RESOURCE AND PATIENT MANAGEMENT SYSTEM

Electronic Health Record

(EHR)

Immunization and Patient Intake & Output Components Addendum to EHR User Guide

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Preface

The Indian Health Service (IHS) Immunization and Patient Intake and Output (I&O) components in the Resource and Patient Management (RPMS) Electronic Health Record (EHR) have been developed to meet the needs of nurses and other caregivers documenting immunizations and intake and output.

1.0   Immunizations

1.1   Introduction

The **Immunizations** module (Figure 1-1) enables the viewing, editing, and adding of immunization information for patients into the **Resource and Patient Management System (RPMS)**. It requires that **Version 8.0** or later of the **RPMS Immunization** package be installed. This component enables the provider to see immediately which vaccines the patient has received, and which ones are needed. This component has been extensively redesigned to improve user experience.

Figure 1-1: Immunizations Record window

The **IMM component** continues with background features enabling RPMS to query the **State IIS** to retrieve and store **IIS history and forecast data**, making it available for any **RPMS** application. Potential settings for this capability may include:

- **2015 Certification** requires that additional information received from a state registry be included and visible. This displays when the user clicks the **State Profile** button, and a site has established a **state IIS connection**.

- Querying the **State IIS** for all patients with an upcoming (e.g., next day) appointment.

- Querying the **State IIS** for a single patient upon check-in to a clinic.

- Querying the **State IIS** for a single patient on demand by the nurse or provider.

By comparing the local facility's **immunization record** and **forecast** with that from the state, users will have a more complete picture of the patient's immunization history, discover immunizations done elsewhere that should be added to the local record, and minimize the risk of over-immunization.

If the patient may have received immunizations at locations other than yours, and your system is set up for immunization exchange with one or more states, the **State Immunization Profile** drop-down menu displays the **State Immunization Exchanges** that are configured for the site and allows for additional information to be displayed and printed for the patient.

The **Immunization** component may be placed anywhere in the EHR. Typically, it would be co-located with other wellness-related components, such as **Patient Education** and **Skin Tests**.

- **Forecast pane (upper left)** – Contains a list of immunizations that are **Due** or **Past Due**, as derived from the **ICE Forecasting System**. A user can enter a vaccine directly from this pane by double-clicking the **row containing the vaccine name** (refer to Section 1.3.1 for more information).

- **Immunizations From Outside Sources pane (upper right)** – Contains the **Refresh States** button that enables the user to display the latest information regarding outside vaccine sources (currently configured **State Registries** in **RPMS**), along with the date of the most recent query response from the state.

- **Contraindications pane** – Displays the **patient's contraindications**, such as a history of chicken pox or reactions to specific vaccines.

- **Immunization History pane** – Displays all **immunizations** that have been received from the state or entered into the RPMS. All columns can be sorted by left-clicking a column heading. If no vaccination information for a patient is present in RPMS, the grid is empty.

The **Immunization History** pane also allows the user to display a visit detail by right-clicking any item in the grid. Use this to display the visit detail for a selected record (refer to Section 1.9 for more information).

> **Note:** This component can be configured so that a particular user or class, for example users assigned the **BGOZ VIEW ONLY KEY**, cannot add/edit the immunization record.

1.2   Customizing the Immunization History Display

The **Immunizations** module allows users or sites to customize the **Immunization History** grid to improve usability. All changes will persist for a user but will not affect other users and can be removed later if desired without loss of data.
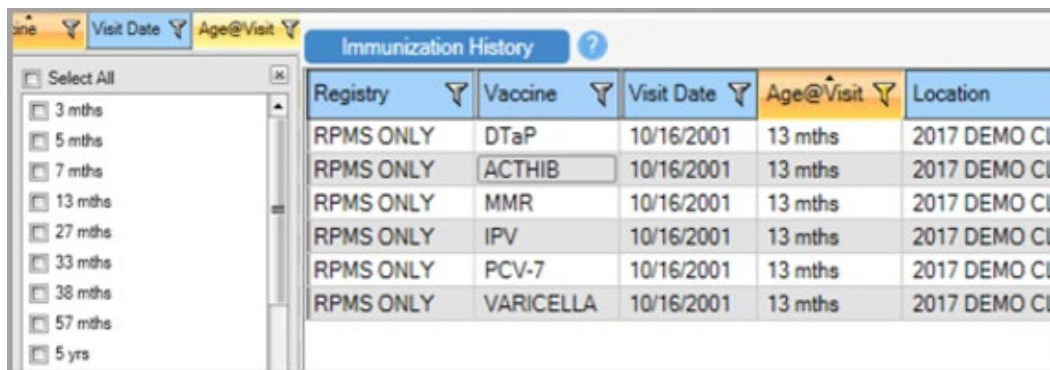
1.2.1   Sorting

Each column can be sorted in multiple ways (Figure 1-2), as follows:

- Left-clicking sorts by **age** in the **Age at Visit** column.

- Left-clicking again **reverses that sort**.

- Left-clicking a third time returns the **column** to its **original order**.

Clicking the **small funnel** icon ( ) at the top of any column displays a check box list of all items in the column. A check box can be selected so only those data display. The **small funnel** icon changes color ( ) (Figure 1-2) to show that a **filter** is enabled.

Figure 1-2: Selecting Just 13-Month-Old display

1.2.2 Columns

When the component is installed, there are **17 columns** initially displayed in the **Immunization History**. Some users may need to see all 17, but others may determine that not all columns are needed for their use. Columns can be hidden if desired, but the data is **NOT** removed, and this will not affect any other users.

To hide a column right-click any **column header**. Be aware that left-clicking a column sorts it. Right-click displays the list of all the columns that can be hidden.

> **Note:** Some columns, such as **Vaccine**, **Registry**, and **Date**, do not appear on this list and cannot be hidden.

All columns selected with check marks will display. If a user does not want to see a particular column, such as manufacturer or volume, they can clear that check box and the column will no longer display in their personal EHR. This setting will persist for future logins for that provider. Any of these check boxes can be cleared.

> **Note:** To restore the original 17 columns, simply click **Restore Defaults**.

Hiding some columns may improve the display for the user, as follows (Figure 1-3):

Figure 1-3: Immunization History display with less columns

1.2.3   Group By

By left-clicking any **column header** and dragging the column up into the **Information History** label area, the following message appears:

> **Drag a header here and drop it to group by that column**

The user releases the left-click and the **Immunization History Table** is now grouped (Figure 1-4) by that column, already expanded with the data rows. This can be done for multiple columns. Clicking the **X** in each item will remove it from the grouping.

Figure 1-4: Immunization History Grouped window

1.2.4   Rearranging Columns

Columns can be rearranged (Figure 1-5) for a particular user. A user may want to move registry information to the far right and display vaccines or dates on the left. To do this, simply grab the **column** by left-clicking, and drag it to the desired **location**. Again, this does not affect any other users' displays.

Vaccine	Visit Date	Admin Date	Age@Visit
COV,Jsn	05/07/2021	05/07/2021	20 yrs
COV,ModBbv	12/27/2022	12/27/2022	22 yrs
COV,Pfr	01/31/2023	02/07/2023	22 yrs
DTaP	12/12/2000		3 mths
DTaP	02/13/2001		5 mths
DTaP	04/16/2001		7 mths
DTaP	10/16/2001		13 mths
DTaP	06/28/2005		57 mths
FLU,NOS	11/19/2003		38 mths
FLU,NOS	10/27/2005		5 yrs
FLU-IIV3	10/29/2008		8 yrs
FLU-IIV3	10/02/2009		9 yrs
FLU-IIV3	11/22/2010	11/22/2010	10 yrs

Figure 1-5: Columns Rearranged example

1.3   Selecting a Vaccine

When selecting a vaccine, there are two options:

- Selecting Items From the Forecaster Pane (Section 1.3.1)
- Selecting a Vaccine Not in Forecast Pane (Section 1.3.2)

1.3.1   Selecting Items from the Forecaster Pane

To select from **Forecaster** pane, double-click the name of the vaccine and the **Vaccine Search** dialog (Figure 1-6) displays with the vaccine information pre-populated.

The **selection list** on the **Vaccine Search** dialog (Figure 1-6) is initially populated by default with **Show only active vaccines with a Lot number**. This can be changed, if desired, by selecting the **Show all active vaccines** or **Show all vaccines** option buttons (a new column to the far left in the records table displays whether the vaccine is active or inactive).
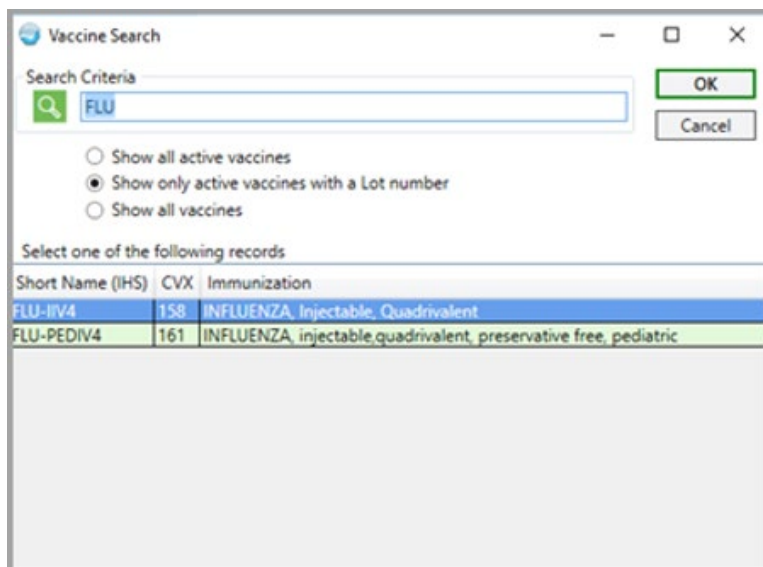
Figure 1-6: Vaccine Search dialog

> **Note:** Only Lot Numbers designated to the facility to which the user is logged on display for selection.

Highlight the **correct entry** and click **OK**. This brings you to the **Add a Vaccine** field (refer to Section 1.4 for more information).

1.3.2   Selecting a Vaccine Not in Forecast Pane

To add an **immunization** not displayed in the **Forecast Pane**, do the following:

1. Click the **Actions** drop-down list on the far right-side of the **Immunization History** pane.

2. Select **ADD** from this list.

3. Search for the **vaccine**. The search value can either be the first few letters (not case sensitive) of an **immunization name**, or **CVX code**.

4. To select an **entry**, double-click the **vaccine name**, or **highlight it** and click **OK**. (Otherwise, click **Cancel**).

This brings the user to the **Add a Vaccine** field (refer to Section 1.4 for more information).

> **Note:** If you select an **Inactive Vaccine**, it will be marked as a **historical vaccination** entry.

1.4   Adding an Immunization

Select an **immunization** as detailed in Section 1.3.

If you choose to add an **Immunization** for which the patient has a related contraindication, the application displays an alert (Figure 1-7) and asks if you want to continue.
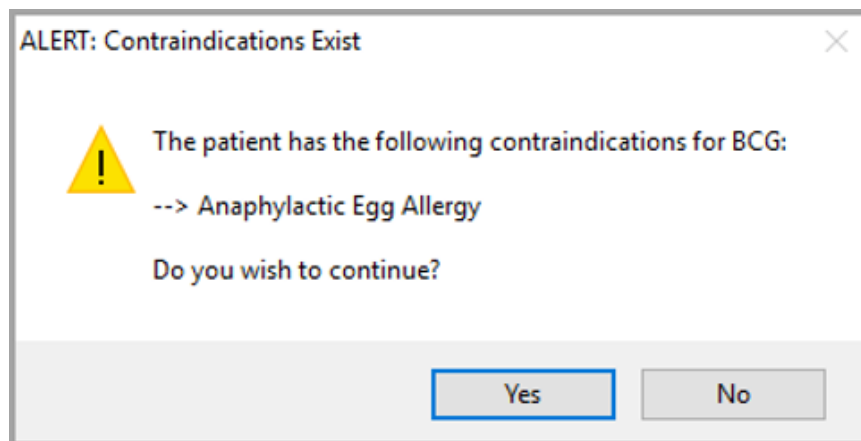
Figure 1-7: Contraindication Exist Alert dialog

The following option button topics address information about these functions:

- Section 1.4.1, Current
- Section 1.4.2, Historical
- Section 1.4.3, Not Done

1.4.1   Current

There are several fields in the **Add Vaccine** dialog (Figure 1-8).

Figure 1-8: Add Vaccine dialog

The **Ordered By field** is defaulted with a provider assigned to the visit. The system first looks at the primary provider for the visit, and if they hold both **Provider** and **ORES** keys, defaults that user as the ordering provider. If that user does not, it will then evaluate if the logged-in user is a visit provider with both keys. If user does not, the system will assign **Ordered By** the visit provider sequenced in the **Encounter Component**, as long as those providers hold both keys.

Users can change the **Ordered By** fields by clicking the **magnifying glass** icon (🔍). The **Ordered By** search only returns values for users that hold both the **Provider** key and the **ORES** key.

The **Administered By** field defaults with the logged-in user and can be changed by clicking the **magnifying glass** icon (🔍).

1. In the **Lot** field, select the **applicable lot and manufacturer** from the drop-down menu.

   > **Note:** Only **Lot Numbers** designated to the facility to which the user is logged on display for selection.

2. Select the **Injection Site** from the drop-down list.

- For common vaccines, the application automatically loads default values for the **Volume and Vaccine Information Sheet**. The **VIS Presented date** defaults to the date of this visit. You can change any of these fields.

> **Note:** If you select an **expired lot number**, a warning message is displayed in bold red lettering above the **Lot** field.

- The **Given** field contains the exact date and time that the immunization was administered. The default is the **current date** and **time**.

- If you counseled the patient/family about the immunization, select the **Patient/Family Counseled** check box. Once saved, the EHR populates the **Vaccinations** component and the **Education** component with a record.

3. **Optional**. In the **Vac. Eligibility** field, users may click to select an applicable vaccination eligibility from the drop-down menu.

4. In the **Admin Notes** field, type any applicable notes.

5. When the **Add Immunization** dialog is complete, click **OK** to add the vaccination to the **Immunization History** field. (Otherwise, click **Cancel**.)

> **Note:** The **OK** button will be disabled until all required fields have been completed. There is a mouse-over tool tip letting the user know which fields must be completed.

1.4.2   Historical

Historical immunizations are those that were given in the past and typically would be for an outside facility or place. Adding a historic immunization causes a historic visit to be created that cannot be billed or exported.

> **Note:** You can add a **historical record** by not selecting a visit and clicking the Add button on the Vaccinations group box. The Add Historical Immunization dialog displays.

To add a historical record:

1. Select the **Historical** option button on the **Add Immunization** dialog (Figure 1-9) to display the **Add Historical Immunization** dialog.

Figure 1-9: Add Historical Immunization dialog

2. Manually enter the **event date** (must be historical) or click the **calendar**.

3. Populate the **Location** field.

4. If the location is an official **IHS facility**, select the **IHS/Tribal Facility** option button. You can select the location from the **Lookup Location** dialog (Figure 1-10) by clicking the **magnifying glass** icon (🔍) and entering the first few letters of the location.

Figure 1-10: Lookup Location dialog

- If the location is not an official **IHS facility**, select the **Other** option button. Enter the **non-official location** (for example, Dr. Name Example).

5. In the **Admin Notes** field, type any notes, as needed.

6. When the **Add Historical Immunization** dialog is complete, click **OK** to add the historic vaccination to the **Immunization History Table**. (Otherwise, click **Cancel**.)

> **Note:** The **OK** button will be disabled until all required fields have been completed. There is a mouse-over tool tip letting the user know which fields must be completed.

1.4.3   Not Done

1. If an immunization is not done or is refused, select the **Not Done** option button on the **Add Vaccine** dialog (Figure 1-11). Select the **date** of this event and a **reason** from the drop-down list.

Figure 1-11: Add Historical Immunization dialog

2. Click **OK** when the dialog is complete. This adds an **Immunization Refusal Record** to the **Immunization History** field, as well as adding a **Refusal** to the **Personal Health** component. (Otherwise, click **Cancel**.)

> **Note:** The **OK** button will be disabled until all required fields have been completed. There is a mouse-over tool tip letting the user know which fields must be completed.

1.5   Editing a Vaccination

Make sure a **visit** is selected. Follow these steps to edit a vaccination:

1. Highlight a **vaccination record** on the **Immunization History** grid that you want
    to edit.

> **Note:**   Vaccinations can only be edited until the visit is locked.

2. Select **Edit** from the **Actions** drop-down list at the top right of the **Immunization
    History Table** or highlight and right-click the **immunization** to edit. The **Edit
    Immunization** dialog (Figure 1-12) displays. If the visit is locked, the **Edit** option
    will be grayed out and cannot be selected. The existing information about the
    selected record displays.

Figure 1-12: Edit Immunization dialog

> **Note:**   You can edit the **Dose Override** field only if you have
> been assigned the **BIZ EDIT PATIENTS** security key.
>
> The **Dose Override** field affects the forecasting. It ignores
> invalid doses and counts forced, valid doses. The field is
> used to force a dose as valid (if given a day or so early but
> will not affect school) or invalid (due to expired vaccine,
> and so on).

3. Enter a **reaction** by selecting from the drop-down list (Figure 1-13) for the
    Reaction field.
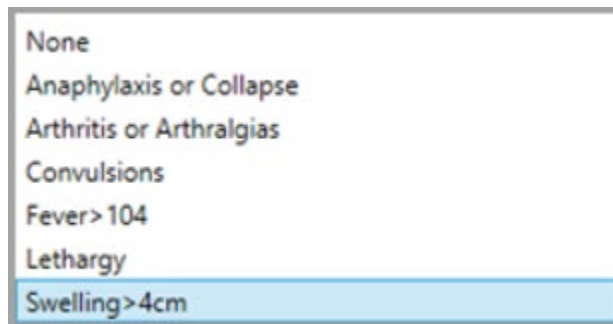
Figure 1-13: Reactions in drop-down list

If one of the following is selected, then a corresponding contraindication is automatically added:

- Anaphylaxis

- Convulsions

- Lethargy

- Fever >104

Otherwise, you are asked if it should be added as a contraindication for the patient (Figure 1-14). If you answer yes, a contraindication of **Other Allergy** is added.
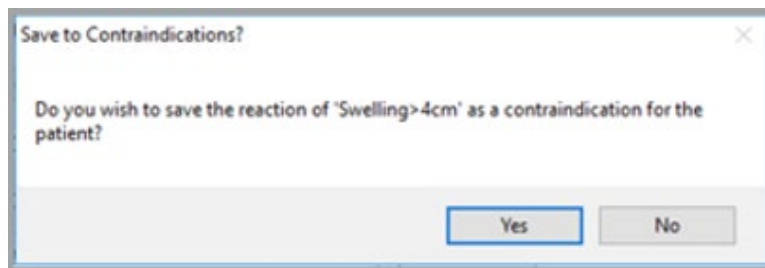
Figure 1-14: Information Message when Saving Refusal

4. Click **Yes** to save the reaction as a contraindication. (Otherwise, click **No**.)

5. When the **Edit Immunization** dialog is complete, click **OK** to change the information about the selected record. (Otherwise, click **Cancel**.)

1.6   Deleting a Vaccination

Follow these steps to delete a vaccination:

1. Highlight a **vaccination record** in the **Immunization History** that you want to delete.

Immunizations can only be deleted by the individual who entered them. Otherwise, the following message (Figure 1-15) displays:
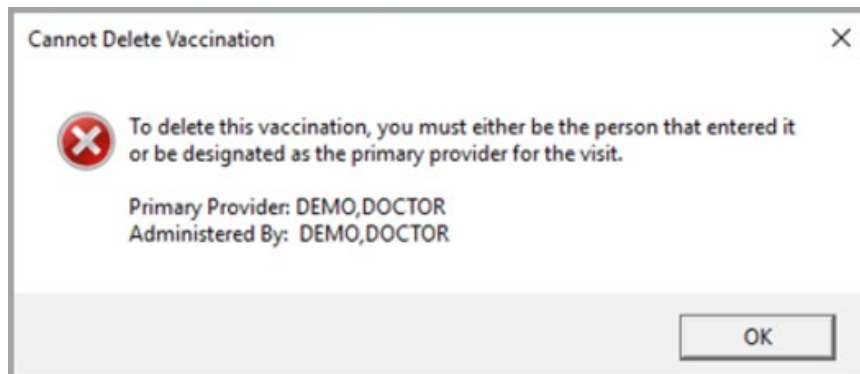
Figure 1-15: Cannot Delete Vaccination warning message

Note: Vaccinations can only be deleted on an unlocked visit.

2. Right-click and select **Delete Immunization** or select **Delete** from the drop-down **Actions** menu at the far right of the **Immunization History** field. This displays the **Remove Immunization?** warning message (Figure 1-16).
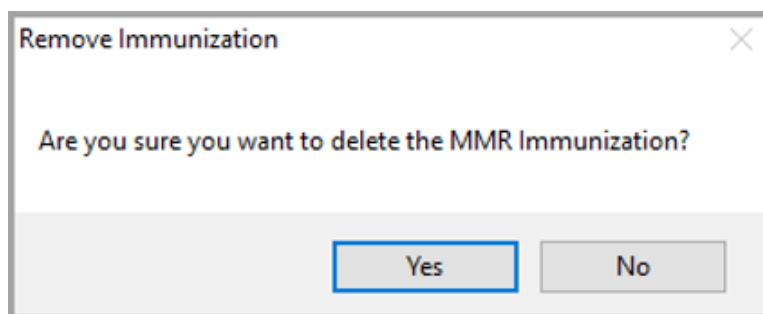
Figure 1-16: Remove Immunization information message

3. Click **Yes** to remove the immunization from the **Immunization History** grid. (Otherwise, click **No**.)

1.7   Action Items

This section provides information about the selections on the **Actions** drop-down menu (Figure 1-17) located at the far right of the **Immunization History** field.
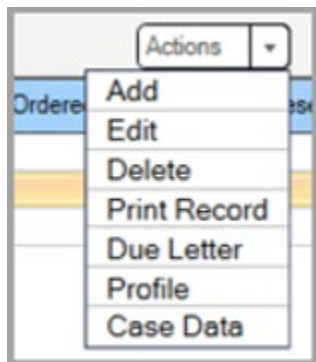
Figure 1-17: Actions drop-down menu

> **Important:** The **Case Data** option only displays in the **Action** drop-down list if the user holds the appropriate **BIZ Manager** key.

For Add, Edit, and Delete, refer to the following topics:

- Section 1.4 - Adding an Immunization
- Section 1.5 - Editing a Vaccination
- Section 1.6 - Deleting a Vaccination

> **Note:** For Actions list selections with pop-up windows, you can change the **font size** of the text displayed in this pop-up by adjusting the size in the **Font Size** field (enter manually or use the **Up** and **Down arrows**). This does not change the size of the text on the output (when you print).

1.7.1   Print Record

1. Select **Print Record** from the **Action** list (or by right-clicking anywhere in the **Immunization History Table**) to display/print the **Official Immunization Record** (Figure 1-18) information for the current patient.

Figure 1-18: Official Immunization Record

> **Note:** The **Print Record** button requires that a **letter template** has been selected (in RPMS).

2. Click **Print** to choose a **printer** and to output the (entire) contents of this pop-up to the specified printer.

   Users are able to **highlight** and **copy** selected text, and then paste it into any **free-text field** within the EHR or into another application (like MS Word).

> **Note:** The **Print** button may not appear. It depends on how your application is configured.

3. Click **Close** to dismiss the pop-up.

1.7.2   Due Letter

Select **Due Letter** from the **Action** list, or by right-clicking anywhere in the **Immunization History Table**, to display/print **the Immunizations Due Letter** (Figure 1-19) information for the current patient.

The **Due Letter** (Figure 1-19) selection requires that a letter template has been selected (in RPMS).


```
Due Letter


                    INDIAN HEALTH SERVICE
                     LOWER BRULE CLINIC
                        P.O. BOX 248
                    LOWER BRULE, SD  57548


   11-Mar-2023

                              Date of Birth: 29-Mar-1968 (54 yrs)
                                     Chart#: 680329



   Parent/Guardian of
   CHILD DEMO
   PARSIFAL ST NE
   ALBUQUERQUE, NM  87112



   Dear Parent or Guardian:

   Your child, ROWENA, is due for the following immunizations.

      Tdap
      HEP B
      FLU
      ZOS-Shgrx


   Please call 473-5526 for an appointments.  If your child received
   immunizations recently and our records do not reflect this, please
   let us know.
   Sincerely,


   Public Health Nursing
```

Figure 1-19: Due Letter example

1.7.3   Profile

1. Select **Profile** from the **Action** drop-down list (or on the right-click menu) in the **Immunization History Table** to display/print the **Immunization Profile** dialog (Figure 1-20). This provides information about the patient's immunization profile.

> **Note:** This selection requires that the **Forecaster** is installed, and the **immunization site parameters** must be configured to point to the **Forecaster**.
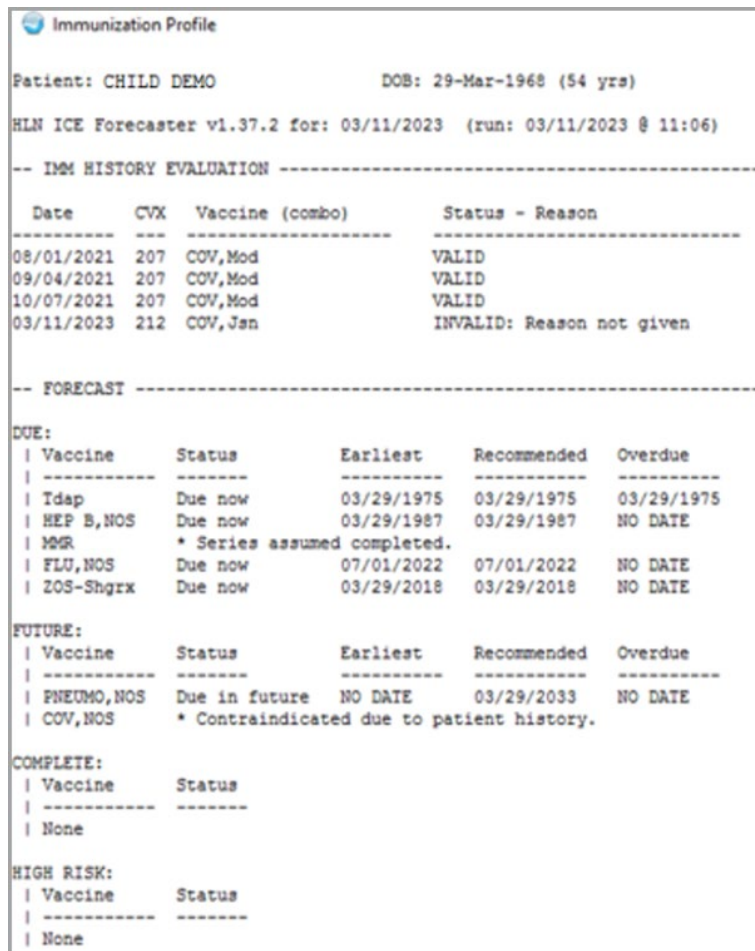
Figure 1-20: Immunization Profile Information

2. Click **Print** to choose a printer and to output the (entire) contents of this pop-up to the specified printer. The pop-up has a right-click menu where you can copy selected text and paste it into any free-text field within the EHR or into another application (like MS Word).

> **Note:** The **Print** button may not appear. It depends on how your application is configured.

3. Click **Close** to dismiss the pop-up.

1.7.4   Case Data

Select **Case Data** from the **Actions** drop-down list or from the right-click menu in the **Immunization History** field to view/edit the **Immunization Register** data for the patient. The Edit Patient **Case Data** dialog (Figure 1-21) displays.

Figure 1-21: Edit Patient Case Data

1.7.4.1   Active/Inactive (Option Buttons)

This indicates the status of the patient in the **Immunization Register**. Since the **Immunization Register** is a very actively managed register and reports only those patients that have an **ACTIVE status**, the panel is used to case manage the **Immunization Register**.

All children from birth to 36 months that live in **Government Performance and Results Act of 1993 (GPRA)** communities are automatically **ACTIVE**. On review of children, some are changed to **INACTIVE** if they fit the **MOGE (Moved or Going Elsewhere)** criteria.

When you choose to change to **INACTIVE status**, you must justify or explain why. In the **Moved To/Elsewhere** field, indicate where the patient went, such as **El Rio Clinic** for example. The **Inactive Date** (Figure 1-22) is very important because the child is included in all reports up to that inactive date. Since children and their parents do not report that they have moved away (they just stop coming to the clinic), this function gives those producing **GPRA** reports a way to have a more accurate denominator when tracking.

Figure 1-22: Inactive Date Group Box fields

If a name is included in the **Parent/Guardian** field, that information is included in the reminder letters.

The **Other Info** field is where the **Case Manager** can enter anything that might be valuable.

1. Populate the **remaining field** by selecting from the drop-down lists.

2. Click **OK** to update the **Immunization Register** with the entered data. (Otherwise, click **Cancel**.)

1.8 Contraindications Group Box

If the patient has had a contraindication or refusal to an immunization, it can be recorded with the corresponding reason being specified. Any contraindications entered for the patient are displayed in the **Immunization** component, and you are alerted if the associated vaccine is subsequently selected.

1.8.1 Adding a Contraindication

Make sure a visit is selected. To add **patient contraindications**, follow these steps:

1. Click **Add** on the **Contraindications** group box (or select **Add Contraindication** on the right-click menu) to display the **Enter Patient Contraindication** dialog (Figure 1-23).

Figure 1-23: Enter Patient Contraindication dialog

2. Click the **magnifying glass** icon (🔍) at the end of the **Vaccine** field to display the **Vaccine Selection** dialog. Here you select a vaccine (refer to Section 1.3 for more information). The selected vaccine displays in the **Vaccine** field of the **Enter Patient Contraindication** dialog.

3. Click **Yes** to continue on the **Enter Patient Contraindication** dialog. (Otherwise, click **No**.)

4. Select the **Contraindication Reason**.

5. When the **Enter Patient Contraindication** dialog is complete, click **Add** to add the contraindication to the **Contraindication** panel. (Otherwise, click **Cancel**.)

The contraindication displays in the **Contraindications group box** and in the patient's **Official Immunization Record**.

1.9   Displaying Visit Detail

The **Immunization** component has the **Display Visit Detail** option on the right-click menu.

1. Select any **immunization record** on the **Immunization History Table** and select **Visit Detail**. The **Visit Detail** dialog (Figure 1-24) displays.
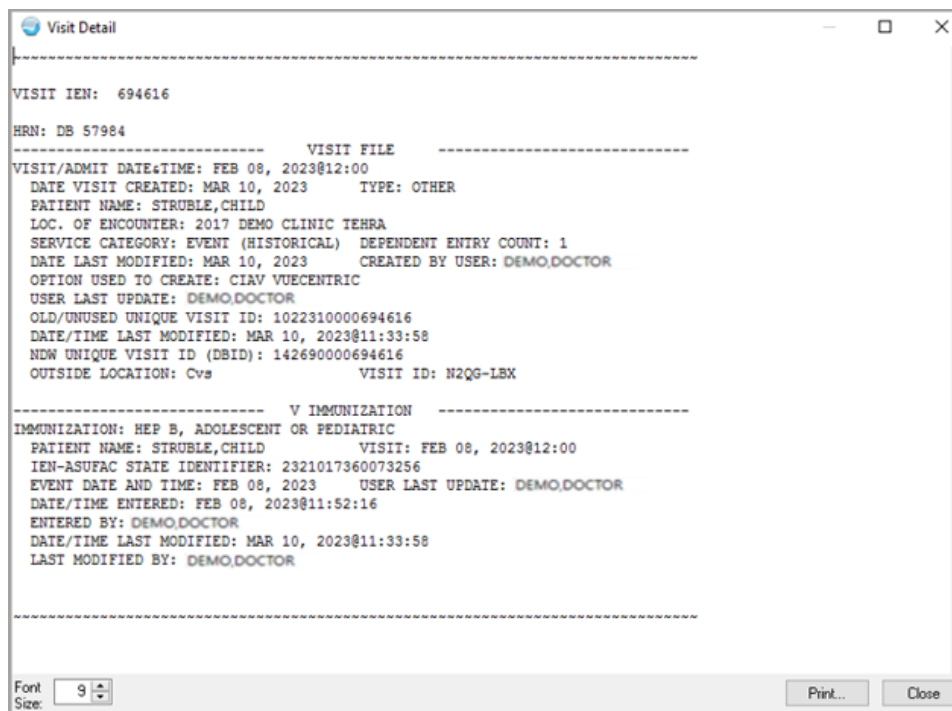
Figure 1-24: Visit Detail example
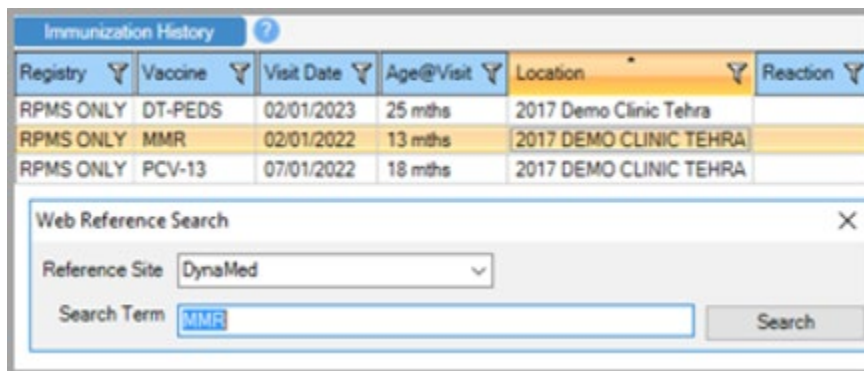
2. Click **Print** to choose a printer and to output the (entire) contents of the **Visit Detail** to the specified printer. Be aware that the **Print** button may not be there. It is according to how your application is configured.

> **Note:** You can change the font size of the text displayed in the **Visit Detail** dialog by adjusting the size in the **Font Size** field (enter manually or use the **Up** and **Down arrows**). This does not change the size of the text on the output (when you print).

3. The **Visit Detail** has a right-click menu where you can copy selected text and paste it into any free-text field within the EHR or into another application (like MS Word).

4. Click **Close** to dismiss the **Visit Detail** dialog.

1.10   Web Reference

If the user selects and highlights any entry in the **Immunization History Table** (Figure 1-25) and clicks the **Information** button ( ) found at the very top of the **Immunization Record** (above the **Forecast** pane) or selects the **Web Reference** option by right-clicking the item, this will take the user to a website for the topic associated with the selected record. The **Search Term** field will be pre-populated with the selected vaccine.
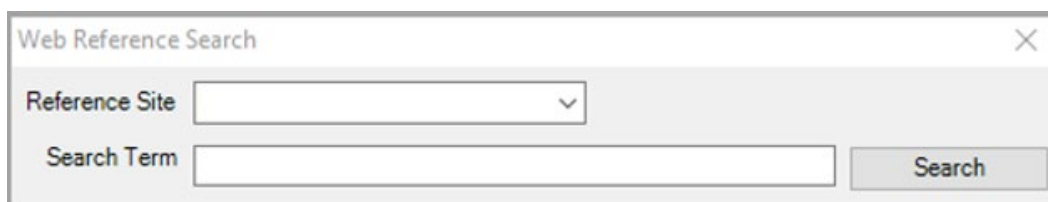
Figure 1-25: Immunization History Table

If there are no immunization records present or if no record is selected, clicking the **Information** button ( ) or selecting the **Web Reference** option on the right-click menu displays the **Web Reference Search** dialog (Figure 1-26).

Figure 1-26: Web Reference Search dialog

Select a **Reference Site**, if needed. The default is the **DynaMed** website. After entering a **search term** and clicking **Search**, the selected website for the specified term appears.

You can change to another website by selecting from the **Reference Site** drop-down list.

2.0   Patient Intake & Output

2.1   Introduction

The **Patient I&O** component permits users to enter and view a patient's **Intake & Output** data. Data can be graphed over time. This is a new component and is designed to replace paper **Intake & Output** sheets.

Important:	This component is for documenting I&O on inpatients **ONLY**.

Read all the documentation for EHR v1.1, Patch 35, and associated patches. Documentation can be found at:

- RPMS Clinical Applications website:

  https://www.ihs.gov/rpms/applications/clinical/

- RPMS Trainings/Recordings:

  https://ihs.cosocloud.com/rpms-tr/event/event_info.html

Note:	If directed to enter a Username and Password, click **OK** to proceed to the **Training Repository** page.

- RPMS Training Course Materials:

  https://www.ihs.gov/rpms/training/course-materials/

- RPMS EHR online help can be located within the RPMS EHR.

2.2   Intake & Output Component

Before the **Patient Intake & Output** component can be used, the site **CAC** must add a new component, **Patient Intake & Output**, to a tab in the EHR. This component is distributed as part of EHR 1.1 p35.

Note:	If a site has multiple **EHR templates** in use, this must be added to **each one separately**. In the screen shot below, this tab is labeled **IO**, but sites can choose their own label.

The **I&O** component (Figure 2-1) is currently designed for use only on inpatients. It is divided into four areas:

- Data Entry Area
- Most Recent Data
- Review Area
- Graphing Area
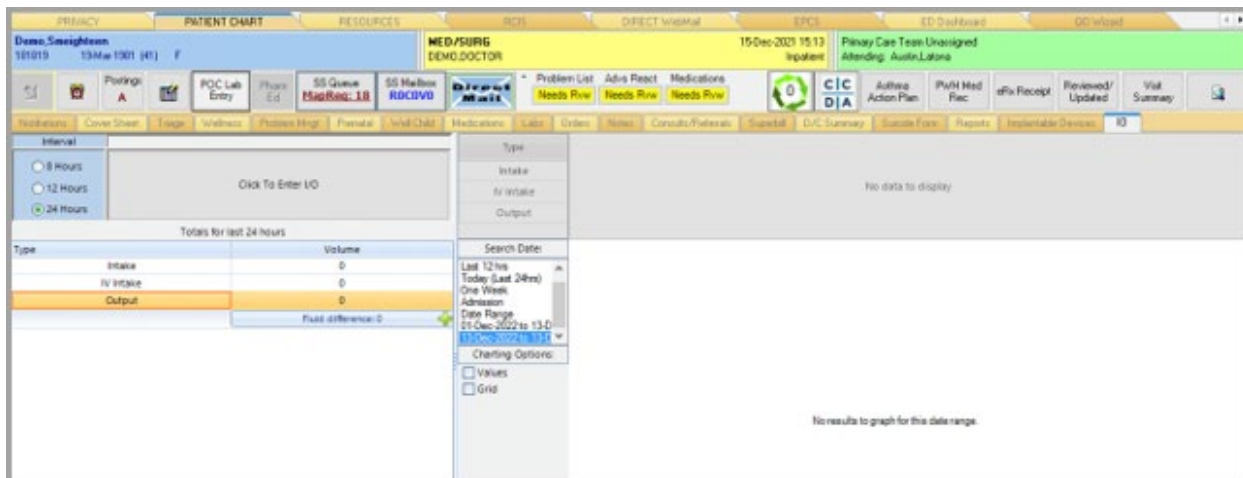
Figure 2-1: Blank I&O Component window

2.2.1   Viewing the Data on the Component

When an **inpatient** is selected, the most recent data is displayed in **Area 2** of the **I&O** component, which is located in the lower-left corner of the window. Items can be selected to appear in the other sections (Figure 2-2), or the user can enter a new **Intake & Output**.
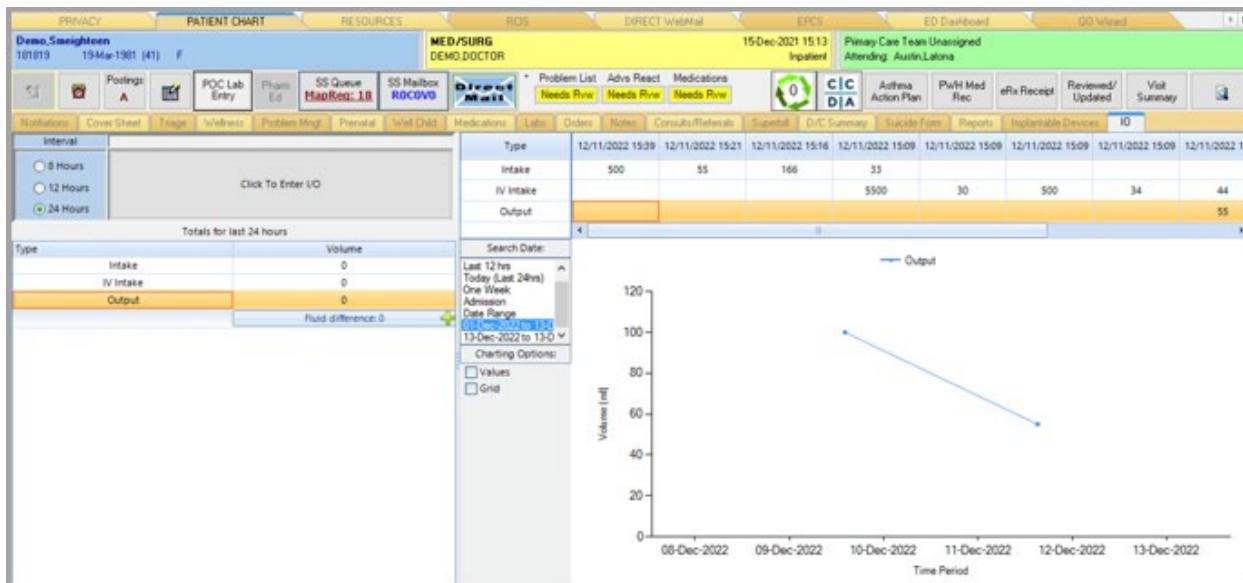
Figure 2-2: I&O Component with Data Window and Graph

2.2.1.1   Most Recent I&O

The most recent data displays the **I&O** for the last **8-**, **12-**, or **24-hours** (Figure 2-3). The default is **24-hours**, but can be changed in the component. It totals up the three main areas, **Intake**, **IV intake**, and **Output**. The fluid balance is also displayed.

Figure 2-3: Most Recent I&O dialog

2.2.1.2   I&O History
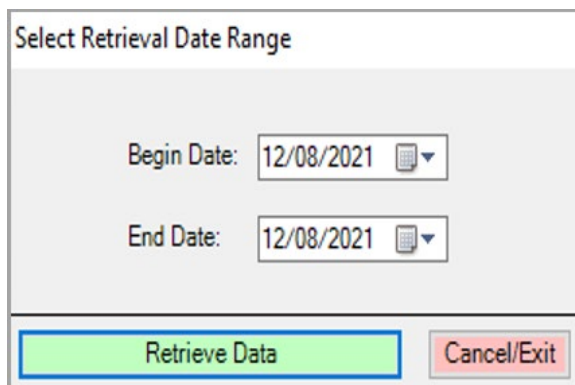
The **I&O History** area (Figure 2-4) allows the user to determine how far back **I&O** should be displayed. The standard choices are:

- Today

- One week

- Admission

- Date Range

Figure 2-4: Date Range for Most Recent

If **Date Range** is selected, the user can determine the **Start** and **End** dates on the **Select Retrieval Date Range** (Figure 2-5) dialog.

Figure 2-5: Select Retrieval Date Range dialog

The history appears from earliest date to the most recent (Figure 2-6), similar to the way the display works in the **Vitals** component.

Figure 2-6: I&O History window

2.2.1.3   Graphing I&O

By clicking any **element** in the **History list**, a graph appears with the following selected items (only one item displays at a time):

- Oral Intake

- IV Intake

- Output

The graph can have **values added** or a **grid** added by selecting the check box on the left (Figure 2-7).
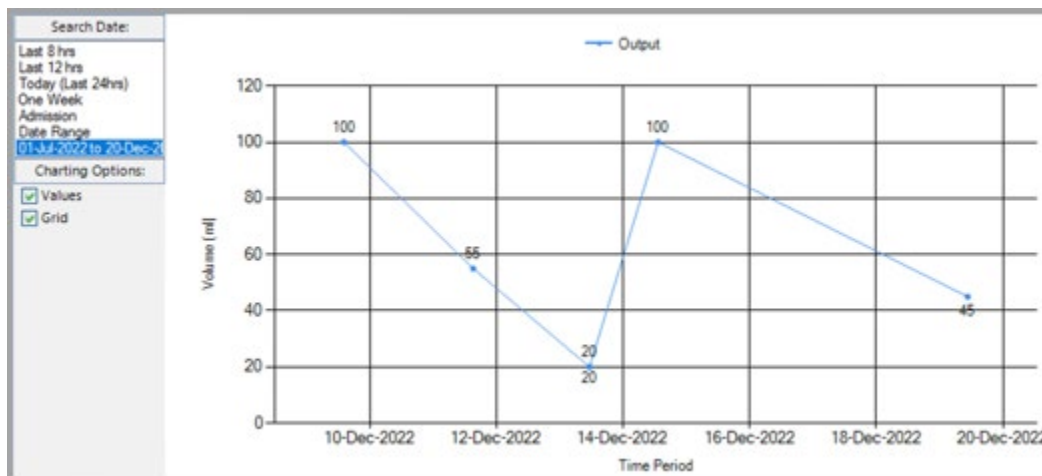
Figure 2-7: I&O History with Values and Grid dialog

2.2.1.4   Data Point Detail

If the user right-clicks any **data point**, the details of all the data entered on that date are displayed (Figure 2-8). This is also similar to the **Vitals** component.
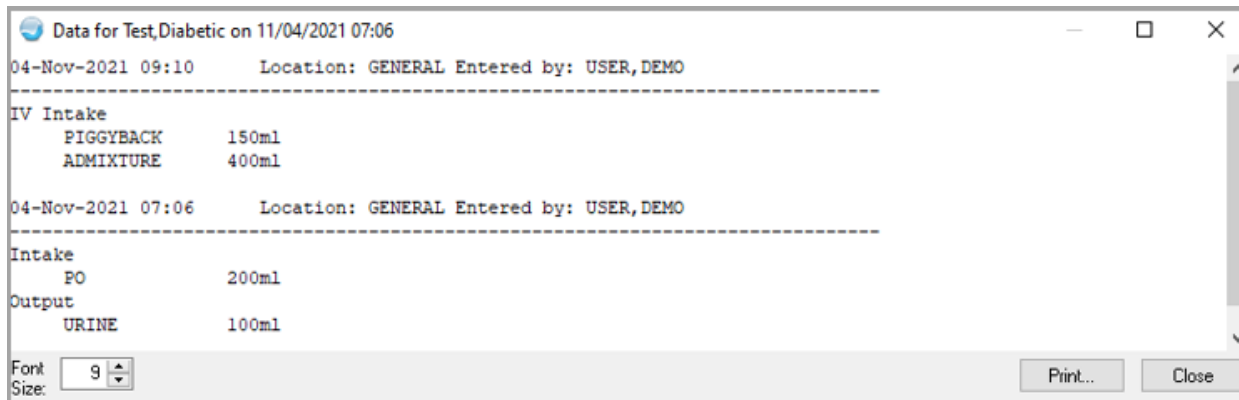
Figure 2-8: Data Point Detail dialog

2.2.2   Entering Data on the Component

The top-left area (Figure 2-9) of the **I&O** component is for entering **Intake & Output** data. A user must first click anywhere in the field labeled **Click to Enter I/O**.
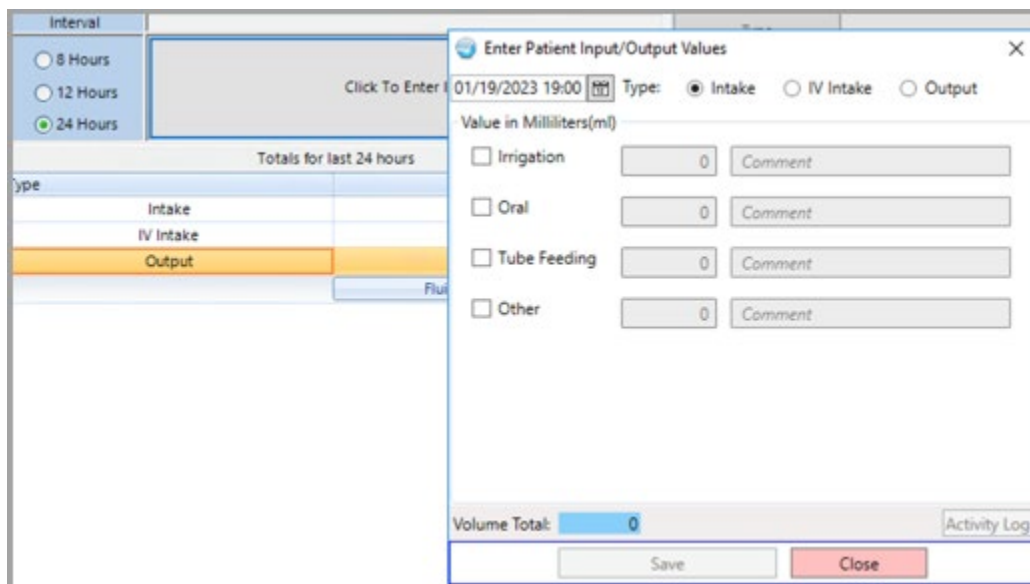
Figure 2-9: Data Entry dialog

2.2.2.1   Selecting the Date

The user first selects the **Date/Time** for the entry in the **Enter Patient Input/Output Values** dialog (Figure 2-10). A date is selected from the left and the time in hours and minutes from the right. If minutes are not selected, the system uses the current minutes when the data is entered.
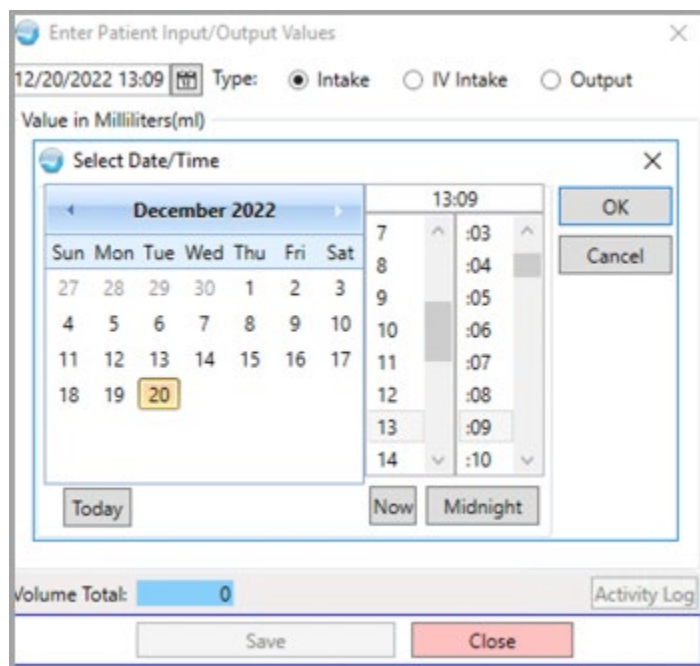
Figure 2-10: Enter Patient Input/Output Values Date Selection dialog
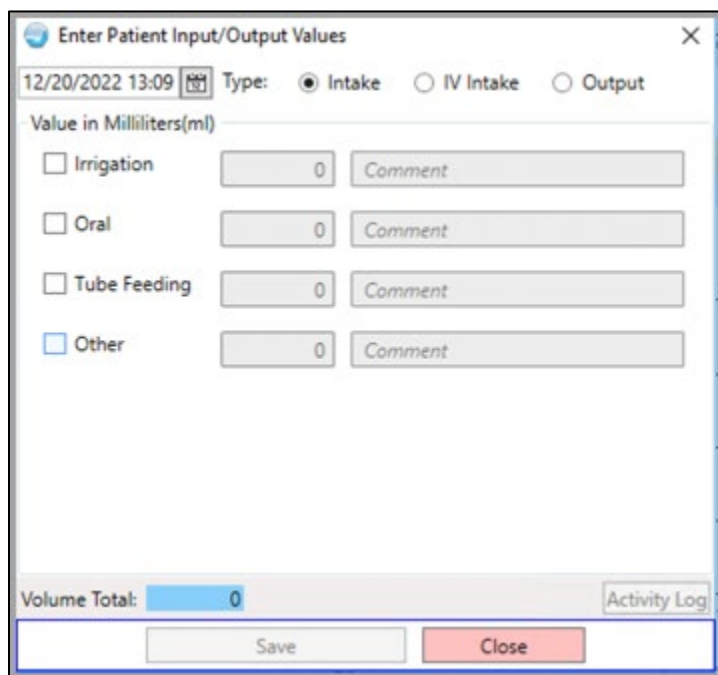
2.2.2.2 Selecting the Type

The user must select the **type**:

- Intake

- IV Intake

- Output

Once a **type** is selected, the **subtypes** that can be used display (Figure 2-11). The user can select any or all of the **subtypes**. Units are always in **milliliters**.

Intake displays first as the default, but this can be changed by a **CAC** in **RPMS**. Go to **General Parameters (XX)**, **EP (Edit parameters)**, select **BEHOGMY** as the parameter, and then select **DEFAULT ENTER TYPE**. You may make a new default for the entire system or for a single user. Display possible options with a single **question mark** and choose another type if desired (**IV INTAKE** or **OUTPUT**).

Figure 2-11: Intake Type dialog

If a user enters a **value** that exceeds the maximum value limit (set at **5000 ml** as a default), they receive a warning (Figure 2-12). This same **warning limit** appears for entries for **intake**, **IV intake**, and **output**.
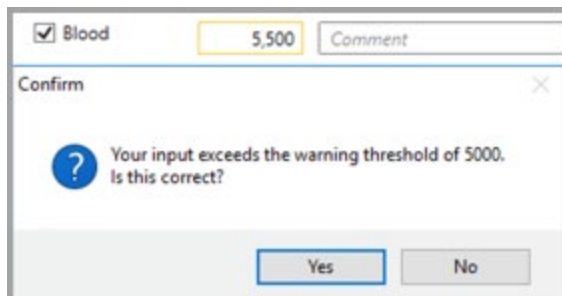
Figure 2-12: Input Exceeds Warning Threshold of 5000 warning message

This message warns a provider of an unusually **high value** and allows them to change this if it has been entered in error or accept it if correct. Some providers (for example, neonatologists) may want a much lower **warning value**. This can be changed by a **CAC** in **RPMS**, as follows:

1. Go to **General Parameters (XX)** > **EP (Edit parameters)**.

2. Select **BEHOGMY** as the parameter.

3. Then select **WARN AT LEVEL**.

4. Determine if this change will be for the **system** or for an **individual**, and then enter the **new value** (Figure 2-13).

Figure 2-13: Setting a New BEHOGMY Warning Level

After all the **subtypes** are selected, the data **MUST** be saved before the user can move on to another type (for example, move from **Intake,** to **IV Intake,** or **Output**). If the user does **NOT** save the data before continuing, the following warning message (Figure 2-14) appears.
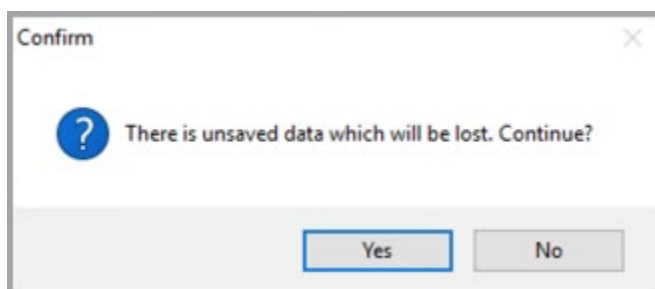
Figure 2-14: Unsaved Data Alert warning message

Click **No** to save the data. Once the data is saved, it updates the totals seen in the lower-left panel. (Otherwise click **Yes**).

2.2.2.2.1   Intake

There are four types of **Intake** (Figure 2-11) available:

- Irrigation
- Oral
- Tube Feeding
- Other

2.2.2.2.2   IV Intake

There are six types of **IV Intake** (Figure 2-15) available:

> **Note:** Due to limitations of this release and software from the VA, intravenous fluids concentrations are listed in **Admixtures**.
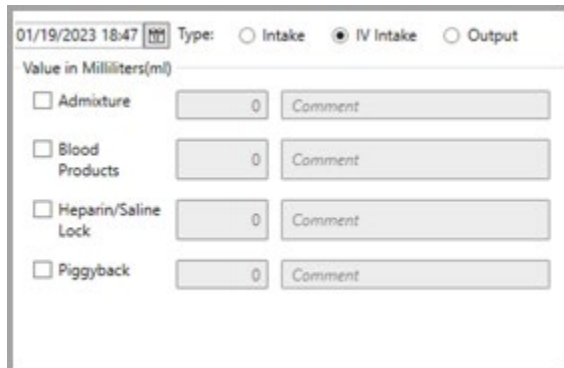
- **Admixture** – An admixture preparation is defined if one of the following criteria is met:

  - Intravenous Solutions. IV fluids are administered to restore fluid to the intravascular compartment used to facilitate the movement of fluid to maintain cellular osmosis. The three main types of IV fluid are:
    - Isotonic
    - hypotonic
    - hypertonic

    Examples: 0.9% Normal Saline, Lactated Ringers, Dextrose 5%, 0.45% Normal Saline.

  - Preparation using an injection powder. Example: Reconstituting a Ceftriaxone vial with normal saline.
  - Preparation with **3** or more medication vials. Example: Preparation of a Banana Bag.
  - Syringe preparation used to dilute liquids or infusion liquids. Example: Adding Promethazine to a normal saline infusion.
  - Preparation of individual dosages requiring complex calculations. Example: Acetylcysteine intravenous administration protocol.

- **Blood Products** – A therapeutic substance that is derived from human blood that includes whole blood and other blood components for transfusion, such as packed red blood cells (PRBCs), fresh frozen plasma (FFP), cryoprecipitate, immune globulins, platelets, etc.

- **Heparin/Saline Lock** – A Heparin lock has a concentrated heparin solution and is injected to prevent clotting within central lines. A saline lock is injected with a saline flush to prevent clotting in intravenous cannulas when not in use.

- **Hyperal** – Also known as Parenteral Nutrition, is a form of nutrition that is delivered into a vein. Hyperalimentation does not use the digestive system. It may be given to people who are unable to absorb nutrients through the intestinal tract because of vomiting that will not stop, severe diarrhea, or intestinal disease.

- **Intralipids** – Refers to an emulsion of fat for Parenteral Nutrition that provides carbohydrates, vitamins, minerals, electrolytes, and fat. Most commonly used for patients with a Percutaneous Endoscopic Gastrostomy (PEG) feeding tube or critically ill patients with the need for supplement feeding.

- **Piggyback** – An Intravenous Piggyback (IVPB) can also be referred to as a secondary IV therapy. It is a small bag of solution that is attached to a primary infusion line.

Figure 2-15: IV Intake Types dialog

An individual or site may reduce the number of **IV Intakes** from the six default entries (Figure 2-16), for example if they never offer **Intralipids** or **Hyperalimentation**. Once again, a **CAC** does this in **RPMS**, **XX**, **EP**, **BEHOGMY** and selects **EXCLUDE IV TYPE**. The default is to not exclude any types, so they all display. The **CAC** can select items to prevent their display, as below:

Figure 2-16: Reduce the Number of IV Intakes

2.2.2.2.3   Output

There are seven types of **Output** (Figure 2-17) available:

- Blood
- Drainage
- Emesis
- Feces
- N/G
- Urine
- Other
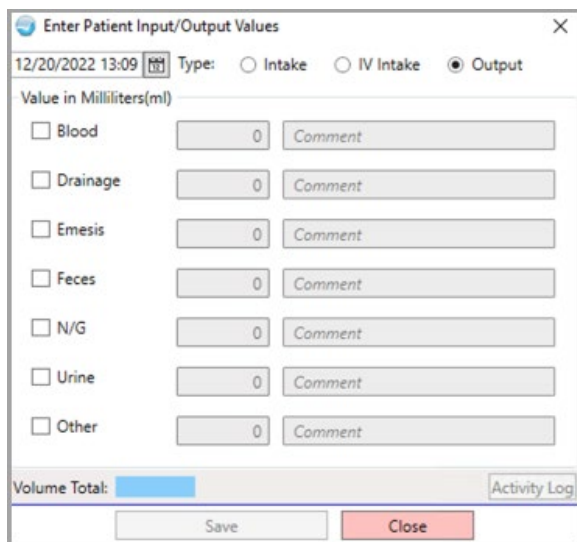
Figure 2-17: Output Types dialog

Once all **values** have been stored, they are available in the **History** area (Figure 2-18).
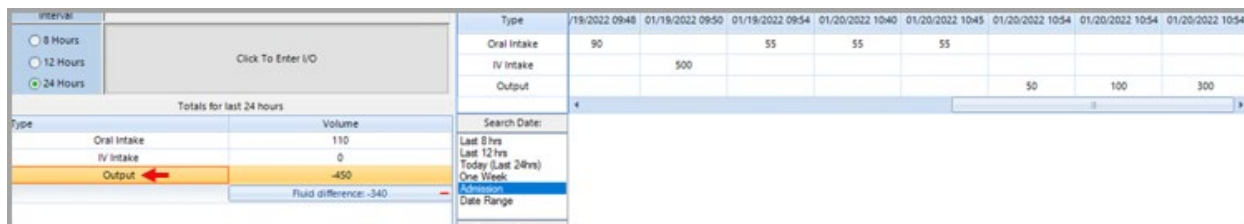
Figure 2-18: I&O Component with new data

2.2.2.3   Editing or Marking an Entry in Error

> **Note:** To edit an entry originally created by another person, you must hold the **BEHOZGMY EDIT** security key.

If a **value** is entered in error, it can be edited or deleted.

> **Note:** No values are actually deleted. They are marked **Entered in Error (EIE)** just as **Vitals**, **Problems**, and **Allergies** are in the EHR.

Right-click the **item** to be corrected in the **upper-right field** (Figure 2-19), and then it can be marked **EIE** or it can be edited.

> **Note:** This can only be done with one item at a time.

Figure 2-19: Editing choices

> **Note:** If edits need to be made to existing entries after the patient is discharged or missing entries need to be added, contact your **Clinical Coordinator** or open a support ticket. Refer to Appendix A: Enter/Edit Patient I & O for additional information.

2.2.2.3.1   Editing an Entry

Users can change the **time** and the **value** for an entry (Figure 2-20). The **type** cannot be edited. Changes must be saved before they are stored.
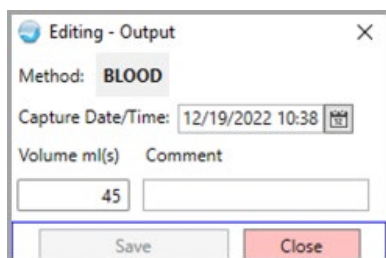
Figure 2-20: Entry Edit dialog

2.2.2.3.2   Entered in Error

If the item is marked as **EIE**, a warning message (Figure 2-21) displays asking the user to confirm the action before it occurs. Once confirmed, the **value** will not be displayed or included in the totals for the period being viewed.
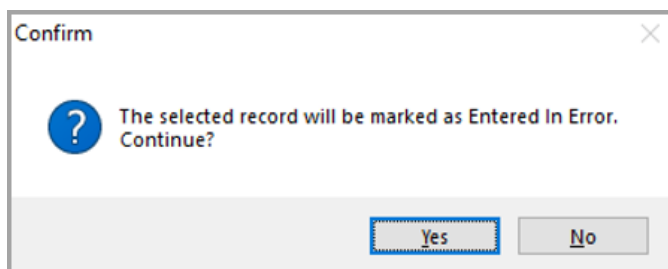
Figure 2-21: Entered in Error warning message

2.3   I&O Reports Setup

This section describes the **I&O reports** available.

2.3.1   Setting Up the OE/RR Report in RPMS

The **OE/RR** report is called the **BEHO I&O SUMMARY**. It must be added to the parameter that holds **OE/RR reports** before it is visible in the EHR.

2.3.1.1   Adding the Report

1. To add the report to the appropriate parameter, navigate to the **General Parameter Tools** menu (XX) (Figure 2-22), select **EP….Edit Parameter Values**.

```
LV    List Values for a Selected Parameter
LE    List Values for a Selected Entity
LP    List Values for a Selected Package
LT    List Values for a Selected Template
EP    Edit Parameter Values
ET    Edit Parameter Values with Template
EK    Edit Parameter Definition Keyword
```
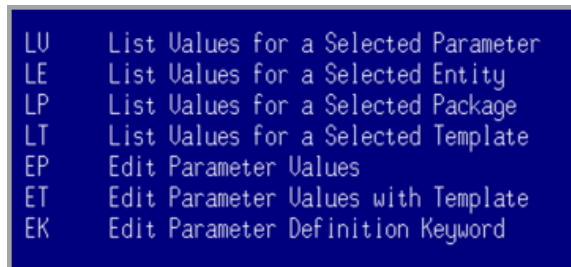
Figure 2-22: General Parameter Tools Menu

2. At **Select PARAMETER DEFINITION NAME:** (Figure 2-23), select **ORWRP REPORT LIST....List of reports**.

```
lect PARAMETER DEFINITION NAME: ORWRP
   1   ORWRP ADHOC LOOKUP      Adhoc Health Summary Lookup
   2   ORWRP CIRN AUTOMATIC      Auto query all sites
   3   ORWRP CIRN REMOTE DATA ALLOW      Allow remote data access
   4   ORWRP CIRN SITES      Remote Access Allowed
   5   ORWRP CIRN SITES ALL      Allow remote data access to all sites.
ess <RETURN> to see more, '^' to exit this list, OR
OOSE 1-5:
   6   ORWRP HDR ON      Turn Remote Queries to HDR on
   7   ORWRP HEALTH SUMMARY LIST ALL      List All Health Summary Types
   8   ORWRP HEALTH SUMMARY TYPE LIST      Allowable Health Summary Types
   9   ORWRP REPORT LAB LIST      List of lab reports
  10   ORWRP REPORT LIST      List of reports
ess <RETURN> to see more, '^' to exit this list, OR
OOSE 1-10: 10  ORWRP REPORT LIST   List of reports
```

Figure 2-23: Select Parameter Definition Name

3. At the **ORWRP REPORT LIST** (Figure 2-24), select **4…System…..SYS…[DEMO.MEDSPHERE.COM]** to set the parameter (this differs on each site's system).

```
ORWRP REPORT LIST may be set for the following:

    2    User            USR     [choose from NEW PERSON]
    3    Division        DIV     [choose from INSTITUTION]
    4    System          SYS     [DEMO.MEDSPHERE.COM]
    6    Package         PKG     [ORDER ENTRY/RESULTS REPORTING]


Enter selection: 4  System    DEMO.MEDSPHERE.COM ← Select System
```

Figure 2-24: Setting ORWRP Report List

4. Add a **new sequence number** and enter the new report name, **BEHO I&O SUMMARY** (Figure 2-25).

```
Sequence: 110//    110
Report: BEHO I&O SUMMARY//
```

Figure 2-25: New Sequence Number and Report

2.3.1.2   Viewing the Report

From the **EHR Reports** menu, users can view many different time frames (Figure 2-26). All of the **I&O** for the selected time frame will display in the format shown below. This shows a 12-hour period on January 30 with entries at **01:15**, **09:15**, and **11:58** along with the summary of **intake**, **IV intake**, **Output**, and **Fluid Balance** for this period of time. This can be copied and pasted into an EHR note if desired.

```
I&O Summary [From: Aug 24,2023 to Aug 31,2023]
|------------------------------------------------------------------------
|
     BARBA,BRIAN112638          JUN 19,2016(7 YRS)    MALE
UNIT:  ICU                       RM/BED: BLANK
DIVISION: 2017 DEMO CLINIC TEHRA

                      PATIENT INTAKE/OUTPUT SUMMARY
AUG 24, 2023 - AUG 31, 2023@23:59:59
TIME   |INPUT            |                          |OUTPUT
       |ADMIX|IVPB |LOCK |PO    |TUBE |IRRIG|OTHER|URINE|EMESI|DRAIN|FECES|BLOOD|
--------------------------------------------------------------------------------
8/29/23
13:06 |     |     |     |450  |     |650  |     |     |     |     |     |     |
13:09 |300  |     |     |     |     |     |     |     |     |     |     |     |
13:10 |     |     |     |     |     |     |     |     |     |     |150  |     |
13:11 |     |     |     |1375 |200  |200  |     |     |     |     |     |     |
14:17 |     |     |     |     |     |     |     |300  |     |     |     |     |
15:00 |     |     |     |     |     |350  |     |     |     |     |     |     |

8/30/23
11:04 |     |     |     |400  |300  |600  |75   |400  |150  |     |     |100  |

DAILY TOTALS
8/29/23            Intake: 3225  IV Intake: 300   Output: 450    Fluid balance: 3075
8/30/23            Intake: 1375  IV Intake:       Output: 650    Fluid balance: 725
TOTAL SUMMARY
Intake: 4600   IV Intake: 300      Output: 1100   Fluid Balance: 3800

Itemized List including Comments:
Date/Time          Type  Amount Comment
8/29/23 13:06      Intake 50    IRRIGATION:
8/29/23 13:06      Intake 100   IRRIGATION:
8/29/23 13:06      Intake 500   IRRIGATION:
8/29/23 13:06      Intake 200   PO:
8/29/23 13:06      Intake 200   PO:
8/29/23 13:06      Intake 50    PO:
8/29/23 13:09      IV     100   ADMIXTURE:
8/29/23 13:09      IV     100   ADMIXTURE:
8/29/23 13:09      IV     100   ADMIXTURE:
```

Figure 2-26: Intake and Output Report

2.3.2   Health Summary Report

The **Health Summary Report** component for I&O is included in the **Health Summary Components (BHS)**, **1.0 patch 16**. Users can add it to the **Ad Hoc health summary** or make their own health summary with this component in it. This must be done by the **Clinical Applications Coordinator (CAC)** at the site.

2.3.2.1   Adding I&O to the Ad Hoc Health Summary

1. Go to the **GMTS MANAGER** menu (found within **VAHS Menu**).

2. On the **GMTS Manager Menu** within RPMS (Figure 2-27), select **number 4**, (found within the **VAHS Menu**) **Health Summary Maintenance Menu**.

```
1        Health Summary Coordinator's Menu ...
2        Health Summary Enhanced Menu ...
3        Health Summary Menu ...
4        Health Summary Maintenance Menu ...
```

Figure 2-27: GMTS Manager Menu

3. On the **Health Summary Maintenance Menu** (Figure 2-28), select **number 3**, **Edit Ad Hoc Health Summary Type**.

```
1        Disable/Enable Health Summary Component
2        Create/Modify Health Summary Components
3        Edit Ad Hoc Health Summary Type
4        Rebuild Ad Hoc Health Summary Type
5        Resequence a Health Summary Type
6        Create/Modify Health Summary Type
7        Edit Health Summary Site Parameters
8        Health Summary Objects Menu ...
9        CPRS Reports Tab 'Health Summary Types List' Menu ...
10       CPRS Health Summary Display/Edit Site Defaults ...
```

Figure 2-28: Health Summary Menu

Selecting **Edit Ad Hoc Health Summary** first displays the following warning message (Figure 2-29):

```
Select Health Summary Maintenance Menu <TEST ACCOUNT> Option: 3  Edit Ad Hoc Hea
lth Summary Type

>>> EDITING the GMTS HS ADHOC OPTION Health Summary Type
SUPPRESS PRINT OF COMPONENTS WITHOUT DATA: no//

Do you wish to review the Summary Type structure before continuing? NO//
```

Figure 2-29: Edit Ad Hoc Health Summary Warning Message

The next entry allows users to select this **component** (Figure 2-30).

4. Enter **IO**.

```
Do you wish to review the Summary Type structure before continuing? NO//
Select COMPONENT: IO
```

Figure 2-30: Select the IO Component

If the **component** is already entered, the following message (Figure 2-31) displays:

```
Select COMPONENT: IO  I AND O            IO
I AND O is already a component of this summary.


    Select one of the following:


       E          Edit component parameters
       D          Delete component from summary


Select Action: █
```
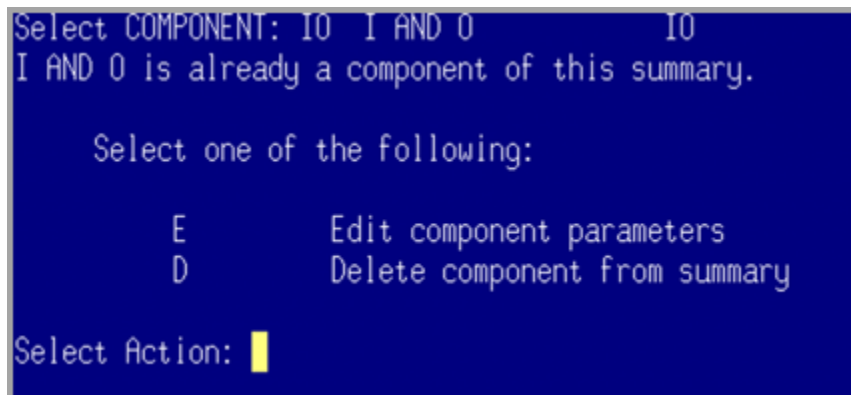
Figure 2-31: I&O warning message

If this has not been previously entered, users must enter the **Summary (Sequence) Order number**, **Occurrence Limit**, **Time Limit**, and **Header Name** to add it to the **Ad Hoc Health Summary**. (Figure 2-32).

```
SUMMARY ORDER: 1135// 1135
OCCURRENCE LIMIT: 50//
TIME LIMIT: 7D//
HEADER NAME: Intake and Output//
```
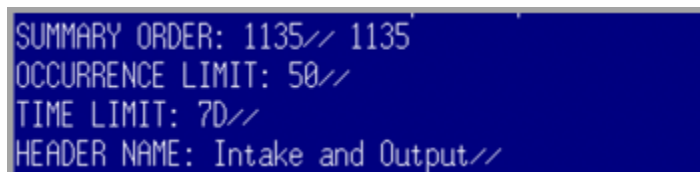
Figure 2-32: Ad Hoc Summary

2.3.2.2   Viewing the Health Summary

Once the **component** has been added to the **Ad Hoc Health Summary**, (Figure 2-33), it should be selectable from the **Health Summary Reports Menu** in the EHR. (This may display as **AdHoc** or as **GMTS AdHoc**, depending on installation). The default on this component is **30 occurrences** or **7 days**. However, users can change this at will. Users cannot change the **Start Date** and **Time** or **Finish Date** and **Time** for this health summary.
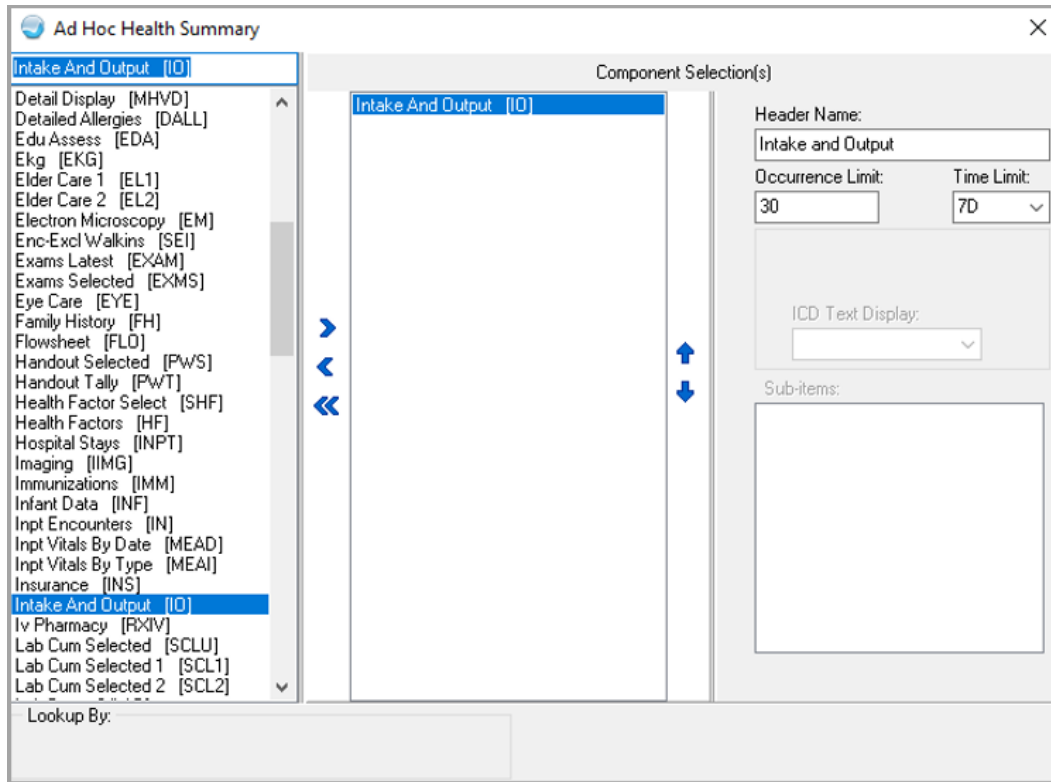
Figure 2-33: Ad Hoc Health Summary dialog

The report will print and look very similar to the **OE/RR report** (Figure 2-34).

```
Health Summary GMTS Adhoc Report
|
                                                        08/31/2023 08:11
******************** CONFIDENTIAL AD HOC SUMMARY   pg. 1 ********************
       BARBA,BRIAN      112638          ICU              DOB: 06/19/2016


------------ IO - Intake and Output (max 50 occurrences or 3 days) ------------



                         PATIENT INTAKE/OUTPUT SUMMARY
AUG 28, 2023@08:11:23 - Aug 31, 2023@08:11:23
TIME   |INPUT            |                         |OUTPUT
       |ADMIX|IVPB |LOCK |PO   |TUBE |IRRIG|OTHER|URINE|EMESI|DRAIN|FECES|BLOOD|
-------------------------------------------------------------------------------
8/29/23
13:06  |     |     |     |450  |     |650  |     |     |     |     |     |     |
13:09  |300  |     |     |     |     |     |     |     |     |     |     |     |
13:10  |     |     |     |     |     |     |     |     |     |     |     |150  |
13:11  |     |     |     |1375 |200  |200  |     |     |     |     |     |     |
14:17  |     |     |     |     |     |     |     |300  |     |     |     |     |
15:00  |     |     |     |     |     |350  |     |     |     |     |     |     |


8/30/23
11:04  |     |     |     |400  |300  |600  |75   |400  |150  |     |     |100  |

DAILY TOTALS
8/29/23          Intake: 3225  IV Intake: 300   Output: 450   Fluid balance: 3075
8/30/23          Intake: 1375  IV Intake:       Output: 650   Fluid balance: 725
TOTAL SUMMARY
Intake: 4600   IV Intake: 300    Output: 1100   Fluid Balance: 3800

Itemized List including Comments:
Date/Time          Type   Amount Comment
8/29/23 13:06      Intake 50    IRRIGATION:
8/29/23 13:06      Intake 100   IRRIGATION:
8/29/23 13:06      Intake 500   IRRIGATION:
8/29/23 13:06      Intake 200   PO:
8/29/23 13:06      Intake 200   PO:
8/29/23 13:06      Intake 50    PO:
```

Figure 2-34: OE/RR report

2.3.3   TIU Objects

Three **TIU Objects** have been included in **TIU 1.0 patch 1025** for **Intake & Output**:

- I&O-8HRS

- I&O-12HRS

- I&O-24HRS

All of these objects use the same logic and only differ in the time frame that they use to look up the data. Each object displays the **entry** with its **time**. In the example below (Figure 2-35), the first set of entries was at **11:58:19**, and a second set was entered at **17:15**, both on **January 30**. The times are noted just above each data entry.

```
8 hour object:

30 Jan 2022 11:58:19 Location: MED/SURG Entered By: DEMO,DOCTOR
_____
Intake
OTHER 20ml
TUBE FEEDING 30ml
PO 40ml
IRRIGATION 50ml
IV Intake
ADMIXTURE 1000ml
PIGGYBACK 50ml
Output
DRAINAGE 10ml
OTHER 15ml
FECES 25ml
EMESIS 35ml
N/G 45ml
URINE 55ml
30 Jan 2022 17:15 Location: MED/SURG Entered By: DEMO,DOCTOR
_____
Intake
OTHER 33ml
PO 55ml
IV Intake
ADMIXTURE 1999ml
Output
URINE 499ml

**************
```

Figure 2-35: 8hr I&O Object

Objects can be added to a template by a site **CAC** so users can insert it into their **note**.

Note:	The header in Figure 2-35, **8-hour object:**, is **NOT** included in the object itself and must be added by the **CAC** when making the template.

These objects pull data from the moment they are added to the note, and look back **8-, 12-**, or **24-hours** from that time. If a different **Start** or **End Time** is needed (for example, for a late entry), users must use the **IO Report** from the **Reports** menu and insert this into their documentation.

3.0   PPN Parameter

This application uses the **AUPN DISPLAY PPN** parameter functionality and is defaulted to **OFF** until **Patient Preferred Name (PPN)** is available across the enterprise.

While this parameter is turned off, the **PPN** will **NOT** display in this application except as a result of the patient lookup function. This allows the **PPN** display to be turned on at once without requiring a coordinated release of all applications.

Once all applications support the display of the **PPN**, instructions will be provided on how to enable this parameter system-wide.

Figure 3-1 is an example of a **Patient Selection (Search)** dialog with the **PPN** displayed to the right under the **HRN** number:
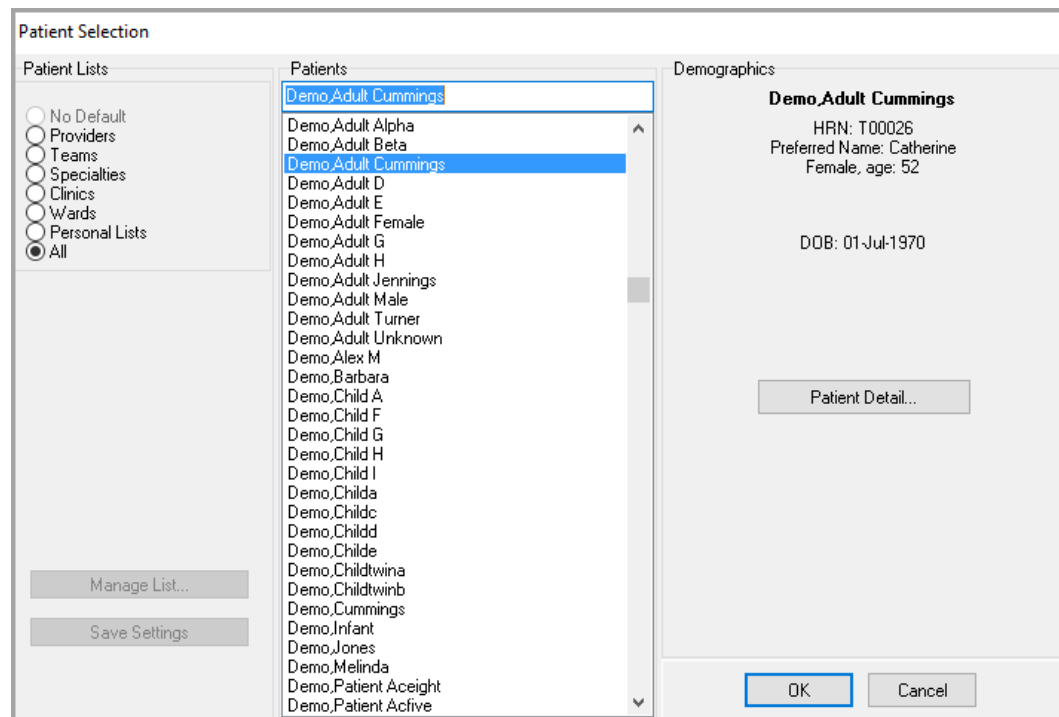

Figure 3-1: Patient Selection (Search) dialog with the PPN displayed

Figure 3-2 is an example of a PPN in an EHR Banner:
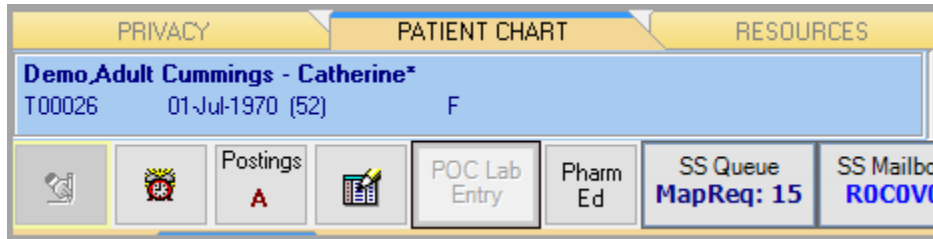
Figure 3-2: PPN in EHR banner

Appendix A   Enter/Edit Patient I & O

The **Enter/Edit Patient Output** option is accessed through the **Patient Intake/ Output Menu** option.

A.1   Editing Existing Entries in Patient I & O

IMPORTANT:	Before proceeding with any **EDIT** updates for existing **Inpatient I&O entries**, it is **STRONGLY** recommended that a **Service Now (SNow)** – via itsupport@ihs.gov – Helpdesk ticket for RPMS EHR Support (Tier 3B) be submitted. Do not proceed without RPMS EHR Support – Tier 3B.

A.2   Entering New Patient I&O

This is only to be utilized to enter **NEW Patient I & O** entries **after** patient discharge.

A.3   GMRY Edit Intake

A.4   Enter New Patient Intake Description

This option allows the user to enter new patient intake records (for example, oral, IV, and nasogastric). Data is stored in the **GMRY Patient I/O (#126)** file. Refer to *Chapter 2, Maintenance of Site Files* for editing associated files.

A.5   Additional Information

Enter New Patient Intake is the primary option used to enter patient intake. Users will note that **two (2) columns** display after the patient's hospital location or patient's name is entered.

Table A-1: Detailed input from 6 to 9

Detailed Input From 6 to 9	
1	PO
2	IV Access
3	Tube Feeding
4	Irrigation
5	Other
6	PO

Detailed Input From 6 to 9	
7	Tube Feeding
8	Irrigation
9	Other

> **Important:** Only utilize **Options 1 thru 5** above to enter, edit, or delete.

- The column on the left permits a user to document only the total intake (in milliliters) associated with a specific intake type (PO, IV, etc.).

- The column on the right allows users to document the names of specific liquids, fluids, solutions, etc., associated with an intake type.

The **Enter New Patient Intake** option prompts the user once the **Intake** is entered, to enter the patient's **Output**. This was done to simplify the **I&O** process and save time. The prompt's response is defaulted to **YES**, but users can answer **N** (for NO) if there is no output at this time.

A.6   Restrictions

Data can only be edited for the previous 48-hour period. Future data cannot be entered.

A.7   Menu Display

```
Select OPTION NAME:   GMRYMGR   Patient Intake/Output Menu.
1  Enter/Edit Patient Intake
2  Enter/Edit Patient Output
3  Start/Add/DC IV and Maintenance
4  Print I/O Summary by Patient (by Shift & Day(s))
5  Print I/O Summary (Midnight to Present)
6  Print I/O Summary (48 Hrs)
7  24 Hours Itemized Shift Report
8  Intravenous Infusion Flow Sheet
9  Configure I/O Files (ADP Coordinator Only) ...
```

Figure A-1: Menu Option Display

A.8   Screen Prints

1. Select **Patient Intake/Output Menu Option: 1 Enter/Edit Patient Intake**.

2. Select **P** from **(A)ll** patients on a unit, **(S)elected** Rooms on a unit, or **(P)atient**?.

3. Select **PATIENT NAME: IOPATIENT, ONE 01-19-25   000632111   NSC VETERAN**.

4. Enter patient name.

5. Select **HOSPITAL LOCATION:**.

If the patient is an outpatient, the hospital location prompt displays.

The following example demonstrates the use of the **left column** for documenting ingested items. More than one (**1**) entry can be entered by separating numbers by a comma (**,**) or a hyphen (**-**) for a range of numbers.

```
1    PO                          6    PO
2    IV ACCESS                   7    TUBE FEEDING
3    TUBE FEEDING                8    IRRIGATION
4    IRRIGATION                  9    OTHER
5    OTHER
Select from 1 to 9 (enter 1,3-5 etc.) or "^" to quit: 1
Enter intake: PO
No records in the database within the last 48 hours
```

Figure A-2: Use of left column for documenting ingested items

> **Important:**   Only utilize **Options 1 thru 5** above to enter, edit, or delete.

> **Note:**   The system alerts the user when no information for this intake type has been recorded in the previous 48 hours. If entries are present the program displays data entered within the last 48 hours and a prompt that allows the user to edit, delete, and add a new entry (for example, Select a Number – **1** to edit; **1@** to delete, or **N** to add, **^** to quit selection 6).

```
Please enter a new DATE/TIME: T@0902    (DEC 28,1992@09:02:00)
```

Figure A-3: Enter date/time dialog

6. Enter appropriate **date/time**.

```
Enter PO dated DEC 28,1992@09:02 Unit ml is not required.
TOTAL AMOUNT: 560
```

Figure A-4: Enter date/time

7. Enter the **intake volume**. **Ml** does not have to be entered after the volume.

```
Total PO intake for this time: 560 mls
Do you want to enter OUTPUT? Yes// <RET>   (Yes)
```

Figure A-5: Intake volume dialog

8. Enter **N** to exit if there is no output for this patient.

```
1   URINE
```

```
2  N/G
3  EMESIS
4  DRAINAGE
5  FECES
6  OTHER
Select from 1 to 6 (enter 1,3-5 etc.) or "^" to quit: URINE//<RET>
```

Figure A-6: Enter N to exit

> **Note:** The above screen display can be changed/edited through the Output Type option (refer to Enter New Patient Intake Description).

```
Enter output: URINE
```

Figure A-7: Enter output: Urine

Urine is the default, but the user may enter another output type from the above list.

```
No records in the database within the last 48 hours
```

Figure A-8: No records in the database within the last 48 hours dialog

> **Note:** The system alerts the user when no information for this output type has been documented in the previous 48 hours. If entries are present, the program displays those entered within the last 48 hours.

```
Please enter a new DATE/TIME: N  (DEC 28,1996@09:05:04)
```

Figure A-9: Enter date/time dialog

9. Enter the appropriate **date/time**.

```
Enter URINE dated DEC 28,1996@09:05 Unit ml is not required
1. VOIDED 3. SUPRAPUBIC CATHETER
2. FOLEY CATHETER
```

Figure A-10: Enter date/time

> **Note:** The above screen display of urine subtypes can be adjusted by editing the **Output Subtype** file through the **Configure I/O Files (ADP Coordinator Only)** option.

10. Users may document how the output was obtained by entering a **urine output subtype** (for example, **voided**, **foley catheter**, or **suprapubic catheter**).

    If the user does not want to enter a subtype, enter **<RET>**.

11. The user is then asked to enter an **amount** that is a **numeric entry**. The user does not have to enter **cc/ml**.

If the actual amount cannot be determined, an estimated amount using **S** = Small, **M** = Medium, and **L** = Large may also be entered.

```
Select a number for the URINE SUBTYPE(optional): 2
FOLEY CATHETER
```

Figure A-11: Enter amount numeric entry dialog

12. Enter appropriate **subtype**.

```
Enter numeric value for measured output in cc/ml or enter S(mall), M(edium)
or L(arge) for estimated output.
OUTPUT AMOUNT: 340
```

Figure A-12: Enter appropriate subtype

A.9   IV Access

Under this option, the user is able to enter the amount of the IV solution left in the container at the end of the shift or at any time an IV intake total must be entered. The **Start/Add/DC IV and Maintenance** option does not automatically calculate an accurate amount of absorbed solution per shift.

```
Select Patient Intake/Output Menu Option: 1   Enter/Edit Patient Intake by
(A)ll patients on a unit, (S)elected Rooms on unit, or (P)atient? P

Select PATIENT NAME: IOPATIENT,ONE  01-19-25  000632111 NSC VETERAN
                                        Detailed input from 6 to 9
1 PO                                     6          PO
2 IV ACCESS                              7          TUBE FEEDING
3 TUBE FEEDING                           8          IRRIGATION
4 IRRIGATION                             9          OTHER
5 OTHER
Select from 1 to 9 (enter 1,3-5 etc.) or "^" to quit: 2
Enter intake: IV ACCESS
1. D5W 1000 mls 1000 mls (A)  LEFT HAND Started on FEB 11,1996@10:39
```

Figure A-13: The software displays a list of the **patient's IVs** that were entered through the **Start/Add/DC IV and Maintenance** option.

Important: Only utilize **Options 1 thru 5** above to enter, edit, or delete.

```
Enter the number of the IV you wish to enter/edit INTAKE: 1
Enter IV INTAKE for D5W 1000 mls A  LEFT HAND 1000 mls Started @FEB
11,1996@10:39
```

```
Total amount absorbed: 0 mls
```

Figure A-14: The software indicates the total **IV intake** previously documented through the option and associated with this **IV**.

```
No intake records for this IV line within the last 48 hours
```

Figure A-15: If no **IV intake** was entered, the display appears on the screen.

```
Please enter a new DATE/TIME: @1500 (FEB 11, 1996@15:00:00) Enter ADMIXTURE
intake dated FEB 11,1996@15:00
Enter * for AMOUNT LEFT if amount of solution absorbed is unknown.
Unit mls is not required.
AMOUNT LEFT: 600
```

Figure A-16: This is the amount of the **IV solution** left at **1500 hours** or **3:00 p.m.**

```
Intake for this period: 400 mls  ? Yes//<RET> (Yes)
```

Figure A-17: This is the amount of the **IV fluid** absorbed from the **1000 ml bag** from the time it was started at **10:39 a.m.** this morning.

```
Do you want to enter OUTPUT? Yes// N    (No)
```

Figure A-18: Do you want to enter OUTPUT?

A.10 GMRY Edit OUTPUT

A.10.1 Enter/Edit Patient Output Description

This option allows users to enter or edit patient output records only. Patient data is stored in the **GMRY Patient I/O (#126)** file.

A.11 Restrictions

Data can only be edited for the previous 48-hour period. Future data cannot be entered.

A.11.1 Menu Display

```
Select OPTION NAME:GMRYMGR    Patient Intake/Output Menu
1  Enter/Edit Patient Intake
2  Enter/Edit Patient Output
3  Start/Add/DC IV and Maintenance
4  Print I/O Summary by Patient (by Shift & Day(s))
5  Print I/O Summary (Midnight to Present)
6  Print I/O Summary (48 Hrs)
7  24 Hours Itemized Shift Report
8  Intravenous Infusion Flow Sheet
```

```
9 Configure I/O Files (ADP Coordinator Only) ...
```

Figure A-19: Menu Display

A.11.2   Screen Prints

```
Select Patient Intake/Output Menu Option: 2   Enter/Edit Patient Output by
(A)ll patients on a unit, (S)elected Rooms on unit, or (P)atient? P
Select PATIENT NAME: IOPATIENT,TWO  04-25-38  000222111
```

Figure A-20: Screen Prints

If the patient is an outpatient and/or placed on a ward for 23-hour observation, the hospital location prompt displays.

```
Select HOSPITAL LOCATION: 1 EAST
1  URINE
2  N/G
3  EMESIS
4  DRAINAGE
5  FECES
6  OTHER
Select from 1 to 6 (enter 1,3-5 etc.) or "^" to quit: URINE//<RET> Enter
output: URINE
1. FEB 2,1996@08:00 245 mls   VOIDED
3. FEB 1,1996@14:24 455 mls   FOLEY CATHETER
4. FEB 1,1996@09:49 100 mls   SUPRAPUBIC CATHETER
Select a number(i.e., 1 to edit; 1@ to delete or N to add; ^ to quit
selection): N
Please enter a new DATE/TIME: @0845 (FEB 02, 1996@08:45:00)
```

Figure A-21: Hospital Location prompt

1. Enter date/time of output.

```
Enter URINE dated FEB 2,1996@08:45 Unit ml is not required
1. VOIDED 3. SUPRAPUBIC CATHETER
2. FOLEY CATHETER
Select a number for the URINE SUBTYPE(optional): 1
Enter numeric value for measured output in cc/ml or enter S(mall), M(edium)
or L(arge) for estimated output.
OUTPUT AMOUNT: S// 240
```

Figure A-22: Date/time of output

A.11.3   Deleting Errors

The entry number, followed by an **@** deletes the entry as shown below.

```
Select Patient Intake/Output Menu Option: 2   Enter/Edit Patient Output by
(A)ll patients on a unit, (S)elected Rooms on unit, or (P)atient? P
Select PATIENT NAME: IOPATIENT,TWO 04-25-38   000222111
```

Figure A-23: Deleting errors

If the patient is an outpatient, the **Hospital Location** prompt displays.

```
Select HOSPITAL LOCATION: 1 EAST
1  URINE
2  N/G
3  EMESIS
4  DRAINAGE
5  FECES
6  OTHER
Select from 1 to 6 (enter 1,3-5 etc.) or "^" to quit: URINE//<RET>
```

Figure A-24: Hospital Location prompt

Urine is the software's default response.

```
Enter output: URINE
1. FEB 2,1996@08:45 240 mls    VOIDED
2. FEB 2,1996@08:00 245 mls    VOIDED
3. FEB 1,1996@14:24 455 mls    FOLEY CATHETER
4. FEB 1,1996@09:49 100 mls    SUPRAPUBIC CATHETER
Select a number(i.e., 1 to edit; 1@ to delete or N to add; ^ to quit
selection): 2@
```

Figure A-25: Enter output: URINE

Select the **entry** to be deleted.

```
Are you sure you want to delete this record? Yes// <RET>    (Yes) URINE
Entered on FEB 2,1996@08:00  has been deleted!!!
```

Figure A-26: Select entry to be deleted

The user can reenter the **date/time** and enter the **correct amount** if appropriate.

Appendix B   Rules of Behavior

The Resource and Patient Management (RPMS) system is a United States Department of Health and Human Services (HHS), Indian Health Service (IHS) information system that is ***FOR OFFICIAL USE ONLY***. The RPMS system is subject to monitoring; therefore, no expectation of privacy shall be assumed. Individuals found performing unauthorized activities are subject to disciplinary action including criminal prosecution.

All users (Contractors and IHS Employees) of RPMS will be provided a copy of the Rules of Behavior (ROB) and must acknowledge that they have received and read them prior to being granted access to a RPMS system, in accordance with IHS policy.

- For a listing of general ROB for all users, see the most recent edition of *IHS General User Security Handbook* (SOP 06-11a).

- For a listing of system administrators/managers rules, see the most recent edition of the *IHS Technical and Managerial Handbook* (SOP 06-11b).

Both documents are available at this IHS website:

   https://home.ihs.gov/security/index.cfm

> **Note**:   Users must be logged on to the IHS D1 Intranet to access these documents.

The ROB listed in the following sections are specific to RPMS.

B.1   All RPMS Users

In addition to these rules, each application may include additional ROBs that may be defined within the documentation of that application (e.g., Dental, Pharmacy).

B.1.1   Access

RPMS users shall:

- Only use data for which you have been granted authorization.

- Only give information to personnel who have access authority and have a need to know.

- Always verify a caller's identification and job purpose with your supervisor or the entity provided as employer before providing any type of information system access, sensitive information, or nonpublic agency information.

- Be aware that personal use of information resources is authorized on a limited basis within the provisions *Indian Health Manual* Part 8, "Information Resources

Management," Chapter 6, "Limited Personal Use of Information Technology Resources."

RPMS users shall not:

- Retrieve information for someone who does not have authority to access the information.

- Access, research, or change any user account, file, directory, table, or record not required to perform their *official* duties.

- Store sensitive files on a PC hard drive, or portable devices or media, if access to the PC or files cannot be physically or technically limited.

- Exceed their authorized access limits in RPMS by changing information or searching databases beyond the responsibilities of their jobs or by divulging information to anyone not authorized to know that information.

B.1.2   Information Accessibility

RPMS shall restrict access to information based on the type and identity of the user. However, regardless of the type of user, access shall be restricted to the minimum level necessary to perform the job.

RPMS users shall:

- Access only those documents they created and those other documents to which they have a valid need-to-know and to which they have specifically granted access through an RPMS application based on their menus (job roles), keys, and FileMan access codes. Some users may be afforded additional privileges based on the functions they perform, such as system administrator or application administrator.

- Acquire a written preauthorization in accordance with IHS policies and procedures prior to interconnection to or transferring data from RPMS.

B.1.3   Accountability

RPMS users shall:

- Behave in an ethical, technically proficient, informed, and trustworthy manner.

- Log out of the system whenever they leave the vicinity of their personal computers (PCs).

- Be alert to threats and vulnerabilities in the security of the system.

- Report all security incidents to their local Information System Security Officer (ISSO).

- Differentiate tasks and functions to ensure that no one person has sole access to or control over important resources.

- Protect all sensitive data entrusted to them as part of their government employment.

- Abide by all Department and Agency policies and procedures and guidelines related to ethics, conduct, behavior, and information technology (IT) information processes.

B.1.4   Confidentiality

RPMS users shall:

- Be aware of the sensitivity of electronic and hard copy information and protect it accordingly.

- Store hard copy reports/storage media containing confidential information in a locked room or cabinet.

- Erase sensitive data on storage media prior to reusing or disposing of the media.

- Protect all RPMS terminals from public viewing at all times.

- Abide by all Health Insurance Portability and Accountability Act (HIPAA) regulations to ensure patient confidentiality.

RPMS users shall not:

- Allow confidential information to remain on the PC screen when someone who is not authorized to that data is in the vicinity.

- Store sensitive files on a portable device or media without encrypting.

B.1.5   Integrity

RPMS users shall:

- Protect their systems against viruses and similar malicious programs.

- Observe all software license agreements.

- Follow industry standard procedures for maintaining and managing RPMS hardware, operating system software, application software, and/or database software and database tables.

- Comply with all copyright regulations and license agreements associated with RPMS software.

RPMS users shall not:

- Violate federal copyright laws.

- Install or use unauthorized software within the system libraries or folders.

- Use freeware, shareware, or public domain software on/with the system without their manager's written permission and without scanning it for viruses first.

B.1.6   System Logon

RPMS users shall:

- Have a unique User Identification/Account name and password.

- Be granted access based on authenticating the account name and password entered.

- Be locked out of an account after five successive failed login attempts within a specified time period (e.g., one hour).

B.1.7   Passwords

RPMS users shall:

- Change passwords a minimum of every 90 days.

- Create passwords with a minimum of eight characters.

- If the system allows, use a combination of alpha-numeric characters for passwords, with at least one uppercase letter, one lower case letter, and one number. It is recommended, if possible, that a special character also be used in the password.

- Change vendor-supplied passwords immediately.

- Protect passwords by committing them to memory or store them in a safe place (do not store passwords in login scripts or batch files).

- Change passwords immediately if password has been seen, guessed, or otherwise compromised, and report the compromise or suspected compromise to their ISSO.

- Keep user identifications (IDs) and passwords confidential.

RPMS users shall not:

- Use common words found in any dictionary as a password.

- Use obvious readable passwords or passwords that incorporate personal data elements (e.g., user's name, date of birth, address, telephone number, or social security number; names of children or spouses; favorite band, sports team, or automobile; or other personal attributes).

- Share passwords/IDs with anyone or accept the use of another's password/ID, even if offered.

- Reuse passwords. A new password must contain no more than five characters per eight characters from the previous password.

- Post passwords.

- Keep a password list in an obvious place, such as under keyboards, in desk drawers, or in any other location where it might be disclosed.

- Give a password out over the phone.

B.1.8 Backups

RPMS users shall:

- Plan for contingencies such as physical disasters, loss of processing, and disclosure of information by preparing alternate work strategies and system recovery mechanisms.

- Make backups of systems and files on a regular, defined basis.

- If possible, store backups away from the system in a secure environment.

B.1.9 Reporting

RPMS users shall:

- Contact and inform their ISSO that they have identified an IT security incident and begin the reporting process by providing an IT Incident Reporting Form regarding this incident.

- Report security incidents as detailed in the *IHS Incident Handling Guide* (SOP 05-03).

RPMS users shall not:

- Assume that someone else has already reported an incident. The risk of an incident going unreported far outweighs the possibility that an incident gets reported more than once.

B.1.10 Session Timeouts

RPMS system implements system-based timeouts that back users out of a prompt after no more than 5 minutes of inactivity.

RPMS users shall:

- Utilize a screen saver with password protection set to suspend operations at no greater than 10 minutes of inactivity. This will prevent inappropriate access and viewing of any material displayed on the screen after some period of inactivity.

B.1.11 Hardware

RPMS users shall:

- Avoid placing system equipment near obvious environmental hazards (e.g., water pipes).

- Keep an inventory of all system equipment.

- Keep records of maintenance/repairs performed on system equipment.

RPMS users shall not:

- Eat or drink near system equipment.

B.1.12 Awareness

RPMS users shall:

- Participate in organization-wide security training as required.

- Read and adhere to security information pertaining to system hardware and software.

- Take the annual information security awareness.

- Read all applicable RPMS manuals for the applications used in their jobs.

B.1.13 Remote Access

Each subscriber organization establishes its own policies for determining which employees may work at home or in other remote workplace locations. Any remote work arrangement should include policies that:

- Are in writing.

- Provide authentication of the remote user through the use of ID and password or other acceptable technical means.

- Outline the work requirements and the security safeguards and procedures the employee is expected to follow.

- Ensure adequate storage of files, removal, and nonrecovery of temporary files created in processing sensitive data, virus protection, and intrusion detection, and provide physical security for government equipment and sensitive data.

- Establish mechanisms to back up data created and/or stored at alternate work locations.

Remote RPMS users shall:

- Remotely access RPMS through a virtual private network (VPN) whenever possible. Use of direct dial in access must be justified and approved in writing and its use secured in accordance with industry best practices or government procedures.

Remote RPMS users shall not:

- Disable any encryption established for network, internet, and Web browser communications.

B.2   RPMS Developers

RPMS developers shall:

- Always be mindful of protecting the confidentiality, availability, and integrity of RPMS when writing or revising code.

- Always follow the IHS RPMS Programming Standards and Conventions (SAC) when developing for RPMS.

- Only access information or code within the namespaces for which they have been assigned as part of their duties.

- Remember that all RPMS code is the property of the U.S. Government, not the developer.

- Not access live production systems without obtaining appropriate written access and shall only retain that access for the shortest period possible to accomplish the task that requires the access.

- Observe separation of duties policies and procedures to the fullest extent possible.

- Document or comment all changes to any RPMS software at the time the change or update is made. Documentation shall include the programmer's initials, date of change, and reason for the change.

- Use checksums or other integrity mechanisms when releasing their certified applications to assure the integrity of the routines within their RPMS applications.

- Follow industry best standards for systems they are assigned to develop or maintain and abide by all Department and Agency policies and procedures.

- Document and implement security processes whenever available.

RPMS developers shall not:

- Write any code that adversely impacts RPMS, such as backdoor access, "Easter eggs," time bombs, or any other malicious code or make inappropriate comments within the code, manuals, or help frames.

- Grant any user or system administrator access to RPMS unless proper documentation is provided.

- Release any sensitive agency or patient information.

B.3   Privileged Users

Personnel who have significant access to processes and data in RPMS, such as system security administrators, systems administrators, and database administrators, have added responsibilities to ensure the secure operation of RPMS.

Privileged RPMS users shall:

- Verify that any user requesting access to any RPMS system has completed the appropriate access request forms.

- Ensure that government personnel and contractor personnel understand and comply with license requirements. End users, supervisors, and functional managers are ultimately responsible for this compliance.

- Advise the system owner on matters concerning information technology security.

- Assist the system owner in developing security plans, risk assessments, and supporting documentation for the certification and accreditation process.

- Ensure that any changes to RPMS that affect contingency and disaster recovery plans are conveyed to the person responsible for maintaining continuity of operations plans.

- Ensure that adequate physical and administrative safeguards are operational within their areas of responsibility and that access to information and data is restricted to authorized personnel on a need-to-know basis.

- Verify that users have received appropriate security training before allowing access to RPMS.

- Implement applicable security access procedures and mechanisms, incorporate appropriate levels of system auditing, and review audit logs.

- Document and investigate known or suspected security incidents or violations and report them to the ISSO, Chief Information Security Officer (CISO), and systems owner.

- Protect the supervisor, superuser, or system administrator passwords.

- Avoid instances where the same individual has responsibility for several functions (i.e., transaction entry and transaction approval).

- Watch for unscheduled, unusual, and unauthorized programs.

- Help train system users on the appropriate use and security of the system.

- Establish protective controls to ensure the accountability, integrity, confidentiality, and availability of the system.

- Replace passwords when a compromise is suspected. Delete user accounts as quickly as possible from the time that the user is no longer authorized system. Passwords forgotten by their owner should be replaced, not reissued.

- Terminate user accounts when a user transfers or has been terminated. If the user has authority to grant authorizations to others, review these other authorizations. Retrieve any devices used to gain access to the system or equipment. Cancel logon IDs and passwords and delete or reassign related active and backup files.

- Use a suspend program to prevent an unauthorized user from logging on with the current user's ID if the system is left on and unattended.

- Verify the identity of the user when resetting passwords. This can be done either in person or by having the user answer a question that can be compared to one in the administrator's database.

- Shall follow industry best standards for systems they are assigned to and abide by all Department and Agency policies and procedures.

Privileged RPMS users shall not:

- Access any files, records, systems, etc., that are not explicitly needed to perform their duties.

- Grant any user or system administrator access to RPMS unless proper documentation is provided.

- Release any sensitive agency or patient information.

Acronym List

Acronym	Meaning
CAC	Clinical Application Coordinator
EHR	Electronic Health Record
EIE	Entered in Error
FFP	Fresh Frozen Plasma
BHS	Health Summary Components
HIPAA	Health Insurance Portability and Accountability Act
ID	Identification
I&O	Intake and Output
IHS	Indian Health Service
IVPB	Intravenous Piggyback
IRM	Information Resources Management
ISSO	Information System Security Officer
PPN	Patient Preferred Name
PEG	Percutaneous Endoscopic Gastrostomy
PC	Personal Computer
RPMS	Resource and Patient Management System
SAC	Standards and Conventions
TIU	Text Integrated Utility
VPN	Virtual Private Network

Contact Information

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

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

Web: https://www.ihs.gov/itsupport/

Email: itsupport@ihs.gov