



RESOURCE AND PATIENT MANAGEMENT SYSTEM

# **Prenatal Care Module**

(BJPN)

## **Addendum to the Technical Manual**

Version 2.0 Patch 8  
September 2016

Office of Information Technology  
Division of Information Technology

# Table of Contents

<b>1.0</b>	<b>Introduction.....</b>	<b>1</b>
<b>2.0</b>	<b>Orientation .....</b>	<b>2</b>
<b>3.0</b>	<b>Implementation and Maintenance .....</b>	<b>3</b>
3.1	General Information .....	3
3.2	System Requirements .....	3
3.3	Package-wide Variables .....	3
3.4	Security Keys.....	4
3.5	Parameters .....	4
<b>4.0</b>	<b>Menu .....</b>	<b>5</b>
<b>5.0</b>	<b>Routine Descriptions .....</b>	<b>6</b>
5.1	Routine List.....	6
5.2	Routines with Description .....	6
<b>6.0</b>	<b>Files and Tables.....</b>	<b>8</b>
6.1	File List .....	8
6.2	File Access .....	8
6.3	Cross References .....	8
6.4	Table File.....	9
<b>7.0</b>	<b>External Relations .....</b>	<b>11</b>
7.1	Callable Routines.....	11
7.2	Published Entry Points.....	14
7.3	Exported Options .....	15
<b>8.0</b>	<b>Internal Relations .....</b>	<b>16</b>
<b>9.0</b>	<b>Archiving and Purging .....</b>	<b>17</b>
<b>10.0</b>	<b>Documentation Resources .....</b>	<b>18</b>
10.1	System Documentation.....	18
10.1.1	%INDEX .....	18
10.1.2	Inquire Options .....	19
10.1.3	Print Option File.....	19
10.1.4	List File Attributes .....	19
10.2	Online Help .....	20
<b>11.0</b>	<b>SAC Requirements and Exemptions .....</b>	<b>21</b>
<b>12.0</b>	<b>Prenatal Client .....</b>	<b>22</b>
12.1	Description of Development Environment.....	22
12.2	Prenatal RPMS Server Requirements .....	22
12.3	Prenatal GUI Server–Install %.....	22
	<b>Glossary.....</b>	<b>25</b>

**Acronym List ..... 26**  
**Contact Information ..... 27**

## Preface

The purpose of this manual is to provide technical information about the Electronic Health Record (EHR) Prenatal Care Module (PCM) components, specifically those changes introduced in p8 of the v2.0 release, which have been developed and released in the BJPN package namespace. The PCM allows users to manage prenatal problems and issues for patients over the course of their pregnancies.

## 1.0 Introduction

The Prenatal Graphical User Interface (GUI) software is a component of the Indian Health Service (IHS) Resource and Patient Management System (RPMS) and EHR that provides prenatal management functions.

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

All routines, files, options, and keys are namespaced starting with the letters BJPN.

The file number range for this package is 90680 – 90680.99.

## 2.0 Orientation

The PCM has no RPMS menu options for users. The only RPMS preparation specifically needed to run the PCM in EHR is to install the “PRENATAL CARE MODULE 2.0” Kernel Installation and Distribution System package and associated patches such as p2.0, p3.0, p4.0, p5.0, p6.0 and p7.0, assign the appropriate Remote Procedure Call (RPC) menu option to users, and install the required Prenatal Dynamic Link Library (DLL) files into the EHR “lib” file directory. EHR is run on the workstation and can be managed from there. See the patch installation notes for Prenatal v2.0 p8 for details on server and client installation and configuration.

Interaction between the PCM (via EHR) and the RPMS system is accomplished entirely through the use of RPCs. All RPCs in this package begin with the namespace letters BJPN.

## 3.0 Implementation and Maintenance

The PCM is designed to work with RPMS through the EHR application.

### 3.1 General Information

The following table shows the prerequisite patch requirements.

Package and Version	Associated Patch Designation
BJPN v2.0 p7	BJPN*2.0*7

### 3.2 System Requirements

The following table shows the versions of other packages that should be installed for the PCM to work properly. These packages are not required for the installation of p8, however, because they would have already been installed as required patches for the installation of BJPN v2.0.

Module	Minimum Version	Recommended Version
VA FileMan (DI package)	v22.0 p1003	
VA Kernel (XU package)	v8.0 p1015	
BMXNet (BMX package)	v4.0 p4	
IHS/VA Utilities (XB package)	v3.0 through p11	
IHS STANDARD TERMINOLOGY (BSTS package)	v1.0 p6	
IHS USER SECURITY AUDIT 1.0 (BUSA package)	v1.0	
PCC Data Entry (APCD package)	v2.0 through p10	
IHS PCC Suite (BJPC package)	v2.0 p17	
EHR 1.1	v1.1 p20	

### 3.3 Package-wide Variables

There are no package-wide BJPN variables in RPMS.

### 3.4 Security Keys

Key Name	Description
ORES, ORELSE, BGOZ PROBLEM LIST EDIT, PROVIDER	Users holding one or more of these keys will be granted full edit privileges to the PCM.
BGOZ VIEW ONLY	This key should be assigned to the person who has VIEW ONLY permission to the PCM. This overrides any other edit security key.

### 3.5 Parameters

There are two parameters delivered with the BJPN version 2.0 package:

Parameter	Value Type	Precedence	Description
BJPN DISABLE PRENATAL EDITING	Boolean	User, Class	Users or users assigned to User Classes entered in this parameter will be excluded from using the PCM, regardless of their assigned security keys.
BJPN POST DEDD DAYS	Numeric	System	The number of days after a patient's definitive estimated date of delivery in which they can still make changes to their prenatal problem list.



## 4.0 Menu

There are no RPMS menus included in the BJPN system.

## 5.0 Routine Descriptions

### 5.1 Routine List

The following routines have been released with version 2.0 and subsequent patch releases of the PRENATAL CARE MODULE package:

BJPN20AU	BJPN20EN	BJPN20P1	BJPN20PR	BJPN20PS
BJPN20RG	BJPN2P01	BJPN2P02	BJPN2P03	BJPN2P04
BJPN2P05	BJPN2P06	BJPN2P07	BJPN2P08	BJPNAPI
BJPNAPI1	BJPNAPI2	BJPNCPIP	BJPNFAUD	BJPNGNOT
BJPNGPIP	BJPNPBDT	BJPNPDET	BJPNPKL	BJPNPRL
BJPNPRNT	BJPNPRUT	BJPNPSET	BJPNPUP	BJPNPUTL
BJPNSPOV	BJPNSPRB	BJPNUTIL	BJPNVFIL	

### 5.2 Routines with Description

Routine	Description
BJPN20AU	BJPN v2.0 post-install audit handling routine
BJPN20EN	BJPN v2.0 environmental check routine
BJPN20P1	BJPN v2.0 post-install conversion routine
BJPN20PR	BJPN v2.0 pre-install routine
BJPN20PS	BJPN v2.0 post-install front end routine
BJPN20RG	BJPN v2.0 post-install component registration routine
BJPN2P01	BJPN v2.0 p1 post-install routine
BJPN2P02	BJPN v2.0 p2 post-install routine
BJPN2P03	BJPN v2.0 p3 post-install routine
BJPN2P04	BJPN v2.0 p4 post-install routine
BJPN2P05	BJPN v2.0 p5 post-install routine
BJPN2P06	BJPN v2.0 p6 post-install routine
BJPN2P07	BJPN v2.0 p7 post-install routine
BJPN2P08	BJPN v2.0 p8 post-install routine
BJPNAPI	Routine containing Application Programmer Interface (API) calls utilized by Text Integration Utility (TIU) and Health Summary objects
BJPNAPI1	API compile routine
BJPNAPI2	API compile routine

<b>Routine</b>	<b>Description</b>
BJPNCPIP	Routine containing problem handling calls
BJPNFAUD	Routine to retrieve audit history
BJPNGNOT	Routine to retrieve note details for the Pregnancy Issues and Problems list (PIP)
BJPNGPIP	Routine to retrieve PIP information
BJPNPBDT	Routine to retrieve problem detail history
BJPNPDET	Utility call routine
BJPNPKL	Pick list routine
BJPNPRL	Calls used by PIP
BJPNPRNT	Routine containing functions and RPCs to handle printing of patient audit history
BJPNPRUT	Routine which contains additional prenatal component function and RPCs
BJPNPSET	Set prenatal PIP problem routine
BJPNPUP	Routine which contains additional prenatal component function and RPCs
BJPNPUTL	Utility call routine
BJPNSPOV	Set as POV routine
BJPNSPRB	Set prenatal problem routine
BJPNUTIL	Utility call routine
BJPNVFIL	Old audit handling routine

## 6.0 Files and Tables

### 6.1 File List

File #	Filename	Description
90680.01	BJPN PRENATAL PROBLEMS	Contains a list of prenatal problems stored for patients as well as the current information stored for each prenatal problem.

### 6.2 File Access

File #	Filename	GL	RD	WR	LYG	DD	DEL
90680.01	BJPN PRENATAL PROBLEMS	^BJPNPL(	@	@	@	@	@

### 6.3 Cross References

#### 90680.01 (BJPN PRENATAL PROBLEMS)

##### .01 PLACEHOLDER FIELD

B Regular type cross reference

##### .02 PATIENT NAME

D Regular type cross reference

##### .03 \*SNOMED TERM

C Regular type cross reference

AC New style cross reference

PATIENT NAME, \*SNOMED TERM, IEN

AN New style cross reference

PATIENT NAME, \*SNOMED TERM (FUTURE), IEN

G New style cross reference (Holdover from Prenatal 1.0)

PATIENT NAME, PROBLEM, IEN

##### .1 PROBLEM

E Regular type cross reference

F New style cross reference

PATIENT NAME, PROBLEM, IEN

## 6.4 Table File

**File: 90680.01 BJPN PRENATAL PROBLEMS**

**Global: ^BJPNPL(**

Field #	Field Name	Subscript	Piece	Type
.01	PLACEHOLDER FIELD	D0,0	1	N
.02	PATIENT NAME	"	2	P9000001
.03	*SNOMED TERM	"	3	F (Previously P90680.02 in v1.0)
.04	*SNOMED TERM (FUTURE)	"	4	Future field (v1.0)
.05	*PROVIDER TEXT	"	5	P9999999.27 (v1.0)
.06	CURRENT PRIORITY	"	6	S
.07	CURRENT SCOPE	"	7	S
.08	CURRENT STATUS	"	8	S
.09	CURRENT DEFINITIVE EDD	"	9	D
.1	PROBLEM	"	10	P9000011
1.01	*ORIGINAL ENTRY DATE	D0,1	1	D (v1.0)
1.02	*ORIGINAL ENTERED BY	"	2	P200 (v1.0)
1.03	*LAST MODIFIED DATE/TIME	"	3	D (v1.0)
1.04	*LAST MODIFIED BY	"	4	P200 (v1.0)
2.01	PROBLEM DELETED BY	D0,2	1	P200
2.02	DATE/TIME PROBLEM DELETED	"	2	D
2.03	REASON PROBLEM DELETED	"	3	S
2.04	DELETE REASON IF OTHER	"	4	F
3	*CURRENT NOTE	D0,3	1	F (v1.0)
4	*HISTORICAL NOTES	D0,4		
.01	HISTORICAL NOTES	"	1	F (v1.0)
.02	NOTE ENTRY DATE/TIME	"	2	D (v1.0)
.03	NOTE ENTERED BY	"	3	P200 (v1.0)
2.01	NOTE DELETED BY	D0,5,D1,2	1	P200 (v2.0)

Field #	Field Name	Subscript	Piece	Type
2.02	DATE/TIME NOTE DELETED	"	2	D (v1.0)
2.03	REASON NOTE DELETED	"	3	S (v1.0)
2.04	DELETE REASON IF OTHER	"	4	F (v1.0)
5	IPL PIP	D0,5		
.01	PIP DATE	D0,5,D1,0	1	D
.02	PIP	"	2	S
.03	PIP USER	"	3	P200

## 7.0 External Relations

### 7.1 Callable Routines

Name	Tag	Routine	Inactive
BJPN CAN DELETE	CDEL	BJPNCPIP	
BJPN CAN EDIT PIP	EDIT	BJPNPDET	
BJPN CARE PLANS AND GOALS	NOTES	BJPNGPIP	
BJPN CHECK FOR ASTHMA	ASTHMA	BJPNUTIL	
BJPN CHECK FOR INJURY	ISINJ	BJPNUTIL	
BJPN CHECK FOR PROBLEM	PCHECK	BJPNSPRB	
BJPN CHECK PRB STATUS	SCHK	BJPNGNOT	
BJPN CHECK VISIT NOTE AUTHOR	AUTHORCK	BJPNPDET	Yes
BJPN CHK FOR VST NOTES	VNOTES	BJPNPRL	Yes
BJPN CLOSE PIP	CLOSE	BJPNPUTL	
BJPN DEL PRB VST NOTES	DVNOTES	BJPNPDET	Yes
BJPN DELETE PIP PROBLEM	DEL	BJPNCPIP	
BJPN DELETE POV	DPOV	BJPNPUTL	
BJPN DELETE PRB NOTE	DEL	BJPNPUP	Yes
BJPN FIRE EHR EVENT	FIREEV	BJPNPDET	
BJPN GET ABNORMAL	GETABN	BJPNPUTL	
BJPN GET ASTHMA CLASSES	ASTCLS	BJPNUTIL	
BJPN GET ASTHMA CONTROL	ASTCON	BJPNUTIL	
BJPN GET DEF PRNT	GDFLT	BJPNPRNT	
BJPN GET DX CAUSE	DXCAUSE	BJPNUTIL	
BJPN GET INJURY PLACE LIST	INJPLC	BJPNUTIL	
BJPN GET PICK LIST	PICK	BJPNPKL	
BJPN GET PICK LISTS	LST	BJPNPKL	
BJPN GET PIP	PIP	BJPNGPIP	
BJPN GET PR NOTES	NOTES	BJPNGPIP	
BJPN GET PRIMARY PROVIDER	PPRV	BJPNPUTL	
BJPN GET PRINTER LIST	DEVICE	BJPNPRNT	
BJPN GET PRLIST HDR	HDR	BJPNPRL	
BJPN GET PROB NOTES	NOTES	BJPNGNOT	
BJPN GET PROBLEM	PROB	BJPNSPRB	
BJPN GET SNOMED TERMS	SNO	BJPNPKL	

Name	Tag	Routine	Inactive
BJPN GET SUBSET	SUBSET	BJPNSPRB	
BJPN OPEN PIP	OPEN	BJPNUTIL	
BJPN PICK LIST PRB DELETE	DEL	BJPNPKL	
BJPN PICK LIST TOGGLE STATUS	CPSTS	BJPNCPIP	
BJPN PRINT DETAIL	DETPRT	BJPNPRNT	
BJPN PROBLEM DETAIL	DET	BJPNPBDT	
BJPN SELECT INJURY CAUSE	GETCOI	BJPNUTIL	
BJPN SET AS POV	POV	BJPNPUP	Yes
BJPN SET DEDD	DEDD	BJPNUTIL	
BJPN SET DEF PRNT	SDFLT	BJPNPRNT	
BJPN SET FLAG	FLAG	BJPNVFIL	
BJPN SET PIP PROBLEM	SET	BJPNPSET	
BJPN SET POV	POV	BJPNSPOV	
BJPN SET PRB FROM PIP	ADD	BJPNPUP	Yes
BJPN SET PROB TO PIP	ADD	BJPNPRL	
BJPN SET PROBLEM	SET	BJPNPSET	
BJPN SET PROBLEM NOTE	SNOTE	BJPNPUP	Yes
BJPN SET PROVIDER	PRV	BJPNPUTL	
BJPN TOGGLE SCOPE	SCO	BJPNCPIP	
BJPN TOGGLE STATUS	STS	BJPNCPIP	
BJPN UPDATE PROBLEM	UPD	BJPNPRUT	Yes
BJPN USR CLASS MEMBER	CLSMBR	BJPNPRUT	
BJPN VISIT LOCK CHK	VLOCK	BJPNPRL	

Routine Called	Description
EN^APCDALVR ;PEP	Called to create PCC V File entries
AGE^AUPNPAT ;PEP	Return patient age
HRN^AUPNPAT ;PEP	Return patient health record number
CHK^AUPNSICD	
ICCDX^AUPNVUTL	
ISLOCKED^BEHOENCX ;PEP	Returns whether visit has been locked for editing
VSTR2VIS^BEHOENXC ;PEP	Convert visit string to visit IEN
CHKASM^BGOASLK	
GET^BGOCPPLAN	
UPSTAT^BGOCPPLAN	



Routine Called	Description
CONCEPT^BGOPAUD	
GET^BGOPROB	
NEXTID^BGOPROB	
SET^BGOPROB	
EDIT^BGOPROB1	
GETONE^BGOPROB1	
DELETE^BGOUTL	
ERR^BGOUTL	
UPDATE^BGOUTL	
VFNEW^BGOUTL2	
GETSET^BGOUTL3	
DEL^BGOVPOV	Delete POV for visit
GET^BGOVPOV	
SET^BGOVPOV	Set POV for visit (Add)
INJURY^BGOVPOV2	
EDIT^BGOVPOV3	Set POV for visit (Edit)
SETPRV^BGOVPRV	Set provider for visit
GET^BGOVTR	
GETEDU^BGOVTR	
FNUM^BGOVVI	
GET^BGOVVI	
CONC^BSTSAPI	
DESC^BSTSAPI	
I10ADV^BSTSAPI	
VALTERM^BSTSAPI	
SUBLST^BSTSAPI	
ICD10^BSTSUTIL	
LOG^BUSAAPI	
BRDCAST^CIANBEVT ;EP – Documented EHR function call	Fire EHR event
GETSUBSC^CIANBEVT ;EP – Documented EHR function call	Return list of subscribers to EHR event
HASKEY^CIAVCXUS ;EP –	Return whether user has the specified security key

Routine Called	Description
Documented EHR function call	
GETVAR^CIAVMEVT ;Documented EHR function call	Returns context variables for EHR patient/visit
GETPAR^CIAVMRPC ;Documented EHR function call	Returns the value for the specified parameter
DEVICE^CIAVUTIO ;Documented EHR function call	Returns a device listing
PRINT^CIAVUTIO ;Documented EHR function call	Prints compiled information
PRTGETDF^CIAVUTIO ;Documented EHR function call	Returns default print device for user
PRTSETDF^CIAVUTIO ;Documented EHR function call	Sets default print device for user
ICDDX^ICDCODE	
ICDDX^ICDEX	
IMP^ICDEXA	
LOOK^LEXA	
CONFIG^LEXSET	
ICDONE^LEXU	
ONE^LEXU	

## 7.2 Published Entry Points

Routine	Description
EN^APCDALVR ;PEP	Called to create PCC V File entries
AGE^AUPNPAT ;PEP	Return patient age
HRN^AUPNPAT ;PEP	Return patient health record number
ISLOCKED^BEHOENCX ;PEP	Returns whether visit has been locked for editing
VSTR2VIS^BEHOENXC ;PEP	Convert visit string to visit IEN
DEL^BGOVPOV ;EP – Documented EHR function call	Delete POV for visit
SET^BGOVPOV ;EP – Documented EHR function call	Set POV for visit
SETVPRV^BGOVPRV ;Documented EHR function call	Set provider for visit
BRDCAST^CIANBEVT ;EP – Documented EHR function call	Fire EHR event

<b>Routine</b>	<b>Description</b>
GETSUBSC^CIANBEVT ;EP – Documented EHR function call	Return list of subscribers to EHR event
HASKEY^CIAVCXUS ;EP – Documented EHR function call	Return whether user has the specified security key
GETVAR^CIAVMEVT ;Documented EHR function call	Returns context variables for EHR patient/visit
GETPAR^CIAVMRPC ;Documented EHR function call	Returns the value for the specified parameter
DEVICE^CIAVUTIO ;Documented EHR function call	Returns a device listing
PRINT^CIAVUTIO ;Documented EHR function call	Prints compiled information
PRTGETDF^CIAVUTIO ;Documented EHR function call	Returns default print device for user
PRTSETDF^CIAVUTIO ;Documented EHR function call	Sets default print device for user

### 7.3 Exported Options

There are no callable options in BJPN since the PCM components are accessed entirely from EHR. BJPNRPC is the broker option.

<b>Option Name</b>	<b>Description</b>
BJPNRPC	This option hosts RPCs in the BJPN namespace. Users must have access to this option in order to use the PCM.

## 8.0 Internal Relations

All functions within this application work independently.

There are no documented internal relations in BJPN.

## **9.0 Archiving and Purging**

There is no archiving or purging currently implemented in PCM.

## 10.0 Documentation Resources

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

### 10.1 System Documentation

Online VPS system documentation can be generated through the use of several Kernel options, including, but not limited to:

- %INDEX
- Menu Management
- Inquire Option
- Print Option File
- VA FileMan
- Data Dictionary Utilities
- List File Attributes

For more option listings and further information about other utilities that supply online technical information, see the Decentralized Hospital Computer Program (DHCP) Kernel Reference manual.

#### 10.1.1 %INDEX

The %INDEX option analyzes the structure of a routine to determine in part, if the routine adheres to RPMS programming standards. The 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, 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 VPS system:
- At the “Routine(s)?” prompt, type the <<CC>> namespace.

### 10.1.2 Inquire Options

The Inquire menu management option provides the following information about a specified option:

- Option name
- Menu text
- Option description
- Type of option
- Lock (if any)

In addition, all items on the menu are listed for each menu option. To secure information about <<RPMSpackage>> options, specify the BJPN namespace.

### 10.1.3 Print Option File

The Print Option File utility generates a listing of options from the Option file (#19). Users can print all of the entries or a single option or range of options.

### 10.1.4 List File Attributes

This VA FileMan option allows users to generate documentation pertaining to files and file structure. The standard format of this option provides 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

For a comprehensive listing of <<package name>> files, see Section 6.0.

## 10.2 Online Help

In addition to system documentation, RPMS includes special help displays for most menu options and data entry prompts. Typing a question mark (?) at the “Select . . . Option” prompt displays information related to the current option, where:

Typing:	Displays:
One question mark (?)	A list of all options accessible from the current option.
Two question marks (??)	A list of all accessible options and their formal names.
Three question marks (???)	A brief description for each option in a menu.
One question mark (?) followed by an option name (?OPTION)	Extended help, if available, for that option.



## 11.0 SAC Requirements and Exemptions

The following is a Standards and Conventions (SAC) Exemption Request for use of third-party User Interface (UI) controls.

<b>Request for Exemption to RPMS Programming Standards</b>	
<b>Package:</b> BJPN	<b>Date:</b> July '12
<b>Program:</b> N/A	
<b>Line Number:</b> N/A	
<b>Applicable Standard:</b> Section 9 of the 2009 SAC	
Section 9.3 states the following: Use of commercially purchased controls requires SAC Commission approval through the Request for Exemption process. The request must also contain the manufacturer's licensing and deployment agreements.	
<b>Reason for Exemption:</b>	
Requirements for the Prenatal application required the use of enhanced UI controls for datagrid, toolbars, tabbed MDI interface, Excel® export and print preview displays. To accommodate these needs without significant additional development time and cost associated with developing these custom controls, commercially available user interface controls were purchased from Infragistics for a nominal fee and were utilized within the GUI portion of the Prenatal application. The set of controls used at the time of this writing is the NetAdvantage® for Windows® Forms–Version 2010 Vol 3. A similar exemption was granted in January of 2007 for the ICARE MANAGEMENT SYSTEM (BQI) package.	
The licensing agreement is attached with this application, and our understanding is that the control dll files may be incorporated and distributed with applications freely. The charge only comes into play for the developer licenses, i.e. in order for a developer to use these controls within a new application, they must have a properly licensed copy of the developer tools on the machines used for development. Use of these tools was suggested and encouraged by IHS liaisons early in the design phase of the iCare project.	
Additional information about these controls is available from the Infragistics® web site:	
<b>Product Description:</b>	
<a href="http://www.infragistics.com/dotnet/netadvantage/winforms.aspx#Overview">http://www.infragistics.com/dotnet/netadvantage/winforms.aspx#Overview</a>	
<b>508 Accessibility Information:</b>	
<a href="http://www.infragistics.com/help/topic/3C16327B-359A-4288-AF74-74BCDCB5AFB7">http://www.infragistics.com/help/topic/3C16327B-359A-4288-AF74-74BCDCB5AFB7</a>	
<b>Current license agreement:</b>	
<a href="http://www.infragistics.com/legal/license">http://www.infragistics.com/legal/license</a>	
<b>Developer:</b>	
<b>SACC Review</b>	<b>Date:</b>
Recommend APPROVAL___ DISAPPROVAL___	
<b>Duration:</b>	
<b>Comments:</b>	
<b>OIT Action</b>	<b>Date:</b>
Request APPROVED___ DISAPPROVED___	
<b>Comments:</b>	
Director, DIT	

## 12.0 Prenatal Client

### 12.1 Description of Development Environment

The Prenatal application was developed using the programming language C# within Microsoft® Visual Studio® 2012 integrated development environment (IDE). The PCM is written to utilize the Microsoft .NET 2.0 framework. All new classes created for the Prenatal application exist within the namespace IHS.PN.EHR.

In addition to the standard .NET object classes, the Prenatal application also uses commercially available Windows form controls from Infragistics. All the controls used were part of a package of controls named Infragistics NetAdvantage for Windows Forms 2010 Volume 3.

In addition, the Prenatal application also utilizes the BMX version 4.0 software to facilitate security authentication and communication between the EHR application and the RPMS server data. All data retrieval and updates are handled through the RPCs defined in the BJPN namespace.

All of the DLL files upon which Prenatal depend are delivered with the EHR application install package and are stored in the EHR program directory.

### 12.2 Prenatal RPMS Server Requirements

The RPMS server portion of the Prenatal application does not require a specific version of Caché® or operating system (OS). However, the server needs to be able to support BMX 4.0 fully, and is therefore subject to any requirements needed to run that application. Please refer to the BMX version 4.0 Technical Manual for details.

Prenatal is included as part of EHR. Workstation OS and hardware requirements are the same as listed in EHR installation guide. Additional disk space (approximately 16 MB) will be required for the PCM's DLLs and help files.

### 12.3 Prenatal GUI Server–Install %

Files that will be installed with the Prenatal application.

Filename	Assembly Version	Description
IHS.PN.EHR.PrenatalProblemList.dll	2.0.8.4	This dll provides all the functionality to implement Prenatal Problem List in EHR.

Filename	Assembly Version	Description
RichTextBoxPrintControl.dll	1.0.0.0	This class extends the RichTextBox control to allow for generation of formatted print documents in print preview and print to printer functions. Specifically, class is used to print character based reports pulled from RPMS and displayed in the Prenatal application.
IHS.PN.EHR.PrenatalProblemList.chm		Compiled HTML file that contains the online help for Prenatal Problem List.

Files that are part of a set of enhanced UI controls from Infragistics called NetAdvantage for Windows Forms® Version 2010 Volume 3.

Filename	Assembly Version	Description
Infragistics2.Shared.v10.3.dll	10.3.20103.1000	This file contains general functions and types common to all of the Infragistics controls.
Infragistics2.Excel.v10.3.dll	10.3.20103.1000	This file contains helper classes that allow export to Excel format without requiring that Excel is installed on the client machine.
Infragistics2.Win.v10.3.dll	10.3.20103.1000	This file contains classes used at a high level to control application-wide styles and appearances and interface with Windows XP themes, etc.
Infragistics2.Win.Misc.v10.3.dll	10.3.20103.1000	This is a set of other miscellaneous functions and data types used when working with the other Infragistics classes.
Infragistics2.Win.UltraWinEditors.v10.3.dll	10.3.20103.1000	The UltraWinEditors is a set of editor controls.
Infragistics2.Win.UltraWinListView.v10.3.dll	10.3.20103.1000	The UltraWinListView is a user interface control to display lists of items.
Infragistics2.Win.UltraWinStatusBar.v10.3.dll	10.3.20103.1000	The UltraWinStatusBar provides the enhanced status bar used at the bottom of form to provide status text and row counts.
Infragistics2.Win.UltraWinGrid.v10.3.dll	10.3.20103.1000	The UltraGrid™ is an enhanced data-bound DataGrid used to display tabular data to the user. This also allows users to sort, filter, arrange columns, and select rows of data at run time.

Filename	Assembly Version	Description
Infragistics2.Win.UltraWinToolbars.v10.3.dll	10.3.20103.1000	This file contains classes to handle the toolbars, menu and context menus (right-click) within Windows forms.
Infragistics2.Win.UltraWinTabControl.v10.3.dll	10.3.20103.1000	This file contains classes to handle the tabs controls.
Infragistics2.Win.UltraWinGrid.ExcelExport.v10.3.dll	10.3.20103.1000	This file contains the classes used to handle export of information from UltraGrid™ DataGrid to Excel format.
Infragistics2.Win.UltraWinPrintPreviewDialog.v10.3.dll	10.3.20103.1000	This file contains classes to handle print preview windows for printable items with the application and allows for zoom, page layout adjustments, etc.
BEHPovCvg.dll	1.0.6075.28525	The file contains classes to handle the POV and CVG (Care Plan, Visit Instructions, Goal Notes) screens from the Integrated Problem List provided by Medsphere.
IndianHealthService.SNOMEDCTSearch.dll	1.0.7.2	SNOMED CT Search tool.

# Glossary

## **Pregnancy Issues and Problems List**

New functionality created in the BJPN namespace to implement pregnancy problem tracking for the Systematized Nomenclature of Medicine--Clinical Terms (SNOMED CT)® terms.

## **Electronic Health Record**

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

## **ICD Codes**

One of several code sets used by the healthcare industry to standardize data. The International Classification of Disease (ICD) codes are an international diagnostic coding scheme. In addition to diseases, ICD also includes several families of terms for medical-specialty diagnoses, health status, disablements, procedures, and reasons for contact with HCPs. IHS currently uses ICD-9 for coding.

## **Purpose of Visit**

In RPMS, ICD codes and narratives describing the patient's purpose of visit (POV) are documented in PCC V POV.

## **Resource and Patient Management System**

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

## **Text Integration Utility**

Refers to functions within RPMS used to store long blocks of text in the medical record.

## **Visual Studio**

Microsoft software development tool and IDE used to develop the Prenatal application.

## Acronym List

Acronym	Meaning
API	Application Programmer Interface
DLL	Dynamic Link Library
EHR	Electronic Health Record
GUI	Graphical User Interface
ICD	International Classification of Disease
IDE	Integrated Development Environment
IHS	Indian Health Service
OS	Operating System
PCM	Prenatal Care Module
PIP	Pregnancy Issues and Problems
POV	Purpose of Visit
RPC	Remote Procedure Call
RPMS	Resource and Patient Management System
SAC	Standards and Conventions
SNOMED CT	Systematized Nomenclature of Medicine--Clinical Terms
TIU	Text Integration Utility
UI	User Interface
VA	U.S. Department of Veterans Affairs

## 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](mailto:support@ihs.gov)