



HealthInformaticsInitiative
TRANSFORMING VA HEALTH CARE DELIVERY



Virtual Patient Record (VPR) 1.0 Technical Manual



Department of Veterans Affairs
Health Systems Design and Development
VA Health Information Technology



Revision History

Date	Patch or Version	Description	Project Manager	Author
08/08/11	1.0	VPR version 1.0 Release	Deb Migliore	Ruth Markham





Contents

Revision History	ii
Overview	- 1 -
Remote Procedure Calls.....	- 2 -
External Relationships.....	- 3 -
Security Keys	- 5 -
Routines	- 5 -
Example.....	- 19 -
Checksums	- 20 -





Overview

This document provides technical information for Virtual Patient Record (VPR) version 1.0.

VPR Version 1.0 is a foundation software package component of the Health Management Platform architecture. This architecture is part of the scope of the Health Informatics Initiative.

VPR extracts patient data from domains at local and remote VistA sites to provide a cached view of patient charts. It provides normalized fields with common field names and data structures across domains. VPR includes two remote procedure calls (RPCs), one comprised of routines that extract data from VistA and the other that returns the current version number for VPR.

The VPR RPC for data extraction was initially installed in the Nationwide Health Information Network (NwHIN) namespace, which was called NHIN, and the NwHIN client has been using most of the extract routines in production to get and share data.

At this time, the VPR RPCs will be installed in its own VPR namespace and renumbered as VPR version 1.0. NwHIN can continue to use the extract routines in its NHIN namespace, but will need to access VPR v1.0, or subsequent versions as they are released, in order to take advantage of future enhancements to the extract routines.

Four routines in this release are new, have not previously been released to NwHIN:

VPRDGMRC	Consults extract
VPRDGPF	Patient Record Flags extract
VPRDOR	Orders extract
VPRDPXHF	Health Factors extract





Remote Procedure Calls

Remote Procedure Call	M Entry Point
VPR GET PATIENT DATA	GET^VPRD
VPR DATA VERSION	VERSION^VPRD

The VPR DATA VERSION RPC gets the value of the current version from VPR, and returns it as a string. Any application with the appropriate Data Base Integration Agreements (DBIAs) can use this RPC to extract the version from VPR.

The VPR GET PATIENT DATA RPC retrieves data from Vista, and returns it as XML in a ^TMP global. Any application with the appropriate Data Base Integration Agreements (DBIAs) can use this RPC to extract data from Vista.

Input parameters can be specified to determine the type and amount of data that will be extracted from Vista:

- Internal entry number from Patient file #2 [optionally DFN;ICN for remote calls] [required]
- The kind(s) of data to extract, which may include:
 - Allergies/Reactions
 - Appointments
 - Consults
 - Documents
 - Health Factors
 - Immunizations
 - Labs
 - Labs by Accession
 - Labs by Order/Panel
 - Orders
 - Patient Demographics
 - Patient Record Flags
 - Pharmacy
 - Pharmacy – Inpatient
 - Pharmacy – outpatient
 - Problems





- Procedures
 - Radiology Procedures
 - Surgical Procedures
 - Visits/Encounters
 - Vitals
- The date/time from which to begin searching for data [optional].
 - The date/time at which to end 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].
 - 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).

External Relationships

The following Database Integration Agreements (DBIAs) cover the use of the following routines and global references.

#	DBIA	Global Reference ICR #	Package
1	GMRCGUIB	2980	Consult Request Tracking
2	GMRCSLM1	2740	Consult Request Tracking
3	GMRVUT0	1446	Gen. Med. Rec. - Vitals
4	GMVRPCM	5702	Gen. Med. Rec. - Vitals
5	^DIC(31)	733	HINQ
6	XUSAP	4677	Kernel
7	^LR	525	Laboratory
8	^LAB(61)	524	Laboratory
9	^LRO(68)	1963	Laboratory
10	^LRO(69)	2407	Laboratory
11	LR7OR1	2503	Laboratory
12	LR7OU1	2955	Laboratory
13	ORQ1	3154	Order Entry/Results Reporting
14	ORQ12	5704	Order Entry/Results Reporting



#	DBIA	Global Reference ICR #	Package
15	ORX8	2467	Order Entry/Results Reporting
16	ORX8	3071	Order Entry/Results Reporting
17	PSOORRL	2400	Outpatient Pharmacy
18	^AUPNVSIT	2028	PCE Patient Care Encounter
19	^PXRMINDX	4290	PCE Patient Care Encounter
20	PXAPI	1894	PCE Patient Care Encounter
21	PXPXRM	4250	PCE Patient Care Encounter
22	^AUPNPROB	5703	Problem List
23	GMPLUTL2	2741	Problem List
24	^RADPT	2480	Radiology/Nuclear Medicine
25	^RARPT	5605	Radiology/Nuclear Medicine
26	^DGSL(38.1)	767	Registration
27	^DIC(42)	723	Registration
28	^DPT	5708	Registration
29	^DPT	5597	Registration
30	DGPFAPI	3860	Registration
31	^DIC(40.7)	557	Scheduling
32	^SRF(130)	5675	Surgery
33	^SRO(136)	4872	Surgery
34	SROESTV	3533	Surgery
35	^TIU(8925.1)	5677	Text Integration Utilities
36	^TIU(8925.1)	2321	Text Integration Utilities
37	^TIU(8926.1)	5678	Text Integration Utilities
38	TIUCNSLT	5546	Text Integration Utilities
39	TIUCP	3568	Text Integration Utilities
40	TIULQ	2693	Text Integration Utilities
41	TIULX	3058	Text Integration Utilities
42	TIUSROI	5676	Text Integration Utilities
43	TIUSRVLO	2834	Text Integration Utilities
44	TIUSRVLO	2865	Text Integration Utilities





#	DBIA	Global Reference ICR #	Package
45	TIUSRVR1	2944	Text Integration Utilities

Security Keys

The VPR RPC package contains no security keys.

Routines

The VPR RPC includes the following routines:

#	Routine	Description
1	VPRD	VPR GET PATIENT DATA RPC: responds to requests for data and serves as a broker, calling the appropriate VPR data extract routines to gather the requested data. VPR DATA VERSION RPC: returns a string identifying the current version of the VPR data extracts.





#	Routine	Description
2	VPRDGMPL	<p>Problem Extract: responds to requests for Problem List data and returns XML-formatted results for the following attributes:</p> <ul style="list-style-type: none"> • id • predecessor • successor • facility • name • problemType • code • icd • entered • status • acuity • history • unverified • removed • service • location • updated • onset • resolved • provider • comment [m] • sc • exposure [m]
3	VPRDGMRA	<p>Reaction Extract: responds to requests for Allergies/Adverse Reaction Tracking (ART) data and returns XML-formatted results for the following attributes:</p> <ul style="list-style-type: none"> • id • facility • name • localCode • void • entered • verified • removed • source • mechanism • type • drugClass [m]





#	Routine	Description
		<ul style="list-style-type: none"> • drugIngredient [m] • comment [m] • reaction [m] • severity
4	VPRDGMRC	Consult Extract: responds to requests for Consults data and returns XML-formatted results for the following attributes: <ul style="list-style-type: none"> • id • requested • status • service • procedure • result • name • orderID • type • document [m] • ,content • facility
5	VPRDGMV	Vitals Extract: responds to requests for Vitals data and returns XML-formatted results for the following attributes: <ul style="list-style-type: none"> • facility • location • taken • entered • removed [m] • measurement [m] <ul style="list-style-type: none"> ○ id ○ void ○ name ○ value ○ units ○ metricvalue ○ metricUnits ○ high ○ low • ,qualifier [m]





#	Routine	Description
6	VPRDGP	Patient Record Flags Extract: responds to requests for Patient Record Flag data and returns XML-formatted results for the following attributes: <ul style="list-style-type: none"> • id • name • reviewDue • type • category • content • origSite • ownSite • approvedBy • assigned • document
7	VPRDLR	Laboratory Extract: responds to requests for Laboratory data and returns XML-formatted results for the following attributes: <ul style="list-style-type: none"> • id • groupName • collected • resulted • status • type • specimen • sample • result • interpretation • loinc • void • comment • facility • labOrderID • orderID • test • localName • units • high • low





#	Routine	Description
		<ul style="list-style-type: none"> • value [m] <ul style="list-style-type: none"> ○ id ○ result ○ interpretation ○ loinc ○ vuid ○ test ○ units ○ low ○ high
10	VPRDOR	Orders Extract: responds to requests for Order data and returns XML-formatted results for the following attributes: <ul style="list-style-type: none"> • id • name • group • entered • start • stop • status • content • location • facility
11	VPRDPROC	Procedures Extract: responds to requests for procedure data from both the Surgery and Radiology packages and returns XML-formatted results. Please refer to VPRDRA and VPRDSR in this table for attribute information.





#	Routine	Description
12	VPRDPS	<p>Pharmacy Extract: responds to requests for Pharmacy data (inpatient and outpatient) and returns XML-formatted results for the following attributes:</p> <ul style="list-style-type: none"> • type • vaType • facility • status • vaStatus • start • stop • name • form • product [m] <ul style="list-style-type: none"> • ,vaGeneric • ,vaProduct • ,class • sig • quantity • daysSupply • orderID • prescription • fillsAllowed • fillsRemaining • lastFilled • fill [m] • routing • expires • ordered • orderingProvider • currentProvider • pharmacist • ptInstructions • location • IMO • fillCost • rate • ivLimit • dose [m] <ul style="list-style-type: none"> • dose <ul style="list-style-type: none"> ○ units ○ unitsPerDose





#	Routine	Description
		<ul style="list-style-type: none"> ○ noun ○ route ○ schedule ○ duration ○ conjunction ○ doseStart ○ doseStop ● id
13	VPRDPSI	<p>Inpatient Pharmacy Extract: responds to requests for inpatient Pharmacy data and returns XML-formatted results for the following attributes:</p> <ul style="list-style-type: none"> ● id ● vaType ● start ● stop ● name ● form ● vaStatus ● status ● dose [m] and sub-fields ● sig ● orderID ● orderingProvider ● IMO ● location ● facility ● product [m] and sub-fields ● rate ● ivLimit





#	Routine	Description
14	VPRDPSO	<p>Outpatient Pharmacy Extract: responds to requests for outpatient Pharmacy data and returns XML-formatted results for the following attributes:</p> <ul style="list-style-type: none"> • type • vaType • facility • status • vaStatus • start • stop • name • form • product [m] <ul style="list-style-type: none"> • ,vaGeneric • ,vaProduct • ,class • sig • quantity • daysSupply • orderID • prescription • fillsAllowed • fillsRemaining • lastFilled • fill [m] • routing • expires • ordered • orderingProvider • currentProvider • pharmacist • ptInstructions • location • IMO • fillCost • rate • ivLimit • dose [m] <ul style="list-style-type: none"> • dose <ul style="list-style-type: none"> ○ units ○ unitsPerDose





#	Routine	Description
		<ul style="list-style-type: none"> ○ noun ○ route ○ schedule ○ duration ○ conjunction ○ doseStart ○ doseStop ● Id
15	VPRDPT	<p>Patient Demographics Extract: responds to requests for Patient Demographic data and returns XML-formatted results for the following attributes:</p> <ul style="list-style-type: none"> ● id ● icn ● fullName ● familyName ● givenNames ● alias [m] ● ssn ● bid ● dob ● gender ● lrdfn ● died ● veteran ● sc ● scPercent ● exposures ● disability [m-P:31] ● address ● telecom ● religion ● maritalStatus ● ethnicity [m-P:10.2] ● race [m-P:10] ● support [m-contactType] <ul style="list-style-type: none"> ,address, telecom or ,address, telecom ● sensitive ● flag [m] ● facility [m - P:4]





#	Routine	Description
21	VPRDTIU	TIU Extract: responds to requests for document data from the TIU package and returns XML-formatted results for the following attributes: <ul style="list-style-type: none"> • id • Facility • encounter • referenceDateTime • status • subject • type • documentClass • localTitle • nationalTitle • nationalTitleSubject • nationalTitleRole • nationalTitleSetting • nationalTitleService • nationalTitleType • clinician [m] <ul style="list-style-type: none"> ○ role • loinc
22	VPRDVSIT	Visit/Encounter Extract: responds to requests for data from the Visit/Encounter package and returns XML-formatted results for the following attributes: <ul style="list-style-type: none"> • id • visitString • facility • dateTime • serviceCategory • patientClass • service • stopCode • creditStopCode • location • type • reason • provider [m] • document [m] <ul style="list-style-type: none"> ○ content For admissions only:





#	Routine	Description
		<ul style="list-style-type: none">• roomBed• specialty• arrivalDateTime• departureDateTime• provider [m]





Example

The following text paragraph contains a snippet of data that the VPRDGMV routine returned in response to a VPR GET PATIENT DATA RPC call for information about test-patient 229:

```
<vital>
<entered value='3050316.115625' />
<facility code='998' name='ABILENE (CAA)' />
<location code='158' name='7A GEN MED' />
<measurements>
<measurement id='14871' void='4500634' name='BLOOD PRESSURE'
value='168/68' high
='210/110' low='100/60' />
<measurement id='14869' void='4500636' name='PULSE' value='72'
high='120' low='6
0' >
<qualifiers>
<qualifier name='RADIAL' void='4688678' />
</qualifiers>
</measurement>
<measurement id='14872' void='4500635' name='PAIN' value='1' />
<measurement id='14870' void='4688725' name='RESPIRATION' value='18'
high='30' l
ow='8' >
<qualifiers>
<qualifier name='SPONTANEOUS' void='4688706' />
</qualifiers>
</measurement>
<measurement id='14868' void='4500638' name='TEMPERATURE' value='99'
units='F' m
etricValue='37.2' metricUnits='C' high='102' low='95' >
<qualifiers>
<qualifier name='ORAL' void='4500642' />
</qualifiers>
</measurement>
</measurements>
<taken value='3050316.1' />
</vital>
```





Checksums

The following table contains checksums for the VPR routines VPR GET PATIENT DATA:

#	Routine	Checksum
1	VPRD	24278674
2	VPRDGMPL	20610705
3	VPRDGMRA	21412184
4	VPRDGMRC	10314726
5	VPRDGMV	39440303
6	VPRDGPF	5569926
7	VPRDLR	24712747
8	VPRDLRA	69605973
9	VPRDLRO	27350157
10	VPRDOR	9187731
11	VPRDPROC	8662758
12	VPRDPS	14378656
13	VPRDPSI	41960179
14	VPRDPSO	68282901
15	VPRDPT	65865871
16	VPRDPXHF	9504608
17	VPRDPXIM	15857859
18	VPRDRA	39795192
19	VPRDSDAM	9762566
20	VPRDSR	29738621
21	VPRDTIU	61120410
22	VPRDVSIT	71801802
	VPRPI << post install routine	300624

