VA FileMan date to filter on "**expires**", chronologically
	MAX	number of most recent inpatient med orders to return
	ID	ORDER (#100) file IEN
	FILTER("vaType")	"**I**"

Table 20: VPR GET PATIENT DATA—Inpatient (Unit Dose) Medications Elements Returned

Elements	Attributes		Content
currentProvider	code		NEW PERSON (#200) ien
	name		NEW PERSON (#200) Name
	officePhone		NEW PERSON (#200) Office Phone
	analogPager		NEW PERSON (#200) Voice Pager
	fax		NEW PERSON (#200) Fax Number
	email		NEW PERSON (#200) Email Address
	taxonomyCode		PERSON CLASS (#8932.1) X12 Code
	providerType		PERSON CLASS (#8932.1) Provider Type
	classification		PERSON CLASS (#8932.1) Classification
	specialization		PERSON CLASS (#8932.1) Area of Specialization
	service		NEW PERSON (#200) Service/Section
dose *	dose		string
	units		string

Elements	Attributes		Content
	unitsPerDose		number
	noun		string
	route		MEDICATION ROUTES (#51.2) Abbreviation
	schedule		ADMINISTRATION SCHEDULE (#51.1) Name
	duration		string
	conjunction		**A**, **T**, or **E**
	doseStart		VA FileMan **date.time**
	doseStop		VA FileMan **date.time**
	order		ORDER (#100) ien
facility	code		INSTITUTION (#4) Station Number
	name		INSTITUTION (#4) Name
form	value		DOSAGE FORM (#50.606) Name
id	value		ORDER (#100) ien
IMO	value		boolean (**1** or **0**)
location	code		HOSPITAL LOCATION (#44) ien
	name		HOSPITAL LOCATION (#44) Name
medID	value		NON-VERIFIED ORDERS (#53.1) ien_“P;I”, or UNIT DOSE ORDERS (#55.06) subfile ien_“U;I”
name	value		PHARMACY ORDERABLE ITEM (#50.7) Name, Form
ordered	value		VA FileMan **date.time**
orderID	value		ORDER (#100) ien
orderingProvider	code		NEW PERSON (#200) ien
	name		NEW PERSON (#200) Name
	officePhone		NEW PERSON (#200) Office Phone
	analogPager		NEW PERSON (#200) Voice Pager
	fax		NEW PERSON (#200) Fax Number
	email		NEW PERSON (#200) Email Address
	taxonomyCode		PERSON CLASS (#8932.1) X12 Code
	providerType		PERSON CLASS (#8932.1) Provider Type

Elements	Attributes		Content
	classification		PERSON CLASS (#8932.1) Classification
	specialization		PERSON CLASS (#8932.1) Area of Specialization
	service		NEW PERSON (#200) Service/Section
parent	value		ORDER (#100) ien
pharmacist	code		NEW PERSON (#200) ien
	name		NEW PERSON (#200) Name
product *	code		DRUG (#50) ien
	name		DRUG (#50) Generic Name
	role		**D**
	concentration		string
	order		ORDER (#100) ien
	class	code	VA DRUG CLASS (#50.605) Code
		name	VA DRUG CLASS (#50.605) Classification
		vuid	VA DRUG CLASS (#50.605) VUID
	vaGeneric	code	VA GENERIC (#50.6) ien
		name	VA GENERIC (#50.6) Name
		vuid	VA GENERIC (#50.6) VUID
	vaProduct	code	VA PRODUCT (#50.68) ien
		name	VA PRODUCT (#50.68) Name
		vuid	VA PRODUCT (#50.68) VUID
sig	value		string
start	value		VA FileMan **date.time**
status	value		**active**, **hold**, **historical**, or **not active**
stop	value		VA FileMan **date.time**
vaStatus	value		ORDER STATUS (#100.01) Name
vaType	value		I

* = may be multiple

3.12.2 IV Fluids (Infusions)

Input parameters: TYPE "**meds**" [required]

[optional] START VA FileMan date to filter on "**expires**", chronologically

STOP VA FileMan date to filter on "**expires**", chronologically

MAX Number of most recent infusion orders to return

ID ORDER (#100) file IEN

FILTER("vaType") "**V**"

Table 21: VPR GET PATIENT DATA—IV Fluids (Infusions) Elements Returned

Elements	Attributes		Content
currentProvider	code		NEW PERSON (#200) ien
	name		NEW PERSON (#200) Name
	officePhone		NEW PERSON (#200) Office Phone
	analogPager		NEW PERSON (#200) Voice Pager
	fax		NEW PERSON (#200) Fax Number
	email		NEW PERSON (#200) Email Address
	taxonomyCode		PERSON CLASS (#8932.1) X12 Code
	providerType		PERSON CLASS (#8932.1) Provider Type
	classification		PERSON CLASS (#8932.1) Classification
	specialization		PERSON CLASS (#8932.1) Area of Specialization
	service		NEW PERSON (#200) Service/Section
dose *	route		MEDICATION ROUTES (#51.2) Abbreviation
	schedule		Administration Schedule #51.1 Name
facility	code		INSTITUTION (#4) Station Number
	name		INSTITUTION (#4) Name
id	value		ORDER (#100) ien
ivLimit	value		string
location	code		HOSPITAL LOCATION (#44) ien
	name		HOSPITAL LOCATION (#44) Name
medID	value		NON-VERIFIED ORDERS (#53.1) ien_"P;I", or IV ORDERS (#55.01) subfile ien_"V;I"

Elements	Attributes		Content
name	value		Pharmacy Orderable Item #50.7 Name, Form
ordered	value		VA FileMan **date.time**
orderID	value		ORDER (#100) ien
orderingProvider	code		NEW PERSON (#200) ien
	name		NEW PERSON (#200) Name
	officePhone		NEW PERSON (#200) Office Phone
	analogPager		NEW PERSON (#200) Voice Pager
	fax		NEW PERSON (#200) Fax Number
	email		NEW PERSON (#200) Email Address
	taxonomyCode		PERSON CLASS (#8932.1) X12 Code
	providerType		PERSON CLASS (#8932.1) Provider Type
	classification		PERSON CLASS (#8932.1) Classification
	specialization		PERSON CLASS (#8932.1) Area of Specialization
	service		NEW PERSON (#200) Service/Section
pharmacist	code		NEW PERSON (#200) ien
	name		NEW PERSON (#200) Name
product *	code		DRUG (#50) ien
	name		DRUG (#50) Generic Name
	role		**A** or **B**
	concentration		string
	class	code	VA DRUG CLASS (#50.605) Code
		name	VA DRUG CLASS (#50.605) Classification
		vuid	VA DRUG CLASS (#50.605) VUID
	ordItem	code	PHARMACY ORDERABLE ITEM (#50.7) ien
		name	PHARMACY ORDERABLE ITEM (#50.7) Name, Form
	vaGeneric	code	VA GENERIC (#50.6) ien
		name	VA GENERIC (#50.6) Name
		vuid	VA GENERIC (#50.6) VUID
	vaProduct	code	VA PRODUCT (#50.68) ien

Elements	Attributes		Content
		name	VA PRODUCT (#50.68) Name
		vuid	VA PRODUCT (#50.68) VUID
rate	value		string
start	value		VA FileMan **date.time**
status	value		**active**, **hold**, **historical**, or **not active**
stop	value		VA FileMan **date.time**
vaStatus	value		ORDER STATUS (#100.01) Name
vaType	value		**V**

* = may be multiple

3.12.3 Outpatient Medications

Input parameters: TYPE "**meds**" [required]

[optional] START VA FileMan date to filter on "**expires**", chronologically

STOP VA FileMan date to filter on "**expires**", chronologically

MAX Number of most recent outpatient med orders to return

ID ORDER (#100) file IEN

FILTER("vaType") "**O**"

Table 22: VPR GET PATIENT DATA—Outpatient Medications Elements Returned

Elements	Attributes		Content
currentProvider	code		NEW PERSON (#200) ien
	name		NEW PERSON (#200) Name
	officePhone		NEW PERSON (#200) Office Phone
	analogPager		NEW PERSON (#200) Voice Pager
	fax		NEW PERSON (#200) Fax Number
	email		NEW PERSON (#200) Email Address
	taxonomyCode		PERSON CLASS (#8932.1) X12 Code
	providerType		PERSON CLASS (#8932.1) Provider Type
	classification		PERSON CLASS (#8932.1) Classification
	specialization		PERSON CLASS (#8932.1) Area of

Elements	Attributes		Content
			Specialization
	service		NEW PERSON (#200) Service/Section
daysSupply	value		number
dose *	dose		string
	units		string
	unitsPerDose		number
	noun		string
	route		MEDICATION ROUTES (#51.2) Abbreviation
	schedule		ADMINISTRATION SCHEDULE (#51.1) Name
	duration		string
	conjunction		**A**, **T**, or **E**
	doseStart		VA FileMan **date.time**
	doseStop		VA FileMan **date.time**
expires	value		VA FileMan date
facility	code		INSTITUTION (#4) Station Number
	name		INSTITUTION (#4) Name
fill *	fillDate		VA FileMan date
	fillRouting		**W**, **M**, or **C**
	releaseDate		VA FileMan date
	fillQuantity		number
	fillDaysSupply		number
	partial		boolean (**1** or **0**)
fillCost	value		number
fillsAllowed	value		number
fillsRemaining	value		number
form	value		DOSAGE FORM (#50.606) Name
id	value		ORDER (#100) ien
lastFilled	value		VA FileMan **date.time**
location	code		HOSPITAL LOCATION (#44) ien
	name		HOSPITAL LOCATION (#44) Name

Elements	Attributes		Content
medID	value		PENDING OUTPATIENT ORDERS (#52.41) ien_“P;O”, or PRESCRIPTION (#52) file ien_“R;O”
name	value		PHARMACY ORDERABLE ITEM (#50.7) Name, Form
ordered	value		VA FileMan **date.time**
orderID	value		ORDER (#100) ien
orderingProvider	code		NEW PERSON (#200) ien
	name		NEW PERSON (#200) Name
	officePhone		NEW PERSON (#200) Office Phone
	analogPager		NEW PERSON (#200) Voice Pager
	fax		NEW PERSON (#200) Fax Number
	email		NEW PERSON (#200) Email Address
	taxonomyCode		PERSON CLASS (#8932.1) X12 Code
	providerType		PERSON CLASS (#8932.1) Provider Type
	classification		PERSON CLASS (#8932.1) Classification
	specialization		PERSON CLASS (#8932.1) Area of Specialization
	service		NEW PERSON (#200) Service/Section
pharmacist	code		NEW PERSON (#200) ien
	name		NEW PERSON (#200) Name
prescription	value		string
product *	code		DRUG (#50) ien
	name		DRUG (#50) Generic Name
	role		D
	concentration		string
	class	code	VA DRUG CLASS (#50.605) Code
		name	VA DRUG CLASS (#50.605) Classification
		vuid	VA DRUG CLASS (#50.605) VUID
	vaGeneric	code	VA GENERIC (#50.6) ien
		name	VA GENERIC (#50.6) Name
		vuid	VA GENERIC (#50.6) VUID
	vaProduct	code	VA PRODUCT (#50.68) ien

Elements	Attributes		Content
		name	VA PRODUCT (#50.68) Name
		vuid	VA PRODUCT (#50.68) VUID
ptInstructions	value		string
quantity	value		number
routing	value		**W**, **M**, or **C**
sig	value		string
start	value		VA FileMan **date.time**
status	value		**active**, **hold**, **historical**, or **not active**
stop	value		VA FileMan **date.time**
supply	value		boolean (**1** or **0**)
type	value		Prescription
vaStatus	value		ORDER STATUS (#100.01) Name
vaType	value		**O**

* = may be multiple

3.12.4 Non-VA Medications

Input parameters: TYPE "**meds**" [required]

[optional] START VA FileMan date to filter on "**expires**", chronologically

STOP VA FileMan date to filter on "**expires**", chronologically

MAX Number of most recent non-VA med orders to return

ID ORDER (#100) file IEN

FILTER("vaType") "**N**"

Table 23: VPR GET PATIENT DATA—Non-VA Medications Elements Returned

Elements	Attributes		Content
currentProvider	code		NEW PERSON (#200) ien
	name		NEW PERSON (#200) Name
	officePhone		NEW PERSON (#200) Office Phone
	analogPager		NEW PERSON (#200) Voice Pager
	fax		NEW PERSON (#200) Fax Number

Elements	Attributes		Content
	email		NEW PERSON (#200) Email Address
	taxonomyCode		PERSON CLASS (#8932.1) X12 Code
	providerType		PERSON CLASS (#8932.1) Provider Type
	classification		PERSON CLASS (#8932.1) Classification
	specialization		PERSON CLASS (#8932.1) Area of Specialization
	service		NEW PERSON (#200) Service/Section
dose [m]	dose		string
	units		string
	unitsPerDose		number
	noun		string
	route		MEDICATION ROUTES (#51.2) Abbreviation
	schedule		ADMINISTRATION SCHEDULE (#51.1) Name
facility	code		INSTITUTION (#4) Station Number
	name		INSTITUTION (#4) Name
form	value		DOSAGE FORM (#50.606) Name
id	value		ORDER (#100) ien
location	code		HOSPITAL LOCATION (#44) ien
	name		HOSPITAL LOCATION (#44) Name
medID	value		NON-VA MED ORDERS (#55.05) subfile ien_“N;O”
name	value		PHARMACY ORDERABLE ITEM (#50.7) Name, Form
ordered	value		VA FileMan **date.time**
orderID	value		ORDER (#100) ien
orderingProvider	code		NEW PERSON (#200) ien
	name		NEW PERSON (#200) Name
	officePhone		NEW PERSON (#200) Office Phone
	analogPager		NEW PERSON (#200) Voice Pager
	fax		NEW PERSON (#200) Fax Number
	email		NEW PERSON (#200) Email Address

Elements	Attributes		Content
	taxonomyCode		PERSON CLASS (#8932.1) X12 Code
	providerType		PERSON CLASS (#8932.1) Provider Type
	classification		PERSON CLASS (#8932.1) Classification
	specialization		PERSON CLASS (#8932.1) Area of Specialization
	service		NEW PERSON (#200) Service/Section
product [m]	code		DRUG (#50) ien
	name		DRUG (#50) Generic Name
	role		D
	concentration		string
	class	code	VA DRUG CLASS (#50.605) Code
		name	VA DRUG CLASS (#50.605) Classification
		vuid	VA DRUG CLASS (#50.605) VUID
	vaGeneric	code	VA GENERIC (#50.6) ien
		name	VA GENERIC (#50.6) Name
		vuid	VA GENERIC (#50.6) VUID
	vaProduct	code	VA PRODUCT (#50.68) ien
		name	VA PRODUCT (#50.68) Name
		vuid	VA PRODUCT (#50.68) VUID
sig			string
start			VA FileMan **date.time**
status			**active**, **hold**, **historical**, or **not active**
stop			VA FileMan **date.time**
type			OTC
vaStatus			ORDER STATUS (#100.01) Name
vaType			**N**

* = may be multiple

3.13 Problem List (GMPL)

Input parameters:	TYPE	"**problems**" [required]
[optional]	START	VA FileMan date to filter on "**onset**"
	STOP	VA FileMan date to filter on "**onset**"
	MAX	Use *not recommended*, as problems are *not* sorted
	ID	Problem file #9000011 IEN
	FILTER("status")	desired "status" code

Table 24: VPR GET PATIENT DATA—Problem List (GMPL) Elements Returned

Element	Attributes	Content
acuity	code	**A** or **C**
	name	**ACUTE** or **CHRONIC**
codingSystem	value	ICD or 10D
comment	id	number
	enteredBy	NEW PERSON (#200) Name
	entered	VA FileMan date
	commentText	string
entered	value	date
exposure *	value	**AO**, **IR**, **PG**, **HNC**, **MST**, **CV**, or SHAD
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
icd	value	ICD code
icdd	value	ICD Description
id	value	PROBLEM (#9000011) ien
location	value	HOSPITAL LOCATION (#44) name
name	value	PROVIDER NARRATIVE (#9999999.27) Narrative
onset	value	VA FileMan date
provider	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
removed	value	boolean (**1** or **0**)
resolved	value	VA FileMan date

Element	Attributes	Content
sc	value	boolean (**1** or **0**)
sctc	value	SNOMED Concept Code
sctd	value	SNOMED Designation Code
sctt	value	SNOMED Preferred Text
service	value	SERVICE (#49) Name
status	code	**A** or **I**
	name	ACTIVE or INACTIVE
unverified	value	boolean (**1** or **0**)
updated	value	VA FileMan date

* = may be multiple

3.14 Radiology/Nuclear Medicine (RA)

Input parameters:	TYPE	"**radiologyExams**" [required]
[optional]	START	VA FileMan date to filter on "**dateTime**"
	STOP	VA FileMan date to filter on "**dateTime**"
	MAX	Number of most recent exams to return
	ID	EXAMINATIONS (#70.03) sub-file IEN string
	FILTER("text")	**1** or **0**, to include "content" text of report

Table 25: VPR GET PATIENT DATA—Radiology/Nuclear Medicine (RA) Elements Returned

Elements	Attributes	Content
case	value	number
category	value	**RA**
dateTime	value	VA FileMan **date.time**
document *	id	TIU DOCUMENT (#8925) ien
	localTitle	TIU DOCUMENT DEFINITION (#8925.1) Name
	nationalTitle	TIU VHA ENTERPRISE STANDARD TITLE (#8926.1)
	vuid	VUID number

Elements	Attributes	Content
	status	**Verified**, **Released/NotVerified**, or **Electronically Filed**
	content	word-processing text
encounter	value	VISIT (#9000010) ien
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
hasImages	value	boolean (**1** or **0**)
id	value	EXAMINATIONS (#70.03) subfile ien string
imagingType	code	IMAGING TYPE (#79.2) Abbreviation
	name	IMAGING TYPE (#79.2) Type of Imaging
interpretation	value	string
location	code	HOSPITAL LOCATION (#44) ien
	name	HOSPITAL LOCATION (#44) name
modifier *	code	CPT Modifier
	name	CPT Modifier Name
name	value	RAD/NUC MED PROCEDURES (#71) Name
order	code	ORDER (#100) ien
	name	ORDERABLE ITEMS (#101.43) Name
provider	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
	officePhone	NEW PERSON (#200) Office Phone
	analogPager	NEW PERSON (#200) Voice Pager
	fax	NEW PERSON (#200) Fax Number
	email	NEW PERSON (#200) Email Address
	taxonomyCode	PERSON CLASS (#8932.1) X12 Code
	providerType	PERSON CLASS (#8932.1) Provider Type
	classification	PERSON CLASS (#8932.1) Classification
	specialization	PERSON CLASS (#8932.1) Area of Specialization
	service	NEW PERSON (#200) Service/Section
radOrderID	value	RAD/NUC MED ORDERS (#75.1) ien

Elements	Attributes	Content
status	value	COMPLETE, CANCELLED, EXAMINED, WAITING FOR EXAM, or CALLED FOR EXAM
type	code	CPT Code
	name	CPT Description
urgency	value	**STAT**, **ASAP**, or **ROUTINE**

* = may be multiple

3.15 Registration (DPT)

Input parameters: TYPE "**demographics**" [required]

[optional] START none

STOP none

MAX none

ID PATIENT (#2) file IEN

FILTER none

Table 26: VPR GET PATIENT DATA—Registration (DPT) Elements Returned

Elements	Attributes		Content
address	streetLine1		string
	streetLine2		string
	streetLine3		string
	city		string
	stateProvince		STATE (#5) Name
	postalCode		string
admitted	id		PATIENT MOVEMENT (#405) ien
	date		PATIENT MOVEMENT (#405) Date/Time
alias *	fullName		string
	familyName		string
	givenNames		string
attending	code		NEW PERSON (#200) ien

Elements	Attributes		Content
	name		NEW PERSON (#200) Name
bid	value		String
died	value		VA FileMan date
disability *	printName		DISABILITY CONDITION (#31) Name
	scPercent		number
	sc		boolean (**1** or **0**)
dob	value		VA FileMan date
eligibility *	name		ELIGIBILITY (#8) Name
	primary		boolean (**1** or **0**)
eligibilityStatus	value		**PENDING [RE]VERIFICATION** or **VERIFIED**
ethnicity *	value		ETHNICITY (#10.2) HL7 Value
exposure *	value		**AO**, **IR**, **PG**, **HNC**, **MST**, or **CV**
facility *	id		INSTITUTION (#4) Station Number
	name		INSTITUTION (#4) Name
	latestDate		VA FileMan **date.time**
	domain		DOMAIN (#4.2) Name
	homeSite		boolean (**1** or **0**)
familyName	value		string
flag *	name		PRF NATIONAL FLAG (#26.15) or PRF LOCAL FLAG (#26.11) Name
	text		string
fullName	value		string
gender	value		**M**, **F**, or **UN**
givenNames	value		string
icn	value		ICN number
id	value		PATIENT (#2) ien
inpatient	value		boolean (**1** or **0**)
language	code		ISO 639 2-character language code
	name		string
location	code		HOSPITAL LOCATION (#44) ien
	name		HOSPITAL LOCATION (#44) Name

Elements	Attributes		Content
locSvc	code		**M**, **S**, **P**, **NH**, **NE**, **I**, **R**, **SCI**, **D**, **B**, or **NC**
	name		**MEDICINE**, **SURGERY**, **PSYCHIATRY**, **NHCU**, **NEUROLOGY**, **INTERMEDIATE MED**, **REHAB MEDICINE**, **SPINAL CORD INJURY**, **DOMICILIARY**, **BLIND REHAB**, or **NON-COUNT**
lrdfn	value		number
maritalStatus	value		**D**, **M**, **W**, **S**, **N**, or **U**
meansTest	value		MEANS TEST STATUS (#408.32) Name
pcAssigned	value		VA FileMan date
pcProvider	code		NEW PERSON (#200) ien
	name		NEW PERSON (#200) Name
	officePhone		NEW PERSON (#200) Office Phone
	analogPager		NEW PERSON (#200) Voice Pager
	fax		NEW PERSON (#200) Fax Number
	email		NEW PERSON (#200) Email Address
	taxonomyCode		PERSON CLASS (#8932.1) X12 Code
	providerType		PERSON CLASS (#8932.1) Provider Type
	classification		PERSON CLASS (#8932.1) Classification
	specialization		PERSON CLASS (#8932.1) Area of Specialization
	service		NEW PERSON (#200) Service/Section
	address	streetLine1	string
		streetLine2	string
		streetLine3	string
		city	string
		stateProvince	STATE (#5) Name
		postalCode	string
pcTeam	code		TEAM (#404.51) ien
	name		TEAM (#404.51) Name
pcTeamMember	code		NEW PERSON (#200) ien
	name		NEW PERSON (#200) Name

Elements	Attributes		Content
	officePhone		NEW PERSON (#200) Office Phone
	analogPager		NEW PERSON (#200) Voice Pager
	fax		NEW PERSON (#200) Fax Number
	email		NEW PERSON (#200) Email Address
	taxonomyCode		PERSON CLASS (#8932.1) X12 Code
	providerType		PERSON CLASS (#8932.1) Provider Type
	classification		PERSON CLASS (#8932.1) Classification
	specialization		PERSON CLASS (#8932.1) Area of Specialization
	service		NEW PERSON (#200) Service/Section
race *	value		RACE (#10) HL7 Value
religion	value		RELIGIOUS PREFERENCE (#13) Name
roomBed	value		string
sc	value		boolean (**1** or **0**)
scPercent	value		number
sensitive	value		boolean (**1** or **0**)
servicePeriod	value		PERIOD OF SERVICE (#21) Name
site	code		INSTITUTION (#4) Station Number
	name		INSTITUTION (#4) Name
specialty	code		FACILITY TREATING SPECIALTY (#45.7) ien
	name		FACILITY TREATING SPECIALTY (#45.7) Name
ssn	value		string
support *	contactType		**NOK** or **ECON**
	name		string
	relationship		string
	address	streetLine1	string
		streetLine2	string
		streetLine3	string
		city	string
		stateProvince	STATE (#5) Name

Elements	Attributes		Content
		postalCode	string
	telecom	usageType	**H**, **MC**, or **WP**
		value	string
telecom	usageType		**H**, **MC**, or **WP**
	value		string
veteran	value		boolean (**1** or **0**)
ward	code		WARD LOCATION (#42) ien
	name		WARD LOCATION (#42) Name

* = may be multiple

3.16 Scheduling (SDAM)

The Scheduling API sorts appointments by **dateTime** chronologically; while past appointments are available, the default view is to extract a patient's future appointments.

Input parameters: TYPE "**appointments**" [required]

[optional] START VA FileMan date to filter on "**dateTime**" [default = TODAY]

STOP VA FileMan date to filter on "**dateTime**" [default = all future]

MAX Number of [future] appointments to return

ID Inverse visit string ("**servCatg;date.time;locationIEN**")

FILTER none

Table 27: VPR GET PATIENT DATA—Scheduling (SDAM) Elements Returned

Elements	Attributes	Content
apptStatus	value	**SCHEDULED/KEPT**, **INPATIENT**, **NO-SHOW**, **CANCELLED BY PATIENT**, **CANCELLED BY CLINIC**, **RESCHEDULED**, **NO ACTION TAKEN**
clinicStop	code	CLINIC STOP (#40.7) AMIS Stop Code
	name	CLINIC STOP (#40.7)7 Name
dateTime	value	VA FileMan **date.time**
facility	code	INSTITUTION (#4) Station Number

Elements	Attributes	Content
	name	INSTITUTION (#4) Name
id	value	serviceCategory code;dateTime;HOSPITAL LOCATION (#44) ien
location	value	HOSPITAL LOCATION (#44) Name
patientClass	value	**AMB**, **IMP**, or **EMER**
provider	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
service	value	**MEDICINE**, **SURGERY**, **PSYCHIATRY**, **NHCU**, **NEUROLOGY**, **INTERMEDIATE MED**, **REHAB MEDICINE**, **SPINAL CORD INJURY**, **DOMICILIARY**, **BLIND REHAB**, or **RESPITE CARE**
serviceCategory	code	**A**, **I**, or **H**
	name	**AMBULATORY**, **INPATIENT VISIT**, or **HOSPITALIZATION**
type	code	APPOINTMENT TYPE (#409.1) ien
	name	APPOINTMENT TYPE (#409.1) Name
visitString	value	HOSPITAL LOCATION (#44) ien;dateTime; serviceCategory code

3.17 Surgery (SR)

Input parameters: TYPE "**surgeries**" [required]

[optional] START VA FileMan date to filter on "**dateTime**"

STOP VA FileMan date to filter on "**dateTime**"

MAX number of most recent surgical procedures to return

ID SURGERY (#130) file IEN

FILTER("text") **1** or **0**, to include "content" text of report

Table 28: VPR GET PATIENT DATA—Surgery (SR) Elements Returned

Elements	Attributes	Content
category	value	**SR**
dateTime	value	VA FileMan date
document *	id	TIU DOCUMENT (#8925) ien
	localTitle	TIU DOCUMENT DEFINITION (#8925.1) Name
	nationalTitle	TIU VHA ENTERPRISE STANDARD TITLE (#8926.1)
	vuid	VUID number
	content	word-processing text
encounter	value	VISIT (#9000010) ien
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
id	value	SURGERY (#130) ien
modifier *	code	CPT Modifier
	name	CPT Modifier Name
name	value	string
opReport	id	TIU DOCUMENT (#8925) ien
	localTitle	TIU DOCUMENT DEFINITION (#8925.1) Name
	nationalTitle	TIU VHA ENTERPRISE STANDARD TITLE (#8926.1)
	vuid	VUID number
otherProcedure *	code	CPT Code
	name	CPT Description

Elements	Attributes	Content
provider	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
	officePhone	NEW PERSON (#200) Office Phone
	analogPager	NEW PERSON (#200) Voice Pager
	fax	NEW PERSON (#200) Fax Number
	email	NEW PERSON (#200) Email Address
	taxonomyCode	PERSON CLASS (#8932.1) X12 Code
	providerType	PERSON CLASS (#8932.1) Provider Type
	classification	PERSON CLASS (#8932.1) Classification
	specialization	PERSON CLASS (#8932.1) Area of Specialization
	service	NEW PERSON (#200) Service/Section
status	value	**COMPLETED** or **ABORTED**
type	code	CPT Code
	name	CPT Description

3.18 Text Integration Utilities (TIU)

Input parameters:	TYPE	"**documents**" [required]
[optional]	START	VA FileMan date to filter on "**referenceDateTime**"
	STOP	VA FileMan date to filter on "**referenceDateTime**"
	MAX	Number of most recent documents to return
	ID	TIU DOCUMENTS (#8925) file IEN
	FILTER("category")	desired "category" code
	FILTER("status")	"**completed**", "**unsigned**", or "**all**" (for current user)
	FILTER("loinc")	LOINC code (see LOINC codes list following Table 29)
	FILTER("text")	**1** or **0**, to include "content" text of report

Table 29: VPR GET PATIENT DATA—Text Integration Utilities (TIU) Elements Returned

Elements	Attributes	Content
category	value	**PN**, **DS**, **CR**, **CP**, **SR**, **RA**, **LR**, **C**, **W**, **A**, or **D**
clinician [m]	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
	role	**A**, **S**, or **C**
	dateTime	VA FileMan **date.time**
	signatureBlock	string
	officePhone	NEW PERSON (#200) Office Phone
	analogPager	NEW PERSON (#200) Voice Pager
	fax	NEW PERSON (#200) Fax Number
	email	NEW PERSON (#200) Email Address
	taxonomyCode	PERSON CLASS (#8932.1) X12 Code
	providerType	PERSON CLASS (#8932.1) Provider Type
	classification	PERSON CLASS (#8932.1) Classification
	specialization	PERSON CLASS (#8932.1) Area of Specialization
	service	NEW PERSON (#200) Service/Section
content		word-processing text
documentClass	value	TIU DOCUMENT DEFINITION (#8925.1) Name
encounter	value	VISIT (#9000010) ien
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
id	value	TIU DOCUMENTS (#8925) ien
images	value	number
localTitle	value	TIU DOCUMENT DEFINITION (#8925.1) Name
loinc	value	LOINC code
nationalTitle	code	TIU VHA ENTERPRISE STANDARD TITLE (#8926.1) VUID
	name	TIU VHA ENTERPRISE STANDARD TITLE (#8926.1)
nationalTitleRole	code	TIU LOINC ROLE (#8926.3) VUID

Elements	Attributes	Content
	name	TIU LOINC ROLE (#8926.3) Role
nationalTitleService	code	TIU LOINC SERVICE (#8926.5) VUID
	name	TIU LOINC SERVICE (#8926.5) Service
nationalTitleSetting	code	TIU LOINC SETTING (#8926.4) VUID
	name	TIU LOINC SETTING (#8926.4) Setting
nationalTitleSubject	code	TIU LOINC SUBJ MATTER DOMN (#8926.2) VUID
	name	TIU LOINC SUBJECT MATTER DOMAIN (#8926.2)
nationalTitleType	code	TIU LOINC DOCUMENT TYPE (#8926.6) VUID
	name	TIU LOINC DOCUMENT TYPE (#8926.6) Doc Type
parent	value	TIU DOCUMENTS (#8925) ien
referenceDateTime	value	VA FileMan **date.time**
status	value	TIU STATUS (#8925.6) Name, in lowercase
subject	value	string

LOINC codes currently in use with VLER:

- 11488-4 Consultation Note
- 18726-0 Radiology Studies
- 18842-5 Discharge Summarization Note
- 26441-6 Cardiology Studies
- 27895-2 Gastroenterology Endoscopy Studies
- 27896-0 Pulmonary Studies
- 27897-8 Neuromuscular Electrophysiology Studies
- 27898-6 Pathology Studies
- 28570-0 Procedure Note (unspecified)
- 28619-5 Ophthalmology Studies
- 28634-4 Miscellaneous Studies
- 29752-3 Perioperative Records
- 34117-2 History & Physical Note

Because there is no direct link in VistA between the TIU titles and LOINC codes, the above list of codes has been manually mapped to existing TIU search capabilities. The "**loinc**" attribute is only returned when a group of documents is requested using the loinc filter and will be the same value passed into the extract.

3.19 Visits/PCE (PX)

Input parameters:	TYPE	"**visits**" [required]
[optional]	START	VA FileMan date to filter on "**dateTime**"
	STOP	VA FileMan date to filter on "**dateTime**"
	MAX	Number of most recent visits to return
	ID	VISIT (#9000010) file IEN
	FILTER("text")	**1** or **0**, to include "content" text of report

Table 30: VPR GET PATIENT DATA—Visits/PCE (PX) Elements Returned

Elements	Attributes	Content
cpt *	code	CPT Code
	name	CPT Short Name
creditStopCode	code	CLINIC STOP (#40.7) AMIS Stop Code
	name	CLINIC STOP (#40.7) Name
dateTime	value	VA FileMan **date.time**
document *	id	TIU DOCUMENT (#8925) ien
	localTitle	TIU DOCUMENT DEFINITION (#8925.1) Name
	nationalTitle	TIU VHA ENTERPRISE STANDARD TITLE (#8926.1)
	vuid	VUID number
	content	word-processing text
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
icd *	code	ICD Code
	name	ICD Description
	system	ICD or 10D
	narrative	V POV (#9000010.07) Provider Narrative

Elements	Attributes	Content
	ranking	**P** or **S**
id	value	VISIT (#9000010) ien
location	value	HOSPITAL LOCATION (#44) Name
patientClass	value	**AMB**, **IMP**, or **EMER**
provider *	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
	role	**P**, **S**, or **A**
	primary	boolean (**1** or **0**)
	officePhone	NEW PERSON (#200) Office Phone
	analogPager	NEW PERSON (#200) Voice Pager
	fax	NEW PERSON (#200) Fax Number
	email	NEW PERSON (#200) Email Address
	taxonomyCode	PERSON CLASS (#8932.1) X12 Code
	providerType	PERSON CLASS (#8932.1) Provider Type
	classification	PERSON CLASS (#8932.1) Classification
	specialization	PERSON CLASS (#8932.1) Area of Specialization
	service	NEW PERSON (#200) Service/Section
reason	code	ICD Code
	name	ICD Description
	system	ICD or 10D
	narrative	V POV (#9000010.07) Provider Narrative
service	value	**MEDICINE**, **SURGERY**, **PSYCHIATRY**, **NHCU**, **NEUROLOGY**, **INTERMEDIATE MED**, **REHAB MEDICINE**, **SPINAL CORD INJURY**, **DOMICILIARY**, **BLIND REHAB**, or **RESPITE CARE**
serviceCategory	code	**A**, **H**, **I**, **C**, **N**, **T**, **S**, **O**, **E**, **R**, **D**, or **X**
	name	**AMBULATORY**, **HOSPITALIZATION**, **IN HOSPITAL**, **CHART REVIEW**, **NOT FOUND**, **TELECOMMUNICATIONS**, **DAY SURGERY**, **OBSERVATION**, **EVENT (HISTORICAL)**, **NURSING HOME**, **DAILY HOSPITALIZATION DATA**, **ANCILLARY**

Elements	Attributes	Content
		PACKAGE DAILY DATA
stopCode	code	CLINIC STOP (#40.7) AMIS Stop Code
	name	CLINIC STOP (#40.7) Name
type	code	CPT Code
	name	CPT Short Name
visitString	value	HOSPITAL LOCATION (#44) ien;dateTime; serviceCategory code
Included with admissions:		
admission		PATIENT MOVEMENT (#405) ien
arrivalDateTime		VA FileMan **date.time**
departureDateTime		VA FileMan **date.time**
ptf		PTF (#45) ien
roomBed		string
specialty		FACILITY TREATING SPECIALTY (#45.7) Name

* = may be multiple

3.20 Vital Measurements (GMV)

Input parameters:	TYPE	"**vitals**" [required]
[optional]	START	VA FileMan date to filter on "**taken**"
	STOP	VA FileMan date to filter on "**taken**"
	MAX	Number of measurement sets to return (by "**taken**")
	ID	GMRV VITAL MEASUREMENT (#120.5) file IEN, or VA FileMan **date.time** to match "**taken**" and return the set
	FILTER	none

Table 31: VPR GET PATIENT DATA—Vital Measurements (GMV) Elements Returned

Elements	Attributes		Content
entered	value		VA FileMan **date.time**
facility	code		INSTITUTION (#4) Station Number
	name		INSTITUTION (#4) Name
location	code		HOSPITAL LOCATION (#44) ien
	name		HOSPITAL LOCATION (#44) Name
measurement *	id		GMRV VITAL MEASUREMENT (#120.5) ien
	vuid		VUID number
	name		GMRV VITAL TYPE (#120.51) Name
	value		string
	units		string
	metricValue		number
	metricUnits		**C**, **cm**, or **kg**
	high		number
	low		number
	bmi		number
	qualifier *	name	GMRV VITAL QUALIFIER (#120.52) Qualifier
		vuid	GMRV VITAL QUALIFIER (#120.52) VUID
removed *	value		INCORRECT DATE/TIME, INCORRECT READING, INCORRECT PATIENT, INVALID RECORD
taken	value		VA FileMan **date.time**

* = may be multiple

4 JSON Tables

This section includes tables that list the data elements returned by the **VPR GET PATIENT DATA JSON** RPC. All input parameters are optional to refine the extract, except for **domain**, and are passed in as list subscripts [i.e., **FILTER("parameter")=value**]. All searches are performed reverse-chronologically to return the most recent data, unless otherwise noted.

4.1 Allergy/Adverse Reaction Tracking (GMRA)

Input Parameters:	domain	"**allergy**" [required]
[optional]	start	VA FileMan date to filter on "**entered**"
	stop	VA FileMan date to filter on "**entered**"
	max	Use *not recommended*, as reactions are *not* sorted
	id	PATIENT ALLERGIES (#120.8) file IEN
	uid	Universal ID for item (**urn:va:domain:SYS:DFN:id**)

Table 32: RPC: VPR GET PATIENT DATA JSON—Allergy/Adverse Reaction Tracking (GMRA) Elements Returned

Elements	Attributes
entered	
facilityCode	
facilityName	
historical	
kind	
localId	
products	name
	vuid
reactions *	name
	vuid
reference	
removed	
summary	
uid	
verified	

* = may be multiple

4.2 Clinical Observations (MDC)

Input parameters:	domain	"**obs**" [required]
[optional]	start	VA FileMan date to filter on "**observed**"
	stop	VA FileMan date to filter on "**observed**"
	max	Use with caution, as search is performed chronologically
	id	OBS (#704.117) file ID (#.01) value
	uid	Universal ID for item (**urn:va:domain:SYS:DFN:id**)

Table 33 RPC: VPR GET PATIENT DATA JSON—Clinical Observations (MDC) Elements Returned

Elements	Attributes
bodySiteCode	
bodySiteName	
comment	
entered	
facilityCode	
facilityName	
interpretationCode	
interpretationName	
localId	
locationName	
locationUid	
methodCode	
methodName	
observed	
qualifiers *	code
	name
	type
result	
setID	
setName	
setStart	

Elements	Attributes
setStop	
setType	
statusCode	
statusName	
typeCode	
typeName	
uid	
units	

4.3 Clinical Procedures (MDC)

Input parameters: domain "**procedure**" [required]

[optional] start VA FileMan date to filter on "**dateTime**"

stop VA FileMan date to filter on "**dateTime**"

max Number of most recent procedures to return

id Variable pointer to CP data file/item

uid Universal ID for item (**urn:va:domain:SYS:DFN:id**)

Table 34: RPC: VPR GET PATIENT DATA JSON—Clinical Procedures (MDC) Elements Returned

Elements	Attributes
category	
consultUid	
dateTime	
encounterUid	
facilityCode	
facilityName	
hasImages	
interpretation	
kind	
localId	
locationName	
locationUid	

Elements	Attributes
name	
orderUid	
providers	providerName
	providerUid
requested	
results *	localTitle
	nationalTitle
	uid
statusName	
uid	

* = may be multiple

4.4 Consult/Request Tracking (GMRC)

Input parameters: domain "**consult**" [required]

[optional] start VA FileMan date to filter on "**dateTime**"

stop VA FileMan date to filter on "**dateTime**"

max Number of most recent consult requests to return

id REQUEST/CONSULTATION (#123) file IEN

uid Universal ID for item (**urn:va:domain:SYS:DFN:id**)

Table 35: RPC: VPR GET PATIENT DATA JSON—Consult/Request Tracking (GMRC) Elements Returned

Elements	Attributes
category	
consultProcedure	
dateTime	
facilityCode	
facilityName	
interpretation	
localId	

Elements	Attributes
orderName	
orderUid	
providerName	
providerUid	
provisionalDx	code
	name
	system
reason	
results *	localTitle
	nationalTitle
	uid
service	
statusName	
typeName	
uid	
urgency	

* = may be multiple

4.5 Laboratory (LR)

Input parameters:	domain	"**lab**" [required]
[optional]	start	VA FileMan date to filter on "**observed**"
	stop	VA FileMan date to filter on "**observed**"
	max	Number of most recent accessions to return
	id	LAB DATA (#63) file IEN string
	uid	Universal ID for item (**urn:va:domain:SYS:DFN:id**)
	category	CH, MI, or AP [default = all]

Table 36: RPC: VPR GET PATIENT DATA JSON—Laboratory (LR) Elements Returned

Elements	Attributes	Content
bactRemarks		
categoryCode		
categoryName		
comment		
displayName		
displayOrder		
facilityCode		
facilityName		
gramStain *	result	
groupName		
groupUid		
high		
interpretationCode		
interpretationName		
labOrderId		
localId		
low		
observed		
orderUid		
organisms *	drugs	interp
		name

Elements	Attributes	Content
		restrict
		result
	name	
	qty	
organizerType		
result		
resulted		
results *	localTitle	
	nationalTitle	
	resultUid	
	uid	
sample		
specimen		
statusCode		
statusName		
typeCode		
typeId		
typeName		
uid		
units		
urineScreen		
vuid		

* = may be multiple

4.6 Orders (OR)

Input parameters:	domain	"**order**" [required]
[optional]	start	VA FileMan date to filter on date released
	stop	VA FileMan date to filter on date released
	max	Number of most recent orders to return
	id	ORDER (#100) file IEN string
	uid	Universal ID for item (**urn:va:domain:SYS:DFN:id**)

Table 37: RPC: VPR GET PATIENT DATA JSON—Orders (OR) Elements Returned

Elements	Attributes
adminTimes	
clinicians *	name
	role
	signedDateTime
	uid
content	
displayGroup	
entered	
facilityCode	
facilityName	
instructions	
localId	
locationName	
locationUid	
name	
oiCode	
oiName	
oiPackageRef	
orderUid	
predecessor	
providerName	
providerUid	

Elements	Attributes
results *	uid
scheduleName	
service	
start	
statusCode	
statusName	
statusVuid	
stop	
successor	
uid	

* = may be multiple

4.7 Patient Care Encounter (PX)

4.7.1 CPT Procedures

Input parameters: domain "**cpt**" [required]

[optional] start VA FileMan date to filter on "**entered**"

stop VA FileMan date to filter on "**entered**"

max number of most recent procedures to return

id V CPT (#9000010.18) file IEN

uid Universal ID for item (**urn:va:domain:SYS:DFN:id**)

Table 38: RPC: VPR GET PATIENT DATA JSON—CPT Procedures Elements Returned

Elements
comment
cptCode
encounterName
encounterUid
entered
facilityCode
facilityName

Elements
localId
locationName
locationUid
name
quantity
type
uid

4.7.2 Exams

Input parameters:	domain	"**exam**" [required]
[optional]	start	VA FileMan date to filter on "**entered**"
	stop	VA FileMan date to filter on "**entered**"
	max	Number of most recent exams to return
	id	V EXAM (#9000010.13) file IEN
	uid	Universal ID for item (**urn:va:domain:SYS:DFN:id**)

Table 39: RPC: VPR GET PATIENT DATA JSON—Exams Elements Returned

Elements
comment
encounterName
encounterUid
entered
facilityCode
facilityName
localId
locationName
locationUid
name
result
uid

4.7.3 Education Topics

Input parameters:	domain	"**education**" [required]
[optional]	start	VA FileMan date to filter on "**entered**"
	stop	VA FileMan date to filter on "**entered**"
	max	Number of most recent education instances to return
	id	V PATIENT ED (#9000010.16) file IEN
	uid	Universal ID for item (**urn:va:domain:SYS:DFN:id**)

Table 40: RPC: VPR GET PATIENT DATA JSON—Education Topics Elements Returned

Elements
comment
encounterName
encounterUid
entered
facilityCode
facilityName
localId
locationName
locationUid
name
result
uid

4.7.4 Health Factors

Input parameters:	domain	"**factor**" [required]
[optional]	start	VA FileMan date to filter on "**entered**"
	stop	VA FileMan date to filter on "**entered**"
	max	Number of most recent factors to return
	id	V HEALTH FACTORS (#9000010.23) file IEN
	uid	Universal ID for item (**urn:va:domain:SYS:DFN:id**)

Table 41: RPC: VPR GET PATIENT DATA JSON—Health Factors Elements Returned

Elements
categoryName
categoryUid
comment
display
encounterName
encounterUid
entered
facilityCode
facilityName
kind
localId
locationName
locationUid
name
severityName
severityUid
summary
uid

4.7.5 Immunizations

Input parameters:	domain	"**immunization**" [required]
[optional]	start	VA FileMan date to filter on "**administeredDateTime**"
	stop	VA FileMan date to filter on "**administeredDateTime**"
	max	Number of most recent immunizations to return
	id	V IMMUNIZATION (#9000010.11) file IEN
	uid	Universal ID for item (**urn:va:domain:SYS:DFN:id**)

Table 42: RPC: VPR GET PATIENT DATA JSON—Immunizations Elements Returned

Elements
administeredDateTime
comment
contraindicated
cptCode
cptName
encounterName
encounterUid
facilityCode
facilityName
localId
locationName
locationUid
name
performerName
performerUid
reactionCode
reactionName
seriesCode
seriesName
summary
uid

4.7.6 Purpose of Visit

Input parameters:	domain	"**pov**" [required]
[optional]	start	VA FileMan date to filter on "**entered**"
	stop	VA FileMan date to filter on "**entered**"
	max	Number of most recent reasons to return
	id	V POV (#9000010.07) file IEN
	uid	Universal ID for item (**urn:va:domain:SYS:DFN:id**)

Table 43: RPC: VPR GET PATIENT DATA JSON—Purpose of Visit Elements Returned

Elements
comment
encounterName
encounterUid
entered
facilityCode
facilityName
icdCode
localId
locationName
locationUid
name
type
uid

4.7.7 Skin Tests

Input parameters:	domain	"**skin**" [required]
[optional]	start	VA FileMan date to filter on "**entered**"
	stop	VA FileMan date to filter on "**entered**"
	max	Number of most recent exams to return
	id	V SKIN TEST (#9000010.12) file IEN
	uid	Universal ID for item (**urn:va:domain:SYS:DFN:id**)

Table 44: RPC: VPR GET PATIENT DATA JSON—Skin Tests Elements Returned

Elements
comment
dateRead
encounterName
encounterUid
entered
facilityCode
facilityName
localId
locationName
locationUid
name
reading
result
uid

4.8 Pharmacy (PS)

4.8.1 Medications

Input parameters:	domain	"**med**" [required]
[optional]	start	VA FileMan date to filter on date released
	stop	VA FileMan date to filter on date released
	max	Number of most recent med orders to return
	id	ORDER (#100) file IEN
	vaType	**I**, **O**, or **N**

Table 45: RPC: VPR GET PATIENT DATA JSON—Medications Elements Returned

Elements	Attributes
administrations *	dateTime
	status
comment	
dosages *	adminTimes
	complexConjunction
	complexDuration
	dose
	relatedOrder
	relativeStart
	relativeStop
	routeName
	scheduleFreq
	scheduleName
	scheduleType
	start
	stop
	units
facilityCode	
facilityName	
fills *	daysSupplyDispensed
	dispenseDate

Elements	Attributes
	partial
	releaseDate
	routing
	quantityDispensed
IMO	
lastFilled	
localId	
medStatus	
medStatusName	
medType	
name	
orders	daysSupply
	fillCost
	fillsAllowed
	fillsRemaining
	locationName
	locationUid
	ordered
	orderUid
	pharmacistName
	pharmacistUid
	predecessor
	prescriptionId
	providerName
	providerUid
	quantityOrdered
	successor
	vaRouting
overallStart	
overallStop	
parent	

Elements	Attributes
patientInstruction	
productFormName	
products *	drugClassCode
	drugClassName
	ingredientCode
	ingredientCodeName
	ingredientName
	ingredientRole
	relatedOrder
	strength
	suppliedCode
	suppliedName
qualifiedName	
sig	
stopped	
supply	
type	
uid	
vaStatus	
vaType	

* = may be multiple

4.8.2 Infusions

Input parameters:	domain	"**med**" [required]
[optional]	start	VA FileMan date to filter on date released
	stop	VA FileMan date to filter on date released
	max	Number of most recent med orders to return
	id	ORDER (#100) file IEN
	vaType	"**V**"

Table 46: RPC: VPR GET PATIENT DATA JSON—Infusions Elements Returned

Elements	Attributes
administrations *	dateTime
	status
comment	
dosages	adminTimes
	duration
	ivRate
	restriction
	routeName
	scheduleFreq
	scheduleName
	scheduleType
facilityCode	
facilityName	
IMO	
localId	
medStatus	
medStatusName	
medType	
name	
orders	locationName
	locationUid
	ordered

Elements	Attributes
	orderUid
	pharmacistName
	pharmacistUid
	predecessor
	providerName
	providerUid
	successor
overallStart	
overallStop	
parent	
products *	drugClassCode
	drugClassName
	ingredientCode
	ingredientCodeName
	ingredientName
	ingredientRole
	relatedOrder
	strength
	suppliedCode
	suppliedName
	volume
qualifiedName	
stopped	
type	
uid	
vaStatus	
vaType	

* = may be multiple

4.9 Problem List (GMPL)

Input parameters:	domain	"**problem**" [required]
[optional]	start	none
	stop	none
	max	Use *not recommended*, as problems are *not* sorted
	id	PROBLEM (#9000011) file IEN
	status	**A** or **I** [default = **A** (all)]

Table 47: RPC: VPR GET PATIENT DATA JSON—Problem List (GMPL) Elements Returned

Elements	Attributes
acuityCode	
acuityName	
comments *	comment
	entered
	enteredByCode
	enteredByName
entered	
facilityCode	
facilityName	
icdCode	
icdName	
localId	
locationName	
locationUid	
onset	
problemText	
providerName	
providerUid	
removed	
resolved	
service	
serviceConnected	

Elements	Attributes
statusCode	
statusName	
uid	
unverified	
updated	

* = may be multiple

4.10 PTF (DG)

Input parameters:	domain	"**ptf**" [required]
[optional]	start	VA FileMan date to filter on movement date
	stop	VA FileMan date to filter on movement date
	max	Number of most recent treatment codes to return
	id	PTF (#45) file IEN
	uid	Universal ID for item (**urn:va:domain:SYS:DFN:id**)

Table 48: RPC: VPR GET PATIENT DATA JSON—PTF (DG) Elements Returned

Elements
arrivalDateTime
dischargeDateTime
encounterName
encounterUid
facilityCode
facilityName
icdCode
icdName
localId
principalDx
uid

4.11 Radiology/Nuclear Medicine (RA)

Input parameters:	domain	"**image**" [required]
[optional]	start	VA FileMan date to filter on "**dateTime**"
	stop	VA FileMan date to filter on "**dateTime**"
	max	Number of most recent exams to return
	id	EXAMINATIONS (#70.03) sub-file IEN string
	uid	Universal ID for item (**urn:va:domain:SYS:DFN:id**)

Table 49: RPC: VPR GET PATIENT DATA JSON—Radiology/Nuclear Medicine (RA) Elements Returned

Elements	Attributes
case	
category	
dateTime	
diagnosis *	code
	lexicon
	primary
encounterName	
encounterUid	
facilityCode	
facilityName	
hasImages	
imageLocation	
imagingTypeUid	
interpretation	
kind	
localId	
locationName	
locationUid	
name	
orderName	
orderUid	
providers	providerName

Elements	Attributes
	providerUid
results	localTitle
	uid
statusName	
summary	
typeName	
uid	
verified	

* = may be multiple

4.12 Registration (DPT)

Input parameters: domain "**patient**" [required]

[optional] start none

stop none

max none

id PATIENT (#2) file IEN

uid Universal ID for item (**urn:va:domain:SYS:DFN:id**)

Table 50: RPC: VPR GET PATIENT DATA JSON—Registration (DPT) Elements Returned

Elements	Attributes	Content
addresses *	city	
	postalCode	
	stateProvince	
	streetLine1	
	streetLine2	
aliases	familyName	
	fullName	
	givenNames	
briefId		
dateOfBirth		

Elements	Attributes	Content
died		
disability *	disPercent	
	name	
	sc	
	vaCode	
eligibility *	name	
	primary	
eligibilityStatus		
ethnicities *	ethnicity	
exposures *	name	
	uid	
facilities *	code	
	homeSite	
	latestDate	
	localPatientId	
	name	
	systemId	
familyName		
flags *	name	
	text	
fullName		
genderCode		
genderName		
givenNames		
icn		
inpatient		
languageCode		
languageName		
localId		
maritalStatuses	code	
	name	

Elements	Attributes	Content
meansTest		
pcProviderName		
pcProviderUid		
pcTeamMembers *	name	
	position	
	uid	
pcTeamName		
pcTeamUid		
races *	race	
religionCode		
religionName		
sensitive		
servicePeriod		
ssn		
supports *	addresses *	city
		postalCode
		stateProvince
		streetLine1
		streetLine2
	contactTypeCode	
	contactTypeName	
	name	
	relationship	
	telecomList *	telecom
		usageCode
		usageName
telecoms *	telecom	
	usageCode	
	usageName	
uid		
veteran	isVet	

Elements	Attributes	Content
	lrdfn	
	serviceConnected	
	serviceConnectionPercent	

* = may be multiple

4.13 Scheduling (SDAM)

The Scheduling API sorts appointments by **dateTime** chronologically; while past appointments are available, the default view is to extract a patient's future appointments.

Input parameters: domain "**appointment**" [required]

[optional] start VA FileMan date to filter on "**dateTime**" [default = **TODAY**]

stop VA FileMan date to filter on "**dateTime**" [default = **all future**]

max Number of [future] appointments to return

id Inverse visit string ("**servCatg;date.time;locationIEN**")

uid Universal ID for item (**urn:va:domain:SYS:DFN:id**)

Table 51: RPC: VPR GET PATIENT DATA JSON—Scheduling (SDAM) Elements Returned

Elements	Attributes
appointmentStatus	
categoryCode	
categoryName	
checkIn	
checkOut	
comment	
dateTime	
facilityCode	
facilityName	
localId	
locationName	
locationUid	

Elements	Attributes
patientClassCode	
patientClassName	
providers	providerName
	providerUid
reasonName	
service	
stopCodeName	
stopCodeUid	
summary	
typeCode	
typeName	
uid	

* = may be multiple

4.14 Surgery (SR)

Input parameters: domain "**surgery**" [required]

[optional] start VA FileMan date to filter on "**dateTime**"

stop VA FileMan date to filter on "**dateTime**"

max Number of most recent surgical procedures to return

id SURGERY (#130) file IEN

uid Universal ID for item (**urn:va:domain:SYS:DFN:id**)

Table 52: RPC: VPR GET PATIENT DATA JSON—Surgery (SR) Elements Returned

Elements	Attributes
category	
dateTime	
encounterName	
encounterUid	
facilityCode	
facilityName	

Elements	Attributes
kind	
localId	
providers *	providerName
	providerUid
results *	localTitle
	nationalTitle
	uid
statusName	
summary	
typeCode	
typeName	
uid	

* = may be multiple

4.15 Text Integration Utilities (TIU)

Input parameters:	domain	"**document**" [required]
[optional]	start	VA FileMan date to filter on "**referenceDateTime**"
	stop	VA FileMan date to filter on "**referenceDateTime**"
	max	Number of most recent documents to return
	id	TIU DOCUMENTS (#8925) file IEN
	uid	Universal ID for item (**urn:va:domain:SYS:DFN:id**)
	category	**PN**, **CR**, **C**, **W**, **A**, **D**, **DS**, **SR**, **CP**, **LR**, or **RA**
	status	"**completed**", "**unsigned**", or "**all**" (for current user)
	text	**1** or **0**, to include "content" text of document

Table 53: RPC: VPR GET PATIENT DATA JSON—Text Integration Utilities (TIU) Elements Returned

Elements	Attributes	Content
attendingName		
attendingUid		
documentClass		
documentTypeCode		
documentTypeName		
encounterName		
encounterUid		
entered		
facilityCode		
facilityName		
images		
localId		
localTitle		
nationalTitle	title	
	vuid	
nationalTitleRole	role	
	vuid	
nationalTitleService	service	
	vuid	

Elements	Attributes	Content
nationalTitleSetting	setting	
	vuid	
nationalTitleSubject	subject	
	vuid	
nationalTitleType	type	
	vuid	
parent		
referenceDateTime		
statusName		
subject		
text *	clinicians *	name
		role
		signature
		signedDateTime
		uid
	content	
	dateTime	
	status	
	uid	
uid		
urgency		

* = may be multiple

4.16 Visits/PCE (PX)

Input parameters:	domain	"**visit**" [required]
[optional]	start	VA FileMan date to filter on "**dateTime**"
	stop	VA FileMan date to filter on "**dateTime**"
	max	Number of most recent visits to return
	id	VISIT (#9000010) file IEN
	uid	Universal ID for item (**urn:va:domain:SYS:DFN:id**)

Table 54: RPC: VPR GET PATIENT DATA JSON—Visits/PCE (PX) Elements Returned

Elements	Attributes
categoryCode	
categoryName	
checkOut	
current	
dateTime	
documents *	localTitle
	nationalTitle
	uid
facilityCode	
facilityName	
localId	
locationName	
locationUid	
movements *	dateTime
	localId
	locationName
	locationUid
	movementType
	providerName
	providerUid
	specialty
patientClassCode	

Elements	Attributes
patientClassName	
providers *	primary
	providerName
	providerUid
	role
reasonName	
reasonUid	
roomBed	
service	
specialty	
stay	arrivalDateTime
	dischargeDateTime
stopCodeName	
stopCodeUid	
summary	
typeName	
uid	

* = may be multiple

4.17 Vital Measurements (GMV)

Input parameters:	domain	"**vital**" [required]
[optional]	start	VA FileMan date to filter on "**observed**"
	stop	VA FileMan date to filter on "**observed**"
	max	Number of measurement sets to return (by "taken")
	id	GMRV VITAL MEASUREMENT (#120.5) file IEN, or VA FileMan **date.time** to match "**taken**" and return the set
	uid	Universal ID for item (**urn:va:domain:SYS:DFN:id**)

Table 55: RPC: VPR GET PATIENT DATA JSON—Vital Measurements (GMV) Elements Returned

Elements	Attributes
displayName	
facilityCode	
facilityName	
high	
kind	
localId	
locationName	
locationUid	
low	
metricResult	
metricUnits	
observed	
qualifiers *	name
	vuid
removed	
result	
resulted	
summary	
typeCode	
typeName	
uid	

Elements	Attributes
units	

* = may be multiple

5 HealthShare Interface

Patch VPR*1*8 introduced another method of retrieving VistA data to support the HealthShare (HS) interface engine. This patch exported almost **150** entries in the VA FileMan ENTITY (#1.5) file, to map VistA data elements to the SDA model and use the supported VA FileMan DDE[1] calls DDE calls to retrieve the requested data as XML. Patch VPR*1*14 added approximately **40** more Entities to support the Advanced Medication Platform (AMPL) project.

SDA organizes patient data by classes called "containers," which correspond to various types of clinical data. VPR is currently populating **21** of the **30** SDA containers. There is a VPR entity for every file or sub-file that feeds a container; some containers have multiple VistA sources, and so multiple VPR entities exist. Entities also exist for sub-classes and common or shared data elements, such as providers or locations. The names and structure of each VPR entity is intended to comply with the SDA model.

Clinical data for active patients is loaded into the Edge Cache Repositories (ECR) on the Regional Health Connect (RHC) servers by a pre-load job. Data is kept up to date by VPR listeners that are attached to VistA application events. The VPR SUBSCRIPTION (#560) file does the following:

- Tracks which patients are currently active in HealthShare for each VistA system.
- Maintains a list of records that have been modified and need to be updated in the ECR.

The **VPRHS** routine contains functions to support the RHC servers. These utilities supply an SDA-formatted record to the RHC and manage the clinical data update list.

[1] DDE is the name of the VA FileMan routine that contains the Entity utilities.

5.1 Entity File VPR Entries

VPR uses the VA FileMan ENTITY (#1.5) file to store the mappings between VistA files and fields, and SDA container classes and properties. Unlike the VPR RPCs that are hard-coded, the DDE (Entity) utility provides a table-driven interface that can be easily updated and searched.

Table 56 lists the VPR entries in the ENTITY (#1.5) file:

Table 56: VPR Entities

Name	Display Name (SDA Container or class)	Primary Source Sub/File#
VPR ADMISSION	Encounter	405
VPR ADMISSION EXTENSION	EncounterExtension	405
VPR ADMISSION MOVEMENT	Movement	405
VPR ADVANCE DIRECTIVE	AdvanceDirective	8925
VPR ALLERGY	Allergy	120.8
VPR ALLERGY ASSESSMENT	Allergy	120.86
VPR ALLERGY EXTENSION	AllergyExtension	120.8
VPR ALLERGY OBSERVATION	AllergyObservation	120.85
VPR ALLERGY SIGN EXTENSION	ReactionExtension	120.8
VPR ALLERGY SIGN/SYMPTOM	Reaction	120.83
VPR AMIS	StopCode	40.7
VPR APPOINTMENT	Appointment	2.98
VPR APPOINTMENT EXTENSION	AppointmentExtension	2.98
VPR CDC EXTENSION	CDCExtension	10.3
VPR CODE ONLY	CodeTable	n/a
VPR CODE TABLE	CodeTable	n/a
VPR COMBAT PERIOD	Period	22
VPR COMBAT SERVICE	Conflict	2
VPR COMMENT	Comment	n/a
VPR CONSULT SERVICE	HealthCareFacility	123.5
VPR COUNTRY	Country	779.004
VPR CPT	ProcedureCode	81
VPR CPT MODIFIER	CPTModifier	81.3
VPR CUSTOM PAIR	NVPair	n/a

Name	Display Name (SDA Container or class)	Primary Source Sub/File#
VPR CW NOTES	Alert	8925
VPR DEL FAMILY HX	FamilyHistory	9000010.23
VPR DEL HF VACC REFUSAL	Vaccination	9000010.23
VPR DEL ICR	Vaccination	9000010.707
VPR DEL PTF	Diagnosis	45
VPR DEL SOCIAL HX	SocialHistory	9000010.23
VPR DEL TIU DOCUMENT	Document	8925
VPR DEL V CPT	Procedure	9000010.18
VPR DEL V EXAM	PhysicalExam	9000010.13
VPR DEL V POV	Diagnosis	9000010.07
VPR DEL VACCINATION	Vaccination	9000010.11
VPR DISPLAY GROUP	OrderCategory	100.98
VPR DOCUMENT	Document	8925
VPR DOCUMENT EXTENSION	DocumentExtension	8925
VPR DOCUMENT ROLE	NationalTitleRole	8926.3
VPR DOCUMENT SERVICE	NationalTitleService	8926.5
VPR DOCUMENT SETTING	NationalTitleSetting	8926.4
VPR DOCUMENT STATUS	DocumentCompletionStatus	8925.6
VPR DOCUMENT SUBJECT	NationalTitleSubject	8926.2
VPR DOCUMENT TITLE	NationalTitle	8926.1
VPR DOCUMENT TYPE	NationalTitleType	8926.6
VPR DOSAGE STEP	DosageStep	100
VPR DOSE EXTENSION	DosageStepExtension	100
VPR DRUG CLASS	ATCCode	50.605
VPR DRUG GENERIC	Generic	50.6
VPR DRUG INGREDIENT	DrugProduct	50.416
VPR DRUG PRODUCT	DrugProduct	50
VPR DRUG PRODUCT EXTENSION	DrugProductExtension	50
VPR EDP CODE	CodeTable	233.1
VPR EDP EXTENSION	EncounterExtension	230
VPR EDP LOG	Encounter	230

Name	Display Name (SDA Container or class)	Primary Source Sub/File#
VPR ELIGIBILITY	Eligibility	8
VPR ETHNICITY	EthnicGroup	10.2
VPR EXAM	PhysExamCode	9999999.15
VPR FACILITY	Organization	4
VPR FACILITY ADDRESS	Address	4
VPR FAMILY DOCTOR	CareProvider	200
VPR FAMILY HISTORY	FamilyHistory	9000010.23
VPR FIM	Problem	783
VPR FIM EXTENSION	ProblemExtension	783
VPR GRENADA SERVICE	Conflict	2
VPR HEALTH CONCERN	HealthConcern	9000010.23
VPR HEALTH FACTOR	DiagnosisCode	9999999.64
VPR HF EXTENSION	HealthConcernExtension	9000010.23
VPR ICD	DiagnosisCode	80
VPR ICR ADMINISTRATION	Administration	9000010.707
VPR ICR CONTRAINDICATION	ObservationValueCode	920.4
VPR ICR EVENT	Vaccination	9000010.707
VPR ICR EXTENSION	VaccinationExtension	9000010.707
VPR ICR OBSERVATION	Observation	9000010.707
VPR ICR REFUSAL	ObservationValueCode	920.5
VPR IMM ADMINISTRATION	Administration	9000010.11
VPR IMM EXTENSION	VaccinationExtension	9000010.11
VPR IMM MANUFACTURER	Manufacturer	9999999.04
VPR IMM ROUTE	Route	920.2
VPR IMM SITE	AdministrationSite	920.3
VPR IMM VIS	VIS	920
VPR IMMUNIZATION	OrderItem	9999999.14
VPR INS COMPANY ADDRESS	Address	36
VPR INS GROUP NAME	HealthFundPlan	355.3
VPR INSURANCE	MemberEnrollment	2.312
VPR INSURANCE COMPANY	HealthFundCode	36

Name	Display Name (SDA Container or class)	Primary Source Sub/File#
VPR INSURANCE PLAN	HealthFund	2.312
VPR INSURED ADDRESS	Address	2.312
VPR IV PRODUCT	DrugProduct	50
VPR LAB FACILITY	Organization	4
VPR LAB ORDER	LabOrder	100
VPR LAB TEST	LabTestItem	60
VPR LAB URGENCY	Priority	62.05
VPR LANGUAGE	Language	.85
VPR LEBANON SERVICE	Conflict	2
VPR LOCATION	HealthCareFacility	44
VPR LOCATION EXTENSION	HealthCareFacilityExtension	44
VPR LOINC	ObservationValueCode	95.3
VPR LR RESULT EXTENSION	ResultExtension	63
VPR LRAP EXTENSION	DocumentExtension	63.08
VPR LRAP REPORT	Document	63.08
VPR LRCH RESULT	Result	63.04
VPR LRCH RESULT EXTENSION	ResultExtension	63.04
VPR LRCH RESULT ITEM	ResultItem	63.04
VPR LRCH RESULT ITEM EXTENSION	LabResultItemExtension	63.04
VPR LRCY RESULT	Result	63.09
VPR LREM RESULT	Result	63.02
VPR LRMI EXTENSION	DocumentExtension	63.05
VPR LRMI REPORT	Document	63.05
VPR LRMI RESULT	Result	63.05
VPR LRSP RESULT	Result	63.08
VPR MARITAL STATUS	MaritalStatus	11.99
VPR MAS MOVEMENT TYPE	MovementType	405.1
VPR MAS TRANSACTION TYPE	TransactionType	405.3
VPR MDD PROCEDURE	ClinicalProcedure	702.01
VPR MED ADMINISTRATION	Administration	53.79

Name	Display Name (SDA Container or class)	Primary Source Sub/File#
VPR MED EXTENSION	MedicationExtension	100
VPR MED FILL	Fill	52
VPR MED ROUTE	Route	51.2
VPR MEDICATION	Medication	100
VPR NAME	Name	n/a
VPR ORDER EXTENSION	OrderExtension	100
VPR ORDER STATUS	OrderStatus	100.01
VPR ORDER URGENCY	Priority	101.42
VPR ORDERABLE ITEM	Order	101.43
VPR ORDERABLE ITEM CODE	NationalItem	101.43
VPR ORDERABLE ITEM EXTENSION	OrderExtension	101.43
VPR OTHER ORDER	OtherOrder	100
VPR PACKAGE	Package	9.4
VPR PANAMA SERVICE	Conflict	2
VPR PAT TEMP ADD EXTENSION	AddressExtension	2
VPR PATIENT	Patient	2
VPR PATIENT ADDRESS	Address	2
VPR PATIENT ADDRESS EXTENSION	AddressExtension	2
VPR PATIENT ALIAS	Alias	2.01
VPR PATIENT AO	Exposure	2
VPR PATIENT BIRTHPLACE	Address	2
VPR PATIENT DISABILITY	Disability	2.04
VPR PATIENT ECON	SupportContact	2
VPR PATIENT ECON ADDRESS	Address	2
VPR PATIENT ECON2	SupportContact	2
VPR PATIENT ECON2 ADDRESS	Address	2
VPR PATIENT ELIGIBILITY	Eligibility	8
VPR PATIENT EMPLOYER	SupportContact	2
VPR PATIENT EMPLOYER ADDRESS	Address	2
VPR PATIENT ENROLLMENT	Enrollment	2.001

Name	Display Name (SDA Container or class)	Primary Source Sub/File#
VPR PATIENT EXTENSION	PatientExtension	2
VPR PATIENT ID	PatientID	2
VPR PATIENT IR	Exposure	2
VPR PATIENT LANGUAGE	PatientLanguage	2.07
VPR PATIENT MILITARY SERVICE	ServiceEpisode	2
VPR PATIENT NOK	SupportContact	2
VPR PATIENT NOK ADDRESS	Address	2
VPR PATIENT NOK2	SupportContact	2
VPR PATIENT NOK2 ADDRESS	Address	2
VPR PATIENT NUMBER	PatientNumber	2
VPR PATIENT RECORD FLAG	Alert	26.13
VPR PATIENT SWA	Exposure	2
VPR PATIENT TEMP ADDRESS	Address	2
VPR PERSIAN GULF SERVICE	Conflict	2
VPR PERSON CLASS	CareProviderType	8932.1
VPR PERSON CLASS EXTENSION	CareProviderTypeExtension	8932.1
VPR POW STATUS	Conflict	2
VPR PREGNANCY	SocialHistory	790.05
VPR PRF DBRS RECORD	DBRSRecord	26.131
VPR PRF EXTENSION	AlertExtension	26.13
VPR PRF HISTORY	Assignment	26.14
VPR PROBLEM	Problem	9000011
VPR PROBLEM EXTENSION	ProblemExtension	9000011
VPR PROCEDURE	Procedure	702
VPR PROCEDURE EXTENSION	ProcedureExtension	702
VPR PROVIDER	CareProvider	200
VPR PROVIDER EXTENSION	CareProviderExtension	200
VPR PTF	Diagnosis	45
VPR PTF EXTENSION	DiagnosisExtension	45
VPR RACE	Race	10.99

Name	Display Name (SDA Container or class)	Primary Source Sub/File#
VPR RAD ORDER	RadOrder	100
VPR RAD REPORT	Document	74
VPR RAD RESULT	Result	70.03
VPR RAD RESULT EXTENSION	ResultExtension	74
VPR RAD RPT EXTENSION	DocumentExtension	74
VPR REFERRAL	Referral	123
VPR REFERRAL ACTIVITY	RequestAction	123.02
VPR REFERRAL EXTENSION	ReferralExtension	123
VPR REFERRING PROVIDER	CareProvider	123
VPR RELIGION	Religion	13
VPR SCH ADM EXTENSION	AppointmentExtension	41.1
VPR SCHEDULED ADMISSION	Appointment	41.1
VPR SIGNER	CareProvider	200
VPR SIGNER EXTENSION	CareProviderExtension	200
VPR SOCIAL HISTORY	SocialHistory	9000010.23
VPR SOMALIA SERVICE	Conflict	2
VPR SOURCE FACILITY	LastTreated	2
VPR SPECIALTY	CareProviderType	45.7
VPR STATE	State	5
VPR SURGERY	Procedure	130
VPR SURGERY EXTENSION	ProcedureExtension	130
VPR TEAM MEMBER	CareProvider	200
VPR TEXT ONLY	CodeTable	n/a
VPR USER	User	200
VPR V CPT	Procedure	9000010.18
VPR V EXAM	PhysicalExam	9000010.13
VPR V POV	Diagnosis	9000010.07
VPR V PROVIDER	CareProvider	9000010.06
VPR VACC HF ADMIN	Administration	9000010.23
VPR VACC HF EXT	VaccinationExtension	9000010.23

Name	Display Name (SDA Container or class)	Primary Source Sub/File#
VPR VACC HF REFUSAL	Vaccination	9000010.23
VPR VACCINATION	Vaccination	9000010.11
VPR VCPT EXTENSION	ProcedureExtension	9000010.18
VPR VFILE DELETE	VFile	n/a
VPR VIETNAM SERVICE	Conflict	2
VPR VISIT	Encounter	9000010
VPR VISIT EXTENSION	EncounterExtension	9000010
VPR VISIT STUB	Encounter	9000010
VPR VITAL EXTENSION	ObservationExtension	120.5
VPR VITAL MEASUREMENT	Observation	120.5
VPR VITAL QUALIFIER	ObservationMethods	120.52
VPR VITAL TYPE	ObservationCode	120.51
VPR WARD LOCATION	WardLocation	42
VPR YUGOSLAVIA SERVICE	Conflict	2

5.2 Data Update Events

Patch VPR*1*8 installed a mechanism to monitor clinical data events in VistA, to enable retrieval of updated information as a patient's data changes. VPR*1*10 adds new PROTOCOL (#101) file entries and links to other appropriate clinical application events to capture the records that have changed, as well as new patients.

Patient data is extracted when it is no longer in a draft status, usually electronically signed or in a completed or verified state. Requests for future action, such as orders or appointments, can be removed from the ECR if cancelled before being performed. Records that are retracted or marked as in error are also removed.

5.2.1 Protocol Events

VPR added listeners to the HL7 event protocols listed in Table 57:

Table 57: VPR HL7 Event Protocols and Associated Listeners

Event Protocol	Listener
RMIM DRIVER	VPR RMIM EVENTS
VAFC ADT-A08 SERVER	VPR ADT-A08 CLIENT

VPR also monitors the *non*-HL7 event protocols listed in Table 58:

Table 58: VPR *Non*-HL7 Event Protocols and Associated Listeners

Event Protocol	Listener
DG FIELD MONITOR	VPR DG UPDATES
DG PTF ICD DIAGNOSIS NOTIFIER	VPR PTF EVENTS
DG SA FILE ENTRY NOTIFIER	VPR DGS EVENTS
DGPF PRF EVENT	VPR PRF EVENTS
DGPM MOVEMENT EVENTS	VPR INPT EVENTS
FH EVSEND OR	VPR XQOR EVENTS
GMPL EVENT	VPR GMPL EVENT
GMRA ASSESSMENT CHANGE	VPR GMRA ASSESSMENT
GMRA ENTERED IN ERROR	VPR GMRA ERROR EVENTS
GMRA SIGN-OFF ON DATA	VPR GMRA EVENTS
GMRA VERIFY DATA	VPR GMRA EVENTS
GMRC EVSEND OR	VPR XQOR EVENTS
IBCN NEW INSURANCE EVENTS	VPR IBCN EVENTS
LR7O AP EVSEND OR	VPR XQOR EVENTS
LR7O CH EVSEND OR	VPR XQOR EVENTS
OR EVSEND FH	VPR NA EVENTS
OR EVSEND GMRC	VPR NA EVENTS
OR EVSEND LRCH	VPR NA EVENTS
OR EVSEND ORG	VPR XQOR EVENTS
OR EVSEND PS	VPR NA EVENTS
OR EVSEND RA	VPR NA EVENTS
OR EVSEND VPR	VPR XQOR EVENTS
PS EVSEND OR	VPR XQOR EVENTS
PSB EVSEND VPR	VPR PSB EVENTS
PXK VISIT DATA EVENT	VPR PCE EVENTS
RA EVSEND OR	VPR XQOR EVENTS
SCMC PATIENT TEAM CHANGES	VPR PCMM TEAM
SCMC PATIENT TEAM POSITION CHANGES	VPR PCMM TEAM POSITION

Event Protocol	Listener
SDAM APPOINTMENT EVENTS	VPR APPT EVENTS
TIU DOCUMENT ACTION EVENT	VPR TIU RETRACT
WV PREGNANCY STATUS CHANGE EVENT	VPR PREGNANCY EVENT

5.2.2 MUMPS Index

Two VistA files that require data monitoring do *not* have a protocol event, so the MUMPS-type cross references in Table 59 were created to call a VPR listener routine on edits:

Table 59: VPR MUMPS Cross Reference Listeners

File	Index
TIU DOCUMENT (#8925)	AEVT
GMRV VITAL MEASUREMENT (#120.5)	AVPR

5.2.3 Tasked Events

Most events process updates immediately, making changes available to the ECR in near real time. Some event updates need to be tasked but usually run within **10-15 minutes**.

5.2.3.1 Patient Demographics

The VistA Registration package fires the **DG FIELD MONITOR** protocol for every field that is changed in the PATIENT (#2) file, but the entire Patient container is updated all at once. The **VPR DG UPDATES** listener creates a task the first time it runs, which waits **10 minutes** before adding the Patient container to the upload list; the task number is saved in the VPR SUBSCRIPTION (#560) file until it runs. When the **DG** event fires for another field, the VPR listener simply quits if a task number already exists.

5.2.3.2 Encounters (PCE)

When encounters are created or edited via the Computerized Patient Record System (CPRS), that data is passed to the Patient Care Encounter (PCE) application which fires the **PXK VISIT DATA EVENT** protocol. This process can happen multiple times during a single user session, so the **VPR PCE EVENTS** listener collects the identifiers of all modified records in **^XTMP** in the following format:

```
^XTMP("VPRPX",0) = descriptor node
^XTMP("VPRPX",visit~dfn) = NOW ^ visit;9000010 ^ 1 if new
^XTMP("VPRPX",visit~dfn,vFile,ien) = 1 if new
^XTMP("VPRPX","ZTSK") = current task number
```

It then fires off a task (if one does *not* already exist) to check **^XTMP** in 5 **minutes**; if the encounter has been stable and unchanged for at least 2 **minutes**, it is moved to the **AVPR** upload list along with any related PCE records. If any encounters remain in **^XTMP** at the end of the task, it requeues itself to repeat this process until all records have been moved to the upload list.

PCE records can be deleted in VistA, and these are also then removed from the ECR. If the flag in **^XTMP** is **true** (**1**), then the **^XTMP** nodes are simply killed, because the record was never sent to the ECR. If the record was *not* new, a copy of the deleted **zero** node is saved in **^XTMP** by upload sequence number so the SDA message can still be built when requested from the ECR:

```
^XTMP("VPR-seq",0) = descriptor node
^XTMP("VPR-seq",ien) = DFN ^ Container ^ ien;file# ^ D ^ visit
^XTMP("VPR-seq",ien,0) = zero node of deleted record
```

5.2.3.3 Documents (TIU)

The **TIU Document** event is an index, so it can fire multiple times during a single user session. Documents are also usually linked to a visit, but the visit number assignment is tasked, and thus, often saved after the note has been marked as complete and the index is executed. HealthShare requires the encounter to be uploaded to the ECR first, before any data linked to that encounter.

For these reasons, **TIU Documents** also use the same process and task as **Encounters** to populate the upload list. Document identifiers are also saved in **^XTMP** in the following format:

```
^XTMP("VPRPX","DOC",ien) = NOW ^ ien;8925
```

The encounter task looks for any waiting documents tied to each visit processed, to ensure that a document's encounter is uploaded first. Any other waiting documents are then also moved to the upload list when stable for at least **5 minutes**.

5.3 VPR Subscription File and Indexes

When the RHC servers were first brought up, a job was fired off that called into each connected VistA system and pre-loaded the clinical data of active patients. A patient was considered active if s/he was a current inpatient, had been seen in the past **5 years**, or had scheduled appointments; they were also required to have an ICN and no date of death. These patients were saved in the VPR SUBSCRIPTION (#560) file. Monitoring of new patients and data update events was also enabled at this time, and those changes are tracked in this file.

5.3.1 VPR Subscription File

The VPR SUBSCRIPTION (#560) file tracks the subscription status of patients for inclusion in the ECR. If subscribed, data changes detected for that patient are tracked in the Patients sub-file and indexed for fast retrieval by HS in either of the following indexes:

- **^VPR("ANEW")**
- **^VPR("AVPR")**

5.3.2 ANEW Index

New, or newly active, patients are added to the **ANEW** index when VistA clinical activity is detected. The RHC monitors this index to register and subscribe to these patients. Once subscribed, the RHC will then automatically upload all of that patient's current data into HealthShare. The **ANEW** index is subscripted by a sequence number and patient DFN, and also includes the ICN:

```
^VPR("ANEW",9,224)="10111V183702"
```

The RHC removes the **ANEW** index node when it has registered the patient.

5.3.3 AVPR Index

Once a patient is subscribed to, changes to his/her clinical data results in a node added to the **AVPR** index. Like the **ANEW** index, the **AVPR** index is subscripted by a sequence number and the patient DFN. Changes are applied to the ECR in order; **AVPR** saves more data to know what record has been updated, including:

- Patient ICN
- SDA Container Name
- Record ID, which consists of **two** semi-colon pieces:
  - Internal entry number, or a string that uniquely identifies the record to the Entity
  - VistA source file or sub-file number
- Action Code:
  - **U—**Update
  - **D—**Delete
- Visit Number (if available)

For example:

```
^VPR("AVPR",1,229)="10104V248233^Problem^940;9000011^U^"
^VPR("AVPR",2,229)="10104V248233^OtherOrder^33751;100^U^"
^VPR("AVPR",3,229)="10104V248233^Referral^618;123^U^"
^VPR("AVPR",4,229)="10104V248233^Appointment^3190524.1128,229;2.98^U^"
^VPR("AVPR",5,229)="10104V248233^Document^4239;8925^U^7200"
```

Like **ANEW**, the RHC removes the **AVPR** index node when it has uploaded the record.

5.4 VPRHS Utilities

The VPRHS routine contains the utility functions needed to directly support the RHC servers. These APIs are only used within VPR or by Health Connect (HC). They are documented in this document to help system administrators who support with the HC interface.

There are no ICR for these APIs; they are only used within VPR or by Health Connect (HC).

5.4.1 $$ON^VPRHS: System Monitoring On/Off

Description

The $$ON^VPRHS extrinsic function returns the current status of the data monitoring utilities.

The VPR event listeners use this function to verify that data should be passed to HealthShare. If the system has been stopped for any reason, no data will be uploaded and the listener quits.

Format

```
$$ON^VPRHS
```

Input Parameters

None.

Output

Returns This Boolean function returns the following:

- **1—**If system monitoring of data events is active.
- 0—If system monitoring of data events is not active.

5.4.1.1 Example

```
>W $$ON^VPRHS
1
```

5.4.2 EN^VPRHS(): Subscribe a Patient

Description

The EN^VPRHS API adds a patient to the VPR SUBSCRIPTION (#560) file for data monitoring.

The RHC server calls this API during the patient subscription process.

Format

```
EN^VPRHS(dfn)
```

Input Parameters

dfn: (Required) Pointer to the PATIENT (#2) file.

Output

None.

5.4.2.1 Example

```
>S DFN=229 D EN^VPRHS(DFN)
```

5.4.3 UN^VPRHS(): Unsubscribe a Patient

Description

The UN^VPRHS API removes a patient from the VPR SUBSCRIPTION (#560) file to stop data monitoring for that patient.

The RHC server calls this API when a patient is removed from the data cache and data subscription is stopped.

Format

```
UN^VPRHS(dfn)
```

Input Parameters

dfn: (Required) Pointer to the PATIENT (#2) file.

Output

None.

5.4.3.1 Example

```
>S DFN=229 D UN^VPRHS(DFN)
```

5.4.4 $$SUBS^VPRHS(): Subscription Status of a Patient

Description

The $$SUBS^VPRHS extrinsic function returns the current subscription status of a patient.

The POST^VPRHS API uses this function to determine if changes to this patient's clinical data are currently being tracked in HealthShare.

Format

```
$$SUBS^VPRHS(dfn)
```

Input Parameters

dfn: (Required) Pointer to the PATIENT (#2) file.

Output

Returns This Boolean function returns the following:

- **1**—If the patient is currently subscribed.
- **0**—If the patient is *not* currently subscribed.

5.4.4.1 Example

```
>S DFN=229 W $$SUBS^VPRHS(DFN)
0
```

5.4.5 $$VALID^VPRHS(): Validation of a Patient for HealthShare

Description

The $$VALID^VPRHS extrinsic function evaluates a patient for possible subscription for data monitoring in HealthShare. Patients:

- *Must* have an ICN.
- *Cannot* be deceased or merged.
- *Cannot* be marked as test patients on a Production system.

The POST^VPRHS API uses this function when clinical data is added or modified for a patient that is *not* currently subscribed.

Format

```
$$VALID^VPRHS(dfn)
```

Input Parameters

dfn: (Required) Pointer to the PATIENT (#2) file.

Output

Returns This Boolean function returns the following:

- **1**—If the patient is valid for subscription.
- **0**—If the patient is *not* valid for subscription.

5.4.5.1 Example

```
>S DFN=224 W $$VALID^VPRHS(DFN)
1
```

5.4.6 POST^VPRHS(): Add Record to AVPR Index for Uploading

Description

The POST^VPRHS API adds a node to the **AVPR** upload index when clinical activity occurs in VistA for a subscribed patient. If the patient is *not* subscribed but is eligible, control is passed to the NEW^VPRHS API for subscribing. The RHC then automatically uploads all of the patient's data.

The VPR event listeners use this API when clinical data is added or modified for a patient:

- If the patient is subscribed, an entry is made in the **^VPR("AVPR")** index.
- If the patient is *not* subscribed but passes the checks in the $$VALID^VPRHS function, then a request to register the patient in HealthShare is posted in the **^VPR("ANEW")** index instead.
- If the patient is neither subscribed nor eligible for subscription, nothing is uploaded and the API quits.

Format

```
POST^VPRHS(dfn,type,id,action,visit[,.seq])
```

Input Parameters

dfn: (Required) Pointer to the PATIENT (#2) file.

type: (Required) Name of the SDA container where the data is to be stored.

id: (Required) Record identifier, in the format:

internal entry number_";"_VistA source file number

action: (Required) **NULL** to update the record, or "@" to delete it from HealthShare.

visit: (Required) Pointer to the related VISIT (#9000010) entry, if applicable.

.seq: (Optional) Parameter to return the assigned sequence number in the **AVPR** or **ANEW** upload lists, *must* be passed by reference.

Output

This API does *not* directly return any results. If successful, however:

- A node is added to the **AVPR** or **ANEW** index.
- The sequence number assigned may optionally be returned in the **SEQ** parameter.

5.4.6.1 Example

```
>D POST^VPRHS(229,"Problem","644;9000011")
```

5.4.7 NEW^VPRHS(): Add Patient to ANEW Index for Subscribing

Description

The NEW^VPRHS API adds a node to the **ANEW** upload index when clinical activity occurs in VistA for an unsubscribed patient.

The POST^VPRHS API calls this API when a valid patient needs to be registered in HealthShare and subscribed for data monitoring. The RHC server registers and subscribes the patient, and then retrieves all current data for the patient so individual record identifiers do *not* need to be passed here.

Format

```
NEW^VPRHS(dfn[,icn])
```

Input Parameters

dfn: (Required) Pointer to the PATIENT (#2) file.

icn: (Optional) ICN of patient. If not defined, it retrieves the ICN from the PATIENT (#2) file.

Output

This API does *not* directly return any results. If successful, however, a node is added to the **ANEW** index.

5.4.7.1 Example

```
>S DFN=229 D NEW^VPRHS(DFN)
```

5.4.8 DEL^VPRHS(): Remove Nodes from ANEW or AVPR Upload Index

Description

The DEL^VPRHS API removes a node from the **ANEW** or **AVPR** upload index after the RHC has processed the patient or record.

The RHC server calls this API to remove nodes from the index after processing.

Format

```
DEL^VPRHS(list,seq)
```

Input Parameters

list: (Required) Name of the index, either "**ANEW**" or "**AVPR**".

seq: (Required) Sequence number in the index of the node to be removed.

Output

This API does *not* directly return any results. If successful, however, the node disappears from the specified index.

5.4.8.1 Example

```
>D DEL^VPRHS("AVPR",5873294)
```

5.4.9 GET^VPRHS(): Retrieve Patient Data for ECR

Description

The GET^VPRHS API retrieves data from VistA in SDA format for HealthShare. The input parameters are used to call the VA FileMan DDE utility GET^DDE API for the appropriate ENTITY (#1.5) file entries, collecting and returning the results and optionally any errors that may occur.

The RHC server calls this API when data upload requests are put into the **AVPR** or **ANEW** index. For **AVPR** nodes, **GET** is called using the data saved in the index node as the input parameters to request a specific record. For **ANEW**, the RHC server requests a whole container at a time to retrieve all current data for the patient.

Format

```
GET^VPRHS(dfn,type[,id][,.query],format,results,errors)
```

Input Parameters

dfn: (Required) Pointer to the PATIENT (#2) file.

type: (Required) Name of the desired SDA Container.

id: (Optional) Record identifier, in the format:

internal entry number_";"_VistA source file number

If *not* defined, the entire container is returned based on Query.

.query("name"): (Optional) Array of search conditions as a list of name-value pairs, passed by reference. This parameter is optional and not used if the **id** parameter is defined.

Commonly used search parameters include:

QUERY("start") = VA FileMan formatted **date.time**
QUERY("stop") = VA FileMan formatted **date.time**
QUERY("max") = Maximum number of items to return

Others may be supported by a specific Entity, such as a status One value is used when ID is defined, to retrieve stored data for deleted records:

QUERY("sequence") = AVPR list item being processed

format: (Required) Format for results:

- **0**=JSON.
- **1**=XML (default).

results: (Required) Closed array name for returning results, default is:

^TMP(“VPR GET”,$J,#)

errors: (Required) Closed array name for returning errors, default is:

^TMP(“VPR ERR”,$J,#)

Output

Returns: This API return results in the specified array or **^TMP** global, a single record per list item. The total number of records returned is in the **zero** node of the array.

5.4.9.1 Examples

5.4.9.1.1 Example 1

```
>D GET^VPRHS(229,"Problem","644;9000011",,1,"VPRESLT") ZW VPRESLT
VPRESLT(0)=1
VPRESLT(1)="<Problem><UpdatedOn>2007-04-10T00:00:00</UpdatedOn><Extension><IsExp
osureAO>false</IsExposureAO><IsExposureIR>false</IsExposureIR><IsExposurePG>fals
e</IsExposurePG><IsSc>false</IsSc><Service>MEDICAL</Service><OnsetDate>2005-04-0
7</OnsetDate><LexiconId>60339</LexiconId><Priority>CHRONIC</Priority></Extension
><ProblemDetails>Hypertension</ProblemDetails><Problem><SDACodingStandard>ICD-9-
CM</SDACodingStandard><Code>401.9</Code><Description>HYPERTENSION NOS</Descripti
on></Problem><Clinician><SDACodingStandard>VA200</SDACodingStandard><Extension><
Title>Scholar Extraordinaire</Title></Extension><Code>10000000031</Code><Descrip
tion>VEHU,ONEHUNDRED</Description><Name><FamilyName>VEHU</FamilyName><GivenName>
ONEHUNDRED</GivenName></Name></Clinician><Status><SDACodingStandard>SNOMED CT</S
DACodingStandard><Code>55561003</Code><Description>Active</Description></Status>
<EnteredBy><SDACodingStandard>VA200</SDACodingStandard><Code>10000000031</Code><
Description>VEHU,ONEHUNDRED</Description></EnteredBy><EnteredAt><SDACodingStanda
rd>VA4</SDACodingStandard><Code>500</Code><Description>CAMP MASTER</Description>
</EnteredAt><EnteredOn>2007-04-10T00:00:00</EnteredOn><FromTime>2005-04-07T00:00
:00</FromTime><ExternalId>644;PL</ExternalId></Problem>"
```

5.4.9.1.2 Example 2

```
>S QRY("start")=2991101,QRY("stop")=2991130,QRY("max")=2
>D GET^VPRHS(129,"Encounter",,.QRY,1,"VPRESLT") ZW VPRESLT
VPRESLT(0)=2
VPRESLT(1)="<Encounter><Extension><StopCode><SDACodingStandard>AMIS</SDACodingSt
andard><Code>328</Code><Description>MEDICAL/SURGICAL DAY UNIT MSDU</Description>
</StopCode></Extension><EncounterNumber>1822</EncounterNumber><EncounterType>O</
EncounterType><EncounterCodedType><Code>A</Code><Description>AMBULATORY</Descrip
tion></EncounterCodedType><ConsultingClinicians><CareProvider><SDACodingStandard
>VA200</SDACodingStandard><Extension><Role>PRIMARY</Role><Title>Scholar Extraord
inaire</Title></Extension><Code>11712</Code><Description>PROVIDER,TWOHUNDREDNINE
TYSEVEN</Description><Name><FamilyName>PROVIDER</FamilyName><GivenName>TWOHUNDRE
DNINETYSEVEN</GivenName></Name><CareProviderType><SDACodingStandard>X12</SDACodi
ngStandard><Extension><Classification>Physician/Osteopath</Classification></Exte
nsion><Code>203B00000N</Code><Description>Physicians (M.D. and D.O.)</Descriptio
n></CareProviderType></CareProvider></ConsultingClinicians><HealthCareFacility><
SDACodingStandard>VA44</SDACodingStandard><Extension><StopCode><SDACodingStandar
d>AMIS</SDACodingStandard><Code>328</Code><Description>MEDICAL/SURGICAL DAY UNIT
 MSDU</Description></StopCode><CreditStopCode><SDACodingStandard>AMIS</SDACoding
Standard><Code>328</Code><Description>MEDICAL/SURGICAL DAY UNIT MSDU</Descriptio
n></CreditStopCode><Service>MEDICINE</Service></Extension><Code>261</Code><Descr
iption><![CDATA[MIKE'S MEDICAL CLINIC]]></Description><LocationType>OTHER</Locat
ionType></HealthCareFacility><Priority><Code>P</Code><Description>PRIMARY</Descr
iption></Priority><EnteredBy><SDACodingStandard>VA200</SDACodingStandard><Code>1
1712</Code><Description>PROVIDER,TWOHUNDREDNINETYSEVEN</Description></EnteredBy>
<EnteredAt><SDACodingStandard>VA4</SDACodingStandard><Code>500</Code><Descriptio
n>CAMP MASTER</Description></EnteredAt><EnteredOn>1999-11-22T11:13:45</EnteredOn
><FromTime>1999-11-22T11:13:12</FromTime><ToTime>1999-11-22T11:13:00</ToTime></E
ncounter>"
VPRESLT(2)="<Encounter><Extension><Cpt><SDACodingStandard>CPT-4</SDACodingStanda
rd><Code>99201</Code><Description><![CDATA[OFFICE OR OTHER OUTPATIENT VISIT FOR
THE EVALUATION AND MANAGEMENT OF A NEW PATIENT, WHICH REQUIRES THESE THREE KEY C
OMPONENTS: A PROBLEM FOCUSED HISTORY; A PROBLEM FOCUSED EXAMINATION; AND STRAIGH
TFORWARD MEDICAL DECISION MAKING. COUNSELING AND/OR COORDINATION OF CARE WITH OT
HER PROVIDERS OR AGENCIES ARE PROVIDED CONSISTENT WITH THE NATURE OF THE PROBLEM
(S) AND THE PATIENT'S AND/OR FAMILY'S NEEDS. USUALLY, THE PRESENTING PROBLEMS AR
E SELF LIMITED OR MINOR. PHYSICIANS TYPICALLY SPEND 10 MINUTES FACE-TO-FACE WITH
 THE PATIENT AND/OR FAMILY.]]></Description></Cpt><StopCode><SDACodingStandard>A
MIS</SDACodingStandard><Code>401</Code><Description>GENERAL SURGERY</Description
></StopCode></Extension><EncounterNumber>1806</EncounterNumber><EncounterType>O<
/EncounterType><EncounterCodedType><Code>A</Code><Description>AMBULATORY</Descri
ption></EncounterCodedType><ConsultingClinicians><CareProvider><SDACodingStandar
d>VA200</SDACodingStandard><Extension><Role>PRIMARY</Role><Title>Scholar Extraor
dinaire</Title></Extension><Code>11712</Code><Description>PROVIDER,TWOHUNDREDNIN
ETYSEVEN</Description><Name><FamilyName>PROVIDER</FamilyName><GivenName>TWOHUNDR
EDNINETYSEVEN</GivenName></Name><CareProviderType><SDACodingStandard>X12</SDACod
ingStandard><Extension><Classification>Physician/Osteopath</Classification></Ext
ension><Code>203B00000N</Code><Description>Physicians (M.D. and D.O.)</Descripti
on></CareProviderType></CareProvider></ConsultingClinicians><HealthCareFacility>
<SDACodingStandard>VA44</SDACodingStandard><Extension><StopCode><SDACodingStanda
rd>AMIS</SDACodingStandard><Code>401</Code><Description>GENERAL SURGERY</Descrip
tion></StopCode><Service>SURGERY</Service><Specialty><SDACodingStandard>VA45.7</
SDACodingStandard><Code>18</Code><Description>GEM ACUTE MEDICINE</Description></
Specialty></Extension><Code>91</Code><Description><![CDATA[SHERYL'S CLINIC]]></D
escription><Organization><SDACodingStandard>VA4</SDACodingStandard><Code>998</Co
de><Description>ABILENE (CAA)</Description></Organization><LocationType>OTHER</L
ocationType></HealthCareFacility><Priority><Code>P</Code><Description>PRIMARY</D
escription></Priority><EnteredBy><SDACodingStandard>VA200</SDACodingStandard><Co
de>11712</Code><Description>PROVIDER,TWOHUNDREDNINETYSEVEN</Description></Entere
dBy><EnteredAt><SDACodingStandard>VA4</SDACodingStandard><Code>500</Code><Descri
```

```
ption>CAMP MASTER</Description></EnteredAt><EnteredOn>1999-11-17T11:12:10</Enter
edOn><FromTime>1999-11-17T09:00:00</FromTime><ToTime>1999-11-17T11:12:00</ToTime
></Encounter>"
```

5.4.10 TEST^VPRHS(): Test SDA Extract

Description

The TEST^VPRHS API retrieves data from VistA in SDA format for a single record. The input parameters are used to call the VA FileMan $$GET1^DDE utility for the specified ENTITY (#1.5) file entry and display the result or any errors that may occur onscreen.

This API can be used by a developer in programmer mode, for testing and debugging purposes.

Format

```
TEST^VPRHS(entity,id,dfn[,seq])
```

Input Parameters

entity: (Required) Name of a single entry in, or pointer to, the ENTITY (#1.5) file.

id: (Required) Pointer to the desired record, from the VistA file defined by the Entity's DEFAULT FILE NUMBER (#.02) field.

dfn: (Required) Pointer to the PATIENT (#2) file.

seq: (Optional) Sequence number of the record in the upload list.

Output

Returns: This API executes the requested entity and displays the results onscreen, as well as any errors that might occur.

5.4.10.1 Example

```
>D TEST^VPRHS("VPR PROBLEM",644,229)

<Problem>
  <UpdatedOn>2007-04-10T00:00:00</UpdatedOn>
  <Extension>
    <IsExposureAO>false</IsExposureAO>
    <IsExposureIR>false</IsExposureIR>
    <IsExposurePG>false</IsExposurePG>
    <IsSc>false</IsSc>
    <Service>MEDICAL</Service>
    <OnsetDate>2005-04-07</OnsetDate>
    <LexiconId>60339</LexiconId>
    <Priority>CHRONIC</Priority>
  </Extension>
  <ProblemDetails>Hypertension</ProblemDetails>
  <Problem>
    <SDACodingStandard>ICD-9-CM</SDACodingStandard>
    <Code>401.9</Code>
    <Description>HYPERTENSION NOS</Description>
  </Problem>
  <Clinician>
    <SDACodingStandard>VA200</SDACodingStandard>
    <Extension>
      <Title>Scholar Extraordinaire</Title>
    </Extension>
    <Code>10000000031</Code>
    <Description>VEHU,ONEHUNDRED</Description>
    <Name>
      <FamilyName>VEHU</FamilyName>
      <GivenName>ONEHUNDRED</GivenName>
    </Name>
  </Clinician>
  <Status>
    <SDACodingStandard>SNOMED CT</SDACodingStandard>
    <Code>55561003</Code>
    <Description>Active</Description>
  </Status>
  <EnteredBy>
    <SDACodingStandard>VA200</SDACodingStandard>
    <Code>10000000031</Code>
    <Description>VEHU,ONEHUNDRED</Description>
  </EnteredBy>
  <EnteredAt>
    <SDACodingStandard>VA4</SDACodingStandard>
    <Code>500</Code>
    <Description>CAMP MASTER</Description>
  </EnteredAt>
  <EnteredOn>2007-04-10T00:00:00</EnteredOn>
  <FromTime>2005-04-07T00:00:00</FromTime>
  <ExternalId>644;PL</ExternalId>
</Problem>
>
```

5.5 Generating Online Documentation

Use VA FileMan options to generate and display online documentation to get the most current information about the VPR-SDA interface.

5.5.1 VPR CONTAINER (#560.1) File

The VPR CONTAINER (#560.1) file contains information about each SDA container class that has been implemented. The SOURCE FILE sub-file defines each VistA source for that container, and the Entities used to build SDA messages for each source.

Use the **Print File Entries** option [DIPRINT] of VA FileMan to display the contents of the VPR CONTAINER (#560.1) file, as shown in Figure 5. The **VPR CONTAINER SOURCES** Print template can be used to show the primary Entities for each container and source.

Figure 5: Print File Entries Option—Displaying the VPR CONTAINER (#560.1) File Contents

```
Select OPTION: PRINT FILE ENTRIES

Output from what File: VPR CONTAINER// <Enter> (24 entries)
Sort by: NAME// <Enter>
Start with NAME: FIRST// <Enter>
First Print FIELD: [VPR CONTAINER SOURCES
                              (JUL 22, 2021@12:17) User #11948 File #560.1
Do you want to edit the 'VPR CONTAINER SOURCES' Template? No// <Enter>
(No)
Heading (S/C): VPR CONTAINER List// <Enter>
DEVICE: 0;80;99 <Enter> Linux Telnet /SSh

VPR CONTAINER List                              JUL 22, 2021@12:54   PAGE 1
NAME                  DISPLAY NAME
SOURCE FILE
NUMBER                UPDATE ENTITY            DELETE ENTITY
------------------------------------------------------------------------------

ADVANCE DIRECTIVE     AdvanceDirective
8925                  VPR ADVANCE DIRECTIVE

ALERT                 Alert
26.13                 VPR PATIENT RECORD FLAG
8925                  VPR CW NOTES

ALLERGY               Allergy
120.8                 VPR ALLERGY
120.86                VPR ALLERGY ASSESSMENT

APPOINTMENT           Appointment
2.98                  VPR APPOINTMENT
41.1                  VPR SCHEDULED ADMISSION

DIAGNOSIS             Diagnosis
9000010.07            VPR V POV                VPR DEL V POV
45                    VPR PTF                  VPR DEL PTF

DOCUMENT              Document
8925                  VPR DOCUMENT             VPR DEL TIU DOCUMENT
74                    VPR RAD REPORT
63.05                 VPR LRMI REPORT
63.08                 VPR LRAP REPORT

ENCOUNTER             Encounter
9000010               VPR VISIT                VPR VISIT STUB
405                   VPR ADMISSION
230                   VPR EDP LOG

FAMILY HISTORY        FamilyHistory
9000010.23            VPR FAMILY HISTORY       VPR DEL FAMILY HX

ILLNESS HISTORY       IllnessHistory

LAB ORDER             LabOrder
100                   VPR LAB ORDER
```

```
MEDICAL CLAIM          MedicalClaim

MEDICATION             Medication
100                    VPR MEDICATION

MEMBER ENROLLMENT      MemberEnrollment
2.312                  VPR INSURANCE

OBSERVATION            Observation
120.5                  VPR VITAL MEASUREMENT

OTHER ORDER            OtherOrder
100                    VPR OTHER ORDER

PATIENT                Patient
2                      VPR PATIENT

PHYSICAL EXAM          PhysicalExam
9000010.13             VPR V EXAM                VPR DEL V EXAM

PROBLEM                Problem
9000011                VPR PROBLEM
783                    VPR FIM

PROCEDURE              Procedure
130                    VPR SURGERY
9000010.18             VPR V CPT                 VPR DEL V CPT

PROGRAM MEMBERSHIP     ProgramMembership

RAD ORDER              RadOrder
100                    VPR RAD ORDER

REFERRAL               Referral
123                    VPR REFERRAL

SOCIAL HISTORY         SocialHistory
9000010.23             VPR SOCIAL HISTORY        VPR DEL SOCIAL HX
790.05                 VPR PREGNANCY

VACCINATION            Vaccination
9000010.11             VPR VACCINATION           VPR DEL VACCINATION
9000010.23             VPR VACC HF REFUSAL       VPR DEL HF VACC REFUSAL
9000010.707            VPR ICR EVENT             VPR DEL ICR
```

The **UPDATE ENTITY** (Figure 5) is used to build most SDA messages, to send a new or updated record from VistA to the ECR. The **DELETE ENTITY** (Figure 5) is used to build SDA messages for data or records that have been deleted from VistA, using data saved in **^XTMP** instead of the regular global.

5.5.2 Inquire to Entity File Option

The **Data Mapping** [DDE ENTITY MAPPING] menu, on the VA FileMan **Other Options** [DIOTHER] menu, contains options that support the creation and management of the ENTITY (#1.5) file entries.

Use the **Print an Entity** [DDE ENTITY INQUIRE] option to display an Entity in a more readable format than the regular VA FileMan **Inquire to File Entries** option [DIINQUIRE]. Basic information about the Entity displays first, followed by a list of the Entity's Items.

Select the **Summary** format to see a simple list as shown in Figure 6, or **Detailed** to view all properties of each item.

Figure 6: Print an Entity Option—Displaying Entities in a Readable Format

```
Select OPTION: OTHER OPTIONS
Select OTHER OPTION: DATA MAPPING
Select DATA MAPPING OPTION: ?
    Answer with DATA MAPPING OPTION NUMBER, or NAME
   Choose from:
   1            ENTER/EDIT AN ENTITY
   2            PRINT AN ENTITY
   3            GENERATE AN ENTITY FOR A FILE

Select DATA MAPPING OPTION: 2 <Enter> PRINT AN ENTITY
Select ENTITY: VPR ALLERGY
     1   VPR ALLERGY       SDA
     2   VPR ALLERGY ASSESSMENT       SDA
     3   VPR ALLERGY EXTENSION       SDA
     4   VPR ALLERGY OBSERVATION       SDA
     5   VPR ALLERGY SIGN EXTENSION       SDA
Press <Enter> to see more, '^' to exit this list,  OR
CHOOSE 1-5: 1 <Enter> VPR ALLERGY     SDA
Print item summary or details? Summary

DEVICE: HOME// 0;80;99  NETWORK


ENTITY: VPR ALLERGY (#52)
  FILE: PATIENT ALLERGIES (#120.8)          Jun 07, 2019@09:58:20   PAGE 1
------------------------------------------------------------------------------

DISPLAY NAME: Allergy

      SORT BY:                            DATA MODEL: SDA
    FILTER BY:                             READ ONLY: NO
       SCREEN:
QUERY ROUTINE: ALLERGYS^VPRSDAQ

 ENTRY ACTION: S VASITE=+$$SITE^VASITE S:VASITE'>0
VASITE=$$KSP^XUPARAM("INST")
    ID ACTION: D ALG1^VPRSDAL(DIEN)
  EXIT ACTION: K GMRAL,GMRAY,VPRALG,VASITE

Seq  Item                        Type Field  Sub/File   Entity
```

```
-------------------------------------------------------------------------------
2    Extension                      E          120.8      VPR ALLERGY
EXTENSION
3    Allergy                        E       1  120.8      VPR CODE TABLE
4    AllergyCategory                E     3.1  120.8      VPR CODE TABLE
5    Clinician                      E      21  120.8      VPR PROVIDER
6    Reaction                       E          120.8      VPR ALLERGY
SIGN/SYMPTOM
7    Severity                       E          120.85     VPR CODE TABLE
8    Certainty                      E      19  120.8      VPR CODE TABLE
12   InactiveTime                   S      23  120.8
13   InactiveComments               S          120.8
14   VerifiedTime                   S      20  120.8
17   FreeTextAllergy                S     .02  120.8
19   Status                         S      22  120.8
22   EnteredBy                      E       5  120.8      VPR USER
23   EnteredAt                      E          120.8      VPR FACILITY
24   EnteredOn                      S       4  120.8
25   FromTime                       S          120.85
26   ToTime                         S      23  120.8
27   ExternalId                     I


Select DATA MAPPING OPTION:
```

5.6 Monitoring and Troubleshooting

The **HealthShare Interface Manager** [VPR HS MGR] menu shown in Figure 7 contains two sub-menus that can be used for system monitoring and troubleshooting.

Figure 7: HealthShare Interface Manager [VPR HS MGR] Menu

```
Select OPTION NAME: VPR HS MGR <Enter> HealthShare Interface Manager


   HS      VPR HealthShare Utilities ...
   TEST    Test/Audit VPR Functions ...

Select HealthShare Interface Manager Option:
```

Table 60, describes the two **HealthShare Interface Manager** [VPR HS MGR] sub-menus that contain options that can be used for technical support or testing:

Table 60: VPR HS MGR Menu Options

Option Name	Option Text	Description
VPR HS MENU	VPR HealthShare Utilities	This menu contains utilities for managing the interface between the VistA Virtual Patient Record (VPR) and the Regional Health Connect (RHC) servers.
VPR HS TESTER	Test/Audit VPR Functions	This menu contains options to facilitate the audit and testing of the VPR interface with HealthShare.

5.6.1 VPR HealthShare Utilities [VPR HS MENU] Menu

The **VPR HealthShare Utilities** [VPR HS MENU] menu shown in Figure 8 contains four options used for managing the interface between VistA and the RHC servers:

Figure 8: VPR HealthShare Utilities [VPR HS MENU] Menu

```
Select HealthShare Interface Manager Option: HS <Enter> VPR HealthShare
Utilities


   ENC     Encounter Transmission Task Monitor
   AVPR    SDA Upload List Monitor
   UPD     Add Records to Upload List
   ON      Enable Data Monitoring


Select VPR HealthShare Utilities Option:
```

Table 61 and the sub-sections that follow describe the **VPR HealthShare Utilities** [VPR HS MENU] menu options:

Table 61: VPR HealthShare Utilities Menu Options

Option Name	Option Text	Description
VPR HS TASK MONITOR	Encounter Transmission Task Monitor	This option checks the status of the task that collects encounters and related records from PCE and TIU for the **AVPR** upload list.
VPR HS SDA MONITOR	SDA Upload List Monitor	This option monitors the **AVPR** list of upload requests for the RHC.
VPR HS PUSH	Add Records to Upload List	This option allows a site to manually add patient record id(s) to the **AVPR** upload list if needed.
VPR HS ENABLE	Enable Data Monitoring	This option enables or disables the tracking of patient data for the **AVPR** upload list.

5.6.1.1 Encounter Transmission Task Monitor [VPR HS TASK MONITOR] Option

Updates to the ECR from the Patient Care Encounter (PCE) application are processed and added to the upload list by a background task, to collect multiple edits into a single update per encounter. Documents stored in the Text Integration Utilities (TIU) application also use this process, as they are usually linked to a visit and may also save multiple edits during a single user session.

REF: For details on the event tasks, see Section 5.2.3.

HealthShare requires encounters to be uploaded first, before any data linked to that encounter can be saved.

The **Encounter Transmission Task Monitor** [VPR HS TASK MONITOR] option checks the health of this task, displaying the task number and its current status. Any waiting encounters or documents can be viewed here. If the task has stopped for any reason and data is waiting, the task can also be restarted with this option.

Figure 9: Encounter Transmission Task Monitor [VPR HS TASK MONITOR] Option—System Prompts and User Entries

```
Select VPR HealthShare Utilities Option: ENC <Enter> Encounter
Transmission Task Monitor


Current time: Feb 04, 2021@16:37:10

Data Monitoring System is ON.

Checking TaskMan ...

     VPR Encounter task is SCHEDULED.
     Task #8437572 is SCHEDULED for Feb 04, 2021@16:40:33

Checking the Transmission List ...

     There are encounters awaiting transmission.
     There are no documents awaiting transmission.

Enter monitor action: UPDATE// ?

     Enter <RETURN> to refresh the monitor display.
     Enter Q to exit the monitor.
     Enter T to display the task.
     Enter R to re-queue the transmission task.
     Enter E to display the Encounter list.
     Enter D to display the Document list.
     Enter ? to see this message.

Enter monitor action: UPDATE// E


     Last Updated   Visit#      DFN         Location Feb 04, 2021@16:37:21
------------------------------------------------------------------------
 2/ 4/21@16:33:33    1851       9           GENERAL MEDICINE

Press <return> to continue ...<Enter>

Current time: Feb 04, 2021@16:37:26

Data Monitoring System is ON.

Checking TaskMan ...

     VPR Encounter task is SCHEDULED.
     Task #8437572 is SCHEDULED for Feb 04, 2021@16:40:33

Checking the Transmission List ...

     There are encounters awaiting transmission.
     There are no documents awaiting transmission.

Enter monitor action: UPDATE// Q
```

5.6.1.2 SDA Upload List Monitor [VPR HS SDA MONITOR] Option

The **SDA Upload List Monitor** [VPR HS SDA MONITOR] option is a simple monitor of the **AVPR** index, which the RHC server polls every few seconds for data extracts, optionally filtered by patient and container. If no patient or container is selected, all current entries in the list are displayed. The RHC server removes entries from this index when the data has been uploaded, so this list should turn over every few seconds if the system is running correctly.

The last sequence number used in this list is also displayed at the bottom.

Figure 10: SDA Upload List Monitor [VPR HS SDA MONITOR] Option—System Prompts and User Entries

```
Select VPR HealthShare Utilities Option: SDA Upload List Monitor
Select PATIENT NAME: <Enter>
Select CONTAINER: <Enter>


VPR Global Upload Monitor                          Apr 16, 2021@15:08:30
SEQ       DFN       All containers for all patients
-------------------------------------------------------------------------
4838      8         5000000049V161696^Medication^16417;100^U^
4839      153       5000000100V704929^Medication^16419;100^U^
4840      153       5000000100V704929^Medication^16420;100^U^
4841      9         5000000098V757329^Observation^525;120.5^U^
4842      9         5000000098V757329^Observation^526;120.5^U^
4843      741       5000000026V032296^Medication^16547;100^U^
4844      741       5000000026V032296^Medication^16546;100^U^
4845      9         5000000098V757329^LabOrder^16578;100^U^
4846      9         5000000098V757329^LabOrder^16577;100^U^
4847      9         5000000098V757329^Medication^16550;100^U^
4848      181       5000000068V971252^Medication^15534;100^U^
4849      300       5000000128V793395^Medication^15556;100^U^
4850      129       5000000129V929287^Medication^15549;100^U^
4851      129       5000000129V929287^Medication^15551;100^U^
4852      300       5000000128V793395^Medication^15553;100^U^
4853      134       5000000046V523900^Medication^15555;100^U^
4854      756       1012856479V033267^Alert^7;26.13^U^
4855      128       5000000126V406128^Medication^16579;100^U^
4856      300       5000000128V793395^Medication^15578;100^U^

Press <return> to continue or ^ to exit ... <Enter>

VPR Global Upload Monitor                          Apr 16, 2021@15:09:06
SEQ       DFN       All containers for all patients
-------------------------------------------------------------------------
4857      9         5000000098V757329^Medication^16892;100^U^
4858      179       5000000115V760984^Medication^16374;100^U^
4859      755       1012856477V526483^Allergy^947;120.8^U^
4860      9         5000000098V757329^Medication^16413;100^U^

Current Sequence#: 4860
Do you wish to continue to monitor the upload global? YES// NO
```

5.6.1.3 Add Records to Upload List [VPR HS PUSH] Option

The **Add Records to Upload List** [VPR HS PUSH] option allows patient record id(s) to be manually added to the **AVPR** upload list, if it is suspected that the data cache has gotten out of synch or a record extract has errored.

Figure 11: Add Records to Upload List [VPR HS PUSH] Option—System Prompts and User Entries

```
Select VPR HealthShare Utilities Option: UPD <Enter> Add Records to Upload
List

Select PATIENT NAME: VPRPATIENT,ONE <Enter>        12-1-46    666000004
YES     NSC VETERAN          *MULTIPLE BIRTH*      SMB     SMB
Select CONTAINER: PROB <Enter> Problem
Update the full container? NO// ?

Enter YES to send all available records in this container to the ECR, or
NO to exit.

Update the full container? NO// <Enter>

This container has multiple sources; please select one.
Select SOURCE FILE: ?

Select a VistA source file for this container, or press return for all.

     Select one of the following:

          9000011   PROBLEM
          783       FUNCTIONAL INDEPENDENCE MEASUREMENT RECORD

Select SOURCE FILE: PROBLEM

Available Problems for VPRPATIENT,ONE:
1    JUL 29, 2019  Hearing loss (SCT 15188001)
Select ITEM(S): 1
Problem #1 added to update queue.

Select CONTAINER:
```

5.6.1.4 Enable Data Monitoring [VPR HS ENABLE] Option

The **Enable Data Monitoring** [VPR HS ENABLE] option enables or disables the tracking of patient data changes in the **AVPR** upload list, for retrieval by the RHC server. Turning off data monitoring effectively disables the VistA – HealthShare interface entirely, so *this option is for emergency use only and is locked with the VPR HS ENABLE security key*. A timestamp is captured when the system is turned on or off, for use in data recovery.

CAUTION: In a Production system, only use this option at the direction of Health Product Support (HPS) or VPR development staff!

Figure 12: Enable Data Monitoring [VPR HS ENABLE] Option—System Prompts and User Entries

```
Select VPR HealthShare Utilities Option: ON <Enter> Enable Data Monitoring


WARNING: Turning off data monitoring will cause the Regional Health
Connect
         server to become out of synch with VistA!!

    ***  Do NOT proceed unless directed to do so by Health Product Support
         or VPR development staff!

ARE YOU SURE? NO// YES

ENABLE MONITORING: YES// <Enter>
```

5.6.2 Test/Audit VPR Functions [VPR HS TESTER] Menu

The **Test/Audit VPR Functions** [VPR HS TESTER] menu shown in Figure 13 contains five options for testing and monitoring the VPR data monitoring functions:

Figure 13: Test/Audit VPR Functions [VPR HS TESTER] Menu

```
Select HealthShare Interface Manager Option: TEST <Enter> Test/Audit VPR
Functions


   SDA     Test SDA Extracts
   AVPR    SDA Upload List Monitor
   LOG     Data Upload List Log
   ENC     Encounter Transmission Task Monitor
   PAT     Inquire to Patient Subscriptions


Select Test/Audit VPR Functions Option:
```

Table 62 and the sub-sections that follow describe the **Test/Audit VPR Functions** [VPR HS TESTER] menu options:

Table 62: Test/Audit VPR Functions [VPR HS TESTER] Menu Options

Option Name	Option Text	Description
VPR HS TEST	Test SDA Extracts	This option runs the SDA data extracts for a selected patient and container to view onscreen.
VPR HS SDA MONITOR	SDA Upload List Monitor	This option monitors the **AVPR** list of upload requests for the RHC.
VPR HS LOG	Data Upload List Log	This option enables saving and viewing of the upload list in **^XTMP** for testing or debugging purposes, for up to **3 days**.
VPR HS TASK MONITOR	Encounter Transmission Task Monitor	This option checks the status of the task that collects encounters and related records from PCE and TIU for the **AVPR** upload list.
VPR HS PATIENTS	Inquire to Patient Subscriptions	This option displays information about a patient's subscription status for data monitoring.

5.6.2.1 Test SDA Extracts [VPR HS TEST] Option

The **Test SDA Extracts** [VPR HS TEST] option runs the SDA data extracts for a selected patient and container, to view the records in SDA format as they were sent to the HealthShare. No data is actually sent to the ECR using this option, the results are only displayed on screen for testing and debugging purposes.

Figure 14: Test SDA Extracts [VPR HS TEST] Option—System Prompts and User Entries

```
Select Test/Audit VPR Functions Option: SDA <Enter> Test SDA Extracts
Select PATIENT NAME: VPRPATIENT,ONE <Enter>       12-1-46    666000004
YES NSC VETERAN          *MULTIPLE BIRTH*       SMB     SMB
Select CONTAINER: PROBLEM
Select SOURCE FILE: <Enter>
Select START DATE: <Enter>
Select TOTAL #items: <Enter>
DEVICE: HOME// <Enter> Linux Telnet /SSh


#Results: 1

Press <return> to continue or ^ to exit results ... <Enter>

Result #1

<Problem>
  <UpdatedOn>2019-07-29T00:00:00</UpdatedOn>
  <Extension>
    <IsExposureAO>false</IsExposureAO>
    <IsExposureIR>false</IsExposureIR>
    <IsExposurePG>false</IsExposurePG>
    <IsExposureCV>true</IsExposureCV>
    <Location>
      <SDACodingStandard>VA44</SDACodingStandard>
      <Extension>
        <StopCode>
          <SDACodingStandard>AMIS</SDACodingStandard>
          <Code>203</Code>
          <Description>AUDIOLOGY</Description>
        </StopCode>
        <Service>MEDICINE</Service>
        <Specialty>
          <SDACodingStandard>VA45.7</SDACodingStandard>
          <Code>11</Code>
          <Description>INTERMEDIATE MED</Description>

Press <return> to continue or ^ to exit item ... ^


Select CONTAINER: <Enter>
Select PATIENT NAME:
```

5.6.2.2 SDA Upload List Monitor [VPR HS SDA MONITOR] Option

The **SDA Upload List Monitor** [VPR HS SDA MONITOR] option is duplicated on the VPR HS TESTER menu for the convenience of users testing VPR patches.

REF: For a description of this option, see Section 5.6.1.2.

5.6.2.3 Data Upload List Log [VPR HS LOG] Option

The **Data Upload List Log** [VPR HS LOG] option enables VPR to save a copy of the **AVPR** upload list entries in **^XTMP("VPRHS")** temporarily, for testing or debugging purposes. Entries are stored by date of activity, so a nightly Kernel job can remove data from the log after **3 days**.

The log can also be viewed in this option, by date of activity, and optionally by patient.

Figure 15: Data Upload List Log [VPR HS LOG] Option—System Prompts and User Entries

```
Select Test/Audit VPR Functions Option: LOG <Enter> Data Upload List Log

Upload list logging is currently OFF

Would you like to turn it ON? NO// Y <Enter> YES


   SDA     Test SDA Extracts
   AVPR    SDA Upload List Monitor
   LOG     Data Upload List Log
   ENC     Encounter Transmission Task Monitor
   PAT     Inquire to Patient Subscriptions

Select Test/Audit VPR Functions Option: LOG <Enter> Data Upload List Log

Upload list logging is currently ON

Select log action: VIEW// <Enter>
Select a date: Apr 16, 2021// ?

Available date is Apr 16, 2021, or enter ^ to exit.

Select a date: Apr 16, 2021// <Enter> (APR 16, 2021)
Starting sequence#: FIRST// <Enter>
Select PATIENT NAME: <Enter>


SEQ       DFN       Apr 16, 2021
-------------------------------------------------------------------------------
5342      4         5000000103V528688^Problem^187;9000011^U^

Press <return> to continue ... <Enter>

Select a date: Apr 16, 2021// ^

Select log action: VIEW// QUIT
```

5.6.2.4 Encounter Transmission Task Monitor [VPR HS TASK MONITOR] Option

The **Encounter Transmission Task Monitor** [VPR HS TASK MONITOR] option is duplicated on the VPR HS TESTER menu for the convenience of users testing VPR patches. However, the action of re-queuing the task, if it has stopped, is *not* available when the option is accessed via the VPR HS TESTER menu.

REF: For a description of this option, see Section 5.6.1.1.

5.6.2.5 Inquire to Patient Subscriptions [VPR HS PATIENTS] Option

The **Inquire to Patient Subscriptions** [VPR HS PATIENTS] option displays information about a selected patient's subscription status for HealthShare data monitoring.

Figure 16: Inquire to Patient Subscriptions [VPR HS PATIENTS] Option—System Prompts and User Entries

```
Select Test/Audit VPR Functions Option: PAT <Enter> Inquire to Patient
Subscriptions

Select PATIENT NAME: VPRPATIENT,TWO MEANS RD <Enter>        3-3-30
666000003 NO  SC VETERAN                    ORANGE TEAM

VPRPATIENT,TWO MEANS RD is subscribed in HealthShare
DFN: 3
ICN: 5000000101V983844
>> Patient DIED on May 29, 2021@08:00


Select PATIENT NAME: VPRPATIENT,THREE <Enter>     0-0-01    102000001P
**Pseudo SSN
**     YES     SC VETERAN         *MULTIPLE BIRTH*      SMB     SMB

VPRPATIENT,THREE is subscribed in HealthShare
DFN: 9
ICN: 5000000098V757329


Select PATIENT NAME: NEWVPRPATIENT,RELEASE <Enter>       12-30-45
666000015     NO     COLLATERAL

                *** Patient Requires a Means Test ***

                      *** Please update ***


Enter <RETURN> to continue. <Enter>

MEANS TEST REQUIRED
   PATIENT REQUIRES A MEANS TEST

NEWVPRPATIENT,RELEASE is NOT subscribed in HealthShare
DFN: 15
ICN: NO MPI NODE


Select PATIENT NAME:
```

5.7 Call To Populate

The **Call To Populate (CTP)** is a utility created by the VPR team that can re-pull VistA patient records that already exist on the RHC server. It is used to update data records after national release of a VPR patch, which added extension properties or corrected a data extract problem.

REF: This document describes the VistA CTP Utility, for more information on the Veterans Data Integration and Federation Enterprise Platform (VDIF-EP) CTP Utility, see the *VDIF-EP Utilities User Guide* (**vdif_ug_utilities.pdf**); located in the VDIF-EP GitHub repository.

5.7.1 VPRZCTP

Description

The **VPRZCTP** routine exists on each RHC server to support the CTP utility. It is in the **VPRZ** namespace as it is only for use by the RHC and is *not* exported to any VistA site. Routine mappings tell the RHC to look for **VPRZ** routines on its system rather than in VistA. Because the job started on the RHC, the results will accumulate in a global there instead of filling up a **^TMP** or **^XTMP** global in VistA.

VPRZCTP itself does *not* actually extract any data. It uses the VPR CONTAINER (#560.1) file and existing Entity file definitions to search for affected records, but it only executes the Query Routine. The resulting record identifiers are formatted like the strings used by the **AVPR** index and returned to the RHC for processing with the real-time updates.

Format

```
EN^VPRZCTP(start,stop,max,routine,type,id,format,number,dfn,result)
```

Input Parameters

All input parameters are *optional*; however, if the **type** input parameter is *not* defined then no data can be returned.

start: Date to start searching for records (default is all records).

stop: Date to stop searching for records (default is all records).

max: Maximum number of items to return per container (default is **9999**).

routine: Name of a **VPRZ** routine to execute for a specialized search.

type: Name of the desired SDA Container(s) and optional source file number, separated by commas, each in the format:

Container name_[";"_VistA source file number]

id: Record identifier, in the format:

internal entry number_";"_VistA source file number

format: String indicating the type of results to return, as:

- **"OPS"—**Individual record identifier strings (default).
- **"CNT"—**A count of the records found by container.

number: Base number from which to start incrementing the sequence numbers in the results array (default is **0**).

dfn: Pointer to the PATIENT (#2) file, or list of pointers as:

"~"_pointer_"~"_pointer_..._"~"_pointer

result: Closed array name for returning results, default is:

^PL.CTP(#) Global that accumulates on the RHC.

Output

This routine returns a list of record identifiers in the specified array, as well as indexes by patient and container. The total number of records returned can be found in the "**Tot**" node of the array.

Result(#): Record identifier string, formatted for use with AVPR index utility and indexed by:

Result("DFN", dfn, #)
Result("DOMAIN", dfn, type, #)

Result("Tot"): Nodes containing counts of the records found by the query, in the form:

Result("Tot")	total ^ updates ^ deletes ^ last subscript ^ error message, if any
Result("Tot", "U")	# of records to be updated
Result("Tot", "D")	# of records to be deleted
Result("Tot", type)	# of records in the container
Result("Tot", type, file#)	# of records in the container and source file

5.7.1.1 Examples

The following are some examples of running the **VPRZCTP** routine utilities to demonstrate how the RHC server calls it and the results returned:

NOTE: This routine exists only on the RHC servers and *not* in any VistA site.

- Error! Reference source not found.
- **CTP by Domain: CNT**
- **CTP by Patient**
- **CTP by ID**
- **CTP by Patch**

5.7.1.1.1 CTP by Domain

Running the **CTP by Domain** utility only truly requires the container name; however, due to the volume of data in VistA other filters, such as a date range, are *strongly recommended*.

NOTE: Dates do *not* need to be passed in VA FileMan format. All input dates are validated using the VA FileMan **%DT** utility, so any format that passes this check is acceptable.

Any domain that relies on visits will also return any related Encounter records.

Figure 17: CTP by Domain Utility—Sample Results

```
>D EN^VPRZCTP(20210701,20211231,,,"Document",,,,,"RESULT") ZW RESULT
RESULT(1)="5000000103V528688^Document^1709;8925^U^1862^4"
RESULT(2)="5000000103V528688^Encounter^1862;9000010^U^^4"
RESULT(3)="5000000098V757329^Document^1716;8925^U^1860^9"
RESULT(4)="5000000098V757329^Document^1706;8925^U^1860^9"
RESULT(5)="5000000098V757329^Encounter^1860;9000010^U^^9"
RESULT(6)="5000000129V929287^Document^1726;8925^U^^129"
RESULT(7)="5000000148V605820^Document^1707;8925^U^1861^229"
RESULT(8)="5000000148V605820^Encounter^1861;9000010^U^^229"
RESULT("DFN",4,1)=""
RESULT("DFN",4,2)=""
RESULT("DFN",9,3)=""
RESULT("DFN",9,4)=""
RESULT("DFN",9,5)=""
RESULT("DFN",129,6)=""
RESULT("DFN",229,7)=""
RESULT("DFN",229,8)=""
RESULT("DOMAIN",4,"Document",1)=""
RESULT("DOMAIN",4,"Encounter",2)=""
RESULT("DOMAIN",9,"Document",3)=""
RESULT("DOMAIN",9,"Document",4)=""
RESULT("DOMAIN",9,"Encounter",5)=""
RESULT("DOMAIN",129,"Document",6)=""
RESULT("DOMAIN",229,"Document",7)=""
RESULT("DOMAIN",229,"Encounter",8)=""
RESULT("Tot")="8^8^0^8^"
RESULT("Tot","D")=0
RESULT("Tot","Document")=5
RESULT("Tot","Document",8925)=5
RESULT("Tot","Encounter")=3
RESULT("Tot","Encounter",9000010)=3
RESULT("Tot","U")=8

>
```

5.7.1.1.2 CTP by Domain: CNT

The "**CNT**" format of the **CTP by Domain** utility performs the same query as the regular **CTP by Domain** utility, but it only returns the index and total nodes to the RHC server. The "**CNT**" parameter simply tells **CTP** to only count the number of entries it finds that fit the criteria; it does *not* actually return all of the record ids or do the update. This is sometimes used first to get an estimate of how long it takes the actual **CTP by Domain** to complete at a given site.

Figure 18: CTP by Domain: CNT Utility—Sample Results

```
>D EN^VPRZCTP(20210701,20211231,,,"Document",,"CNT",,,"RESULT") ZW RESULT
RESULT("DFN",4,1)=""
RESULT("DFN",4,2)=""
RESULT("DFN",9,3)=""
RESULT("DFN",9,4)=""
RESULT("DFN",9,5)=""
RESULT("DFN",129,6)=""
RESULT("DFN",229,7)=""
RESULT("DFN",229,8)=""
RESULT("DOMAIN",4,"Document",1)=""
RESULT("DOMAIN",4,"Encounter",2)=""
RESULT("DOMAIN",9,"Document",3)=""
RESULT("DOMAIN",9,"Document",4)=""
RESULT("DOMAIN",9,"Encounter",5)=""
RESULT("DOMAIN",129,"Document",6)=""
RESULT("DOMAIN",229,"Document",7)=""
RESULT("DOMAIN",229,"Encounter",8)=""
RESULT("Tot")="8^8^0^8^"
RESULT("Tot","D")=0
RESULT("Tot","Document")=5
RESULT("Tot","Document",8925)=5
RESULT("Tot","Encounter")=3
RESULT("Tot","Encounter",9000010)=3
RESULT("Tot","U")=8

>
```

5.7.1.1.3 CTP by Patient

The **CTP by Patient** utility can be run for a single patient by passing the local PATIENT (#2) pointer in the **dfn** parameter. A finite list of patient dfn's can also be requested by passing in a string whose first character is the delimiter separating each dfn. For example: **"~129~231~744"**.

Figure 19: CTP by Patient Utility—Sample Results

```
>D EN^VPRZCTP(20210701,20211231,,,"Document,Problem",,,,9,"RESULT") ZW
RESULT
RESULT(1)="5000000098V757329^Document^1716;8925^U^1860^9"
RESULT(2)="5000000098V757329^Document^1706;8925^U^1860^9"
RESULT(3)="5000000098V757329^Problem^195;9000011^U^^9"
RESULT(4)="5000000098V757329^Problem^155;9000011^U^^9"
RESULT(5)="5000000098V757329^Encounter^1860;9000010^U^^9"
RESULT("DFN",9,1)=""
RESULT("DFN",9,2)=""
RESULT("DFN",9,3)=""
RESULT("DFN",9,4)=""
RESULT("DFN",9,5)=""
RESULT("DOMAIN",9,"Document",1)=""
RESULT("DOMAIN",9,"Document",2)=""
RESULT("DOMAIN",9,"Encounter",5)=""
RESULT("DOMAIN",9,"Problem",3)=""
RESULT("DOMAIN",9,"Problem",4)=""
RESULT("Tot")="5^5^0^5^"
RESULT("Tot","D")=0
RESULT("Tot","Document")=2
RESULT("Tot","Document",8925)=2
RESULT("Tot","Encounter")=1
RESULT("Tot","Encounter",9000010)=1
RESULT("Tot","Problem")=2
RESULT("Tot","Problem",9000011)=2
RESULT("Tot","U")=5

>
```

5.7.1.1.4 CTP by ID

Use the **CTP by ID** utility to pass in a single record id. It is often used after an error has occurred. If the **id** parameter is passed, then the **type** and **dfn** parameters are also required.

Figure 20: CTP by ID Utility—Sample Results

```
>D EN^VPRZCTP(20210701,20211231,,,"Problem","195;9000011",,,9,"RESULT")

>ZW RESULT
RESULT(1)="5000000098V757329^Problem^195;9000011^U^^9"
RESULT("DFN",9,1)=""
RESULT("DOMAIN",9,"Problem",1)=""
RESULT("Tot")="1^1^0^1^"
RESULT("Tot","D")=0
RESULT("Tot","Problem")=1
RESULT("Tot","Problem",9000011)=1
RESULT("Tot","U")=1

>
```

5.7.1.1.5 CTP by Patch

Some containers, such as **Documents**, are very intensive to re-load; so, a special lookup routine can be written to target only those records directly affected by a patch. The **CTP by Patch** utility allows you to pass the CTP patch routine name into **VPRZCTP**. It should follow these constraints:

- Be named **VPRZP##**; where ## is the number of the corresponding VistA VPR patch; it will be loaded only on the RHC servers.
- Have a "**CTP**" line tag, that will be called from inside **VPRZCTP**.
- Support the search parameters for date range and patient that are available in the variables: **VPRBDT**, **VPREDT**, and **VPRPT** respectively.
- Support the **type** parameter, if multiple searches are performed; **type** is available in the **VPRTYPE** variable and can be whatever domain identifier needed by the routine, such as a container name or a line tag to execute.
- Can call the POST^VPRZCTP API for each record identified, to return the same results array.

Figure 21 is an example of the CTP routine from patch VPR*1*20, to find documents in the TIU DOCUMENT (#8925) file affected by the patch.

Figure 21: Sample CTP Routine—Finding Documents in the TIU DOCUMENT (#8925) File affected by the Patch

```
>D EN^VPRZCTP(20210701,20211231,,"VPRZP20","TIU",,,,,"RESULT") ZW RESULT
RESULT(1)="5000000098V757329^Document^1706;8925^U^1860^9^1706;TIU"
RESULT(2)="5000000098V757329^Document^1716;8925^U^1860^9^1716;TIU"
RESULT(3)="5000000098V757329^Encounter^1860;9000010^U^^9^1860"
RESULT(4)="5000000129V929287^Document^1726;8925^U^^129^1726;TIU"
RESULT(5)="5000000148V605820^Document^1707;8925^U^1861^229^1707;TIU"
RESULT(6)="5000000148V605820^Encounter^1861;9000010^U^^229^1861"
RESULT("DFN",9,1)=""
RESULT("DFN",9,2)=""
RESULT("DFN",9,3)=""
RESULT("DFN",129,4)=""
RESULT("DFN",229,5)=""
RESULT("DFN",229,6)=""
RESULT("DOMAIN",9,"Document",1)=""
RESULT("DOMAIN",9,"Document",2)=""
RESULT("DOMAIN",9,"Encounter",3)=""
RESULT("DOMAIN",129,"Document",4)=""
RESULT("DOMAIN",229,"Document",5)=""
RESULT("DOMAIN",229,"Encounter",6)=""
RESULT("Tot")="6^6^0^6^"
RESULT("Tot","D")=0
RESULT("Tot","TIU")=6
RESULT("Tot","U")=6

>
```