



RESOURCE AND PATIENT MANAGEMENT SYSTEM

Practice Management Application Suite

(BPRM)

Technical Manual

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Table of Contents

1.0	Introduction.....	1
2.0	Orientation	2
3.0	Implementation and Maintenance	3
3.1	General Information	3
3.2	System Requirements	3
3.2.1	Application Server Resources	3
3.2.2	Database Server Resources	4
3.2.3	Workstation Resources	5
3.3	Package-wide Variables	5
3.4	Menu and Security Keys.....	5
4.0	Menu/Security Keys	7
5.0	Routine Descriptions	8
6.0	Files and Tables.....	9
6.1	File List	9
6.2	File Access	9
6.3	Cross References	9
6.4	Table File.....	9
6.5	Database Views.....	9
6.6	Stored Procedures.....	11
7.0	External Relations	14
7.1	Callable Routines.....	14
7.2	Published Entry Points.....	14
7.3	Exported Options	14
8.0	Internal Relations	15
9.0	Archiving and Purging	16
10.0	Documentation Resources	17
11.0	SAC Requirements and Exemptions	18
	Glossary.....	19
	Acronym List	21
	Contact Information	22

Preface

The Practice Management Application Suite (BPRM) is a browser-accessible graphical user interface (GUI) for the Indian Health Service (IHS) Resource and Patient Management System (RPMS) applications. It provides easier, more intuitive access to existing RPMS data, and streamlines the input of new patient data. This suite is also referred to by its development name, Moonwalk.

The purpose of this manual is to provide technical information related to the BPRM package. The BPRM package has the following features:

- A browser-based user interface
- A unified One View architecture for RPMS
- Tightly linked to RPMS patient and clinic data
- A consolidated Patient Registration and Scheduling interface

1.0 Introduction

This manual provides IHS site managers with a technical description of the Practice Management Application Suite routines, files, menus, cross references, globals, and other necessary information required to effectively manage the system.

All routines, files, options, and keys are namespaced starting with the letters “BPRM.”

The file number range for this package is not yet assigned.

2.0 Orientation

The BPRM package has no RPMS server menu options. The RPMS server preparation needed to run the BPRM package is to mount the BPRM database. Refer to the current *Practice Management Application Suite (BPRM) Installation Manual* for server and client installation.

Interaction of BPRM with the RPMS system is accomplished through ODBC (Open Database Connectivity) calls.

3.0 Implementation and Maintenance

BPRM provides a browser-based graphical user interface for RPMS. See the current *Practice Management Application Suite (BPRM) Installation Manual* for detailed information on implementation.

3.1 General Information

The following components must be installed for BPRM to work properly:

Table 3-1: Required Components

Component	Description
BMW CACHE.DAT	Mount and Configure cache database file for Windows or AIX systems running Ensemble version 2012.2.0
BPRM Application Server Installer	Install bprm0300.msi

Note: The BMW Cache.dat file is delivered to support two operating systems: One for Microsoft® Windows® systems and the other for IBM® AIX® systems. These files are provided by OIT SQA and are not included in the distribution package.

3.2 System Requirements

Table 3-2: System Requirements

Module	Minimum Version
Intersystems Ensemble®	Ver. 2012.2.x
Kernel (XU)	Ver. 8.0
IHS Dictionaries (Pointers) (AUT)	Ver. 98.1 patch 26
IHS Dictionaries (Patient) (AUPN)	Ver. 99.1 patch 23
IHS VA Support Files (AVA)	Ver. 93.2 patch 22
IHS PCC Suite (BJPC)	Ver. 2.0 patch 10
Patient Information Management System (PIMS)	Ver. 5.3 patch 1017
Patient Registration (AG)	Ver. 7.1 patch 11
Clinical Scheduling GUI (BSDX)	Ver. 3.0

3.2.1 Standalone Application Server Resources

The following resources are required for a standalone application server:

- Microsoft® Windows® 2008 Server x64 bit (or later)

- Microsoft IIS[®] 7.0 (available with Windows 2008 server by default)
- Microsoft .NET Framework 4.5
- Four processor cores running at 2.0 GHz or faster (for site)
- Eight processor cores running at 2.4 GHz or faster (for area office)
- 4 GB RAM running at 1333 MHz (for site)
- 12 GB RAM running at 1333 MHz (for area office)
- 50 GB minimum free disk space (disk drives should be 10K RPM or faster)

3.2.2 Shared Application/MongoDB Server Resources

The following resources are required if the MongoDB is installed on the application server:

- Microsoft[®] Windows[®] 2008 Server x64 bit and up
- Microsoft IIS[®] 7.0 (available with Windows 2008 server by default)
- Microsoft .NET Framework 4.5
- Four processor cores running at 2.0 GHz or faster (for site)
- Eight processor cores running at 2.4 GHz or faster (for area office)
- 8 GB RAM running at 1333 MHz (for site)
- 12-16 GB RAM running at 1333 MHz (for area office)
- 80 GB minimum free disk space (disk drives should be 10K RPM or faster)

3.2.3 Standalone MongoDB Server Resources

The following resources are required if the MongoDB server is a standalone system:

- Microsoft[®] Windows[®] 2008 Server x64 bit and up
- Minimum two processor cores running at 2.0 GHz or faster (for site)
- Minimum four processor cores running at 2.4 GHz or faster (for area office)
- 4 GB RAM running at 1333 MHz (for site)
- 12 GB RAM running at 1333 MHz (for area office)
- 50 GB minimum free disk space (disk drives should be 10K RPM or faster)

3.2.4 Database Server Resources

Database servers running the BPRM application require a minimum 5 GB of free disk space.

3.2.5 Workstation Resources

The following resources are recommended for any workstations accessing the BPRM application:

- Dual-core processor running at 1.8 GHz or faster
- 4 GB of RAM
- 20 GB free disk space
- Screen resolution of 1024 x 768 or higher
- Windows 7 (highly recommended) or Windows XP
- Internet Explorer® 9 (highly recommended) or Internet Explorer 8
- Microsoft Silverlight® 5.0 plugin for Internet Explorer (required)

The Silverlight plugin can be rolled out on an enterprise basis using Group Policies or another enterprise deployment tool, or it can be installed individually on the workstation. Silverlight is available from Microsoft at this location:

<http://www.microsoft.com/getsilverlight/get-started/install/default.aspx>

3.3 Package-wide Variables

There are no package-wide variables used in the BPRM system.

3.4 Menu and Security Keys

There are no package-specific security keys. The BPRM package operates on existing RPMS security keys.

BPRM security is built on top of the RPMS Menus and Keys system. The following table defines the relationship between BPRM Roles and RPMS security keys.

Note: If a user has AKMOCORE or AKMOEVE primary menu options, they will have access to all modules and features.

Table 3-3: Security Keys

Role	Secondary Menu Option	Security Keys (Must include all)
ADT Clerk	BDGMENU	DGZADT DGZNUR DGZMENU
ADT Coder	BDGMENU	DGZPCC DGZMENU

Role	Secondary Menu Option	Security Keys (Must include all)
ADT Supervisor	BDGMENU	DGZADT DGZICE DGZNUR DGZSUP DGZSYS DGZMENU
ADT Non-Clinical	BDGMENU	DGZNOCLN DGZMENU
Admin		XUPROG XUPROGMODE
CQM Clerk	APCLMENU	APCLZMENU
CQM Supervisor	APCLMENU	APCLZMENU
Flag Manager		DGPF MANAGER
Flag Assignment		DGPF ASSIGNMENT
Flag Access		DGPF PRF ACCESS
PHR Operate	AGPAT -or- AGVIEWONLY	AGZPHROPT
Registration Clerk	AGPAT -or- AGMENU	AGZMENU
Registration Supervisor	AGMENU	AGZMENU AGZMGR AGZHOME AGZREPORTS AGZDELHRN
Registration View Only	AGPAT -or- AGVIEWONLY	AGZVIEWONLY
Scheduling Clerk	BSDMENU	SDZMENU
Scheduling Supervisor	BSDMENU -or- BSD MENU SUPERVISOR	SDZMENU SDZSUP
SSN Viewer	AGSSNMENU	AGZVIEWSSN

4.0 Menu/Security Keys

The BPRM system does not add any menus or security keys to the RPMS system.

5.0 Routine Descriptions

There are no routines distributed as part of this package.

6.0 Files and Tables

There are no files distributed as part of this package.

6.1 File List

The BPRM application suite consumes Cache classes generated by the Fm2Class utility, which maps onto FileMan files. Create, read, update, and delete operations can then be performed over the generated Cache classes (SQL tables) via the ADO.NET provider for Intersystems Ensemble/Cache.

6.2 File Access

Not applicable.

6.3 Cross References

Not applicable.

6.4 Table File

Not applicable.

6.5 Database Views

Table 6-1 lists the database views used by the BPRM application suite.

Table 6-1: Database Views

View	Description
AG_ALTERNATE_RESOURCE_DETAIL_VIEW	Gives access to all of the patient insurances detail
AG_ALTERNATE_RESOURCE_VIEW	Gives access to all of the patient insurances.
AG_BENEFIT_COORDINATOR_CASES_VIEW	Gives access to patient benefit cases.
AG_GUARANTOR_INSURER_VIEW	Gives access to guarantors
AG_INTERNET_ACCESS_QUESTION_VIEW	Gives access to patient Internet access
AG_PATIENT_APPLICATIONS_VIEW	Gives access to patient applications submitted against a benefit case
AG_PATIENT_DEMOGRAPHICS_VIEW	Gives access to patient demographics

View	Description
AG_PATIENT_FACE_SHEET_VIEW	Gives access to patient information for face sheet
AG_PATIENT_FLAG_VIEW	Used for checking whether the patient record is flagged or not
AG_PATIENT_NOTES	Gives access to patient notes (additional registration info)
AG_PATIENT_OTHER_LANGUAGES_VIEW	Gives access to the patient's other languages
AG_PATIENT_PROFILE_VIEW	Gives access to the patient information other than demographics
AG_PATIENT_SEARCH_VIEW	Gives access to patient records for searches
AG_PRF_ASSIGNMENT_VIEW	Gives access to patient record flag information
AG_PRIOR_AUTHORIZATIONS_VIEW	Gives access to patient prior authorizations
AG_RESOURCE_ELIGIBILITY_VIEW	Gives access to all of the patient insurance eligibilities
AG_SEQUENCE_EFFECTIVE_DATE_GROUP_VIEW	Gives access to a patient's insurance category sequence list
AG_SEQUENCE_GROUP_VIEW	Gives access to a patient's insurance category sequence detail
AG_SEQUENCE_VIEW	Gives access to patient insurance sequencing
BDG_ADMITTED_PATIENTS_VIEW	Gets info from VA_PATIENT for patients who are currently admitted
BDG_CURRENT_ADMISSION_VIEW	Gets details about all patients currently admitted
BDG_INCOMPLETE_CHART_STATISTICS_VIEW	Gets statistics for incomplete chart dashboard
BDG_INCOMPLETE_CHART_STATUS_VIEW	Gets data to display on A&D Dashboard and Incomplete Charts tab
BDG_INCOMPLETE_CHART_VIEW	Gets all incomplete charts
BSDX_APPOINTMENT_VIEW	Gives access to patient appointments
BSDX_CLINIC_WORKLOAD_VIEW	Used for calculating appointments for the Clinic Workload report
BSDX_WAITING_LIST_VIEW	Gives access to the clinic waiting list

6.6 Stored Procedures

Table 6-2 lists the stored procedures used by the BPRM application suite.

Table 6-2: Stored Procedures

Procedure	Description
AG_CheckAndSetSilentSPTAccessQ	Implements SPT for BPRM. Checks and silently tracks access to sensitive patient data
AG_CheckSPTAccessQ	Implements SPT for BPRM. Checks access to sensitive patient data
AG_GetIncompleteChartStatisticsQ	Fetches data for the Range of Dates for Inpatient Services report
AG_GetIncompleteChartStatisticsCountQ	Fetches data for the Incomplete Charts by Provider report
AG_GetIncompleteChartStatisticsSumQ	Fetches data for the Incomplete Charts by Provider report
AG_GetPatientASheetReportQ	Provides data for a patient's A-sheet report
AG_GetPatientFaceSheetQ	Provides data for a patient's Face Sheet report
AG_GetPatientRoutingSlipQ	Send a patient's routing slip report to default printer; set in IHS SCHEDULING PARAMETERS file
AG_GetPatientRoutingSlipReportQ	Get a patient's routing slip report data
AG_GetPatientWellnessHandoutQ	Get PWH (patient wellness handout) data for a patient
AG_PatientRegisterEventQ	Performs post-patient register HL7 messages using CREATMSG^AGMPIHLO and AG^AGHL7
AG_PatientUpdateEventQ	Performs post-patient update HL7 messages using UPDATE1^AGED and AG^AGHL7.

Procedure	Description
AG_SearchPatientQ	Performs patient search by Name, SSN, DOB, Gender, Eligibility Status, HRN , Phone Number, InPatient Or Outpatient.
AG_SetPatientGenderQ	MU2- updates patient's gender in all related files, when gender is updated through BPRM. Using SEXELIG^AGUTL
AG_PatientInsuranceAddCategorySequenceQ	Add a sequence for patient's insurance category
AG_PatientInsuranceRemoveCategorySequenceQ	Remove a sequence for patient's insurance category
AG_SetPatientTempHRNQ	Assigns temp HRN to patients added using quick registration
AG_SetSPTAccessQ	Implements SPT for BPRM. Tracks access to sensitive patient data
BDG_GetAdsReportQ	Get ADS report data
BDG_GetIsReAdmitCheckQ	Should BPRM ask if this discharge will be a Re-Admit
BDG_GetRangeOfMonthCensusQ	Get census report data (ADT)
BDG_SetPatientAdmissionQ	Admit patient
BDG_SetPatientMovementDischargeQ	Discharge patient
BDG_SetPatientSpecialtyTransferQ	Specialty transfer for patient
BDG_SetPatientTransferQ	Ward transfer for patient
BSD_GetSchedulingAccessBlocksQ	Get a clinic availability for a date range
BSD_GetSchedulingAvailableSlotsQ	Get a clinic's future available appointment slots
BSD_GetConfigAccessBlocksQ	Provides the clinic availabilities upto on year in future
BSD_SetPatientAppointmentQ	Creates an appointment on schedule command
BSD_SetPatientAppointmentCheckInQ	Creates a visit on appointment check in

Procedure	Description
BSD_SetPatientAppointmentUndoCheckInQ	Undo check-in : delete visit if exists
BSD_SetSchedulingAddHolidayQ	Add a holiday to scheduling configuration
BSD_SetSchedulingRemoveHolidayQ	Remove a holiday from scheduling configuration
Core_AuthenticateUserQ	Authenticates access and verifies codes on login.
Core_ChangeVerifyCodeQ	Change user verify code
Core_GetDatabaseTimeQ	Get current datetime of DB (RPMS/Ensemble) server
Core_SetBusaAuditLogQ	Set MU Busa audit log
Core_SetPatientContextQ	Set DFN variable to patient's id in session' symbol table for current transaction
Core_SetRemotePatientContextQ	Set DFN for an outside application (Switch patient in EHR for the user, when a patient is selected in BPRM)
Core_SetSessionVariablesQ	Sets session variables
Core_SetWordProcessingQ	Set word processing data field (can be used to insert data into any word processing field)
Core_VerifyESignatureQ	Verify patients E-signature
CQM_GetPatientAdmissionOrderListQ	Get patient admission orders
CQM_GetPatientLabOrderListQ	Get patient Laboratory orders
CQM_GetPatientMedicationListQ	Get patient medication orders
CQM_GetPatientRadOrderListQ	Get patient Radiology orders

7.0 External Relations

No special integration agreements exist between BPRM and any other package.

7.1 Callable Routines

No callable routines exist in the BPRM package.

7.2 Published Entry Points

No published entry points exist in the BPRM package.

7.3 Exported Options

No exported options exist in the BPRM package.

8.0 Internal Relations

All routines and files are namespaced starting with the letters BPRM.

9.0 Archiving and Purging

There is no archiving or purging done by the BPRM package.

10.0 Documentation Resources

The BPRM package does not provide any methods to generate online technical documentation.

The documentation shown in Table 10-1 is included with the BPRM distribution:

Table 10-1: Documentation Resources

File	Description
bprm0300.msi	BPRM Application Installer
bprm0300.xml	BPRM data description file
cqm_mongo_db_0101.msi	MongoDB object database system and the Measures and Value Sets database installer
bprm030i.pdf	Version 3.0 Installation Guide and Release Notes
bprm030u_overview.pdf	User Manual – Overview
bprm030u_registration.pdf	User Manual – Patient Registration Module
bprm030u_scheduling.pdf	User Manual – Scheduling Module
bprm030u_adt.pdf	User Manual – ADT Module
bprm030u_cqm.pdf	User Manual – CQM Module
bprm030t.pdf	Technical Manual

11.0 SAC Requirements and Exemptions

No exemptions for the SAC standard have been granted.

Glossary

ADO.NET

A set of computer software components that programmers can use to access data and data services. It is a part of the base class library that is included with the Microsoft .NET Framework. It is commonly used by programmers to access and modify data stored in relational database systems, though it can also access data in non-relational sources.

Archiving

The storing of historical or little used data off-line (often on tape).

Cache Class

An object-oriented structure used to store data.

FileMan files

FileMan files define the schema of an RPMS database.

Fm2Class

A utility from InterSystems that converts FileMan file definitions to Cache class definitions.

Kernel

The set of MUMPS software utilities that function as an intermediary between the host operating system and application packages, such as Laboratory and Pharmacy. The Kernel provides a standard and consistent user and programmer interface between application packages and the underlying MUMPS implementation. These utilities provide the foundation for RPMS.

Menu

A list of choices for computing activity. A menu is a type of option designed to identify a series of items (other options) for presentation to the user for selection. When displayed, menu-type options are preceded by the word "Select" and followed by the word "option" as in Select Menu Management option: (the menu's select prompt).

Namespace

A unique set of two to four alpha characters assigned by the database administrator to a software application.

Option

An entry in the Option file. As an item on a menu, an option provides an opportunity for users to select it, thereby invoking the associated computing activity. Options may also be scheduled to run in the background, non-interactively, by TaskMan.

Schema

An underlying organizational pattern or structure; conceptual framework.

Acronym List

Acronym	Definition
API	Application Programming Interface
GUI	Graphical User Interface
IHS	Indian Health Service
RPMS	Resource and Patient Management System

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)

Web: <http://www.ihs.gov/helpdesk/>

Email: support@ihs.gov