Virtual Patient Record (VPR) 1.0

Developer's Guide

January 2024

Department of Veterans Affairs (VA)

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Software Product Management (SPM)

Revision History

Date	Revision	Description	Author
01/24/2024	1.9	Updates: • Updated entries in Table 3, Table 5, Table 11, Table 12, Table 20, Table 21, Table 22, Table 23, Table 26, Table 27, Table 28, Table 29, and Table 36. • Updated Section 5, 5.1, 5.2, 5.2.1, 5.2.3, 5.2.3.2, 5.2.3.3, 5.5.1, and 5.6. • Section 5.1: Deleted the "VPR Entities" table. • Deleted the "VPR Subscription File and Indexes" section. • Added Section 5.3 and all subsections.	Virtual Patient Record (VPR) Development Team

10/10/2023	1.8	Updates:
		• Section 3: Added **DFN** or **patientId** to RPC tables.
		• Section 3.16:
		  ○ Updated the FILTER input parameter.
		  ○ Table 27: Added two new properties that are being added in the next VPR patch.
		• Section 4: Changed JSON filter names back to lowercase.
		• Section 5.2: Added new events to tables.
		• Section 3.18, 5.4.2, 5.4.3, and 5.4.8: Made a few other miscellaneous updates.
		• Table 60: Added **MDC OBSERVATION UPDATE** event protocol.
		• Table 61: Added TIU MULTIPLE SIGNATURE (#8925.7) file.
			VPR Development Team

07/06/2023	1.7	Updates for VPR Patches VPR*1*30 and 31: • Section 2.3.1 and 2.4.1: Added specific prompt references and text regarding results display options. • Updated Figure 2 and Figure 4: Added prompt to continue display. • Section 3.1, 3.8, 3.8.1, 3.8.2, 3.11, 3.13, 3.15, 4.4, 4.5, and 4.12: Updated FILTER parameter. • Section 3.9: Many orders not most.	VPR Development Team

Date	Revision	Description	Author

		• Section 3.10: In NOTE: "**Visit**" *not* "**VistA**."
		• Section 3.12 and 3.12.1: Moved text to another section.
		• Added Section 3.12.5, "Medications by Order."
		• Added Section 3.18, "Text Integration Utilities (TIU)."
		• Table 29: Updated **category** entry; removed "**RA**" value.
		• Added Section 3.18.1, "Clinical Procedure/Medicine Reports"; added Table 30.
		• Added Section 3.18.2, "Laboratory Reports"; added Table 31.
		• Added Section 3.18.3, "Radiology Reports"; added Table 32.
		• Table:
		  ○ Added **VPR DEL INSURANCE**, **VPR INSURANCE EXTENSION**, and **VPR SOCIAL HX EXTENSION** entries.
		  ○ Updated **VPR INSURANCE PLAN** entry.	

02/01/2023	1.6	Updates for VPR Patch VPR*1*30: • Table: Added the VPR DEL PTF 601, VPR DOCUMENT CLASS, VPR FAM HX EXTENSION, VPR ICD OP, VPR MAS SPECIALTY, VPR MED SPECIALTY, VPR ORDER DC EVENT, VPR ORDER DIALOG, VPR ORDER EVENT, VPR PATIENT TYPE, VPR PTF 601, VPR PTF 601 EXTENSION, VPR RELEASE EVENT, VPR SERVICE, VPR SURG SPECIALTY, VPR UNITS, VPR VPOV EXTENSION, and VPR VXAM EXTENSION entries. • Table 59: Added the PSO VDEF RDS O13 OP PHARM PPAR VS and PSO VDEF RDS O13 OP PHARM PREF VW entries. • Table 60: Added the DG PTF ICD PROCEDURE NOTIFIER entry. • Section 5.5.2, "Print an Entity Option:" Retitled to match option name.	VPR Development Team

Date	Revision	Description	Author
07/05/2022	1.5	Updates: • Table: 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 18: Added VPR ICR EVENT. • Updated Section 5.5.2, "Print an Entity Option:" Figure 19. • Added Section 5.7, "Call To Populate:" Added sub-sections and figures.	VPR Development Team
11/03/2021	1.4	Updates: • Table 37: Added the **locationName** and **locationUid** entries. • Table 39: Added the **displayOrder** and **vuid** entries. • Table 40: Added the **instructions** and **orderUid** entries. • Table 49: Added the **parent** entry. • Table 50: Added the **service** entry. • Table 55: Deleted **cpt** entry. • Table: 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 TEXT ONLY** entries. • Table 60: Added the **TIU DOCUMENT ACTION EVENT** entry.	VPR Development Team

Date	Revision	Description	Author
		• 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, 5.4.1, and 5.5.2: Added option names. • Updated Figure 19. • Section 5.3: Added application programming interface (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: Add intro text. • Table: 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 59: Deleted an entry. • Table 60: 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**. • Section: added link to Section 5.2. • Section 5.2.4.1: Updated intro text.	VPR Development Team

Date	Revision	Description	Author
		• Section 5.2.4.2: 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." • Renamed/Updated Section 5.2, "Data Update Events." • Renamed/Updated Section 5.3, "Generating SDA Results." • Updated VPRHS Utilities. • Renumbered/Updated Section 5.4.1, "$$ON^VPRHS: System Monitoring On/Off."	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

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	VPR Development Team

Date	Revision	Description	Author
		Technical Manual. • Updated document to follow current documentation standards and style guidelines.	
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. • Added a section describing VPR*1.0*4; Pages: 7-8. • Added two new ICRs to the External Relationships section; Page: 13.	VPR Development Team

Date	Revision	Description	Author
		• 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. • Updated the glossary section. Pages: All.	VPR Development Team
07/30/2012	0.05	Updates for Patch VPR*1.0*1:	VPR Development

Date	Revision	Description	Author
		Updated checksum for VPRDPSOR; Page 27.	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. • Updated External relationships table. • Added section for Files. • Updated Routine List table with new/changed routines and reordered	VPR Development Team

Date	Revision	Description	Author
		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

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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:

- Software Product Management (SPM)—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

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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 3, "XML Tables," and Section 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 can 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 "Select DOMAIN:" and "Select PATIENT Name:" 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 can 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.

Results will be displayed one record at a time, pausing between each to allow the tester to press **Enter** to continue or enter "^" to exit the results display and return to the "Select DOMAIN:" prompt.

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' >

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

 <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 can 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 "Select DOMAIN:" and "Select PATIENT Name:" 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.

Results are displayed one record at a time, pausing between each to allow the tester to press **Enter** to continue or enter "^" to exit the results display and return to the "Select DOMAIN:" prompt.

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":[

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

{"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]"}

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

{"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"}

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

{"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":""}

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

{"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":"%"}

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

{"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"}

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

{"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"}

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

{"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 searches are performed reverse-chronologically to return the most recent data, unless otherwise noted.

All input parameters are optional to refine the extract, except for **DFN** and **TYPE**. The Data File Number (DFN) is the internal entry number (IEN) from the PATIENT (#2) file, or alternatively, the Integration Control Number (ICN) for remote calls. This parameter's value can be provided in any of the following formats:

- **DFN**
- **DFN;ICN**
- **;ICN**

3.1 Allergy/Adverse Reaction Tracking (GMRA)

Input Parameters

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**reactions**".

START: (optional) VA FileMan date to filter on "**entered**".

STOP: (optional) VA FileMan date to filter on "**entered**".

MAX: (optional) Use *not recommended*, as reactions are *not* sorted.

ID: (optional) PATIENT ALLERGIES (#120.8) file IEN.

FILTER("nowrap"): **1** or **0**, to include breaks between lines in comment text.

Output

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

Elements	Attributes	Content
assessment	value	**not done** or **nka (**only returned if no reactions)
comment *	id	number
	enteredBy	NEW PERSON (#200) Name
	entered	VA FileMan **date.time**
	commentType	**O** or **E** (observed or error)
	commentText	string

Elements	Attributes	Content
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
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

***** = can be multiple

3.2 Clinical Observations (MDC)

Input Parameters

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**observations**".

START: (optional) VA FileMan date to filter on "**observed**".

STOP: (optional) VA FileMan date to filter on "**observed**".

MAX: (optional) Use with caution, as search is performed chronologically.

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

FILTER: (optional) None.

Output

Table 4: VPR GET PATIENT DATA—Clinical Observations (MDC): "observations" Type 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
	name	string
name	value	string
observed	value	VA FileMan **date.time**
position	code	VUID number
	name	string
product	code	VUID number
	name	string

Elements	Attributes	Content
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

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**clinicalProcedures**".

START: (optional) VA FileMan date to filter on "**dateTime**".

STOP: (optional) VA FileMan date to filter on "**dateTime**".

MAX: (optional) Number of most recent procedures to return.

ID: (optional) Variable pointer to **CP** data file/item.

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

Output

Table 5: VPR GET PATIENT DATA—Clinical Procedures (MC): "clinicalProcedures" Type 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
	localTitle	TIU DOCUMENT DEFINITION (#8925.1) Name
	nationalTitle	TIU VHA ENTERPRISE STANDARD TITLE

Elements	Attributes	Content
		(#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

***** = can be multiple

3.4 Clinical Reminders (PXRM)

Not all clinical reminders that may appear in Computerized Patient Record System (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

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**reminders**".

START: (optional) None.

STOP: (optional) None.

MAX: (optional) None.

ID: (optional) REMINDER DEFINITION (#811.9) file ien.

FILTER: (optional) None.

Output

Table 6: VPR GET PATIENT DATA—Clinical Reminders (PXRM): "reminders" Type 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

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**consults**".

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.

Output

Table 7: VPR GET PATIENT DATA—Consult/Request Tracking (GMRC): "consults" Type 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

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)1 Classification
	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

***** = can 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

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**functionalMeasurements**".

START: (optional) VA FileMan date to filter on "**admitted**", chronologically.

STOP: (optional) VA FileMan date to filter on "**admitted**", chronologically.

MAX: (optional) Use *not recommended*, as measurements are *not* sorted.

ID: (optional) FUNCTIONAL INDEPENDENCE (#783) file IEN.

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

Output

Table 8: VPR GET PATIENT DATA—Functional Independence Measurements (RMIM): "functionalMeasurements" Type 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**

Elements	Attributes		Content
		transChair	number, **1-7**
		transToilet	number, **1-7**
		transTub	number, **1-7**
		locomWalk	number, **1-7**
		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

Elements	Attributes		Content
onset	value		VA FileMan date

* = can be multiple

3.7 Integrated Billing (IB)

Input Parameters

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**insurancePolicies**".

START: (optional) None.

STOP: (optional) None.

MAX: (optional) Use *not recommended*, as policies are *not* sorted.

ID: (optional) None.

FILTER("status"): (optional) Desired status codes, see ^IBBDOC for possible values. Default = "**RB**".

Output

Table 9: VPR GET PATIENT DATA—Integrated Billing (IB): "insurancePolicies" Type 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

Elements	Attributes		Content
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**, **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

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**labs**".

START: (optional) VA FileMan date to filter on "**collected**".

STOP: (optional) VA FileMan date to filter on "**collected**".

MAX: (optional) Number of most recent accessions to return.

ID: (optional) LAB DATA (#63) file IEN string.

FILTER("type"): (optional) Desired "type" code(s). Default = "**CH**".

FILTER("nowrap"): (optional) **1** or **0**, to include breaks between comment lines.

Output

Table 10: VPR GET PATIENT DATA—Laboratory (LR): "labs" Type 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
	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
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 returns pathology data, and the recommended domain for retrieving microbiology results.

Input Parameters

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**accessions**".

START: (optional) VA FileMan date to filter on "**collected**".

STOP: (optional) VA FileMan date to filter on "**collected**".

MAX: (optional) Number of most recent accessions to return.

ID: (optional) LAB DATA (#63) file IEN string.

FILTER("type"): (optional) Desired "type" codes. Default = **all lab types**.

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

FILTER("nowrap"): (optional) **1** or **0**, to include breaks between comment lines.

Output

Table 11: VPR GET PATIENT DATA—Accessions: "accessions" Type Elements Returned

Elements	Attributes	Content
collected	value	VA FileMan **date.time**
comment	value	string
document *	id	TIU DOCUMENT (#8925) ien
(document only returned for MI and AP types)	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

Elements	Attributes	Content
name	value	ACCESSION (#68) Area
pathologist	code	NEW PERSON (#200) ien
(pathologist only returned for AP types)	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
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**

Elements	Attributes	Content
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
	order	ORDER (#100) ien
	performingLab	string

* = can 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

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**panels**".

START: (optional) VA FileMan date to filter on **date order released**.

STOP: (optional) VA FileMan date to filter on **date order released**.

MAX: (optional) Number of most recent orders to return.

ID: (optional) ORDER (#100) file IEN.

FILTER("type"): (optional) Desired "type" code. Default = "**CH**".

FILTER("nowrap"): (optional) **1** or **0**, to include breaks between comment lines.

Output

Table 12: VPR GET PATIENT DATA—Panels: "panels" Type 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
	name	LAB TEST (#60) Name
ordered	value	VA FileMan **date.time**
provider	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
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

***** = can be multiple

3.9 Orders (OR)

Many 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

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**orders**".

START: (optional) VA FileMan date to filter on "**released**" or "**entered**".

STOP: (optional) VA FileMan date to filter on "**released**" or "**entered**".

MAX: (optional) Number of most recent orders to return.

ID: (optional) ORDER (#100) file IEN string.

FILTER("view"): (optional) Desired "view" code, see **^ORQ1** for possible values. Default = **6** (Released Orders), sorted by "released".

Output

Table 13: VPR GET PATIENT DATA—Orders (OR): "orders" Type 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

Elements	Attributes	Content
location	code	HOSPITAL LOCATION (#44) ien
	name	HOSPITAL LOCATION (#44) Name
name	code	ORDERABLE ITEMS (#101.43) 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
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

Elements	Attributes	Content
	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
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 of ordered item, for labs and meds

***** = Can 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 **Visit**.

3.10.1 Exams

Input Parameters

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**exams**".

START: (optional) VA FileMan date to filter on "**dateTime**".

STOP: (optional) VA FileMan date to filter on "**dateTime**".

MAX: (optional) Number of most recent exams to return.

ID: (optional) V EXAM (#9000010.13) file IEN.

FILTER: (optional) None.

Output

Table 14: VPR GET PATIENT DATA—Exams: "exams" Type 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 EXAM (#9000010.13) ien
name	value	EXAM (#9999999.15) Name
result	value	string

3.10.2 Education Topics

Input Parameters

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**educationTopics**".

START: (optional) VA FileMan date to filter on "**dateTime**".

STOP: (optional) VA FileMan date to filter on "**dateTime**".

MAX: (optional) Number of most recent education instances to return.

ID: (optional) V PATIENT ED (#9000010.16) file IEN.

FILTER: (optional) None.

Output

Table 15: VPR GET PATIENT DATA—Education Topics: "educationTopics" Type 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

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**healthFactors**".

START: (optional) VA FileMan date to filter on "**recorded**".

STOP: (optional) VA FileMan date to filter on "**recorded**".

MAX: (optional) Number of most recent factors to return.

ID: (optional) V HEALTH FACTORS (#9000010.23) file IEN.

FILTER: (optional) None.

Output

Table 16: VPR GET PATIENT DATA—Health Factors: "healthFactors" Type 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

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**immunizations**".

START: (optional) VA FileMan date to filter on "**administered**".

STOP: (optional) VA FileMan date to filter on "**administered**".

MAX: (optional) Number of most recent immunizations to return.

ID: (optional) V IMMUNIZATION (#9000010.11) file IEN.

FILTER: (optional) None.

Output

Table 17: VPR GET PATIENT DATA—Immunizations: "immunizations" Type 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

Elements	Attributes	Content
		Number
manufacturer	value	IMMUNIZATION LOT (#9999999.41) Manufacturer
name	value	IMMUNIZATION (#9999999.14) Name
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

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**skinTests**".

START: (optional) VA FileMan date to filter on "**dateTime**".

STOP: (optional) VA FileMan date to filter on "**dateTime**".

MAX: (optional) Number of most recent skin tests to return.

ID: (optional) V SKIN TEST (#9000010.12) file IEN.

FILTER: (optional) None.

Output

Table 18: VPR GET PATIENT DATA—Skin Tests: "skinTests" Type 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

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**flags**".

START: (optional) None.

STOP: (optional) None.

MAX: (optional) None.

ID: (optional) DFN~PRF variable pointer string.

FILTER("nowrap"): (optional) **1** or **0**, to include breaks between content lines.

Output

Table 19: VPR GET PATIENT DATA—Patient Record Flags (DGPF): "flags" Type 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 can 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. As each type is processed in sequence, use of MAX is discouraged with multiple types.

The PS Application Programming Interface (API) used to get the data sorts meds by expiration date and includes orders that expire on or after the **START** value but omit those that do *not* begin until after the **STOP** value.

NOTE: Results can include orders that expire after the **STOP** value, or that have no expiration date.

3.12.1 Inpatient (Unit Dose) Medications

Input Parameters

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**meds**".

START: (optional) VA FileMan date to filter on "**expires**", chronologically.

STOP: (optional) VA FileMan date to filter on "**expires**", chronologically.

MAX: (optional) Number of most recent inpatient med orders to return.

ID: (optional) ORDER (#100) file IEN.

FILTER("vaType"): (optional) "**I**".

Output

Table 20: VPR GET PATIENT DATA—Inpatient (Unit Dose) Medications: "meds" Type 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

Elements	Attributes		Content
	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
	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**)
indication	value		string
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

Elements	Attributes		Content
	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
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**

Elements	Attributes		Content
stop	value		VA FileMan **date.time**
vaStatus	value		ORDER STATUS (#100.01) Name
vaType	value		I

***** = Can be multiple.

3.12.2 IV Fluids (Infusions)

Input Parameters

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**meds**".

START: (optional) VA FileMan date to filter on "**expires**", chronologically.

STOP: (optional) VA FileMan date to filter on "**expires**", chronologically.

MAX: (optional) Number of most recent infusion orders to return.

ID: (optional) ORDER (#100) file IEN.

FILTER("vaType"): (optional) "**V**".

Output

Table 21: VPR GET PATIENT DATA—IV Fluids (Infusions): "meds" Type 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

Elements	Attributes		Content
	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
IMO	value		boolean (**1** or **0**)
indication	value		string
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”
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

Elements	Attributes		Content
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
		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**

***** = Can be multiple.

3.12.3 Outpatient Medications

Input Parameters

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**meds**".

START: (optional) VA FileMan date to filter on "**expires**", chronologically.

STOP: (optional) VA FileMan date to filter on "**expires**", chronologically.

MAX: (optional) Number of most recent outpatient med orders to return.

ID: (optional) ORDER (#100) file IEN.

FILTER("vaType"): (optional) "**O**".

Output

Table 22: VPR GET PATIENT DATA—Outpatient Medications: "meds" Type 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
daysSupply	value		number
dose *	dose		string
	units		string
	unitsPerDose		number
	noun		string
	route		MEDICATION ROUTES (#51.2) Abbreviation

Elements	Attributes		Content
	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
indication	value		string
lastFilled	value		VA FileMan **date.time**
location	code		HOSPITAL LOCATION (#44) ien
	name		HOSPITAL LOCATION (#44) Name
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

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
parked	value		boolean (**1** or **0**)
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
		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

Elements	Attributes		Content
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**

***** = Can be multiple.

3.12.4 Non-VA Medications

Input Parameters

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**meds**".

START: (optional) VA FileMan date to filter on "**expires**", chronologically.

STOP: (optional) VA FileMan date to filter on "**expires**", chronologically.

MAX: (optional) Number of most recent non-VA med orders to return.

ID: (optional) ORDER (#100) file IEN.

FILTER("vaType"): (optional) "**N**".

Output

Table 23: VPR GET PATIENT DATA—Non-VA Medications: "meds" Type 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

Elements	Attributes		Content
	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
indication	value		string
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
	taxonomyCode		PERSON CLASS (#8932.1) X12 Code

Elements	Attributes		Content
	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**

***** = Can be multiple.

3.12.5 Medications by Order

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

This domain also supports the different order views available in the **Orders** (**OR**) domain.

Input Parameters

DFN:	(required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).
TYPE:	(required) "**pharmacy**".
START:	(optional) VA FileMan date to filter on "**ordered**", chronologically.
STOP:	(optional) VA FileMan date to filter on "**ordered**", chronologically.
MAX:	(optional) Number of most recent med orders to return.
ID:	(optional) ORDER (#100) file IEN.
FILTER("vaType"):	(optional) "**I**", "**V**", "**O**", or "**N**".
FILTER("view"):	(optional) Desired "view" code from **^ORQ1** (only 1-7, 18, and 23 are supported). Default = **6** (Released Orders).

This domain returns the same data elements as the other Pharmacy domains in Section 3.12.

REF: For details on each medication type, see Table 20 through Table 23.

3.13 Problem List (GMPL)

Input Parameters

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**problems**".

START: (optional) VA FileMan date to filter on "**onset**".

STOP: (optional) VA FileMan date to filter on "**onset**".

MAX: (optional) Use *not recommended*, as problems are *not* sorted.

ID: (optional) Problem file #9000011 IEN.

FILTER("status"): (optional) Desired "status" code. Default = "" (all).

Output

Table 24: VPR GET PATIENT DATA—Problem List (GMPL): "problems" Type 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

Element	Attributes	Content
provider	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
removed	value	boolean (**1** or **0**)
resolved	value	VA FileMan date
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

***** = Can be multiple.

3.14 Radiology/Nuclear Medicine (RA)

Input Parameters

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**radiologyExams**".

START: (optional) VA FileMan date to filter on "**dateTime**".

STOP: (optional) VA FileMan date to filter on "**dateTime**".

MAX: (optional) Number of most recent exams to return.

ID: EXAMINATIONS (#70.03) subfile IEN string.

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

Output

Table 25: VPR GET PATIENT DATA—Radiology/Nuclear Medicine (RA): "radiologyExams" Type 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
	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

Elements	Attributes	Content
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
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**

***** = Can be multiple.

3.15 Registration (DPT)

Input Parameters

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**demographics**".

START: (optional) None.

STOP: (optional) None.

MAX: (optional) None.

ID: (optional) PATIENT (#2) file IEN.

FILTER("nowrap"): (optional) **1** or **0**, to include breaks between lines in flag text.

Output

Table 26: VPR GET PATIENT DATA—Registration (DPT): "demographics" Type 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
	name		NEW PERSON (#200) Name
bid	value		String
died	value		VA FileMan date
disability *	printName		DISABILITY CONDITION (#31) Name
	scPercent		number

Elements	Attributes		Content
	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
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**

Elements	Attributes		Content
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
	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

Elements	Attributes		Content
	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
		postalCode	string
	telecom	usageType	**H**, **MC**, or **WP**
		value	string
telecom	usageType		**H**, **MC**, or **WP**
	value		string

Elements	Attributes		Content
veteran	value		boolean (**1** or **0**)
ward †	code		WARD LOCATION (#42) ien
	name		WARD LOCATION (#42) Name

***** = Can be multiple.

† = Only populated if the patient is currently admitted.

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

DFN:	(required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).
TYPE:	(required) "**appointments**".
START:	(optional) VA FileMan date to filter on "**dateTime**". Default = **TODAY**.
STOP:	(optional) VA FileMan date to filter on "**dateTime**". Default = **all future**.
MAX:	(optional) Number of (future) appointments to return.
ID:	(optional) Inverse visit string ("servCatg;date.time;locationIEN").
FILTER("status"):	(optional) Desired status code(s). For possible values, see the "Application Programming Interface – SDAPI/Available Data Filters" section in the Patient Information Management System (PIMS) Technical Manual.

Output

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

Elements	Attributes	Content
apptStatus	value	**SCHEDULED/KEPT**, **INPATIENT**, **NO-SHOW**, **CANCELLED BY PATIENT**, **CANCELLED BY CLINIC**, **RESCHEDULED**, **NO ACTION TAKEN**
cancelled	value	VA FileMan **date.time**
cancelReason	value	CANCELLATION REASONS (#409.2) Name
checkIn	value	VA FileMan **date.time**
checkOut	value	VA FileMan **date.time**
clinicStop	code	CLINIC STOP (#40.7) AMIS StopCode
	name	CLINIC STOP (#40.7)7 Name
dateTime	value	VA FileMan **date.time**
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name

Elements	Attributes	Content
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
visit	value	VISIT (#9000010) ien
visitString	value	HOSPITAL LOCATION (#44) ien;dateTime; serviceCategory code

3.17 Surgery (SR)

Input Parameters

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**surgeries**".

START: (optional) VA FileMan date to filter on "**dateTime**".

STOP: (optional) VA FileMan date to filter on "**dateTime**".

MAX: (optional) Number of most recent surgical procedures to return.

ID: (optional) SURGERY (#130) file IEN.

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

Output

Table 28: VPR GET PATIENT DATA—Surgery (SR): "surgeries" Type 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

Elements	Attributes	Content
	nationalTitle	TIU VHA ENTERPRISE STANDARD TITLE (#8926.1)
	vuid	VUID number
otherProcedure *	code	CPT Code
	name	CPT Description
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)

Completed TIU Documents in the Progress Note and Discharge Summary classes are returned *without* text by default unless otherwise requested. Usually, Clinical Procedure (**CP**), Lab (**LR**), and Surgery (**SR**) reports are in their own classes and *must* be requested separately.

The document extract can also return reports from other sources, in addition to TIU. See the following sub-sections for other supported source files.

Input Parameters

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**documents**".

START: (optional) VA FileMan date to filter on "**referenceDateTime**".

STOP: (optional) VA FileMan date to filter on "**referenceDateTime**".

MAX: (optional) Number of most recent documents to return.

ID: (optional) TIU DOCUMENTS (#8925) file IEN.

FILTER("category"): (optional) Desired "category" code.

FILTER("status"): (optional) "**completed**", "**unsigned**", or "**all**" (for current user).

FILTER("loinc"): (optional) LOINC code (see LOINC codes list following (Table 29).

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

Output

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

Elements	Attributes	Content
category	value	**PN**, **DS**, **CR**, **CP**, **SR**, **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

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
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
	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)

Elements	Attributes	Content
		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
type	value	**PN**, **DS**, **CR**, **CP**, **SR**, **LR**, **C**, **W**, **A**, or **D**

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 was no direct link in VistA between the TIU titles and LOINC codes when this RPC was created, the above list of codes was 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 are the same value passed into the extract.

3.18.1 Clinical Procedure/Medicine Reports

Use the **CP** category to return all Clinical Procedure reports. Those stored in TIU return the data elements listed in Table 29. Older Medicine package reports are *not* stored in TIU and return only the elements shown in Table 30.

Input Parameters

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**documents**".

FILTER("category"): (required) "**CP".**

START: (optional) VA FileMan date to filter on "**referenceDateTime**".

STOP: (optional) VA FileMan date to filter on "**referenceDateTime**".

MAX: (optional) Number of most recent documents to return.

ID: (optional) Medicine Package (files #69*.*) variable pointer.

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

Output

Table 30: VPR GET PATIENT DATA—Clinical Procedure/Medicine Reports: "documents" Type Elements Returned

Elements	Attributes	Content
category	value	**CP**
clinician [m]	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
	role	**A**, **S**, or **C**
	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

Elements	Attributes	Content
documentClass	value	**CLINICAL PROCEDURES**
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
id	value	Medicine package (#69*.*) variable pointer
localTitle	value	PROCEDURE/SUBSPECIALTY (#697.2) Name
loinc	value	LOINC code
nationalTitle	code	**4696566**
	name	**PROCEDURE REPORT**
nationalTitleService	code	**4696471**
	name	**PROCEDURE**
nationalTitleType	code	**4696123**
	name	**REPORT**
referenceDateTime	value	VA FileMan **date.time**
status	value	string

3.18.2 Laboratory Reports

Use the LR category to return all Laboratory reports. Those stored in TIU return the data elements listed in Table 29. Other Lab package reports *not* stored in TIU return only the elements shown in Table 31.

Input Parameters

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**documents**".

FILTER("category"): (required) "**LR".**

START: (optional) VA FileMan date to filter on "**referenceDateTime**".

STOP: (optional) VA FileMan date to filter on "**referenceDateTime**".

MAX: (optional) Number of most recent documents to return.

ID: (optional) LAB DATA (#63) subfile identifier string (subscript_"**;**"_inverse collection date.time).

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

Output

Table 31: VPR GET PATIENT DATA—Laboratory Reports: "documents" Type Elements Returned

Elements	Attributes	Content
clinician [m]	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
	role	**A**, **S**, or **C**
	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	**LR LABORATORY REPORTS**
encounter	value	VISIT (#9000010) ien
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
id	value	LAB DATA (#63) subscript_";"_inverse collection date.time
localTitle	value	LR <section> REPORT
loinc	value	LOINC code
nationalTitle	code	**4697105**
	name	**LABORATORY NOTE**
nationalTitleSubject	code	**4697104**
	name	**LABORATORY**
nationalTitleType	code	**4696120**
	name	**NOTE**
referenceDateTime	value	VA FileMan **date.time**

Elements	Attributes	Content
status	value	string
type	value	**LR**

3.18.3 Radiology Reports

Use the **RA** category to return all Radiology reports. These are *not* stored in TIU and return only the elements shown in Table 32.

Input Parameters

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**documents**".

FILTER("category"): (required) "**RA".**

START: (optional) VA FileMan date to filter on "**referenceDateTime**".

STOP: (optional) VA FileMan date to filter on "**referenceDateTime**".

MAX: (optional) Number of most recent documents to return.

ID: (optional) RAD NUC/MED PATIENT (#70) exam identifier string (**inverse exam date.time_"-"_case ien**).

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

Output

Table 32: VPR GET PATIENT DATA—Radiology Reports: "documents" Type Elements Returned

Elements	Attributes	Content
category	value	**RA**
clinician [m]	code	NEW PERSON (#200) ien
	name	NEW PERSON (#200) Name
	role	**A**, **S**, or **C**
	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

Elements	Attributes	Content
	specialization	PERSON CLASS (#8932.1) Area of Specialization
	service	NEW PERSON (#200) Service/Section
content		word-processing text
encounter	value	VISIT (#9000010) ien
facility	code	INSTITUTION (#4) Station Number
	name	INSTITUTION (#4) Name
id	value	RAD NUC/MED PATIENT (#70) inverse exam date.time_"-"_case ien
localTitle	value	RAD NUC/MED PROCEDURE (#71) Name
loinc	value	LOINC code
nationalTitle	code	**4695068**
	name	**RADIOLOGY REPORT**
nationalTitleSubject	code	**4693357**
	name	**RADIOLOGY**
nationalTitleType	code	**4696123**
	name	**REPORT**
referenceDateTime	value	VA FileMan **date.time**
status	value	string

3.19 Visits/PCE (PX)

Input Parameters

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**visits**".

START: (optional) VA FileMan date to filter on "**dateTime**".

STOP: (optional) VA FileMan date to filter on "**dateTime**".

MAX: (optional) Number of most recent visits to return.

ID: (optional) VISIT (#9000010) file IEN.

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

Output

Table 33: VPR GET PATIENT DATA—Visits/PCE (PX): "visits" Type Elements Returned

Elements	Attributes	Content
cpt *	code	CPT Code
	name	CPT Short Name
creditStopCode	code	CLINIC STOP (#40.7) AMIS StopCode
	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
	ranking	**P** or **S**

Elements	Attributes	Content
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 PACKAGE DAILY DATA**

Elements	Attributes	Content
stopCode	code	CLINIC STOP (#40.7) AMIS StopCode
	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

***** = Can be multiple.

3.20 Vital Measurements (GMV)

Input Parameters

DFN: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

TYPE: (required) "**vitals**".

START: (optional) VA FileMan date to filter on "**taken**".

STOP: (optional) VA FileMan date to filter on "**taken**".

MAX: (optional) Number of measurement sets to return (by "**taken**").

ID: (optional) GMRV VITAL MEASUREMENT (#120.5) file IEN, or VA FileMan **date.time** to match "**taken**" and return the set.

FILTER: (optional) None.

Output

Table 34: VPR GET PATIENT DATA—Vital Measurements (GMV): "vitals" Type 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

Elements	Attributes		Content
removed *	value		INCORRECT DATE/TIME, INCORRECT READING, INCORRECT PATIENT, INVALID RECORD
taken	value		VA FileMan **date.time**

***** = Can be multiple.

4 JSON Tables

This section includes tables that list the data elements returned by the **VPR GET PATIENT DATA JSON** RPC. All searches are performed reverse-chronologically to return the most recent data, unless otherwise noted.

This RPC accepts only one input parameter, which is an array passed by reference as a list of name-value pairs [i.e., **FILTER("name")=value**]. All input filters are optional to refine the extract, except for **domain** and **patientId**.

The **patientId** is the internal entry number (IEN) from the PATIENT (#2) file, or alternatively, the Integration Control Number (ICN) for remote calls. Its value can be provided in any of the following formats:

- **IEN**
- **IEN;ICN**
- **;ICN**

NOTE: For the PATIENT (#2) file, the IEN is the equivalent of the Data File Number (DFN).

4.1 Allergy/Adverse Reaction Tracking (GMRA)

Input Filters

patientId:	(required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).
domain:	(required) "**allergy**".
start:	(optional) VA FileMan date to filter on "**entered**".
stop:	(optional) VA FileMan date to filter on "**entered**".
max:	(optional) Use *not recommended*, as reactions are *not* sorted.
id:	(optional) PATIENT ALLERGIES (#120.8) file IEN.
uid:	(optional) Universal ID for item (**urn:va:domain:SYS:DFN:id**).

Output

Table 35: VPR GET PATIENT DATA JSON—Allergy/Adverse Reaction Tracking (GMRA): "allergy" Domain Elements Returned

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

* = Can be multiple.

4.2 Clinical Observations (MDC)

Input Filters

patientId: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

domain: (required) "**obs**".

start: (optional) VA FileMan date to filter on "**observed**".

stop: (optional) VA FileMan date to filter on "**observed**".

max: (optional) Use with caution, as search is performed chronologically.

id: (optional) OBS (#704.117) file ID (#.01) value.

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

Output

Table 36: VPR GET PATIENT DATA JSON—Clinical Observations (MDC): "obs" Domain Elements Returned

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

Elements	Attributes
result	
setID	
setName	
setStart	
setStop	
setType	
statusCode	
statusName	
typeCode	
typeName	
typeVuid	
uid	
units	

* = Can be multiple.

4.3 Clinical Procedures (MDC)

Input Filters

patientId: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

domain: (required) "**procedure**".

start: (optional) VA FileMan date to filter on "**dateTime**".

stop: (optional) VA FileMan date to filter on "**dateTime**".

max: (optional) Number of most recent procedures to return.

id: (optional) Variable pointer to **CP** data file/item.

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

Output

Table 37: VPR GET PATIENT DATA JSON—Clinical Procedures (MDC): "procedure" Domain Elements Returned

Elements	Attributes
category	
consultUid	
dateTime	
encounterUid	
facilityCode	
facilityName	
hasImages	
interpretation	
kind	
localId	
locationName	
locationUid	
name	
orderUid	
providers	providerName
	providerUid
requested	
results *	localTitle

Elements	Attributes
	nationalTitle
	uid
statusName	
uid	

* = Can be multiple.

4.4 Consult/Request Tracking (GMRC)

Input Filters

patientId: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

domain: (required) "**consult**".

start: (optional) VA FileMan date to filter on "**dateTime**".

stop: (optional) VA FileMan date to filter on "**dateTime**".

max: (optional) Number of most recent consult requests to return.

id: (optional) REQUEST/CONSULTATION (#123) file IEN.

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

nowrap: (optional) **1** or **0**, to include breaks between lines in reason.

Output

Table 38: VPR GET PATIENT DATA JSON—Consult/Request Tracking (GMRC): "consult" Domain Elements Returned

Elements	Attributes
category	
consultProcedure	
dateTime	
facilityCode	
facilityName	
interpretation	
localId	
orderName	

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

* = Can be multiple.

4.5 Laboratory (LR)

Input Filters

patientId:	(required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).
domain:	(required) "**lab**".
start:	(optional) VA FileMan date to filter on "**observed**".
stop:	(optional) VA FileMan date to filter on "**observed**".
max:	(optional) Number of most recent accessions to return.
id:	(optional) LAB DATA (#63) file IEN string.
uid:	(optional) Universal ID for item (**urn:va:domain:SYS:DFN:id**).
category:	(optional) CH, MI, or AP. Default = **all**.
nowrap:	(optional) **1** or **0**, to include breaks between comment lines.

Output

Table 39: VPR GET PATIENT DATA JSON—Laboratory (LR): "lab" Domain Elements Returned

Elements	Attributes	Content
bactRemarks		
categoryCode		
categoryName		
comment		
displayName		
displayOrder		
facilityCode		
facilityName		
gramStain *	result	
groupName		
groupUid		
high		
interpretationCode		
interpretationName		
labOrderId		
localId		

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

* = Can be multiple.

4.6 Orders (OR)

Input Filters

patientId: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

domain: (required) "**order**".

start: (optional) VA FileMan date to filter on date released.

stop: (optional) VA FileMan date to filter on date released.

max: (optional) Number of most recent orders to return.

id: (optional) ORDER (#100) file IEN string.

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

Output

Table 40: VPR GET PATIENT DATA JSON—Orders (OR): "order" Domain Elements Returned

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

Elements	Attributes
orderUid	
predecessor	
providerName	
providerUid	
results *	uid
scheduleName	
service	
start	
statusCode	
statusName	
statusVuid	
stop	
successor	
uid	

* = Can be multiple.

4.7 Patient Care Encounter (PX)

4.7.1 CPT Procedures

Input Filters

patientId: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

domain: (required) "**cpt**".

start: (optional) VA FileMan date to filter on "**entered**".

stop: (optional) VA FileMan date to filter on "**entered**".

max: (optional) Number of most recent procedures to return.

id: (optional) V CPT (#9000010.18) file IEN.

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

Output

Table 41: VPR GET PATIENT DATA JSON—CPT Procedures: "cpt" Domain Elements Returned

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

4.7.2 Exams

Input Filters

patientId: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

domain: (required) "**exam**".

start: (optional) VA FileMan date to filter on "**entered**".

stop: (optional) VA FileMan date to filter on "**entered**".

max: (optional) Number of most recent exams to return.

id: (optional) V EXAM (#9000010.13) file IEN.

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

Output

Table 42: VPR GET PATIENT DATA JSON—Exams: "exam" Domain Elements Returned

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

4.7.3 Education Topics

Input Filters

patientId: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

domain: (required) "**education**".

start: (optional) VA FileMan date to filter on "**entered**".

stop: (optional) VA FileMan date to filter on "**entered**".

max: (optional) Number of most recent education instances to return.

id: (optional) V PATIENT ED (#9000010.16) file IEN.

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

Output

Table 43: VPR GET PATIENT DATA JSON—Education Topics: "education" Domain Elements Returned

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

4.7.4 Health Factors

Input Filters

patientId:	(required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).
domain:	(required) "**factor**".
start:	(optional) VA FileMan date to filter on "**entered**".
stop:	(optional) VA FileMan date to filter on "**entered**".
max:	Number of most recent factors to return.
id:	(optional) V HEALTH FACTORS (#9000010.23) file IEN.
uid:	(optional) Universal ID for item (**urn:va:domain:SYS:DFN:id**).

Output

Table 44: VPR GET PATIENT DATA JSON—Health Factors: "factor" Domain 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 Filters

patientId: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

domain: (required) "**immunization**".

start: (optional) VA FileMan date to filter on "**administeredDateTime**".

stop: (optional) VA FileMan date to filter on "**administeredDateTime**".

max: (optional) Number of most recent immunizations to return.

id: (optional) V IMMUNIZATION (#9000010.11) file IEN.

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

Output

Table 45: VPR GET PATIENT DATA JSON—Immunizations: "immunization" Domain Elements Returned

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

Elements
seriesCode
seriesName
summary
uid

4.7.6 Purpose of Visit

Input Filters

patientId: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

domain: (required) "**pov**".

start: (optional) VA FileMan date to filter on "**entered**".

stop: (optional) VA FileMan date to filter on "**entered**".

max: (optional) Number of most recent reasons to return.

id: (optional) V POV (#9000010.07) file IEN.

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

Output

Table 46: VPR GET PATIENT DATA JSON—Purpose of Visit: "pov" Domain Elements Returned

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

Elements
uid

4.7.7 Skin Tests

Input Filters

patientId: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

domain: (required) "**skin**".

start: (optional) VA FileMan date to filter on "**entered**".

stop: (optional) VA FileMan date to filter on "**entered**".

max: (optional) Number of most recent exams to return.

id: (optional) V SKIN TEST (#9000010.12) file IEN.

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

Output

Table 47: VPR GET PATIENT DATA JSON—Skin Tests: "skin" Domain 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 Filters

patientId: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

domain: (required) "**med**".

start: (optional) VA FileMan date to filter on date released.

stop: (optional) VA FileMan date to filter on date released.

max: (optional) Number of most recent med orders to return.

id: (optional) ORDER (#100) file IEN.

vaType: (optional) **I**, **O**, or **N**.

Output

Table 48: VPR GET PATIENT DATA JSON—Medications: "med" Domain Elements Returned

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

Elements	Attributes
facilityCode	
facilityName	
fills *	daysSupplyDispensed
	dispenseDate
	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

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

* = Can be multiple.

4.8.2 Infusions

Input Filters

patientId: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

domain: (required) "**med**".

start: (optional) VA FileMan date to filter on date released.

stop: (optional) VA FileMan date to filter on date released.

max: (optional) Number of most recent med orders to return.

id: (optional) ORDER (#100) file IEN.

vaType: (optional) "**V**".

Output

Table 49: VPR GET PATIENT DATA JSON—Infusions: "med" Domain Elements Returned

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

Elements	Attributes
name	
orders	locationName
	locationUid
	ordered
	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	

* = Can be multiple.

4.9 Problem List (GMPL)

Input Filters

patientId: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

domain: (required) "**problem**".

start: (optional) None.

stop: (optional) None.

max: (optional) Use *not recommended*, as problems are *not* sorted.

id: (optional) PROBLEM (#9000011) file IEN.

status: (optional) **A** or **I**. Default = **A** (all).

Output

Table 50: VPR GET PATIENT DATA JSON—Problem List (GMPL): "problem" Domain Elements Returned

Elements	Attributes
acuityCode	
acuityName	
comments *	comment
	entered
	enteredByCode
	enteredByName
entered	
facilityCode	
facilityName	
icdCode	
icdName	
localId	
locationName	
locationUid	

Elements	Attributes
onset	
problemText	
providerName	
providerUid	
removed	
resolved	
service	
serviceConnected	
statusCode	
statusName	
uid	
unverified	
updated	

* = Can be multiple.

4.10 PTF (DG)

Input Filters

patientId: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

domain: (required) "**ptf**".

start: (optional) VA FileMan date to filter on movement date.

stop: (optional) VA FileMan date to filter on movement date.

max: (optional) Number of most recent treatment codes to return.

id: (optional) PTF (#45) file IEN.

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

Output

Table 51: VPR GET PATIENT DATA JSON—PTF (DG): "ptf" Domain Elements Returned

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

4.11 Radiology/Nuclear Medicine (RA)

Input Filters

patientId: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

domain: (required) "**image**".

start: (optional) VA FileMan date to filter on "**dateTime**".

stop: (optional) VA FileMan date to filter on "**dateTime**".

max: (optional) Number of most recent exams to return.

id: (optional) EXAMINATIONS (#70.03) subfile IEN string.

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

Output

Table 52: VPR GET PATIENT DATA JSON—Radiology/Nuclear Medicine (RA): "image" Domain Elements Returned

Elements	Attributes
case	
category	
dateTime	
diagnosis *	code
	lexicon
	primary
encounterName	
encounterUid	
facilityCode	
facilityName	
hasImages	
imageLocation	
imagingTypeUid	
interpretation	
kind	
localId	
locationName	

Elements	Attributes
locationUid	
name	
orderName	
orderUid	
providers	providerName
	providerUid
results	localTitle
	uid
statusName	
summary	
typeName	
uid	
verified	

* = Can be multiple.

4.12 Registration (DPT)

Input Filters

patientId: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

domain: (required) "**patient**".

start: (optional) None.

stop: (optional) None.

max: (optional) None.

id: (optional) PATIENT (#2) file IEN.

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

nowrap: (optional) **1** or **0**, to include breaks between lines of flag text.

Output

Table 53: VPR GET PATIENT DATA JSON—Registration (DPT): "patient" Domain Elements Returned

Elements	Attributes	Content
addresses *	city	
	postalCode	
	stateProvince	
	streetLine1	
	streetLine2	
aliases	familyName	
	fullName	
	givenNames	
briefId		
dateOfBirth		
died		
disability *	disPercent	
	name	
	sc	
	vaCode	
eligibility *	name	

Elements	Attributes	Content
	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	
meansTest		
pcProviderName		
pcProviderUid		
pcTeamMembers *	name	
	position	
	uid	

Elements	Attributes	Content
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	
	lrdfn	
	serviceConnected	
	serviceConnectionPercent	

* = Can 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 Filters

patientId:	(required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).
domain:	(required) "**appointment**".
start:	(optional) VA FileMan date to filter on "**dateTime**". Default = **TODAY**.
stop:	(optional) VA FileMan date to filter on "**dateTime**". Default = **all future**.
max:	(optional) Number of [future] appointments to return.
id:	(optional) Inverse visit string ("**servCatg;date.time;locationIEN**").
uid:	(optional) Universal ID for item (**urn:va:domain:SYS:DFN:id**).

Output

Table 54: VPR GET PATIENT DATA JSON—Scheduling (SDAM): "appointment" Domain Elements Returned

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

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

* = Can be multiple.

4.14 Surgery (SR)

Input Filters

patientId: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

domain: (required) "**surgery**".

start: (optional) VA FileMan date to filter on "**dateTime**".

stop: (optional) VA FileMan date to filter on "**dateTime**".

max: (optional) Number of most recent surgical procedures to return.

id: (optional) SURGERY (#130) file IEN.

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

Output

Table 55: VPR GET PATIENT DATA JSON—Surgery (SR): "surgery" Domain Elements Returned

Elements	Attributes
category	
dateTime	
encounterName	
encounterUid	

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

* = Can be multiple.

4.15 Text Integration Utilities (TIU)

Input Filters

patientId:	(required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).
domain:	(required) "**document**".
start:	(optional) VA FileMan date to filter on "**referenceDateTime**".
stop:	(optional) VA FileMan date to filter on "**referenceDateTime**".
max:	(optional) Number of most recent documents to return.
id:	(optional) TIU DOCUMENTS (#8925) file IEN.
uid:	(optional) Universal ID for item (**urn:va:domain:SYS:DFN:id**).
category:	(optional) **PN**, **CR**, **C**, **W**, **A**, **D**, **DS**, **SR**, **CP**, **LR**, or **RA.**
status:	(optional) "**completed**", "**unsigned**", or "**all**" (for current user).
text:	(optional) **1** or **0**, to include "content" text of document.

Output

Table 56: VPR GET PATIENT DATA JSON—Text Integration Utilities (TIU): "document" Domain Elements Returned

Elements	Attributes	Content
attendingName		
attendingUid		
documentClass		
documentTypeCode		
documentTypeName		
encounterName		
encounterUid		
entered		
facilityCode		
facilityName		
images		
localId		
localTitle		
nationalTitle	title	

Elements	Attributes	Content
	vuid	
nationalTitleRole	role	
	vuid	
nationalTitleService	service	
	vuid	
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		

* = Can be multiple.

4.16 Visits/PCE (PX)

Input Filters

patientId: (required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).

domain: (required) "**visit**".

start: (optional) VA FileMan date to filter on "**dateTime**".

stop: (optional) VA FileMan date to filter on "**dateTime**".

max: (optional) Number of most recent visits to return.

id: (optional) VISIT (#9000010) file IEN.

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

Output

Table 57: VPR GET PATIENT DATA JSON—Visits/PCE (PX): "visit" Domain Elements Returned

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

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

* = Can be multiple.

4.17 Vital Measurements (GMV)

Input Filters

patientId:	(required) PATIENT (#2) file IEN (optionally: **DFN;ICN** or **;ICN**).
domain:	(required) "**vital**".
start:	(optional) VA FileMan date to filter on "**observed**".
stop:	(optional) VA FileMan date to filter on "**observed**".
max:	(optional) Number of measurement sets to return (by "taken").
id:	(optional) GMRV VITAL MEASUREMENT (#120.5) file IEN, or VA FileMan **date.time** to match "**taken**" and return the set.
uid:	(optional) Universal ID for item (**urn:va:domain:SYS:DFN:id**).

Output

Table 58: VPR GET PATIENT DATA JSON—Vital Measurements (GMV)" "vital" Domain Elements Returned

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

Elements	Attributes
summary	
typeCode	
typeName	
uid	
units	

* = Can 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 to retrieve the requested data as XML. The names and structure of each VPR entity is intended to comply with the SDA model.

Patch VPR*1*8 also installed a mechanism to monitor application data events in VistA, to enable retrieval of updated information as a patient's data changes. This patch added new PROTOCOL (#101) file entries and links to other appropriate application events, as well as new utilities in the **VPRHS** routines to directly support the Regional Health Connect (RHC) servers.

5.1 Process Flow

In 2019, all data for active patients was loaded into the Edge Cache Repositories (ECR) on the RHC servers. A patient was considered active at run-time if they:

- Were a current inpatient.
- Had future scheduled appointments or admissions.
- Had a visit within the past three years.

Now, the VPR application performs two primary functions to support HS:

- Monitor patient data events in VistA and notify the RHC of new or modified records.
- Respond to requests from the RHC for an updated copy of those records.

If the patient does *not* currently have data in the ECR, a request for a full new patient load is added to the RHC update list instead.

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

5.2 Data Update Events

VPR monitors about **40** different patient data events in VistA to be able to notify the RHC that new or updated data is available. The VPR SUBSCRIPTION (#560) file tracks all active patients that have data in the ECR, and it maintains the upload lists used by the RHC to extract updated records.

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

An event in the PROTOCOL (#101) file can be triggered by an application after a record has been added or modified. Other applications add protocol Items to the event to be notified of the changes.

REF: For details about the Kernel Unwinder (**XQOR**) utility that processes protocols and subscribers, see the Kernel 8.0 and *Kernel Toolkit 7.3 Developer's Guide* on the VA Software Document Library (VDL).

VPR added listeners to the HL7 event protocols listed in Table 59:

Table 59: VPR HL7 Event Protocols and Associated Listeners

Event Protocol	Listener
RMIM DRIVER	VPR RMIM EVENTS
PSO VDEF RDS O13 OP PHARM PPAR VS	VPR PSO VDEF EVENTS
PSO VDEF RDS O13 OP PHARM PREF VW	VPR PSO VDEF EVENTS
VAFC ADT-A08 SERVER	VPR ADT-A08 CLIENT

VPR also monitors the *non*-HL7 event protocols listed in Table 60:

Table 60: 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 PTF ICD PROCEDURE NOTIFIER	VPR PTF OP 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
MDC OBSERVATION UPDATE	VPR OBSERVATION UPDATE
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

Event Protocol	Listener
SCMC PATIENT TEAM CHANGES	VPR PCMM TEAM
SCMC PATIENT TEAM POSITION CHANGES	VPR PCMM TEAM POSITION
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 61 were created to call a VPR listener routine on edits:

Table 61: VPR MUMPS Cross Reference Listeners

File	Index
TIU DOCUMENT (#8925)	AEVT
TIU MULTIPLE SIGNATURE (#8925.7)	AVPR
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 **5-10 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)

SDA organizes data first by patient but then by encounter, so any record that is linked to a visit must have that pointer defined when the record is created in the ECR; if assigned later, the original record will not be found and a duplicate will be created with the encounter.

When encounters are created or edited in VistA, 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 in some applications, so the **VPR PCE EVENTS** listener collects the visit number as well as 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 and the **^XTMP** entry is removed. 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, but if the new flag in **^XTMP** is **true** (**1**). Then, the **^XTMP** nodes are simply KILLed, because the record was never sent to the ECR.

REF: For more information on managing deleted records, see Section 5.3.3, "Deleting Records."

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 event is tasked, and thus, is not always executed before the note has been marked as complete and the index is executed. HealthShare requires the encounter to be uploaded to the ECR 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 **2 minutes**.

5.2.4 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 subfile and indexed for fast retrieval by HS in either of the following indexes:

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

5.2.4.1 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.

5.2.4.2 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 subfile 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.

5.3 Generating SDA Results

VPR responds to requests for data from the RHC with XML that is formatted according to the Summary Document Architecture (SDA) data model. SDA organizes patient data by classes called "containers," which correspond to various types of patient data.

VPR uses the VA FileMan ENTITY (#1.5) file to store the mappings between VistA files and fields, and SDA container classes and properties. There is a VPR entity for every file or subfile that feeds a container; some containers have multiple VistA sources, and so multiple VPR entities exist. Entities also exist for subclasses and common or shared data elements, such as providers or locations. The name and structure of each VPR entity is intended to comply with the SDA model.

The initial data set for the VPR Entities was based on the VPR RPCs. Unlike the VPR RPCs that are hard-coded, the DDE (Entity) utility provides a table-driven interface that can be easily updated and searched. SDA supports an aggregated data cache, so national standard codes are used when possible while still preserving VistA values. Some property values are translated to SDA or HL7 table values; see the SDA Class Reference for detailed information on each container.

5.3.1 SDA Containers

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 subfile that feeds a container; some containers have multiple VistA sources, and so multiple VPR entities exist. The names and structure of each VPR entity is intended to comply with the SDA model.

5.3.1.1 Advance Directives

The Advance Directive (AD) container holds completed TIU Documents with a title that is in the Advance Directives document class.

Table 62: Advance Directive SDA Container

Primary Source File	Entity	Events	Use Enc?	Can Delete
TIU Document (#8925)	VPR ADVANCE DIRECTIVE	AEVT index on #8925, TIU DOCUMENT ACTION EVENT protocol	No	Yes

A document *must* be complete or amended to be saved in the ECR; retracted documents are removed from the ECR. A patient should have only one active AD at a time per site, but VistA does *not* explicitly track or mark each as active or inactive. The status is set to inactive if the title contains "**rescind**".

ADs are not linked to an encounter in SDA, even if the document has a visit pointer in TIU.

5.3.1.2 Alerts

The Alert container holds Patient Record Flags (PRF), and copies of TIU documents with a title in the Crisis Note or Clinical Warning document classes (that populate the "**CW**" indicator in CPRS).

Table 63: Alert SDA Container

Primary Source Files	Entities	Events	Use Enc?	Can Delete
PRF Assignment (#26.13)	VPR PATIENT RECORD FLAG	DGPF PRF EVENT	No	No
TIU Document (#8925)	VPR CW NOTES	AEVT index on #8925, TIU DOCUMENT ACTION EVENT protocol	No	Yes

Only national flag assignments are extracted for the ECR, as local flag assignments have not historically been shared between VistA sites. Flag assignments are *not* deleted from the ECR, but they can be inactivated.

A document *must* be complete or amended to be saved in the ECR; retracted documents are removed from the ECR. Alert documents are *not* linked to an encounter in the ECR, even if the document has a visit pointer in TIU.

5.3.1.3 Allergies

The Allergy container holds all records from the Allergy/Adverse Reaction Tracking application for each patient, or an assessment entry if there are none.

Table 64: Allergy SDA Container

Primary Source Files	Entities	Events	Use Enc?	Can Delete
Patient Allergies (#120.8)	VPR ALLERGY	GMRA SIGN-OFF ON DATA GMRA VERIFY DATA GMRA ENTERED IN ERROR	No	No
Adverse Reaction Assessment (#120.86)	VPR ALLERGY ASSESSMENT	GMRA ASSESSMENT CHANGE	No	Yes

Unlike most other containers, records marked as Entered in Error are retained in SDA at the request of client applications, as this is the only way an allergy can be inactivated in VistA.

If the patient has *not* been assessed for allergies, or has been marked as having No Known Allergies, an Assessment record is sent to the ECR. The creation of an allergy later causes the assessment record to be removed from the ECR. If all reactions are inactivated (marked as Entered in Error), the assessment record will be re-sent to note No Known Allergies.

5.3.1.4 Appointments

The Appointment container is populated primarily from the Appointments subfile of the Patient (#2) file, supplemented with additional data from related entries in the Appointment subfile of the Hospital Location (#44) file and the Outpatient Encounter (#409.68) file. This container also contains entries from the Scheduled Admissions (#41.1) file.

Table 65: Appointment SDA Container

Primary Source Files	Entities	Events	Use Enc?	Can Delete
Appointment (#2.98) subfile	VPR APPOINTMENT	SDAM APPOINTMENT EVENTS	No	Yes
Scheduled Admission (#41.1)	VPR SCHEDULED ADMISSION	DG SA FILE ENTRY NOTIFIER	No	Yes

Appointments are *not* usually associated with a visit until checked-in, but SDA organizes data by encounter, and thus, requires the Encounter Number at the time a record is created, if used; populating this property later causes a duplicate entry to be created. For this reason, the visit number is retrieved from the related Outpatient Encounter entry when assigned and stored in an extension property instead of the standard Encounter Number.

Cancelled appointments and admissions are currently filtered out and removed from the ECR.

5.3.1.5 Diagnoses

The Diagnosis container holds ICD code assignments from the V POV (outpatient) and PTF (inpatient) files. The PTF extract pulls codes from the Principal Diagnosis (#79) field, and the Secondary Diagnosis 1-24 (#79.16-79.24915) fields.

Table 66: Diagnosis SDA Container

Primary Source Files	Entities	Events	Use Enc?	Can Delete
V POV (#9000010.07)	VPR V POV VPR DEL VPOV	PXK VISIT DATA EVENT	Yes	Yes
PTF (#45)	VPR PTF VPR DEL PTF	DG PTF ICD DIAGNOSIS NOTIFIER	Yes	Yes

All diagnoses expect an encounter and are *not* posted without a related VISIT (#9000010) file entry. Each ICD code in the PTF (#45) file creates a separate record in the ECR.

PCE allows V POV records to be deleted, and individual codes can be deleted from PTF. The VPR DEL entities use data saved in **^XTMP** to create the delete request.

REF: For more information on building delete messages, see Section 5.3.3, "Deleting Records."

5.3.1.6 Document

The Document container holds all completed TIU Documents, as well as any Lab or Radiology reports not stored in TIU. All documents must be complete (TIU) or verified (Lab or Rad) to be pulled into the ECR; retracted documents are removed from the ECR.

Table 67: Document SDA Container

Primary Source Files	Entities	Events	Use Enc?	Can Delete
TIU Document (#8925)	VPR DOCUMENT VPR DEL DOCUMENT	AEVT index on #8925, TIU DOCUMENT ACTION EVENT protocol	Yes	Yes
Rad/Nuc Med Reports (#74)	VPR RAD REPORT	RA EVSEND OR	No	Yes
Lab Data (#63)	VPR LRMI REPORT VPR LRAP REPORT	LR7O CH EVSEND OR LR7O AP EVSEND OR	No	No

Most TIU notes are linked to a visit, though not all. Reports *not* stored in TIU are not tied to an encounter.

Because notes are *not* sent to the ECR until complete, they *cannot* be deleted in VistA afterwards. Some retraction scenarios do, however, remove the Visit pointer from the note which the ECR needs to find and remove the note. The VPR DEL entity uses data saved in **^XTMP** to create the delete request.

REF: For more information on building delete messages. see Section 5.3.3, "Deleting Records."

Any addenda that are added to a note are always included in the original note text. VPR does *not* pull addenda separately for the ECR. Amending a note is a different process that retracts the original and creates a new one. The old note is kept as an audit trail, while the new one can be edited and replaces it. Any user can add an addendum to a note, but users *must* have access to a special TIU menu to be able to amend a note.

If the AP ESIG ON (#619) field in LABORATORY SITE (#69.9) file is set to **YES**, then pathology reports are stored in TIU and *must* follow all TIU processing rules (signed, complete). For lab reports *not* stored in TIU, including all microbiology reports, results *must* be verified and the report is generated via Lab package APIs.

Radiology reports are *not* stored in TIU at all and *must* have a Report Status of Verified, Released, or Electronically Filed. If a report is part of a set (multiple reports for a single order), all are saved together in the ECR as a single document like TIU addenda.

5.3.1.7 Encounters

The Encounter container is populated from the VISIT (#9000010) file. Supplemental data is pulled from the PATIENT MOVEMENT (#405) and ED LOG (#230) files for admissions and ED visits, respectively. All visits are pulled except for child visits that only store additional StopCodes for the parent visit.

Table 68: Encounter SDA Container

Primary Source Files	Entity(ies)	Event(s)	Use Enc?	Can Delete
Visit (#9000010)	VPR VISIT VPR VISIT STUB	PXK VISIT DATA EVENT	Yes	Yes
Patient Movement (#405)	VPR ADMISSION	DGPM MOVEMENT EVENTS	Yes	Yes
ED Log (#230)	VPR EDP LOG	AVPR index on #230 PXK VISIT DATA EVENT	Yes	Yes

PCE allows a visit to be deleted if no other records are pointing to it. Deleting an admission or ED log entry in VistA does *not* remove the encounter from the ECR until the related visit is also deleted.

REF: For more information on building delete messages, see Section 5.3.3, "Deleting Records."

A visit with a Service Category of "Hospitalization" corresponds to an admission in the PATIENT MOVEMENT (#405) file. A PCE item, VSIT PATIENT STATUS, on the DGPM MOVEMENT EVENTS protocol creates a new visit for a new admission. An entire inpatient episode is considered a single visit, so all subsequent movements simply update the admission encounter in the ECR. An admission *must* have a related visit number to be stored in the ECR, but most data is pulled from the movements. Movements can be deleted, but the encounter is *not* removed from the ECR until the related visit is deleted.

Most data in the ED LOG (#230) file that is relevant for the ECR is captured in the VISIT (#9000010) file, and as such is maintained by the PXK VISIT DATA EVENT. The **AVPR** index on #230 lets VPR know when an ED Log entry has been closed.

5.3.1.8 Family History

The Family History container is currently populated by the V Health Factors file, with any records that contain some form of 'Family History' in its name as there is no Factor Category that contains all history factors.

Table 69: Family History SDA Container

Primary Source File	Entity(ies)	Event(s)	Use Enc?	Can Delete
V Health Factor (#9000010.23)	VPR FAMILY HISTORY VPR DEL FAMILY HX	PXK VISIT DATA EVENT	Yes	Yes

Family History entries expect an encounter and are not posted without a related VISIT (#9000010) file entry.

V Health Factor records can also be deleted. The VPR DEL entity uses data saved in **^XTMP** to create the delete request.

REF: For more information on building delete messages, see Section 5.3.3, "Deleting Records."

5.3.1.9 Lab Orders

The Lab Order container is populated from the Orders file, with associated results from the Lab Data file. Orders are added to the ECR when released to the service; cancelled orders that were never acted on are removed from SDA. Orders with a schedule create "child" orders are released to Lab instead of the original "parent" order; only the "child" orders are sent to the ECR.

Table 70: Lab Order SDA Container

Primary Source Files	Entity(ies)	Event(s)	Use Enc?	Can Delete
Order (#100)	VPR LAB ORDER	OR EVSEND LRCH LR 7O CH EVSEND OR	No	Yes
Result Subfiles	Entities	Events		
Chem (#63.01)	VPR LRCH RESULT	LR7O CH EVSEND OR		
Microbiology (#63.05)	VPR LRMI RESULT	LR7O CH EVSEND OR		
Surgical Pathology (#63.08)	VPR LRSP RESULT	LR7O AP EVSEND OR		

Primary Source Files	Entity(ies)	Event(s)	Use Enc?	Can Delete
Cytopathology (#63.09)	VPR LRCY RESULT	LR7O AP EVSEND OR		
EM (#63.02)	VPR LREM RESULT	LR7O AP EVSEND OR		

The OR EVSEND protocols are invoked by CPRS when an order is released to the service for action. This usually happens on signature, but an order can be explicitly released without a signature (then signed later). All subsequent updates come from the package events.

REF: For details on these events, see the OE/RR documentation on the VDL.

Until very recently, pathology requests were made directly to the lab; there was no order for them in CPRS. Without an order, the results *cannot* be saved in the Lab Order container; older reports are available in the Document container.

Blood Bank requests and results are *not* currently being sent to the ECR.

5.3.1.10 Medications

The Medication container is populated primarily from the Orders file, with additional data coming from the various Pharmacy application files. Orders are sent to the ECR when released to the service; cancelled orders that were never acted on are removed from the ECR. Inpatient orders with a schedule create "child" orders are released to Pharmacy instead of the original "parent" order; only the "child" orders are sent to the ECR.

Table 71: Medication SDA Container

Primary Source Files	Entity(ies)	Event(s)	Use Enc?	Can Delete
Order (#100)	VPR MEDICATION	OR EVSEND PS PS EVSEND OR	No	Yes
Result Sub/files	Entities	Events		
Unit Dose (#55.06)	VPR DRUG PRODUCT VPR DOSAGE STEP VPR MED ADMINISTRATION	PS EVSEND OR PSB EVSEND OR		
IV (#55.01)	VPR IV PRODUCT VPR MED ADMINISTRATION	PS EVSEND OR PSB EVSEND OR		
Non-VA Meds	VPR DRUG PRODUCT	PS EVSEND OR		

Primary Source Files	Entity(ies)	Event(s)	Use Enc?	Can Delete
(#55.05)	VPR DOSAGE STEP			
Prescription (#52)	VPR DRUG PRODUCT VPR MED FILL	PS EVSEND OR PSO VDEF RDS 013 OP PHARM PREF VS		

The OR EVSEND protocols are invoked by CPRS when an order is released to the service for action. This usually happens on signature, but an order can be explicitly released without a signature (then signed later). All subsequent updates come from the package events.

REF: For details on these events, see the OE/RR documentation on the VDL.

5.3.1.11 Member Enrollment

The Member Enrollment container is populated by the Insurance Type subfile of the PATIENT (#2) file, which is managed by the Integrated Billing (IB) VistA application.

Table 72: Member Enrollment SDA Container

Primary Source Files	Entity(ies)	Event(s)	Use Enc?	Can Delete
Insurance Type (#2.312)	VPR INSURANCE VPR DEL INSURANCE	IBCN NEW INSURANCE EVENTS	No	Yes

Integrated Billing allows policy assignments to be deleted. The VPR DEL entity uses data saved in **^XTMP** to create the delete requeues.

REF: For more information on building delete messages, see Section 5.3.3, "Deleting Records."

5.3.1.12 Observations

The Observation container is populated primarily from the GMRV Vital Measurements file but can also include vitals stored in the Clinical Procedures OBS file.

Table 73: Observation SDA Container

Primary Source Files	Entity(ies)	Event(s)	Use Enc?	Can Delete
GMRV Vital Measurement (#120.5)	VPR VITAL MEASUREMENT	AVPR index on #120.5	No	No
OBS (#704.117)	VPR VITAL MEASUREMENT	MDC OBSERVATION UPDATE	No	No

The GMRVUT0 utility returns vitals stored in both files and the GMV APIs support the OBS GUID as well as a #120.5 IEN, so both files share a single entity. Observations are *not* linked to an encounter or removed from the ECR.

5.3.1.13 Other Orders

The Other Order container is populated by the Orders file and holds any kind of order that was not sent to Lab, Pharmacy, or Radiology. Orders are sent to the ECR when released; cancelled orders that were never acted on are removed from the ECR.

Table 74: Other Order SDA Container

Primary Source Files	Entity(ies)	Event(s)	Use Enc?	Can Delete
Order (#100)	VPR OTHER ORDER	OR EVSEND ORG OR EVSEND FH FH EVSEND OR OR EVSEND GMRC GMRC EVSEND OR	No	Yes

The OR EVSEND protocols are invoked by CPRS when an order is released to the service for action. This usually happens on signature, but an order can be explicitly released without a signature (then signed later). All subsequent updates come from the package events.

REF: For details on these events, see the OE/RR documentation on the VDL.

Orders for the OR package are also called "generic" or text orders, since they only live within CPRS and are *not* sent to any other service for action. As such, they usually go directly to an Active status and users can complete them inside CPRS (which invokes the event).

The Other Orders container also holds Dietetics (FH) and Consult (GMRC) orders. Consult events also cause an entry to be made or updated in the Referral container.

5.3.1.14 Patient

The Patient container is populated primarily from the PATIENT (#2) file and supplemented by various other Registration package files.

Table 75: Patient SDA Container

Primary Source Files	Entity(ies)	Event(s)	Use Enc?	Can Delete
Patient (#2)	VPR PATIENT	DG FIELD MONITOR VAFC ADT-08 SERVER	No	No
Patient Team Assignment (#404.42)	VPR PATIENT EXTENSION	SCMC PATIENT TEAM CHANGES	No	No
Patient Team Position Assignment (#230)	VPR PATIENT EXTENSION	SCMC PATIENT TEAM POSITION CHANGES	No	No

Authoritative demographics from Master Veteran Index (MVI) and the HC Registry are saved in the Enterprise Facility (EF) Edge and returned instead of any local value when a request is made to the Access Gateway. Most other properties are returned from the preferred or last treated facility, though some return all values tagged with the source facility.

5.3.1.15 Physical Exams

The Physical Exam container is populated by the V Exam file.

Table 76: Physical Exam SDA Container

Primary Source Files	Entity(ies)	Event(s)	Use Enc?	Can Delete
V EXAM (#9000010.13)	VPR V EXAM VPR DEL V EXAM	PXK VISIT DATA EVENT	Yes	Yes

All exams expect an encounter and are *not* posted without a related VISIT (#9000010) file entry.

PCE allows V EXAM records to be deleted. The VPR DEL entity uses data saved in **^XTMP** to create the delete request.

REF: For more information on building delete messages, see Section 5.3.3, "Deleting Records."

5.3.1.16 Problems

The Problem container is populated primarily by the Problem file but also includes Functional Independence Measurements. All problems, active and inactive, are sent to the ECR; "hidden" problems are filtered out or removed.

Table 77: Problem SDA Container

Primary Source Files	Entity(ies)	Event(s)	Use Enc?	Can Delete
Problem (#9000011)	VPR PROBLEM	GMPL EVENT	No	Yes
Functional Independence Measurement (#783)	VPR FIM	RMIM DRIVER	No	No

The preferred coding system for a problem is SNOMED, but early entries in this file used only ICD. The **Problem** property is populated by the SNOMED (#80001) field if available; otherwise, the ICD code (field #.01) is used.

FIM data is returned in the Problem container because previous CDA document specifications looked for it here, and much of SDA used similar structures. Current versions of both models now prefer the Social History container.

5.3.1.17 Procedures

The primary source for the Procedure container is the V CPT file. Inpatient ICD procedure codes are pulled from the Procedure Code 1-25 (#4-28) fields in the 601 subfile of the PTF (#45) file.

Table 78: Procedure SDA Container

Primary Source Files	Entity(ies)	Event(s)	Use Enc?	Can Delete
V CPT (#9000010.18)	VPR V CPT VPR DEL V CPT	PXK VISIT DATA EVENT	Yes	Yes
Surgery (#130)	VPR SURGERY	AEVT index on #8925	Yes	No
PTF 601 (#45.05)	VPR PTF 601 VPR DEL PTF 601	DG PTF ICD PROCEDURE NOTIFIER	Yes	Yes

All procedures expect an encounter and are *not* posted without a related VISIT (#9000010) file entry.

PCE allows V CPT records to be deleted, and individual codes can be deleted from PTF. The VPR DEL entities use data saved in **^XTMP** to create the delete request.

REF: For more information on building delete messages, see Section 5.3.3, "Deleting Records."

Many applications create entries in V CPT for billing and workload tracking, and some of those codes are returned to the ECR elsewhere. Surgery codes are pulled from the Surgery package instead, when a report has been completed in TIU indicating that the procedure has been done. Codes for office visit type are skipped in Procedure and instead returned as a property of the Encounter. Immunization CPT codes are returned in the Vaccination container.

5.3.1.18 Rad Order

The Rad Order container is populated from the Orders file, with associated results from the Rad/Nuc Med Patient file. Orders are added to the ECR when released to the service; cancelled orders that were never acted on are removed from SDA.

Table 79: Rad Order SDA Container

Primary Source Files	Entity(ies)	Event(s)	Use Enc?	Can Delete
Order (#100)	VPR RAD ORDER	OR EVSEND RA	No	Yes
Result Sub/file	Entity	Event		
Examinations (#70.03)	VPR RAD RESULT	RA EVSEND OR		

The OR EVSEND protocols are invoked by CPRS when an order is released to the service for action. This usually happens on signature, but an order can be explicitly released without a signature (then signed later). All subsequent updates come from the package events.

REF: For details on these events, see the OE/RR documentation on the VDL.

5.3.1.19 Referral

The Referral container is populated by the Request/Consultation file, which includes consult and clinical procedure requests. A consult makes an entry in both the Referral and the Other Order containers; it can also appear in the Procedure container if it has a corresponding Clinical Procedure record.

Table 80: Referral SDA Container

Primary Source Files	Entity(ies)	Event(s)	Use Enc?	Can Delete
Request/Consultation (#123)	VPR REFERRAL	OR EVSEND GMRC GMRC EVSEND OR	No	No

The OR EVSEND protocols are invoked by CPRS when an order is released to the service for action. This usually happens on signature, but an order can be explicitly released without a signature (then signed later). All subsequent updates come from the package events.

REF: For details on these events, see the OE/RR documentation on the VDL.

SDA does *not* support the Delete action for the Referral container, so cancelled consults are *not* removed from the ECR.

The Consult package supports both local and remote requests, via the Inter-Facility Consult (IFC) feature. The Referring Provider has different source fields for local requests (field #10 - #200 IEN) vs. remote (field #.126 – name string only). Remote consults that have only results will have no corresponding order in CPRS.

5.3.1.20 Social History

The Social History container is populated primarily by the V Health Factor file, with entries related to Smoking or Tobacco Use. It also contains a Pregnancy Status entry for female patients using data in the Women's Health package.

Table 81: Social History SDA Container

Primary Source Files	Entity(ies)	Event(s)	Use Enc?	Can Delete
V Health Factor (#9000010.23)	VPR SOCIAL HISTORY VPR DEL SOCIAL HX	PXK VISIT DATA EVENT	Yes	Yes
Pregnancy Status (#790.05) subfile	VPR PREGNANCY	WV PREGNANCY STATUS CHANGE EVENT	No	No

V Health Factors expect an encounter and are *not* posted without a related VISIT (#9000010) file entry, but the Pregnancy Status does not.

PCE allows V Health Factor records to be deleted. The VPR DEL entity uses data saved in **^XTMP** to create the delete request.

REF: For more information on building delete messages, see Section 5.3.3, "Deleting Records."

Only a single entry tracking the pregnancy status of female patients is currently being sent to the ECR, and not every entry in the Pregnancy Status Log.

5.3.1.21 Vaccination

The Vaccination container is populated primarily from the V Immunization file but may also include vaccination refusals in the V Imm Contra/Refusal Event or V Health Factor files.

Table 82: Vaccination SDA Container

Primary Source Files	Entity(ies)	Event(s)	Use Enc?	Can Delete
V Immunization (#9000010.11)	VPR VACCINATION VPR DEL VACCINATION	PXK VISIT DATA EVENT	Yes	Yes
V Imm Contra/Refusal Events (#9000010.707)	VPR ICR EVENT VPR DEL ICR	PXK VISIT DATA EVENT	Yes	Yes
V Health Factor (#9000010.23)	VPR VACC HF REFUSAL VPR DEL HF VACC REFUSAL	PXK VISIT DATA EVENT	Yes	Yes

All V files expect an encounter and are not posted without a related VISIT (#9000010) file entry.

PCE allows V file records to be deleted. The VPR DEL entities use data saved in **^XTMP** to create the delete request

REF: For more information on building delete messages, see Section 5.3.3, "Deleting Records."

5.3.2 Reference Files

Reference files themselves are *not* stored in the ECR, which is only for patient data. Most patient records point to one or more reference files, however, and SDA properties *must* be able to identify a record in a reference file consistently when needed.

Many VPR entities were created for reference files as coded elements, to be re-useable for consistency. Some have additional data included beyond the standard Code and Description.

Table 83: HS.SDA3.CodeTableDetail Data Types

SDA Data Type Class	Source File	Entity
ATCCode	VA Drug Class (#50.605)	VPR DRUG CLASS
CareProvider	New Person (#200)	VPR PROVIDER
CareProviderType	Person Class (#8932.1)	VPR PERSON CLASS
CareProviderType	Facility Treating Specialty (#45.7)	VPR SPECIALTY
Country	Country Code (#779.004)	VPR COUNTRY
Diagnosis	ICD Diagnosis (#80)	VPR ICD
DocumentCompletionStatus	TIU Status (#8925.6)	VPR DOCUMENT STATUS
DrugProduct	Drug (#50)	VPR DRUG PRODUCT
EthnicGroup	Ethnicity (#10.2)	VPR ETHNICITY
Generic	VA Generic (#50.6)	VPR DRUG GENERIC
HealthCareFacility	Hospital Location (#44)	VPR LOCATION
LabTestItem	Lab Test (#60)	VPR LAB TEST
Language	Language (#.85)	VPR LANGUAGE
MaritalStatus	Master Marital Status (#11.99)	VPR MARITAL STATUS
Observation	GMRV Vital Type (#120.51)	VPR VITAL TYPE
ObservationMethod	GMRV Vital Qualifier (#120.51)	VPR VITAL QUALIFIER
ObservationValueCode	Lab LOINC (#95.3)	VPR LOINC
OrderCategory	Display Group (#100.98)	VPR DISPLAY GROUP
Order	Orderable Item (#101.43)	VPR ORDERABLE ITEM
Organization	Institution (#4)	VPR FACILITY
Priority	Order Urgency (#101.42)	VPR ORDER URGENCY
Procedure	CPT (#81)	VPR CPT
Race	Race Master (#10.99)	VPR RACE
Reaction	Sign/Symptoms (#120.83)	VPR ALLERGY

SDA Data Type Class	Source File	Entity
		SIGN/SYMPTOM
Religion	Religion (#13)	VPR RELIGION
Route	Medication Routes (#51.2)	VPR MED ROUTE
State	State (#5)	VPR STATE
UoM	UCUM Codes (#757.5)	VPR UNITS
User	New Person (#200)	VPR USER

Table 84: HS.Local.VA.SDA3.CodeTableDetail Data Types

SDA Data Type	Source File	Entity
CreditStopCode	Clinic Stop (#40.7)	VPR AMIS
CPTModifier	CPT Modifier (#81.3)	VPR CPT MODIFIER
DocumentClass	TIU Document Definition (#8925.1)	VPR DOCUMENT CLASS
EligibilityCode	Eligibility Code (#8)	VPR ELIGIBILITY
MovementType	Facility Movement Type (#405.1)	VPR MAS MOVEMENT TYPE
NationalTitle	TIU VHA Enterprise Std Title (#8926.1)	VPR DOCUMENT TITLE
NationalTitleRole	TIU LOINC Role (#8926.3)	VPR DOCUMENT ROLE
NationalTitleService	TIU LOINC Service (#8926.5)	VPR DOCUMENT SERVICE
NationalTitleSetting	TIU LOINC Setting (#8926.4)	VPR DOCUMENT SETTING
NationalTitleSubject	TIU LOINC Subject Matter Domain (#8926.2)	VPR DOCUMENT SUBJECT
NationalTitleType	TIU LOINC Doc Type (#8926.6)	VPR DOCUMENT TYPE
Package	Package (#9.4)	VPR PACKAGE
Service	Service/Section (#49)	VPR SERVICE
StopCode	Clinic Stop (#40.7)	VPR AMIS
SurgicalSpecialty	Specialty (#42.4)	VPR MAS SPECIALTY
SurgicalSpecialty	Medical Specialty (#723)	VPR MED SPECIALTY
SurgicalSpecialty	Surgical Specialty (#45.3)	VPR SURG SPECIALTY
TransactionType	MAS Mvt Transaction Type (#405.3)	VPR MAS TRANSACTION TYPE
VAStatus	Order Status (#100.01)	VPR ORDER STATUS
WardLocation	Ward Location (#42)	VPR WARD LOCATION

5.3.3 Deleting Records

Records can be removed from the ECR if they are cancelled or marked in error in VistA. Most records in the ECR are in a complete or verified state so they can no longer be physically deleted from VistA. This preserves data that must be included in the delete request for the RHC to find the record in the ECR and mark it as deleted. Usually the record identifier is sufficient, but some containers require additional properties to match the record. If the record was linked to a visit, then encounter number will also be required.

PCE records can be truly deleted in VistA. A copy of the deleted record's **zero** node is saved in **^XTMP** by upload sequence number, so the SDA message can still be built when requested from the RHC:

Figure 5: Sample Deleted PCE Record Zero Node Saved in ^XTMP

```
^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
```

Entities can be created for building delete requests that use this data in **^XTMP** instead of the application file. Existing delete entities have names that begin with "**VPR DEL**" to easily identify them.

The ICD codes in the PTF (#45) file create entries in the Diagnosis and Procedure containers, and when one of those field values is deleted the old data is stored here as well. Some document retractions in TIU remove the visit pointer, so those are also handled by this mechanism.

5.3.4 Container File

The VPR CONTAINER (#560.1) file contains information about each SDA container class that has been implemented. The SOURCE FILE subfile links each VistA source for that container to one or more Entities used to build SDA messages.

Figure 6: Sample SDA Container Class Entry in the VPR CONTAINER (#560.1) File

```
NAME: DIAGNOSIS                          DISPLAY NAME: Diagnosis
SOURCE FILE NUMBER: 9000010.07
  UPDATE ENTITY: VPR V POV               DELETE ENTITY: VPR DEL V POV
SOURCE FILE NUMBER: 45
  UPDATE ENTITY: VPR PTF                 DELETE ENTITY: VPR DEL PTF
```

The **UPDATE ENTITY** is used to build most SDA messages, to send a new or updated record from VistA to the ECR. The **DELETE ENTITY** 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.

5.4 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 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

Figure 7: $$ON^VPRHS Extrinsic Function—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. Developers working in a system that is *not* linked to an RHC can use this call in programmer mode to replicate the actions of the RHC.

Format

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

Input Parameters

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

Output

None.

5.4.2.1 Example

Figure 8: EN^VPRHS API—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. Developers working in a system that is *not* linked to an RHC can use this call in programmer mode to replicate the actions of the RHC.

Format

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

Input Parameters

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

Output

None.

5.4.3.1 Example

Figure 9: UN^VPRHS API—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

Figure 10: $$SUBS^VPRHS Extrinsic Function—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

Figure 11: $$VALID^VPRHS Extrinsic Function—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

Figure 12: POST^VPRHS API—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

Figure 13: NEW^VPRHS API—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. Developers working in a system that is *not* linked to an RHC can use this call in programmer mode to replicate the actions of the RHC.

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

Figure 14: DEL^VPRHS API—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

Figure 15: GET^VPRHS API—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

Figure 16: GET^VPRHS API—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><CareProviderTyp: e><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

Figure 17: TEST^VPRHS API—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

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 18. The **VPR CONTAINER SOURCES** Print template can be used to show the primary Entities for each container and source.

Figure 18: 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
26.13                VPR PATIENT RECORD FLAG
8925                 VPR CW NOTES

ALLERGY
120.8                VPR ALLERGY
120.86               VPR ALLERGY ASSESSMENT

APPOINTMENT
2.98                 VPR APPOINTMENT
41.1                 VPR SCHEDULED ADMISSION

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

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

```
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
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 18) is used to build most SDA messages, to send a new or updated record from VistA to the ECR. The **DELETE ENTITY** (Figure 18) 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 Print an Entity 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 19, or **Detailed** to view all properties of each item.

Figure 19: 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

If data is not being saved in the ECR, ensure that the application events and tasks are all running, and that the SDA itself is building correctly and as expected.

The **HealthShare Interface Manager** [VPR HS MGR] menu shown in Figure 20 contains two sub-menus that can be used for monitoring the system and troubleshooting the SDA messages.

Figure 20: 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 85, describes the two **HealthShare Interface Manager** [VPR HS MGR] sub-menus that contain options that can be used for technical support or testing:

Table 85: 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 21 contains four options used for managing the interface between VistA and the RHC servers:

Figure 21: 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 86 and the sub-sections that follow describe the **VPR HealthShare Utilities** [VPR HS MENU] menu options:

Table 86: 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, "Tasked Events."

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 22: 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 23: 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 24: 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 25: 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 26 contains five options for testing and monitoring the VPR data monitoring functions:

Figure 26: 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 87 and the sub-sections that follow describe the **Test/Audit VPR Functions** [VPR HS TESTER] menu options:

Table 87: 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 27: 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, "SDA Upload List Monitor [VPR HS SDA MONITOR] Option."

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 28: 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, "Encounter Transmission Task Monitor [VPR HS TASK MONITOR] Option."

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 29: 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.

- **CTP by Domain**
- **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 30: 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 31: 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 DFNs can also be requested by passing in a string whose first character is the delimiter separating each dfn. For example: **"~129~231~744"**.

Figure 32: 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 33: 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 34 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 34: 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

>
```