RESOURCE AND PATIENT MANAGEMENT SYSTEM

IHS Personal Health Record

(BPHR)

Technical Manual

Version 2.1
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Office of Information Technology (OIT)
Division of Information Technology
Albuquerque, New Mexico

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Preface

The purpose of this manual is to provide technical information about the IHS PERSONAL HEALTH RECORD (BPHR) package. The BPHR package contains an Application Programming Interface (API) call used by a Meaningful Use 2014 Performance Measure.

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1.0   Introduction

The BPHR package is a component of the Indian Health Service (IHS) Resource and Patient Management System (RPMS) that provides an interface for patients to have access to their medical information. Patients will access their Personal Health Record via the internet. The RPMS side only contains an API that is used by a Meaningful Use 2014 Performance Measure to count how many patients have accessed their PHR and how many patients have done secure messaging.

This manual provides IHS site managers with a technical description of the BPHR APIs, routines, files, menus, cross references, globals, and other necessary information required to effectively maintain this component of PHR.

All APIs, routines, files, options, and keys are namespaced starting with the letters BPHR. The file number range for this package is 90670-90679.

2.0   Orientation

The API package will be distributed as a Kernel Installation and Distribution System (KIDS) package which will contain the appropriate files and routines to enable MU Performance measure to calculate their data.

Interaction between RPMS and the actual PHR is accomplished via web service calls or requests. All APIs and classes in this package begin with the namespace letters BPHR.

A high-level diagram of the PHR services architecture is shown below in Figure 2-1. Each of the main components identified in Figure 2-1 are detailed in the sections that follow.
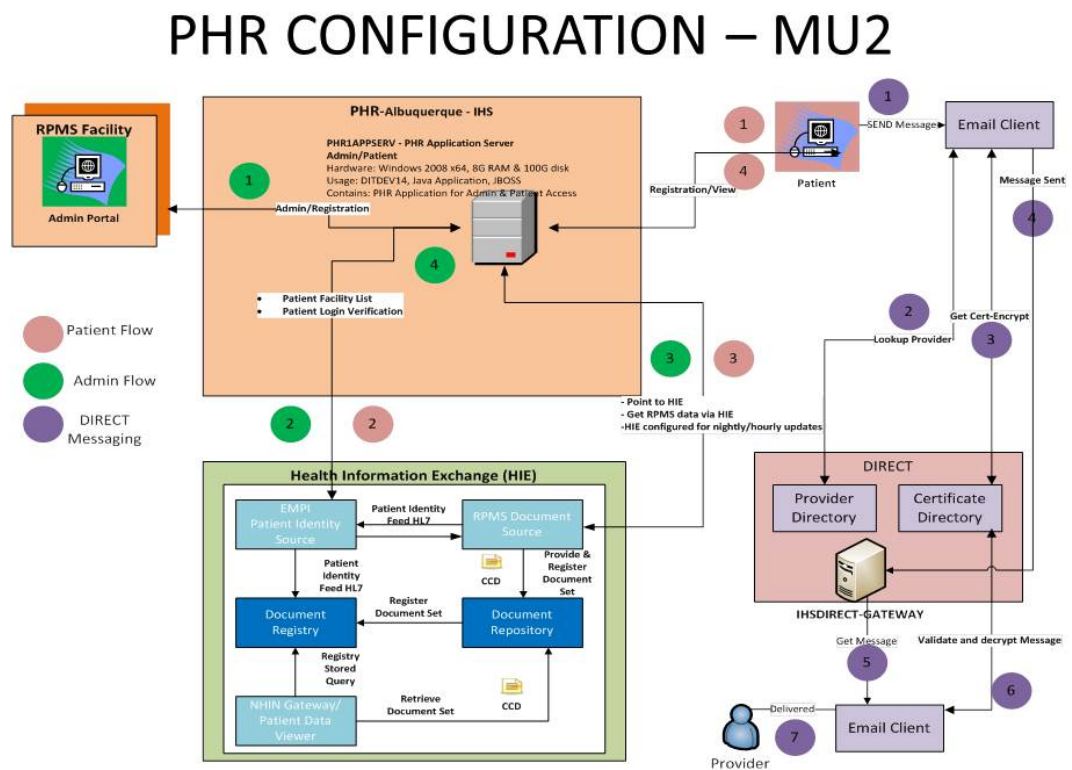
2-1: High-level Application Architecture Diagram for the Personal Health Record

2.1   Health Information Exchange (HIE)

The PHR application will make a SOAP based web service call to the HIE service. There will be two calls made one to retrieve a list of documents related to the patient accessing the PHR application then another call to retireve the actual CCDA that the patient chooses to view. This information is provided to the Performance Measures.

2.2   Direct Email Services

In order to allow secure messaging the PHR application will use direct.

3.0   Implementation and Maintenance

The BPHR APIs are designed to provide a MUMPS-based programming interface for the MU 2014 Performance Measures development team to obtain needed information from the PHR. The API in turn utilizes a web service interface to interact with the PHR server.

3.1   General Information

The following table shows the prerequisite patch requirements.

Package and Version	Associated Patch Designation(s)	Brief Patch Description
None	None	None

3.2   System Requirements

The following table shows the versions of other packages that should be installed for BPHR to work properly.

Module	Minimum Version	Recommended Version
Ensemble 2012	v2012	
VA FileMan (DI)	v22.0 Patch 1017	
IHS/VA Utilities (XB)	v3.0 through Patch 11	
IHS Kernel Toolkit (XT)	V7.3 through Patch 1017	
VA Kernel (XU)	v8.0 Patch 1017	

3.3   Package-wide Variables

There are no package-wide BPHR variables in RPMS.

3.4   Security Keys

These are the security keys which govern BPHR that can be assigned to users.

Key Name	Description
BPHRZMENU	This security key should only be assigned to those persons who will manage the BPHR system. It should not be given to the general RPMS user population.

4.0   Menu Diagram

RPMS menus in the BPHR system:

- IHS Personal Health Record Managment [BPHRMENU]
  Menu option needs key BPHRZMENU and contains the following option for managing BPHR.

- Edit PHR Web Service [BPHR EDIT WEB SERVICE]
  Updates information about the web service used by the site to connect to the PHR server.

5.0   Routine

5.1   Routine List

This routine list includes all BPHR routines:

BPHR1POS   BPHRCLAS   BPHRMUPM   BPHRUPD

5.2   Routines with Description

This routine list describes each routine in this version.

Routine	Description
BPHR1POS	Post-installation program
BPHRCLAS	Cache Class Compiler
BPHRMUPM	API to be called by MU 2014 Performance Measure
BPHRUPD	Updates the web service information

5.3   API List

5.3.1   PHR^BPHRMUPM(DFN,BDT,EDT,.RESULT)

This API returns information needed in calculating certain Performance Measures.

Parameter	Data Type	Description
DFN	Numeric (Required)	The internal entry number of the patient, identified by the MU Performance Measure.
BDT	Numeric (Required)	The beginning date of the MU Performance report in FileMan date format.
EDT	Numeric (Required)	The ending date of the MU Performance report in FileMan date format.
RESULT	String	Specified as: [1] PHR Access ^ [2] Date Access Granted ^ [3] Login ^ [4] Date of Last Login ^ [5] Secure Message ^ [6] Date of Last Secure Message

5.3.2   TMZ^BPHRMUPM()

This API returns the system timezone.

Parameter	Data Type	Description
None		

5.3.3   DATE^BPHRMUPM(BPX)

This API takes a FileMan date and formats it the way that the PHR system needs it.

Parameter	Data Type	Description
BPX	Date	3131101.0001 to 2013-11-01T00:00:01-0600

5.3.4   FMDT^BPHRMUPM(BPX)

This API takes a PHR system date/date (with timezone) and converts it to a FileMan date/time.

Parameter	Data Type	Description
BPX	Date/Time	2013-09-13T08:46:17-0600 to 3130913.084617

6.0   Files and Tables

6.1   File List

The following table contains a list of new files.

File #	Filename	Description
90670.2	BPHR WEB SERVICE	This file contains information about the connections to web service endpoints.
90670.5	BPHR CLASS TRANSPORT	This file contains the classes that will need to be defined as part of the installation.

6.2   File Access

The following table contains the FileMan access to new files.

File #	Filename	GL	RD	WR	LYG	DD	DEL
90670.2	BPHR WEB SERVICE	^BPHR(90670.2,	@	@	@	@	@
90670.5	BPHR CLASS TRANSPORT	^BPHRCLS(	@	@	@	@	@

6.3   Cross References

90670.2 (BPHR WEB SERVICE)

.01 Name

B Regular type cross reference

90670.5 (BPHR CLASS TRANSPORT)

.01 Package Name

B Regular type cross reference

11 Class (multiple)

.01 Class

B Regular type cross reference

6.4   Table File

File: 90670.2 BPHR WEB SERVICE

Global: ^BPHR(90670.2,

Field #	Field Name	Subscript	Piece	Type
.01	NAME	D0,0	1	F
.02	URL ROOT	"	2	F
.03	PORT NUMBER	"	3	F
.05	TIMEOUT OVERRIDE	"	5	F
.06	CURRENT VERSION	"	6	F
.07	USERNAME		7	F
.08	PASSWORD		8	F
.09	INACTIVE		9	S
.1	INACTIVE DATE		10	D
.11	SERVICE PATH		11	F
1	VERSION (90670.21)	D0,1,D1,0	1	
.01	VERSION	"	1	F
.02	DATE INSTALLED	"	2	D

File: 90670.5 BPHR CLASS TRANSPORT

Global: ^BPHRCLS(

Field #	Field Name	Subscript	Piece	Type
.01	PACKAGE NAME	D0,0	1	F
1.02	RPMS STATUS	"	2	S
1.03	RPMS DATE/TIME INSTALLED	"	3	D
10	XML (90670.51)	D0,10,D1,		W
11	CLASS (90670.511)	D0,11,D1		
.01	CLASS		1	F

6.5   Callable Routines

There are no remote procedure calls added in this release.

6.6   Published Entry Points

BPHRMUPM.INT

PHR(DFN,BDT,EDT,RESULT) ;PEP

7.0   Internal Relations

All functions within this application work independently.

There are no documented internal relations in BPHR.

8.0   External Relations

8.1   External Calls

8.2   Callable Routines–Published Entry Points

This application contains no calls to external published entry points other than to standard Kernel/FileMan calls.

8.3   Exported options

Option Name	Description
BPHRMENU	Menu option
BPHR EDIT WEB SERVICE	Edit a site's PHR Web Service, if needed

9.0   Archiving and Purging

There is no archiving or purging in BPHR.

10.0   Documentation Resources

This section describes a few methods to generate BPHR technical documentation.

10.1   %INDEX Option

This option analyzes the structure of a routine to determine in part if the routine adheres to RPMS programming standards. The %INDEX output can include the following components:

- Compiled list of errors and warnings

- Routine listing

- Local variables

- Global variables

- Naked globals

- Label references

- External references

Running %INDEX for a specified set of routines allows users to discover any deviations from RPMS programming standards that exist in the selected routines and to see how routines interact with one another (i.e., which routines call or are called by other routines).

To run %INDEX for the Patient Registration package, type the BPHR namespace at the "Routine(s)?>" prompt.

10.2   List File Attributes Option

This VA FileMan option allows users to generate documentation pertaining to files and file structure. Using the standard format of this option yields the following data dictionary information for a specified file:

- File name and description

- Identifiers

- Cross-references

- Files pointed to by the file specified

- Files that point to the file specified

- Input, print, and sort templates

In addition, the following applicable data is supplied for each field in the file:

- Field name, number, title, and description

- Global location

- "Help" prompt

- Cross-references

- Input transform

- Date last edited

- Notes

Using the Global Map format of this option generates an output that lists the following information:

- All cross-references for the file selected

- Global location of each field in the file

- Input, print, and sort templates

11.0   SAC Requirements and Exemptions

No exemptions are noted at this time.

12.0   Templates, Forms, and Protocols

12.1   Print Templates

There are no print templates in BPHR.

12.2   Sort Templates

There are no sort templates in BPHR.

12.3   Input Templates

BPHR ADD/EDIT WEB SERVICE

12.4   List Templates

There are no list templates in BPHR.

12.5   Forms

There are no forms in BPHR.

12.6   Protocols

There are no protocols in BPHR.

13.0   Accessibility Checklist

13.1   Indian Health Service (IHS) Section 508 36 CFR Part §1194.21 Software Applications and Operating Systems Checklist

The BPHR package is not a software application that includes a user interface and therefore Section 508 compliancy checklist is not applicable

Appendix A: Sample API Calls

13.2   PHR^BPHRMUPM(DFN,BDT,EDT,.RESULT)

The following example shows the record of a Patient who does not have an ICN (Master Patient Index) identifier or a patient who has not signed up for PHR:

```
Input Parameters:
DFN – Internal entry number of the patient
BDT – Beginning date of the report period
EDT – Ending date of the report period
Output Parameter:
RESULT – result of the query to the PHR server
Piece 1 - Signed up for PHR (0=No, 1=Yes)
Piece 2 - Date
Piece 3 - Accessed PHR (0=No, 1=Yes)
Piece 4 - Last date accessed
Piece 5 - Used secure messaging (0=No, 1=Yes)
Piece 6 - Last date used secure messaging

>D PHR^BPHRMUPM(365,3130301,3130801,.RESULT)

>W RESULT
0^^0^^0^
```

The following example shows the record of a Patient who signed up for PHR, has logged in and used secure messaging:

```
>D PHR^BPHRMUPM(31818,3130301,3130801,.RESULT)

>W RESULT
1^3130617.1046^1^3130819.1458^1^3130617.1046
```

Glossary

Electronic Health Record (EHR)

An application used by medical organizations to track patient medical records and care.

Meaningful Use (MU)

Meaningful Use (MU) is a term used by CMS to ensure that providers and hospitals that have adopted certified EHR are using the technology to further the goals of information exchange among health care professionals. Eligible Providers (EPs) and Eligible Hospitals (EHs) will achieve meaningful use if the EP or EH : (a) demonstrate use of certified EHR technology in a meaningful manner, (b) demonstrate the certified EHR technology provides for electronic exchange of health information to improve quality of care, and (c) use certified EHR technology to submit information on clinical quality and other measures.

Microsoft® (MS)

Software company that develops and distributes the Visual Studio® (VS) tool used to develop the BPHR application.

Office of Information Technology (OIT)

The organization within IHS that is responsible for developing and maintaining RPMS and related IT functions.

Resource and Patient Management System (RPMS)

A series of integrated software components that includes clinical, administrative, and financial functions.

Software Quality Assurance (SQA)

The office within OIT responsible for ensuring that the system conforms to RPMS Programming Standards and Conventions (SAC).

Acronym List

API	Application Programmer Interface
BPHR	Namespace for BPHR files and routines
DSM	Digital Standard Mumps
DTS	Distributed Terminology System
EHR	Electronic Health Record
GUI	Graphical User Interface
I/T/U	Abbreviation referring to all IHS direct, Tribal, and urban facilities. Using the abbreviation I/T/U generally refers to all components of the Indian healthcare system.
IDE	Integrated development environment
IHS	Indian Health Service
ITSC	Information Technology Support Center currently referred to as Office of Information Technology (OIT)
MS	Microsoft®
MU	Meaningful Use
OIT	Office of Information and Technology
RPMS	Resource and Patient Management System
SAC	Standards and Conventions
SQA	Software Quality Assurance
SRD	Software Requirements Document
UI	User Interface

Contact Information

If you have any questions or comments regarding this distribution, please contact the OIT Help Desk (IHS).

Phone: (888) 830-7280 (toll free)

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