



RESOURCE AND PATIENT MANAGEMENT SYSTEM

RPMS Electronic Health Information (EHI) Export

(BREH)

Technical Manual

Version 1.0
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Revision History

Version	Date	Author	Section	Page Number	Summary of Change
1.0		OIT Developers	All	All	Initial Version

Preface

The purpose of this manual is to provide technical information about the Resource and Patient Management System (RPMS) Electronic Health Information (EHI) Export v1.0 (BREH) package.

BREH is designed to generate an EHI export using a predefined national schema, which is published on the Indian Health Service website. The BREH national schema includes all patient health information as defined by the Office of National Coordinator (ONC) 2015 Edition Cures Update and the 21st Century Cures Act (21 CCA).

1.0 Introduction

The BREH application is a component of the Indian Health Service (IHS) RPMS software. The application allows users to generate an EHI export using a predefined national schema for a single patient or for a patient population. The national schema consists of the patient's EHI that can be stored in the EHR at the time of the BREH release. These exports meet the ONC 2015 Editions Cures Update and 21 CCA certification specifications.

Note: Although the EHI export generates using a predefined national schema, the BREH application provides sites with an option to create their own schema. Site can choose to copy an existing national schema and modify it or they can create their own completely custom schema.

EHI means “electronic protected health information” (ePHI) as defined in 45 CFR 160.103 to the extent that it would be included in a designated record set (DRS) as defined in 45 CFR 164.501, regardless of whether the group of records are used or maintained by or for an entity covered by the Health Insurance Portability and Accountability Act (HIPAA) Rules.

The DRS as defined in the HIPAA Rules (45 CFR 164.501) consists of the following:

- Medical records and billing records about individuals;
- Enrollment, payment, claims adjudication, and case or medical management record systems maintained by or for a health plan;
- Other records that are used, in whole or in part, to make decisions about individuals.

Note: The term “record” means any item, collection, or grouping of information that includes protected health information.

The EHI export does not include the following:

- Psychotherapy notes as defined in 45 CFR 164.501.
- Information compiled in reasonable anticipation of, or for use in, a civil, criminal, or administrative action or proceeding.

The Security categorization for this application is HIGH in accordance with Federal Information Processing Standard (FIPS) 199. Security controls used in this application adhere to those outlined in the System Security Plan (SSP) for RPMS (SSP 06-02) with specific details as follows in this document.

1.1 Purpose

EHI export primary uses are to provide patients with their EHI stored within the Electronic Health Record (EHR) or for migrating from an existing system to a new system of record.

1.2 Scope

An EHI export is machine-readable document containing all the patient's EHI stored in the RPMS EHR using a predefined national schema. The national schema consists of all patient related files and their cross-references and may be updated when patient files are added and modified by other RPMS and EHR applications.

1.3 Technical Information

This manual provides IHS site managers with a technical description of the BREH 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 BREH. The file number range for this package is 90314–90314.99.

1.4 Architecture

EHI export documents can be generated using for a specific patient or a population of patients via an RPMS API.

2.0 Orientation

The BREH application has no RPMS menu option for users. Instead, it has its own menu structure which is accessible from the programmer's prompt. This menu structure is documented in Section 4.0.

3.0 Implementation and Maintenance

3.1 General Information

The BREH application is designed to work within a standard InterSystems Cache[®], Ensemble[®], HealthShare[®] or IRIS[®] environment. Installation of the BREH application is done through a standard Kernel Installation and Distribution System (KIDS) install. Table 3-1 shows the prerequisite patch requirements for BREH Version 1.0.

Table 3-1: Prerequisite Packages and Descriptions

Package and Version	Associated Patch Designation	Brief Patch Description
VA FileMan (DI)	Patch 1020 (or greater)	The version 22.0 Patch 1020 release.
VA Kernel (XU)	Patch 1020	The version 8.0 Patch 1020 release.

3.2 System Requirements

The BREH application relies on other RPMS applications. As a result, Table 3-2 lists the minimum system requirements to ensure the exports are complete as defined by the national schema.

Table 3-2: System Requirements by Module and Minimum Version

Module	Minimum Version
VA FileMan (DI)	v22.0 Patch 1020 or later
VA Kernel (XU)	v8.0 Patch 1020 or later

3.2.1 CPU Capacity Requirements

Generating a BREH EHI export for a single patient should not adversely affect other processes running on the server. However, when choosing to perform a BREH EHI export of all patients on a system, care should be taken to run the export process during off hours when a limited number of users are on the system.

3.2.2 Disk space

3.2.2.1 Disk space required for single BREH EHI document generation

An EHI document generated for a single patient can vary greatly in size. Depending on the amount of care recorded for a patient a single EHI document could range anywhere from 1 MB to upwards of 80 MB. When generating a document for a patient therefore, care should be taken to ensure an ample amount of disk storage space is available.

3.2.2.2 Disk space required for a couple export of a site's patient population

If a site wishes to generate a complete BREH export of every patient in their database, a significant amount of disk space will be required to hold the exported EHI files. It is recommended that, at minimum, disk space equivalent to $\frac{3}{4}$ of the size of the production database be available before attempting to generate EHI exports of all patients.

3.3 Package-wide Variables

There are no package-wide variables in the BREH application.

3.4 Security Keys

The BREH application is designed to support two roles:

- Regular users who are permitted to access the BREH menu system, enter/edit/import/export schema information, and create site and patient exceptions.
- Elevated users who can perform the same tasks as regular users but can also generate an EHI document for a patient or patients.

The BREH application includes security keys that controls access to the BREH menus that allow users perform the functionality based on their role. lists the security keys included with the BREH application. In addition to these BREH keys, users also need to be assigned the XUMGR and XUPROG keys. Finally, in order to make the BREH application more secure, only users who have programmer access are able to access the BREH menu structure. In User Management, users must have a “@” assigned for the FILE MANAGER ACCESS CODE in order to access the BREH menus and functionality.

Table 3-3: BREH Security Keys

Key Name	Descriptive Name	Description
BREHZMENU	Menu Access Key	This key permits users to access the BREH menu system, enter/edit/import/export schema information, and create site and patient exceptions.
BREHZGEN	Export EHI document Key	This key permits holders of the BREHZMENU key to also generate an EHI document for a patient or patients.

4.0 BREH Menu

The BREH application has no RPMS menu option for users. Instead, it has its own menu structure which is accessible from the programmer's prompt. All of the BREH menu options are described in the BREH User Manual for the Version 1.0 release.

To access the BREH Main Menu, after ensuring all of the appropriate requirements defined in Section 3.4 have been met, users can sign into the BREH menu as shown in Figure 4-1:

```

Site set to 2016 DEMO HOSPITAL

1      Core Applications ...
2      Device Management ...
3      VA FileMan ...
4      Manage Mailman ...
5      Menu Management ...
6      Programmer Options ...
7      Operations Management ...
8      User Management ...
9      AVA MENU ...
10     Taskman Management ...
11     Information Security Officer Menu ...
12     Admin Tools ...

You have PENDING ALERTS
      Enter "VA to jump to VIEW ALERTS option

Select IHS Kernel <TEST ACCOUNT> Option: 6 Programmer Options

KIDS  Kernel Installation & Distribution System ...
PG    Programmer mode
      Delete Unreferenced Options
      Error Processing ...
      Global Block Count
      List Global
      Routine Tools ...

You have PENDING ALERTS
      Enter "VA to jump to VIEW ALERTS option

Select Programmer Options <TEST ACCOUNT> Option: PG Programmer mode

CHITT>D EN^BREHMENU

```

Figure 4-1: Accessing the BREH Menu

The BREH Main Menu will display as shown in Figure 4-2:

```

RPMS EHI EXPORT (BREH) Main Menu

1.  Generate a BREH EHI Export
2.  Edit BREH Settings

```

- ```
3. Enter EHI Demo Patients
4. BREH Schema Menu...
5. BREH Exception Menu...
6. Real World Testing Report
```

```
Select number or return to quit: (1-6):
```

Figure 4-2: The BREH Main Menu

The BREH Main Menu contains to submenu options, the BREH Schema Menu shown in Figure 4-3 and the BREH Exception Menu shown in Figure 4-4:

```
BREH Schema Menu
```

- ```
1. Import Schema File
2. Create/Edit/Remove Custom Schema Definition
3. Generate Schema Export File
```

```
Select number or return to quit: (1-3):
```

Figure 4-3: The BREH Schema Menu

```
BREH Exception Menu
```

- ```
1. Define Site Level Exceptions
2. Define Patient Specific Exceptions
3. Display Patient and Site Exceptions
```

```
Select number or return to quit: (1-3):
```

Figure 4-4: The BREH Exception Menu

## 5.0 Routine Descriptions

### 5.1 Routine List

Table 5-1: BREH Routine List

| Routine  | Routine  | Routine  |
|----------|----------|----------|
| BREH1P00 | BREHBEDD | BREHCCS  |
| BREHCCSA | BREHCCSE | BREHCLAS |
| BREHCSD  | BREHCSDO | BREHCSTF |
| BREHD634 | BREHD635 | BREHEXC  |
| BREHEXL  | BREHEXLS | BREHEXM  |
| BREHEXP  | BREHEXR  | BREHEXR1 |
| BREHEXR2 | BREHEXR3 | BREHEXU  |
| BREHGEN  | BREHGEN1 | BREHGSEA |
| BREHGSEM | BREHGSEP | BREHGSEU |
| BREHGSEX | BREHJSN  | BREHJSND |
| BREHJSNE | BREHMENU | BREHPE   |
| BREHPEL  | BREHPELF | BREHPER  |
| BREHPER1 | BREHPER2 | BREHPER3 |
| BREHPSED | BREHRWT  | BREHS634 |
| BREHS635 | BREHSE   | BREHSEE  |
| BREHSFE  | BREHSI   | BREHSIA  |
| BREHSIAF | BREHSIMP | BREHSIU  |
| BREHUTL  |          |          |

### 5.2 Routines with Description

Table 5 2: BREH Routines and descriptions

| Routine  | Description                                                       |
|----------|-------------------------------------------------------------------|
| BREH1P00 | EHI v1.0 release environmental checking and pre/post installation |
| BREHBEDD | Routine to retrieve BEDD related patient information              |
| BREHCCS  | Create/Edit Custom Schema                                         |
| BREHCCSA | Edit custom schema – ancillary file updates                       |
| BREHCCSE | Edit custom schema                                                |
| BREHCLAS | Import/Export BREH class data for a build                         |
| BREHCSD  | Create schema definition                                          |

| <b>Routine</b> | <b>Description</b>                               |
|----------------|--------------------------------------------------|
| BREHCSDO       | Create OIT schema definition                     |
| BREHCSTF       | Custom field processing                          |
| BREHD634       | Custom file 63 CHEM date export logic            |
| BREHD635       | Custom file 63 MICRO data export logic           |
| BREHEXC        | Custom field processing                          |
| BREHEXL        | Loop through files and identify entries          |
| BREHEXLS       | Identify entries in subfiles                     |
| BREHEXM        | Process multiple field entries                   |
| BREHEXP        | Process one file entry                           |
| BREHEXR        | Custom looping calls (1)                         |
| BREHEXR1       | Custom looping calls (2)                         |
| BREHEXR2       | Custom looping calls (3)                         |
| BREHEXR3       | Custom looping calls (4)                         |
| BREHEXU        | Utility calls                                    |
| BREHGEN        | EHI export front end                             |
| BREHGEN1       | EHI export front end (2)                         |
| BREHGSEA       | Generate a schema export file – ancillary files  |
| BREHGSEM       | Generate a schema export file – multiple fields  |
| BREHGSEP       | Generate a schema export file – process one file |
| BREHGSEU       | Schema export – utility calls                    |
| BREHGSEX       | Generate a schema export file                    |
| BREHJSN        | Decode/Encode JSON – front end                   |
| BREHJSND       | Decode JSON                                      |
| BREHJSNE       | Encode JSON                                      |
| BREHMENU       | BREH Main Menu Front End                         |
| BREHPE         | Create/edit patient exceptions – front end       |
| BREHPEL        | Patient exceptions – file records                |
| BREHPELF       | Patient exceptions – filter records              |
| BREHPER        | Patient exceptions – custom looping calls        |
| BREHPER1       | Patient exceptions – custom looping calls (2)    |
| BREHPER2       | Patient exceptions – custom looping calls (3)    |
| BREHPER3       | Patient exceptions – custom looping calls (4)    |
| BREHPSED       | Patient/site exception display                   |
| BREHRWT        | Real world testing report                        |
| BREHS634       | Custom file 63 CHEM schema logic                 |
| BREHS635       | Custom file 63 MICRO schema logic                |

---

| <b>Routine</b> | <b>Description</b>                             |
|----------------|------------------------------------------------|
| BREHSE         | Site exceptions – front end                    |
| BREHSEE        | Site exceptions – Edit site exceptions         |
| BREHSFE        | Site exceptions – Field exceptions             |
| BREHSI         | Import schema from a file                      |
| BREHSIA        | Import schema – pointer and ancillary info     |
| BREHSIAF       | Import schema – file definitions               |
| BREHSIMP       | Load spreadsheet into BREH EHI FILE DEFINITION |
| BREHSIU        | Import schema – utilities                      |
| BREHUTL        | BREH utilities                                 |

## 6.0 Files and Tables

### 6.1 File List

Table 6-1: BREH file numbers, filenames and descriptions

| File #       | Filename                      | Description                                                                                   |
|--------------|-------------------------------|-----------------------------------------------------------------------------------------------|
| 90314.0<br>1 | BREH EHI FILE DEFINITION      | Contains information required to process each file in EHI                                     |
| 90314.0<br>2 | BREH EHI SCHEMAS              | Contains EHI schema definitions                                                               |
| 90314.0<br>3 | BREH EHI PATIENT EXCEPTIONS   | Contains site defined patient exception information                                           |
| 90314.0<br>4 | BREH EHI CLASS TRANSPORT FILE | Contains class information transported in the BREH build file                                 |
| 90314.0<br>5 | BREH EHI SITE PARAMETERS      | Contains various site parameter and application settings                                      |
| 90314.0<br>6 | BREH EHI EXPORT HISTORY       | Contains a history of generated EHI documents                                                 |
| 90314.0<br>7 | BREH EHI ANCILLARY DATA DEF   | Contains custom ancillary definitions that can be applied during a schema definition creation |
| 90314.0<br>8 | BREH EHI SITE EXCEPTIONS      | Contains site exceptions that can be applied during the generation of an EHI document export  |

### 6.2 File Access

Table 6-2: BREH file access by number and filename

| File #       | Filename                      | GL         | RD | WR | LYG | DD | DEL |
|--------------|-------------------------------|------------|----|----|-----|----|-----|
| 90314.0<br>1 | BREH EHI FILE DEFINITION      | ^BREHFDEF( | @  | @  | @   | @  | @   |
| 90314.0<br>2 | BREH EHI SCHEMAS              | ^BREHSCH(  | @  | @  | @   | @  | @   |
| 90314.0<br>3 | BREH EHI PATIENT EXCEPTIONS   | ^BREHPE(   | @  | @  | @   | @  | @   |
| 90314.0<br>4 | BREH EHI CLASS TRANSPORT FILE | ^BREHCLS(  | @  | @  | @   | @  | @   |
| 90314.0<br>5 | BREH EHI SITE PARAMETERS      | ^BREHSITE( | @  | @  | @   | @  | @   |
| 90314.0<br>6 | BREH EHI EXPORT HISTORY       | ^BREHEXP(  | @  | @  | @   | @  | @   |

| File #   | Filename                    | GL        | RD | WR | LYG | DD | DEL |
|----------|-----------------------------|-----------|----|----|-----|----|-----|
| 90314.07 | BREH EHI ANCILLARY DATA DEF | ^BREHANC( | @  | @  | @   | @  | @   |
| 90314.08 | BREH EHI SITE EXCEPTIONS    | ^BREHSE(  | @  | @  | @   | @  | @   |

### 6.3 Cross References

BREH includes the following file cross references:

- 90314.01 (BREH EHI FILE DEFINITION)
  - .01 FILE
    - B regular cross reference
- 90314.02 (BREH EHI SCHEMAS)
  - .01 SCHEMA NAME
    - B regular cross reference
  - .06 OUTPUT FILE NAME
    - C new style cross reference
  - 1 FILE → .01 FILE
    - B regular cross reference
  - 1 FILE → 1 FIELD REFERENCE → .01 FIELD REFERENCE
    - B regular cross reference
  - 2 POINTER FILES → .01 POINTER FILE
    - B regular cross reference
  - 2 POINTER FILES → 1 FIELD REFERENCE → .01 FIELD REFERENCE
    - B regular cross reference
- 90314.03 (BREH EHI PATIENT EXCEPTIONS)
  - .01 PATIENT
    - B regular cross reference
  - 1 EXCEPTION PROFILE NAME → .01 EXCEPTION PROFILE NAME
    - B regular cross reference
    - C new style cross reference
    - C whole file mumps style cross reference on .01 PATIENT and .01 EXCEPTIONS PROFILE NAME
  - 1 EXCEPTION PROFILE NAME → 1 FILE → .01 FILE

- B regular cross reference
- E mumps style cross reference on .01 FILE (external value)
- 1 EXCEPTION PROFILE NAME → 1 FILE → 1 ENTRY EXCLUSION  
→ .01 ENTRY DIVISION|TIME
  - B regular cross reference
- 1 EXCEPTION PROFILE NAME → 1 FILE → .02 EXCLUDE ALL FILE ENTRIES
  - D whole file mumps style cross reference on .01 PATIENT (level 1) and .01 FILE (external value) – defined only for exclude all
- 1 EXCEPTION PROFILE NAME → 1 FILE → 1 ENTRY EXCLUSION  
→ 1 FIELD NUMBER → .01 FIELD NUMBER
  - B regular cross reference
- 1 EXCEPTION PROFILE NAME → 1 FILE → 1 ENTRY EXCLUSION  
→ .02 EXCLUDE ENTIRE ENTRY
  - I whole file mumps style cross reference on .01 PATIENT (level 1), .01 FILE (level 2 – external value) and .01 ENTRY DIVISION|IEN – defined only for exclude entire entry
  - IEN whole file mumps style cross reference on .01 PATIENT (level 1), .01 FILE (level 2 – external value) and .01 ENTRY DIVISION|IEN – defined for all entries
- 1 EXCEPTION PROFILE NAME → 1 FILE → 1 ENTRY EXCLUSION  
→ 1 FIELD NUMBER → .03 FILE/SUBFILE and .01 FIELD NUMBER
  - S new style cross reference
- 1 EXCEPTION PROFILE NAME → 1 FILE → 1 ENTRY EXCLUSION  
→ 1 FIELD NUMBER → .03 FILE/SUBFILE
  - F whole file mumps style cross reference on .01 PATIENT (level 1), .01 FILE (level 3 – external value), .01 ENTRY DIVISION|IEN (level 3) and .01 FIELD NUMBER
  - 90314.04 (BREH EHI CLASS TRANSPORT FILE)
- .01 PACKAGE NAME
  - B regular cross reference
  - 90314.05 (BREH EHI SITE PARAMETERS)
- .01 HOME SITE
  - B regular cross reference
- 2 BEDD EDVISIT CLASS DEF → .01 PROPERTY
  - B regular cross reference

- 3 EHI DEMO PATIENTS → .01 EHI DEMO PATIENTS
  - B regular cross reference
- 10 DICTIONARY FILES → .01 DICTIONARY FILES
  - B regular cross reference
- 10 DICTIONARY FILES → 1 EXPORT INCLUSION FIELDS → .01 EXPORT INCLUSION FIELD
  - B regular cross reference
  - 90314.06 (BREH EHI EXPORT HISTORY)
- .01 EXPORT DATE/TIME
  - B regular cross reference
- 1 PATIENT → .01 PATIENT
  - B regular cross reference
  - DFN whole file mumps style cross reference on .01 PATIENT (level 1 – external DFN value) and EXPORT DATE/TIME (level 2 – internal pointer)
  - DFNDT whole file mumps style cross reference on .01 PATIENT (level 1 – external DFN value) and EXPORT DATE/TIME (level 2 – external value)
- 1 PATIENT → 1 FILE → .01 FILE
  - B regular cross reference
  - FILE whole file mumps style cross reference on EXPORT DATE/TIME, .01 PATIENT (level 2 – external DFN value), .01 FILE (level 3 – external file number)
  - FILEDT whole file mumps style cross reference on .01 FILE (level 1 – external file number), EXPORT DATE/TIME (level 2 – external value), EXPORT DATE/TIME (level 3 – internal pointer)
  - 90314.07 (BREH EHI ANCILLARY DATA DEF)
- .01 ANCILLARY DEFINITION
  - B regular cross reference
- 1 FILE → .01 FILE
  - B regular cross reference
- 1 FILE → 1 FIELD NUMBER → .01 FIELD NUMBER
  - B regular cross reference

- INC whole file mumps style cross reference on .01 ANCILLARY DEFINITION (level 1 – internal value), .01 FILE (level 2 – external value) and .01 FIELD NUMBER (level 3 – external value)
- 90314.08 (BREH EHI SITE EXCEPTIONS)
  - .01 SITE EXCEPTION PROFILE NAME
    - B regular cross reference
    - C new style cross reference
  - .02 EXCEPTION TYPE
    - L regular cross reference
  - .03 FILE
    - F mumps style cross reference on .01 SITE EXCEPTION PROFILE NAME (level 1 – internal value) and .01 FILE (level 2 – external value)
    - D regular cross reference
  - .04 SUBFILE
    - S mumps style cross reference on .01 SITE EXCEPTION PROFILE NAME (level 1 – internal value) and .04 SUBFILE (level 2 – external value)
  - 1 CONDITIONS → .01 CONDITION #
    - B regular cross reference

## 6.4 Table File

This section includes the table files for the BREH application.

**File: 90314.01 BREH EHI FILE DEFINITION**

**Global: ^BREHFDEF(**

Table 6-3: BREH EHI FILE DEFINITION (#90314.01) file table

| Field # | Field Name                 | Subscript | Piece | Type  |
|---------|----------------------------|-----------|-------|-------|
| .01     | FILE                       | D0,0      | 1     | P (1) |
| .02     | EHI ENABLED                | D0,0      | 2     | S     |
| .03     | LOOKUP TYPE                | D0,0      | 3     | S     |
| .04     | ALTERNATE FILE LOOKUP      | D0,0      | 4     | P (1) |
| .05     | ROUTINE BREHEXR LOOKUP TAG | D0,0      | 5     | F     |
| .06     | INITIALIZE TAG~ROUTINE     | D0,0      | 6     | F     |
| .07     | FILE NAME                  | D0,0      | 7     | F     |
| .08     | FILE GLOBAL                | D0,0      | 8     | F     |

| Field # | Field Name                | Subscript | Piece | Type |
|---------|---------------------------|-----------|-------|------|
| .09     | 4DW ENABLED               | D0,0      | 9     | S    |
| .1      | CUSTOM FILE               | D0,0      | 10    | S    |
| 1       | CROSS REFERENCE           | D0,1      | 1     | F    |
| 3       | CUSTOM FIELD LOGIC        | D0,3      |       |      |
| .01     | CUSTOM LOGIC FILE/SUBFILE | D0,3,D1,0 | 1     | F    |
| .02     | CUSTOM TYPE               | D0,3,D1,0 | 2     | S    |
| .03     | DATA TAG~ROUTINE          | D0,3,D1,0 | 3     | F    |
| .04     | SCHEMA TAG~ROUTINE        | D0,3,D1,0 | 4     | F    |
| 1       | CONDITION                 | D0,3,D1,1 | 1     | F    |

**File: 90314.02 BREH EHI SCHEMAS**

**Global: ^BREHSCH(**

Table 6-4: BREH EHI SCHEMAS (#90314.02) file table

| Field # | Field Name               | Subscript          | Piece | Type                |
|---------|--------------------------|--------------------|-------|---------------------|
| .01     | SCHEMA NAME              | D0,0               | 1     | F                   |
| .02     | PUBLIC URL               | D0,0               | 2     | F                   |
| .03     | NATIONAL SCHEMA          | D0,0               | 3     | S                   |
| .04     | ANCILLARY DEFINITION     | D0,0               | 4     | P<br>(90314<br>.07) |
| .05     | SCHEMA TYPE              | D0,0               | 5     | S                   |
| .06     | OUTPUT FILE NAME         | D0,0               | 6     | F                   |
| .07     | COPIED FROM SCHEMA       | D0,0               | 7     | P<br>(0314.<br>07)  |
| .08     | SCHEMA ORIGIN            | D0,0               | 8     | S                   |
| .09     | VERSION STATUS           | D0,0               | 9     | S                   |
| 1       | FILE                     | D0,1               |       |                     |
| .01     | FILE                     | D0,1,D1,0          | 1     | P (1)               |
| .02     | FILE NAME                | D0,1,D1,0          | 2     | F                   |
| .03     | GLOBAL REFERENCE         | D0,1,D1,0          | 3     | F                   |
| .04     | FILE ORIGIN              | D0,1,D1,0          | 4     | S                   |
| .05     | FILE VERSION             | D0,1,D1,0          | 5     | S                   |
| .06     | EXCLUDE FILE FROM SCHEMA | D0,1,D1,0          | 6     | S                   |
| 1       | FIELD REFERENCE          | D0,1,D1,1          |       |                     |
| .01     | FIELD REFERENCE          | D0,1,D1,1,D<br>2,0 | 1     | F                   |

| Field # | Field Name               | Subscript            | Piece | Type  |
|---------|--------------------------|----------------------|-------|-------|
| 1       | SET OF CODES DEFINITION  | D0,1,D1,1,D<br>2,1   | 1     | F     |
| 2       | FIELD FORMAT CHECK       | D0,1,D1,1,D<br>2,2   | 1     | M     |
| 3       | OUTPUT TRANSFORM         | D0,1,D1,1,D<br>2,3   | 1     | M     |
| 4.01    | WORD SUB-FIELD NAME      | D0,1,D1,1,D<br>2,4   | 1     | F     |
| 9       | DICMX EXEC               | D0,1,D1,1,D<br>2,9   | 1     | M     |
| 9.1     | COMPUTED CODE 9.1        | D0,1,D1,1,D<br>2,9.1 | 1     | M     |
| 9.2     | COMPUTED CODE 9.2        | D0,1,D1,1,D<br>2,9.2 | 1     | M     |
| 2       | POINTER FILES            | D0,2                 |       |       |
| .01     | POINTER FILE             | D0,2,D1,0            | 1     | P (1) |
| .02     | POINTER FILE NAME        | D0,2,D1,0            | 2     | F     |
| .03     | GLOBAL REFERENCE         | D0,2,D1,0            | 3     | F     |
| 1       | FIELD REFERENCE          | D0,2,D1,1            |       |       |
| .01     | FIELD REFERENCE          | D0,2,D1,1,D<br>2,0   | 1     | F     |
| 1       | SET OF CODES DEFINITION  | D0,2,D1,1,D<br>2,1   | 1     | F     |
| 2       | FIELD FORMAT CHECK       | D0,2,D1,1,D<br>2,2   | 1     | M     |
| 3       | OUTPUT TRANSFORM         | D0,2,D1,1,D<br>2,3   | 1     | M     |
| 4.01    | WORD SUB-FIELD NAME      | D0,2,D1,1,D<br>2,4   | 1     | F     |
| 9       | DICMX EXEC               | D0,2,D1,1,D<br>2,9   | 1     | M     |
| 9.1     | COMPUTED CODE 9.1        | D0,2,D1,1,D<br>2,9.1 | 1     | M     |
| 9.2     | COMPUTED CODE 9.2        | D0,2,D1,1,D<br>2,9.2 | 1     | M     |
| 3       | INCLUDED SITE EXCEPTIONS | D0,3                 | 1     | F     |

**File: 90314.03 BREH EHI PATIENT EXCEPTIONS**

**Global: ^BREHPE(**

Table 6-5: BREH EHI PATIENT EXCEPTIONS (#90314.03) file table

| Field # | Field Name               | Subscript                        | Piece | Type                |
|---------|--------------------------|----------------------------------|-------|---------------------|
| .01     | PATIENT                  | D0,0                             | 1     | P (2)               |
| 1       | EXCEPTION PROFILE NAME   | D0,1                             |       |                     |
| .01     | EXCEPTION PROFILE NAME   | D0,1,D1,0                        | 1     | F                   |
| 1       | FILE                     | D0,1,D1,1                        |       |                     |
| .01     | FILE                     | D0,1,D1,1,D<br>2,0               | 1     | P<br>(90314<br>.01) |
| .02     | EXCLUDE ALL FILE ENTRIES | D0,1,D1,1,D<br>2,0               | 2     | S                   |
| .03     | EXCLUSION REASON         | D0,1,D1,1,D<br>2,0               | 3     | S                   |
| .04     | OTHER EXCLUSION REASON   | D0,1,D1,1,D<br>2,0               | 4     | F                   |
| 1       | ENTRY EXCLUSION          | D0,1,D1,1,D<br>2,1               |       |                     |
| .01     | ENTRY DIVISION EN        | D0,1,D1,1,D<br>2,1,D3,0          | 1     | F                   |
| .02     | EXCLUDE ENTIRE ENTRY     | D0,1,D1,1,D<br>2,1,D3,0          | 2     | S                   |
| .03     | EXCLUSION REASON         | D0,1,D1,1,D<br>2,1,D3,0          | 3     | S                   |
| .04     | OTHER EXCLUSION REASON   | D0,1,D1,1,D<br>2,1,D3,0          | 4     | F                   |
| 1       | FIELD NUMBER             | D0,1,D1,1,D<br>2,1,D3,1          |       |                     |
| .01     | FIELD NUMBER             | D0,1,D1,1,D<br>2,1,D3,1,D4,<br>0 | 1     | F                   |
| .02     | FIELD NAME               | D0,1,D1,1,D<br>2,1,D3,1,D4,<br>0 | 2     | F                   |
| .03     | FILE/SUBFILE             | D0,1,D1,1,D<br>2,1,D3,1,D4,<br>0 | 3     | F                   |

**File: 90314.04 BREH EHI CLASS TRANSPORT FILE**

**Global: ^BREHCLS(**

Table 6-6: BREH EHI CLASS TRANSPORT FILE (#90314.04) file table

| Field # | Field Name   | Subscript | Piece | Type |
|---------|--------------|-----------|-------|------|
| .01     | PACKAGE NAME | D0,0      | 1     | F    |

| Field # | Field Name               | Subscript | Piece | Type |
|---------|--------------------------|-----------|-------|------|
| 1.02    | RPMS STATUS              | D1,1      | 2     | S    |
| 1.03    | RPMS DATE/TIME INSTALLED | D0,1      | 3     | D    |
| 10      | XML                      | D0,10     | 1     | W    |
| 11      | CLASS                    | D0,2      |       |      |
| .01     | CLASS                    | D0,2,0    | 1     |      |

**File: 90314.05 BREH EHI SITE PARAMETERS**

**Global: ^BREHSITE(**

Table 6-7: BREH EHI SITE PARAMETERS (#90314.05) file table

| Field # | Field Name                  | Subscript           | Piece | Type               |
|---------|-----------------------------|---------------------|-------|--------------------|
| .01     | HOME SITE                   | D0,0                | 1     | F                  |
| .02     | TIME ZONE                   | D0,0                | 2     | S                  |
| .03     | DST                         | D0,0                | 3     | S                  |
| .04     | KEEP EXPORT DETAIL HISTORY  | D0,0                | 4     | S                  |
| .05     | LAST SCHEMA CHECK           | D0,0                | 5     | D                  |
| .06     | SCHEMA CHECK DAYS           | D0,0                | 6     | N                  |
| 2       | BEDD EDVISIT CLASS DEF      | D0,2                |       |                    |
| .01     | PROPERTY NAME               | D0,2,D1,0           | 1     | F                  |
| .02     | PROPERTY TYPE               | D0,2,D1,0           | 2     | S                  |
| .03     | POINTED TO FILE             | D0,2,D1,0           | 3     | P (1)              |
| 1       | CALCULATION CALL OR METHOD  | D0,2,D1,1           | 1     | F                  |
| 3       | EHI DEMO PATIENTS           | D0,1                |       |                    |
| .01     | EHI DEMO PATIENTS           | D0,1,D1,0           | 1     | P<br>(90000<br>01) |
| 4       | DEFAULT NATIONAL SCHEMA URL | D0,4                | 1     | F                  |
| 10      | DICTIONARY FILES            | D0,10               |       |                    |
| .01     | DICTIONARY FILES            | D0,10,D1,0          | 1     | P (1)              |
| 1       | EXPORT INCLUSION FIELDS     | D0,10,D1,1          |       |                    |
| .01     | EXPORT INCLUSION FIELD      | D0,10,D1,1<br>,D2,0 | 1     | F                  |
| .02     | SUBFILE REFERENCE           | D0,10,D1,1<br>,D2,0 | 2     | F                  |

**File: 90314.06 BREH EHI EXPORT HISTORY**

**Global: ^BREHEXP(**

Table 6-8: BREH EHI EXPORT HISTORY (#90314.06) file table

| Field # | Field Name              | Subscript            | Piece | Type         |
|---------|-------------------------|----------------------|-------|--------------|
| .01     | EXPORT DATE/TIME        | D0,0                 | 1     | D            |
| .02     | USER                    | D0,0                 | 2     | P (200)      |
| .03     | CURRENT PROCESS PATIENT | D0,0                 | 3     | P (2)        |
| .04     | COMPLETION DATE/TIME    | D0,0                 | 4     | D            |
| .05     | SCHEMA                  | D0,0                 | 5     | P (90314.02) |
| 1       | PATIENT                 | D0,1                 |       |              |
| .01     | PATIENT                 | D0,1,D1,0            | 1     | P (2)        |
| .02     | START DATE/TIME         | D0,1,D1,0            | 2     | D            |
| .03     | END DATE/TIME           | D0,1,D1,0            | 3     | D            |
| 1       | FILE                    | D0,1,D1,1            |       |              |
| .01     | FILE                    | D0,1,D1,1, D2,0      | 1     | P (1)        |
| .02     | START DATE/TIME         | D0,1,D1,1, D2,0      | 2     | D            |
| .03     | END TIME                | D0,1,D1,1, D2,0      | 3     | D            |
| 1       | IENS                    | D0,1,D1,1, D2,1      |       |              |
| .01     | IENS                    | D0,1,D1,1, D2,1,D3,0 | 1     | F            |
| 2       | FATAL ERROR MESSAGE     | D0,2                 | 1     | F            |

**File: 90314.07 BREH EHI ANCILLARY DATA DEF**

**Global: ^BREHANC(**

Table 6-9: BREH EHI ANCILLARY DATA DEF (#90314.07) file table

| Field # | Field Name                 | Subscript       | Piece | Type  |
|---------|----------------------------|-----------------|-------|-------|
| .01     | ANCILLARY DEFINITION       | D0,0            | 1     | F     |
| .02     | DEFINITION TYPE            | D0,0            | 2     | S     |
| 1       | FILE                       | D0,1            |       |       |
| .01     | FILE                       | D0,1,D1,0       | 1     | P (1) |
| .02     | INCLUDE ALL POINTER FIELDS | D0,1,D1,0       | 2     | S     |
| 1       | FIELD NUMBER               | D0,1,D1,1       |       |       |
| .01     | FIELD NUMBER               | D0,1,D1,1, D2,0 | 1     | F     |

**File: 90314.08 BREH EHI SITE EXCEPTIONS**

**Global: ^BREHSE(**

Table 6-10: BREH EHI SITE EXCEPTIONS (#90310.08) file table

| Field # | Field Name                  | Subscript | Piece | Type |
|---------|-----------------------------|-----------|-------|------|
| .01     | SITE EXCEPTION PROFILE NAME | D0,0      | 1     | F    |
| .02     | EXCEPTION TYPE              | D0,0      | 2     | S    |
| .03     | FILE                        | D0,0      | 3     | F    |
| .04     | SUBFILE                     | D0,0      | 4     | F    |
| .05     | EXCLUSION REASON            | D0,0      | 5     | S    |
| .06     | OTHER EXCLUSION REASON      | D0,0      | 6     | F    |
| 1       | CONDITIONS                  | D0,1      |       |      |
| .01     | CONDITION #                 | D0,1,D1,0 | 1     | N    |
| .02     | CONDITION LETTER            | D0,1,D1,0 | 2     | F    |
| .03     | FIELD NUMBER                | D0,1,D1,0 | 3     | F    |
| .04     | FIELD NAME                  | D0,1,D1,0 | 4     | F    |
| .05     | CONDITION NEGATE            | D0,1,D1,0 | 5     | S    |
| .06     | CONDITIONS POINTER          | D0,1,D1,0 | 6     | F    |
| .07     | CONDITION OPERATOR          | D0,1,D1,0 | 7     | F    |
| 1       | VALUE                       | D0,1,D1,1 | 1     | F    |
| 2       | EXTERNAL LOGIC SYNTAX       | D0,2      | 1     | M    |
| 3       | INTERNAL LOGIC SYNTAX       | D0,3      | 1     | W    |

## 7.0 External Relations

The BREH application utilizes various VA FileMan and Kernel API's and utilities to retrieve, format and output data into EHI files. The minimum versions of each package are listed in Section 3.1.

In addition, since the BREH application requires that suitable cross references be defined on patient related files in order to identify file records pertaining to a particular patient, the following package releases contain updated cross references on required files. While not required for the EHI document export to run, to ensure all of a patient's data is identified those patches should also be installed.

- CONTRACT HEALTH MGMT SYSTEM (ACHS) – Version 3.1, Patch 30
- LAB SERVICE (LR) – Version 5.2, Patch 1052

Note: One additional file CDMIS BILL [9002172.9] which required a new cross reference is included in the BREH release since there is no scheduled release of a CDMIS patch.

### 7.1 Callable Routines

BREH has only one routine shown in Table 7-1. All other entry points and routines are called internally by the BREH application.

Table 7-1: BREH Callable Routine

| Routine Called | Description                        |
|----------------|------------------------------------|
| EN^BREHMENU    | Front-end for the BREH menu system |

### 7.2 Published Entry Points

There are no published entry points included in the include the BREH application.

### 7.3 Exported Options

There are no options in the BREH application.

## 8.0 Internal Relations

The BREH export document generation process does not rely on any internal relationships. The BREH application is self-contained and, other than numerous VA FileMan and Kernel API's/utilities, relies only on delivered BREH routines, classes and files.

## **9.0 Archiving and Purging**

The BREH application does not perform any archiving or purging. Generated documents are created in the defined export file location and it is the responsibility of the site to archive or purge these files manually.

## 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 BREH 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 EHI Export options, specify the BREH 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 BREH files, see Section 6.0.

## 10.2 RPMS Online Help

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

Table 2 Special Help Displays

| 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 BREH application has not been granted any SAC exemptions.

# Glossary

**Archiving**

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

**File**

A set of related records or entries treated as a single unit.

**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 that are assigned by the database administrator to a software application.

## Acronym List

| Acronym | Term Meaning                                        |
|---------|-----------------------------------------------------|
| 21 CCA  | 21st Century Cures Act                              |
| DRS     | Designated Record Set                               |
| EHI     | Electronic Health Information                       |
| ePHI    | Electronic Protected Health Information             |
| FIPS    | Federal Information Processing Standard             |
| HIPPA   | Health Insurance Portability and Accountability Act |
| IHS     | Indian Health Service                               |
| KIDS    | Kernel Installation and Distribution System         |
| ONC     | Office of National Coordinator                      |
| PII     | Personally Identifiable Information                 |
| PHI     | Protected Health Information                        |
| RPMS    | Resource and Patient Management System              |
| SSP     | System Security Plan                                |

## Contact Information

If you have any questions or comments regarding this distribution, please contact the IHS IT Service Desk.

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