Data Mining Custom Reports

Data Mining Custom Reports

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Chapter 1 Introduction

1.1 Attestation Disclaimer

Promoting Interoperability Program attestation confirms the use of a certified Electronic Health Record (EHR) to regulatory standards over a specified period of time. TruBridge's Promoting Interoperability Program certified products, recommended processes and supporting documentation are based on TruBridge’s interpretation of the Promoting Interoperability Program regulations, technical specifications and vendor specifications provided by CMS, ONC and NIST. Each client is solely responsible for its attestation being a complete and accurate reflection of its EHR use during the attestation period and that any records needed to defend the attestation in an audit are maintained. With the exception of vendor documentation that may be required in support of a client’s attestation, TruBridge bears no responsibility for attestation information submitted by the client.

1.2 What's New

This section introduces the new features and improvements for the **Data Mining Custom Reports application** for release Version 22. A brief summary of each enhancement is given referencing its particular location if applicable. As new branches of Version 20 are made available, the original enhancements will be moved to the Previous Work Requests section. The enhancements related to the most current branch available will be listed under the main What's New section.

Each enhancement includes the Work Request (WR) Number and the description. If further information is needed, please contact **Client Services** Support.

NOTE: *There are no new enhancements for release Version 22.*

Chapter 2 Overview

The Data Mining application allows the user to create Custom Reports in Table Maintenance within Data Mining Custom Reports. These reports will contain Datasets that may be built to extract information from applications within TruBridge EHR. The reports will have the ability to pull data documented across multiple patients into useable output formats (i.e. PDF, CSV, JSON).

Chapter 3 Security

3.1 Overview

This Chapter will discuss the process of setting up security for user access to both build and generate Custom Reports. In order for a site to use Data Mining Custom Reports, the following applications need to be active: Custom Report Builder and Dataset Builder along with the appropriate Datablocks activated. Please contact Client Services Support for more information.

3.2 Security for building Custom Reports

The security needed within Identity Management for Logins that will need access to build Custom Reports is as follows:

Applications:

- **Custom Report Builder:** Allow Access
- **Dataset Builder:** Allow Access

Datablocks:

- Setup global rule by following the steps below:
  - Select **Datablocks**
  - Select **New**
  - Skip Step 1
  - Select **Allow** from step 2 by selecting the **green plus sign** icon.
  - Select **Save**
  - Enter the title for the rule.
  - Select **Save**

Custom Reports:

- Setup global rule by following the steps below:
  - Select **Custom Reports**
  - Select **New**
  - Skip Step 1
  - Select **Allow** from step 2 by selecting the **green plus sign** icon
  - Select **Save**
  - Enter the title for the rule.
  - Select **Save**

NOTE*: Once the rule has been created it may then be added to other logins or roles without having to follow the steps above for each login. See the System Administration User Guide for more information.*

3.3 Security to Generate Custom Reports

Security needed within Identity Management for Logins that will only need access to generate Custom Reports:

Applications:

- **Custom Report Builder:** Allow Access.

Custom Reports:

- Setup global rule for access to all reports by following the steps below:
  - Select **Custom Reports**
  - Select **New**
  - Skip Step 1.
  - Select **Allow** from Step 2 by selecting the **green plus sign** icon.
  - Select **Save**
  - Enter the title for the rule.
  - Select **Save**

- Or to setup a rule for access to just the report the Login should be generating by following the steps below:
  - Select **Custom Reports**
  - Select **New**
  - Select the green plus sign icon next to Report .
  - Select **Allow** from step 2 by selecting the **green plus sign** icon .
  - Select **Report** from Step 3.
  - Double click the needed Report(s).
  - Select **Save**
  - Select **Save**
  - Enter the title for the rule.
  - Select **Save**

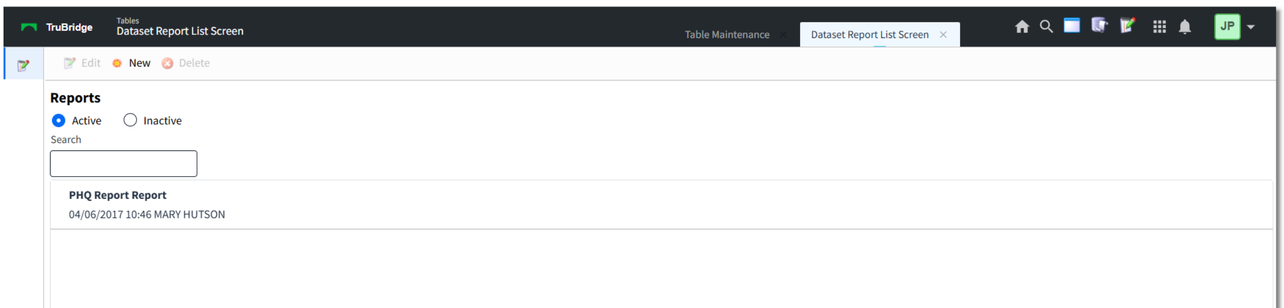
***NOTE**: Once the rule has been created it may then be added to other logins or roles without having to follow the steps above for each login. See the System Administration User Guide for more information.*

Chapter 4 Accessing Data Mining Custom Reports

Data Mining Custom Reports may be accessed within the Clinical area of Table Maintenance.

1. From TruBridge EHR, select **Tables**.
2. Next select **Clinical**.
3. Select **Data Mining Custom Reports** under the Clinical Documentation area.

From **Web Client** > **Tables** > **Clinical** > **Data Mining Custom Reports**



Data Mining Custom Reports

The Report screen will display with the following options on the action bar:

- **Edit:** Allows the user to edit an existing report. A report must be selected to enable the Edit option. See Building a Custom Report 17 for more information on modifying a Custom Report.
- **New:** Allows the user to to launch to the Data Mining Reports Edit screen to create a new report. See Building a Custom Report 17 for additional information.
- **Delete:** Allows the user to delete an existing report. A report must be selected to enable the Delete option.

The reports listed may sorted by **Active** reports or **Inactive** reports by selecting the corresponding radio button at the top of the Reports screen.

The **Search** field allows the user the ability to search the list of existing reports.

Each report will display with the Title of the report in bold and below the title the date/time will display along with the user of the last time the report was updated.

Chapter 5 Building Data Sets

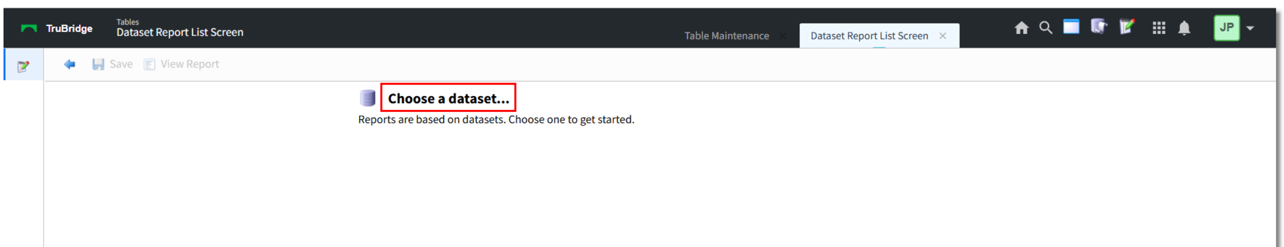
5.1 Overview

Data Mining Custom Reports may be customized to each facility's specifications.This Chapter will discuss the process of building datasets and pulling the datasets to a Custom Report.

5.2 Building a Dataset

Datasets must be created before a report may be built. To build a New Dataset select **New** from the action bar and then select **Choose a dataset**.

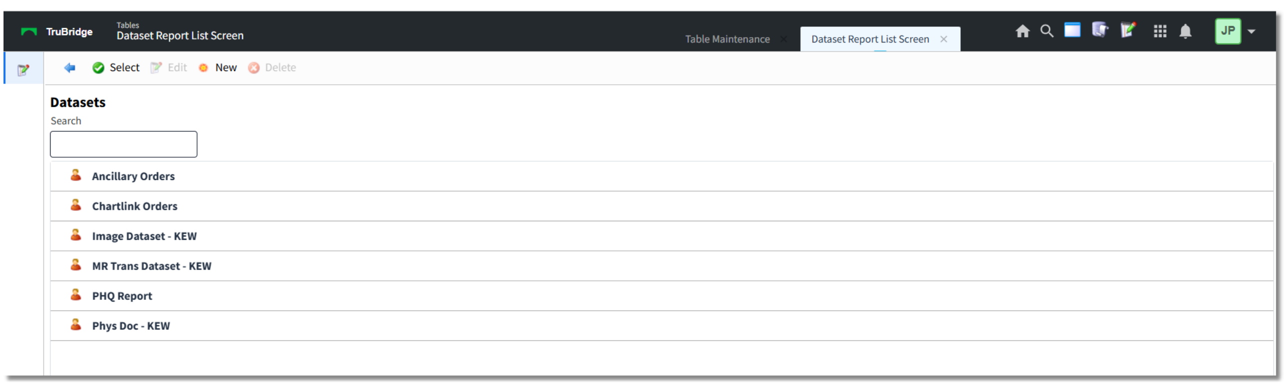
Select **Tables** > **Clinical** > **Data Mining Custom Reports** > **New**



Data Mining Report Edit

The Datasets screen allows the user to build new datasets or edit existing ones.

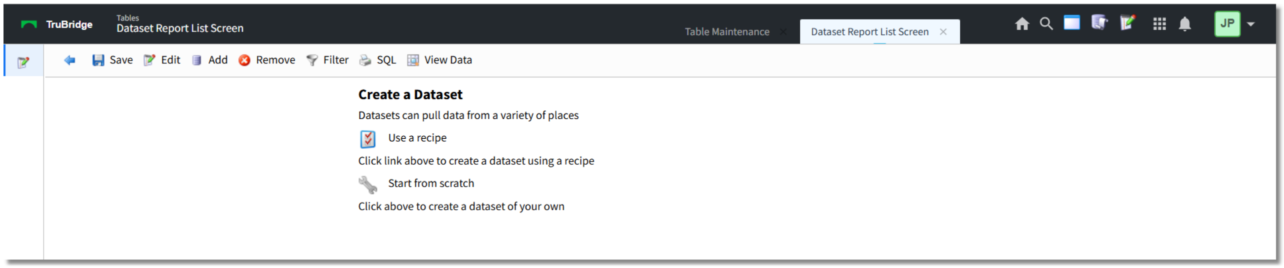
Select **Tables** > **Clinical** > **Data Mining Custom Reports** > **New** > **Choose a dataset**



Datasets

To create a New dataset, select **New**.

Select **Tables** > **Clinical** > **Data Mining Custom Reports** > **New** > **Choose a dataset** > **New**



New Dataset

Selecting **Use a recipe** will create a dataset based on common clinical information. The information may be included by selecting the check box next to the Clinical information to be included in the report.

Selecting **Start from scratch** will allow the user to build a new dataset from any datablocks.

Start from Scratch

The datablocks may be sorted by General Category to include **All** or **Clinical**. When the radio button for Clinical is selected, the Specific Category may be used to narrow down the datablock list.

The following options are available within the **Specific Category** table:
- General information for a profile or visit
- Allergy or intolerance
- Care provision or Team
- Condition, problem or diagnosis
- Diagnostic orders, results, studies or vital signs
- Questionnaires and other type of documentation
- Medication Orders and administrations, prescriptions, home medications or immunizations
- Actions performed on a visit
- Other

Below the Specific Category are the options to display Recommended datablocks, Deprecated datablocks and Inactive datablocks.

The following datablocks are available to be included when the radio button **Recommended** is selected:

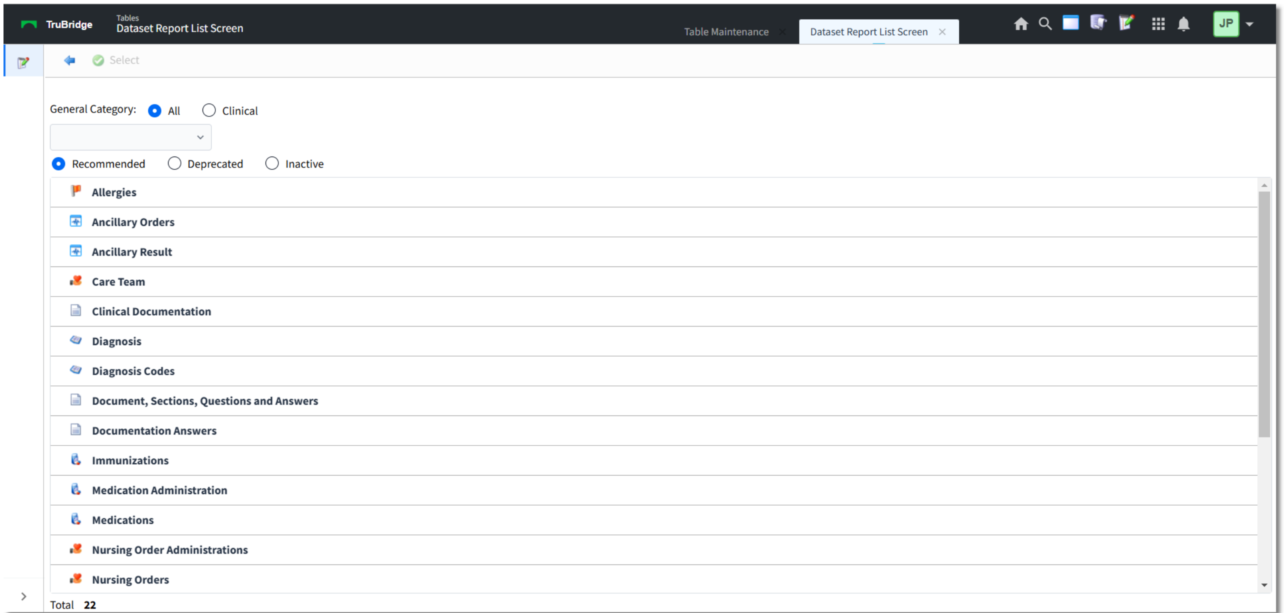
- Allergies
- Ancillary Orders
- Ancillary Result
- Care Team
- Clinical Documentation
- Diagnosis
- Diagnosis Codes
- Document, Sections, Questions and Answers
- Documentation Answers
- Immunizations
- Medication Administration
- Medications
- Nursing Order Administrations
- Nursing Orders
- Patient Documentation
- Patient Education Documents
- Patient Visit
- Plan of Care
- Plan of Care Goal
- Problem List
- Sections and Questions
- Vital Signs

NOTE: *The Recommended datablocks may differ depending on what datablocks have been activated for each facility.*

The radio button **Deprecated** is currently TruBridge use only.

When the **Inactive** radio button is selected it will display all datablocks currently inactive.

Select **Web Client** > **Tables** > **Data Mining Custom Reports** > **New** > **Choose a dataset** > **New** > **Start from Scratch**

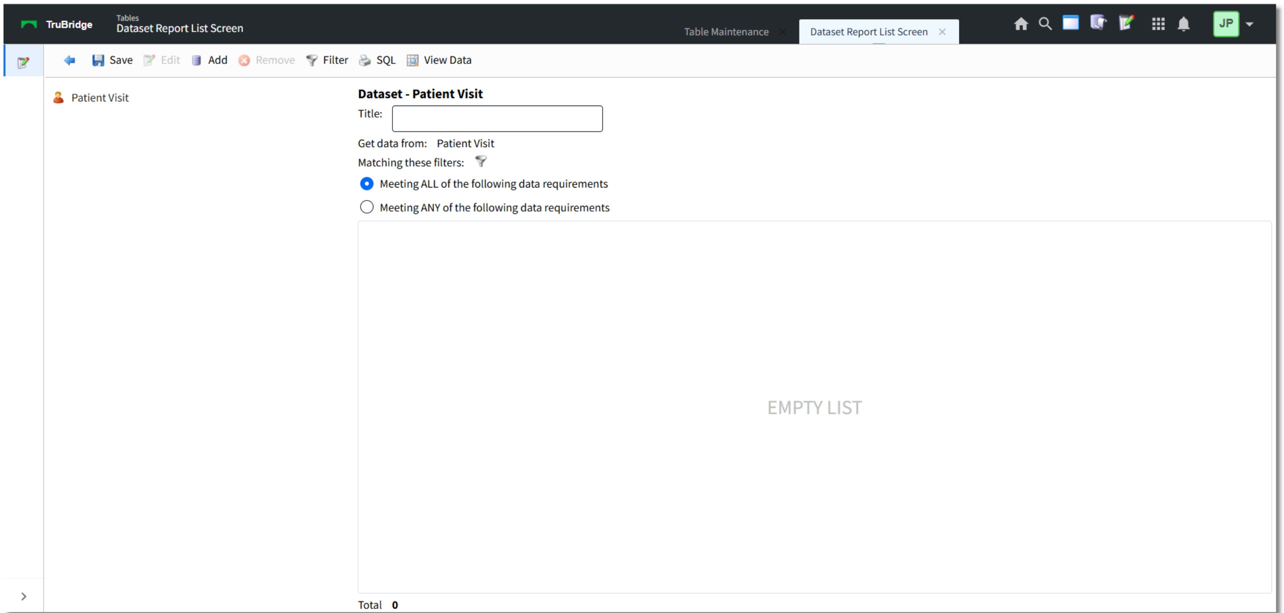


Datablocks

Select the parent data block and choose **Select** or **double click** the datablock to launch the Dataset Report List screen.

This is a single selection screen and additional child datablocks may be added from within the Dataset Report List Screen. To choose the parent datablock the first step is to figure out where the main source of the information is to be collected from. For example, if this is a report to collect patient clinical data the parent datablock would be Patient List.

Select **Web Client** > **Tables** > **Data Mining Custom Reports** > **New** > **Choose a dataset** > **New** > **Start from Scratch** > **Select Dataset**



Dataset Report List

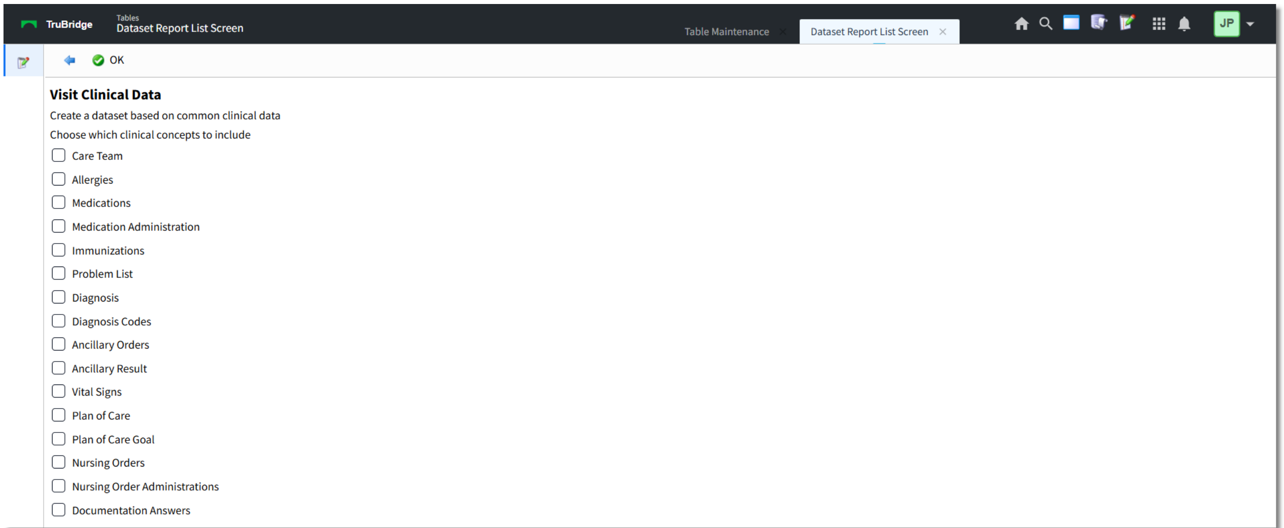
Please see the Dataset Report List Screen 13 for additional information on setting up additional child datablocks and filters.

Use a Recipe

The Visit Clinical Data screen will display when **Use a recipe** is selected. This will provide a list of common clinical data that may be selected to be included into the report.

NOTE: *The common clinical data may differ depending on what datablocks that have been activated for each facility.*

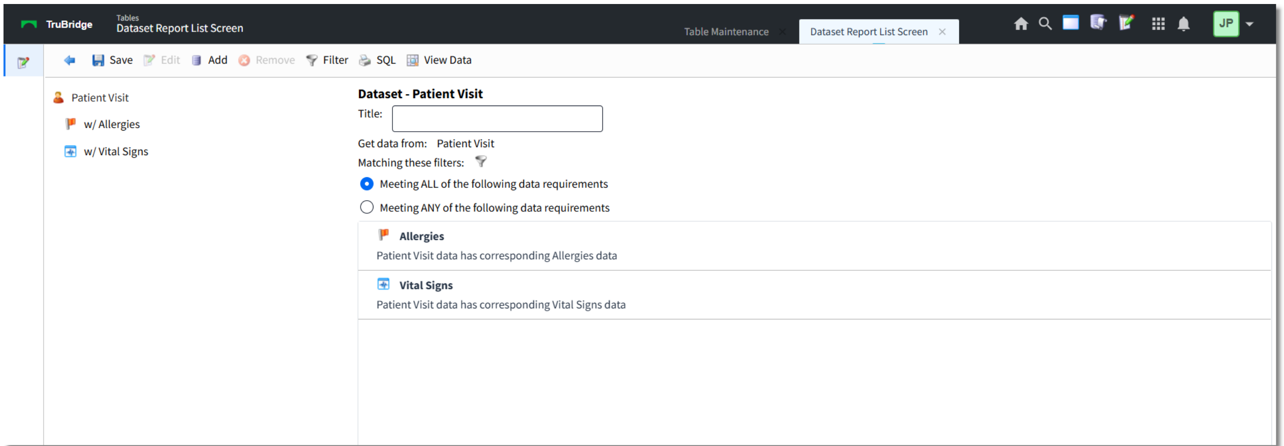
Select **Web Client** > **Tables** > **Data Mining Custom Reports** > **New** > **Choose a dataset** > **New** > **<u>Use a recipe</u>**



Use a Recipe Dataset

Select the common clinical data that will be the included within that Dataset by checking the appropriate check boxes and selecting **OK**.

Select **Web Client** > **Tables** > **Data Mining Custom Reports** > **New** > **Choose a dataset** > **New** > **<u>Use a recipe</u>** > **Select Clinical Data** > **<u>Ok</u>**



Dataset Using a Recipe

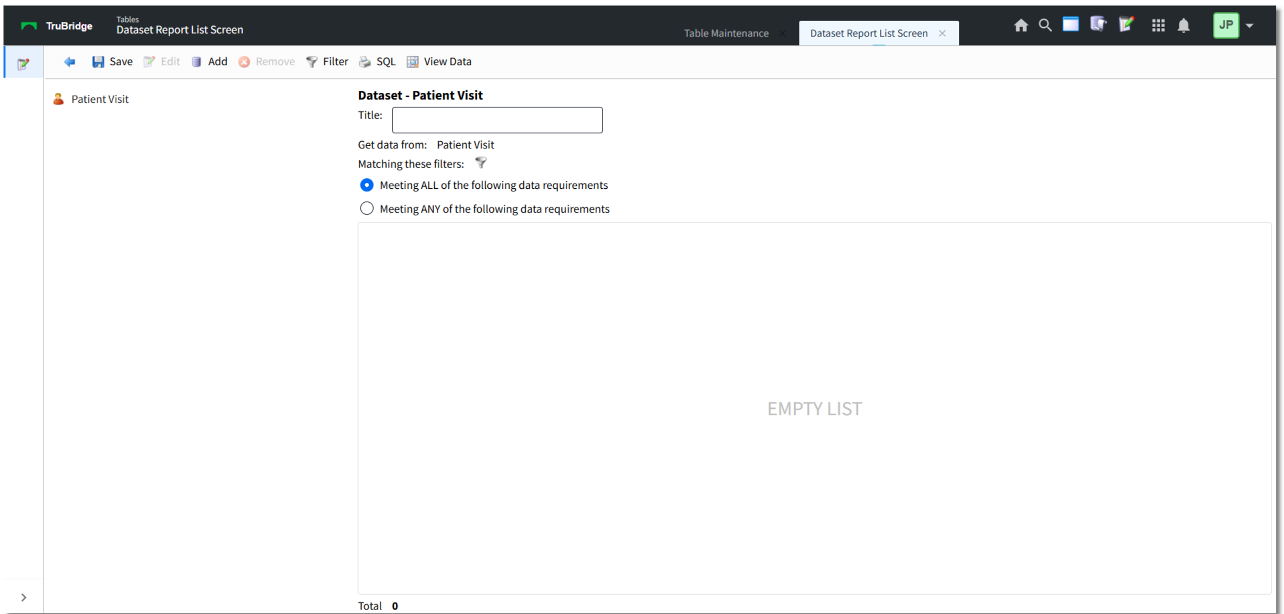
When building Datasets by choosing the Use a Recipe option, the Patient Visit will always display as the parent datablock and the selected common clinical data will display as a child datablock.

Please see the Dataset Report List Screen 13 for additional information on setting up additional child datablocks and filters.

Dataset Report List Screen

The Dataset Report List screen allows additional child datablocks to be added to the dataset.

Select **Web Client** > **Tables** > **Data Mining Custom Reports** > **New** > **Choose a dataset** > **New** > **Start from Scratch or Use a Recipe** > **Choose datablocks** > **Select**



Dataset Report List

To set up a dataset follow the steps below:

1. Enter the title of the dataset within the **Title** field and select **Save**.

2. Add any needed child datablocks to the dataset by selecting **Add** from the action bar. See Adding Child Datablocks 15 for more information.

3. Next begin filtering each datablock included within the dataset. Select the datablock on the left side of the screen and then select the **Filter icon**  next to "Matching these filters" to setup filters within the selected dataset. The **Filter** option from the action bar may also be selected. Please refer to the Filter Builder document for addition information on creating filters.

4. Select the appropriate data requirements by choosing one of the following options:

- **Meeting ALL of the following data requirements**: If selected, all of the values on the filter have to be on an account for it to be included in the report.

- **Meeting ANY of the following data requirements**: If selected, any of the values on the filter may be on an account for it to be included on the report.

5. Select **Save**.

The following options are available on the action bar:

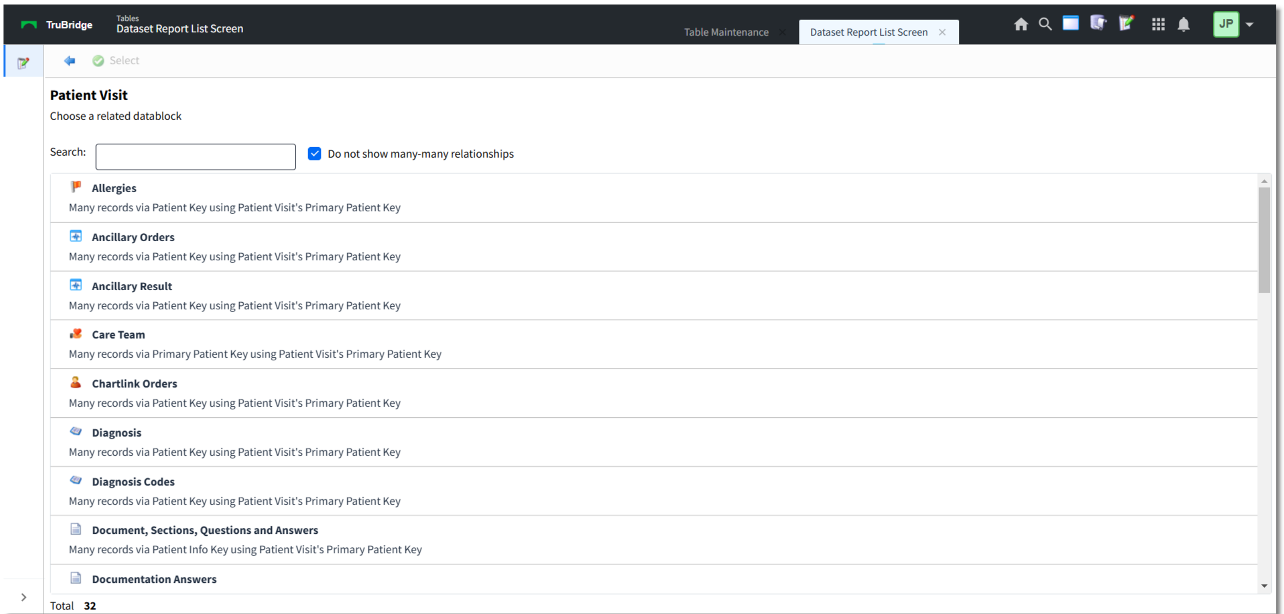
- **Back Arrow:** Allows the user to move back to the Dataset screen.
- **Save:** Allows the dataset to be saved.
- **Edit:** For TruBridge Use Only.
- **Add:** Allows child Datablocks to be added to the dataset. See Adding Child Datablocks 15 for more information.
- **Remove:** Allows the removal of the selected datablock. This option is enabled when a datablock is selected (Parent or child).
- **Filter:** Allows information to be filtered in or out of the dataset to achieve the needed results. For additional information, please refer to the Filter Builder document for addition information on creating filters.
- **SQL:** Displays the Structured Query Language information for the dataset.
- **View Data:** Allows the dataset to be previewed.

Adding Child Datablocks

To add any additional child datablocks to the parent datablock:

1. Select **Add** from the action bar.

Select **Web Client** > **Tables** > **Data Mining Custom Reports** > **New** > **Choose a dataset** > **Select a Dataset or select New** > **Add**



Adding Child Datablocks

When Add has been selected, only datablocks that are related to the parent datablock will display.

The check box **Do not show many-many relationships** will default as checked. It is recommended to leave this selected to keep from having information duplicated within the dataset.

2. Select the datablock that will be included within the dataset.

NOTE*: This is a one selection screen but multiple child datablocks may be added to the dataset by repeating steps 1-3.*

3. Then choose **Select**.

4. Next begin filtering each datablock included within the dataset. Select the datablock on the left side of the screen and then select the **Filter icon**  next to "Matching these filters" to setup filters within the selected dataset. The **Filter** option from the action bar may also be selected. Please refer to the Filter Builder document for addition information on creating filters.

5. Choose what type of records to include by selecting the appropriate radio button by Where Records:

   - **Exist**: Allows the report to display when the criteria is part of the patient's chart.

   - **Not Exist**: Allows the report to display when the patient chart does not have the criteria documented within the patient's chart. For example, if the screenings section within a Documentation document should be addressed on each patient the report may be generated to filter out patients that do not have the documentation by selecting Not Exist.

6. Select the appropriate data requirements by choosing one of the following options:

   - **Meeting ALL of the following data requirements**: This will allow only criteria to pull to the report that meet all of the filters applied.

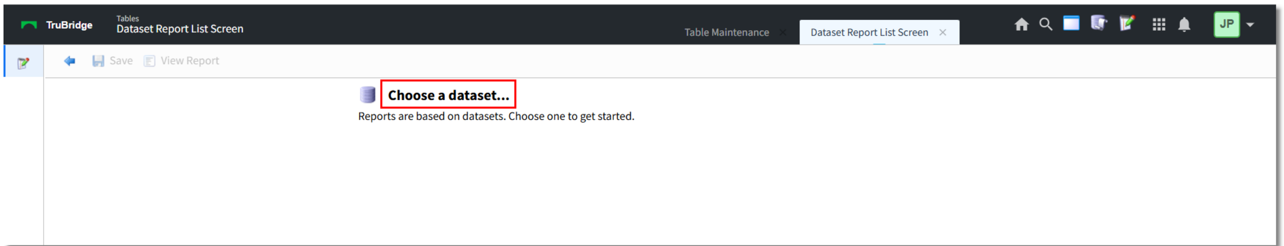
   - **Meeting ANY of the following data requirements**: This will allow any criteria to pull to the report that meet any of the filters applied.

7. Select **Save**.

Chapter 6 Building a Custom Report

After the datasets have been built a custom report may be compiled. To build a New Report select **New** from the action bar.

Select **Web Client >Tables** > **Clinical** > **Data Mining Custom Reports** > **New**

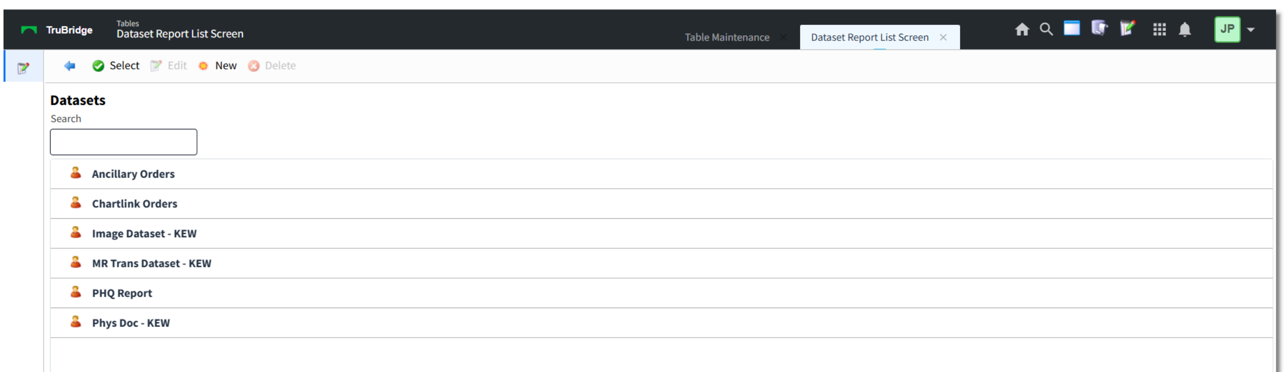


Data Mining Report Edit

Then select **Choose a dataset**.

NOTE: *Datasets must be created before a report may be built.*

Select **Web Client** > **Tables** > **Clinical** > **Data Mining Custom Reports** > **New** > **Choose a dataset**

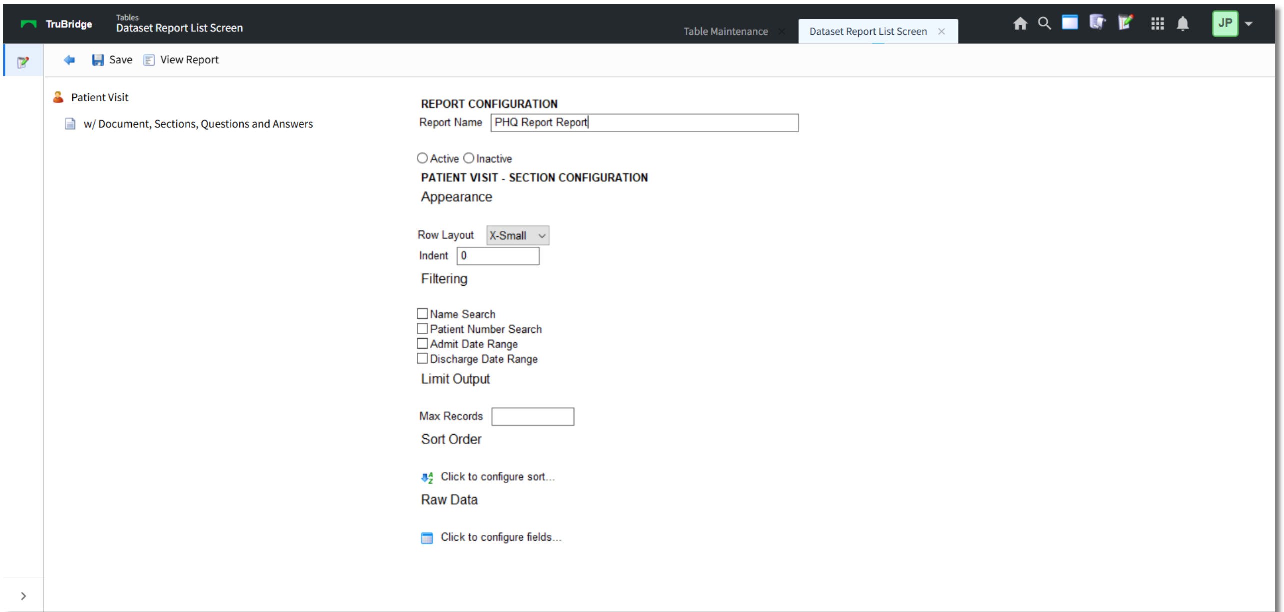


Choosing a Dataset

Single select the dataset that will be generated to create the report and choose **Select**.

NOTE: *If the dataset is double clicked it will open the dataset to be edited.*

Select **Tables** > **Clinical** > **Data Mining Custom Reports** > **New** > **Choose a dataset** > **Dataset**



Report Configuration

Enter a Name for report within the **Report Name** field. The dataset that has been included into the report will display below the report title.

If the radio button **Active** is selected then the report is available to be generated from within the Report Dashboard. If the radio button **Inactive** is selected then the report is under construction and only available within the Data Mining Custom Reports area.

After the title has been entered select **Save**.

The next step is to define the output of each datablock included in the set. See configurations to define the output for Patient List Report Configurations 19, Document/Section/Question/Answer 20 and Vital Signs 21.

View Report will allow the report to be generated. See Generating from Data Mining Custom Reports 24 for more information.

6.1 Configurations

Patient Visit Configuration

The following options may be setup to configure the Patient Visit datablock.

Appearance

This section is used to configure the dataset for the PDF output and embedded list.

- **Row Layout**: Determines the amount of information that will display for the selected datablock. The following options are available:
  - **X-Small**: Displays the Patient name.
  - **Small**: Displays all the of the patient demographic information except the patient's phone number and email address.
  - **Medium**: Displays all patient demographic information.

- **Indent:** This will allow the information to be indented to add spacing to distinguish between the different datablocks. For example, the parent datablock would be left at zero with the child datablock indented by 1 and so on.

Filtering

- **Name**: Allows the report to be filtered by a particular patient.

- **Patient Number**: Allows the report to be filtered by a particular account number.

- **Admit date is between**: Allows the report to only display patients admitted during the range entered.

- **Discharge date is between**:Allows the report to only patients discharged during the range entered.

Limit Output

- **Max Records:** Allows a set number of records to be display on the report, this will decrease the time the report takes to generate.

Sort Order

Select **Click to configure sort** for the PDF output of the datablock. This will allow the individual components of the datablock to pull and sort the order in which those components display within the PDF. See Sort Order 23 for additional information.

Raw Data

This section Is the configuration for the CSV, JSON, and XML output. This is usually used to delimit the number of rows of information that is pulled to the report. See Raw Data 23 for additional information.

Document, Sections, Questions and Answer Configuration

The following options may be setup to configure the Documents, Sections, Question and Answers datablock.

Appearance

This section is used for configuring the PDF output and embedded list.

- **Row Layout**: Determines the amount of information that will display for the selected datablock. The following options are available:
  - **Question & Answer**: Displays the question title and the selected answer on the patient's account.
  - **Document, Section, Question and Answer**: Displays the document title, section title, question title and the selected answer on the patient's account.
  - **Document**: Displays the document title on the patient's account.
  - **Answer**: Displays the selected answer on the patient's account.

- **Indent:** This will allow the information to be indented to add spacing to distinguish between the different datablocks. For example, the parent datablock would be left at zero with the child datablock indented by 1 and so on.

- **Show Label Before**: When selected it will display the text entered in the field with the datablock displaying after the entered text. For example, if Documentation is entered in the text field it will display prior to the information pulling from the selected datablock.

Filtering

- **Include Deleted**: Allows documentation that was amended to display within the report.

- **Answer Date Range**: Allows documentation that was entered within the date range set to display within the report.

Limit Output

This section allows the number of patients that pull to the report to be delimited by the following options:

- **Show only records that match:** Displays only patients that match the exact parameters set within the datablock.
- **Show All Records**: Displays all patient accounts that match any of the parameters set within the datablock.
- **Max Records**: Allows a set number of records to be display on the report, this will decrease the time the report takes to generate.

Sort Order

Select **Click to configure sort** for the PDF output of the datablock. This will allow the individual components of the datablock to pull and sort the order in which those components display within the PDF. See Sort Order 23 for additional information.

Raw Data

This section is used for the configuration of the CSV, JSON, and XML output. This is usually used to delimit the number of rows of information that is pulled to the report. See Raw Data 23 for additional information.

Vital Signs Configuration

The following options may be setup to configure the Vital Signs datablock.

Appearance

This section is for the configuration of the PDF output and embedded list.

- **Row Layout**: Determines the amount of information that will display for the selected datablock. The following options are available:
  - **Vital & Value**: Displays only the vital sign type and value entered on the patient's account.
  - **Vital & Detail**: Displays all detail including vital sign type, value entered, date/time stamp and the site that is entered on the patient's account if applicable.

- **Indent:** This will allow the information to be indented to add spacing to distinguish between the different datablocks. For example, the parent datablock would be left at zero with child datablock indented by 1 and so on.

- **Show Label Before**: When selected it will display the text entered in the field with the datablock displaying after the text. For example, if Vital Signs is entered in the text field it will display prior to the information pulling from the selected datablock.

Filtering

- **Require ANY of the following vital signs criterion**: If selected, any values entered in the vital sign ranges may be on an account for it to generate.

- **Require ALL of the following vital signs criterion**: If selected, all of the values entered in the vital sign ranges have to be on an account for it to generate.

High and Low values for each vital sign may be entered so that only those values display within the report. To include a vital sign select the check box and then enter the high and low values for each individual vital sign. The following vitals signs may be filtered:
- Temperature
- Height
- Pulse
- Respiration
- Diastolic Blood Pressure
- Systolic Blood Pressure

Limit Output

This section allows the number of patients that pull to the report to be delimited by the following options:
- **Show only records that match:** Displays only patients that match the exact parameters set within the datablock.
- **Show All Records**: Displays all patient accounts that match any of the parameters set within the datablock.
- **Max Records**: Allows a set number of records to be display on the report, this will decrease the time the report takes to generate.

Sort Order

Select **Click to configure sort** for the PDF output of the datablock. This will allow the individual components of the datablock to pull and sort the order in which those components display within the PDF. See Sort Order 23 for additional information.

Raw Data

This section Is for the configuration of CSV, JSON, and XML outputs. This is usually used to delimit the number of rows of information that is pulled to the report. See Raw Data 23 for additional information.

6.2 Sort Order

To sort the order of the individual components of the datablock for a PDF output select **Sort Order**.

Double-click the components in the order that they should display. To remove selected components from the selected list, select the component from the list and choose **Remove**.

Once all components have been added in the order intended select **Save**.

The components will display in blue when the mouse hovers over the list beneath the Sort Order title. They may be edited by selecting the list of components.

6.3 Raw Data

To sort the order of the individual components of the datablock for a CSV, JSON, and XML output select **Raw Data**.

Double-click the components in the order that they should display. To remove selected components from the selected list, select the component from the list and choose **Remove**.

Once all components have been added in the order intended select **Save**.

The components will display in blue when the mouse hovers over the list beneath the Raw Data title. They may be edited by selecting the list of components.

Chapter 7 Generating Data Mining Reports

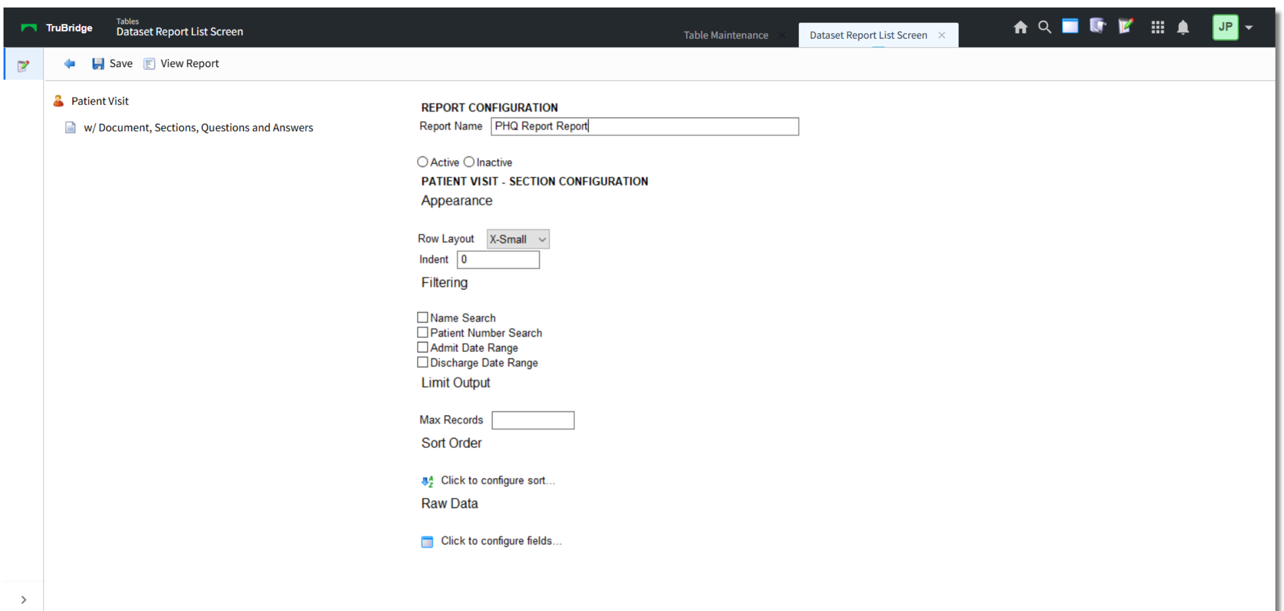
7.1 Overview

This Chapter will cover the steps that should be taken to generate a Custom Report.

7.2 Generating Custom Reports from within Data Mining Custom Reports

To generate a report from within the Data Mining Custom Reports screens select the report and choose **Edit** or double click the report.

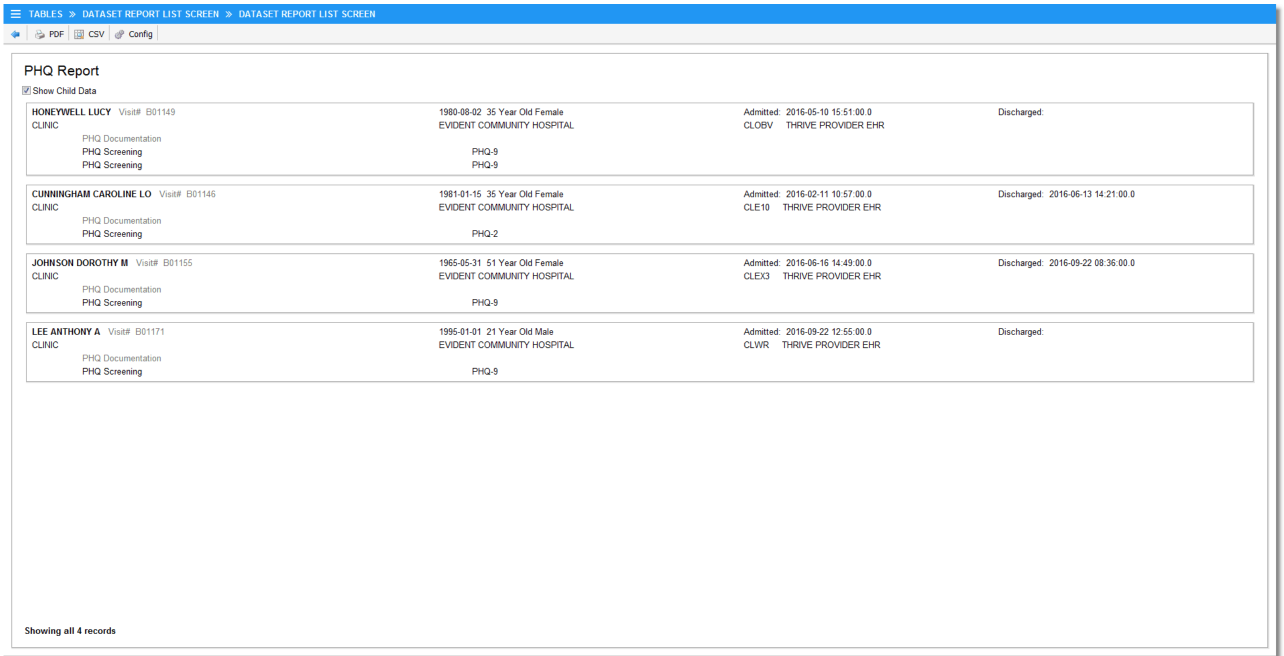
Select **Web Client** > **Tables** > **Clinical** > **Data Mining Custom Reports** > **Report**



Report Configuration

Then select **View Report** from within the Report Configuration screen.

Select **Web Client** > **Tables** > **Clinical** > **Data Mining Custom Reports** > **Report** > **View Report**



Report Generation

After View Report is selected the report will generate and display. The title of the report will display in bold in the top left hand corner of the screen. A check box labeled **Show Child Data** displays beneath the title of the report and is defaulted as checked. This allows the child datablocks of the dataset to display. If unchecked, the report will only display the parent datablock of the dataset.

The following options are available on the action bar:

- **PDF**: Displays the report in a PDF format.
- **CSV**: Displays the report in Excel.
- **Config**: Allows additional filters and sorting to be applied to the report. Please see the Configurations 27 for additional information.

7.3 Generating Custom Reports from within Report Dashboard

To generate a Custom Report from Report Dashboard follow the steps listed below:

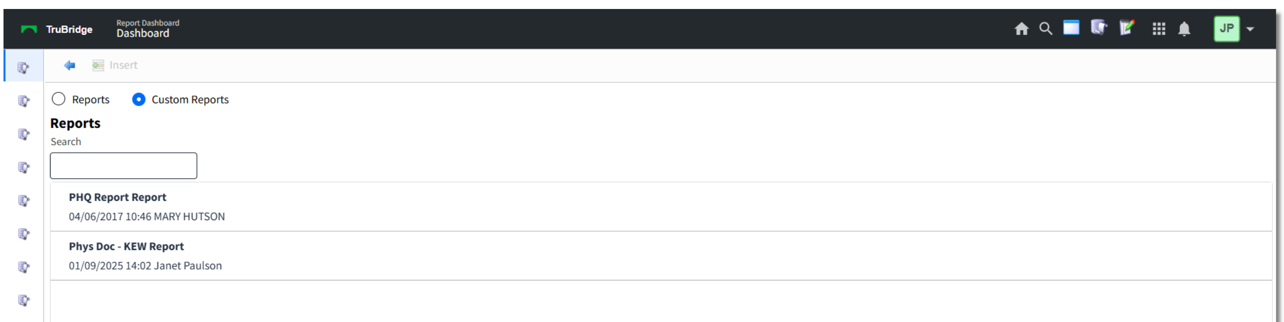
1. Select **Report Dashboard** from the Navigation Panel.

2. To add a Custom Report select **Add**.

3. Choose the radio button for **Custom Reports**. All custom reports that are active will display.

NOTE*: Depending on the users security for Custom Reports within Identity Management will determine what displays when the Custom Reports radio button is selected.*

Select **Web Client** > **Reports Dashboard** > **Add** > **Custom Reports**



Adding a Custom Report

4. Select the Custom Report and choose **Insert**.

5. Once the Custom Report has been added to the user's Report Dashboard select the report and select **Run**.

After Run is selected the report will generate and display. The title of the report will display in bold in the top left hand corner of the screen. A check box labeled **Show Child Data** displays beneath the title of the report and is defaulted as checked. This allows the child Datablocks of the dataset to display. If unchecked, the report will only display the parent datablock of the dataset.

The following options are available on the action bar:

- **PDF**: Displays the report in a PDF format.
- **CSV**: Displays the report in Excel.
- **Config**: Allows additional filters and sorting to be applied to the report. Please see the Configurations 27 for additional information.

7.4 Configurations

The configurations screen will allow the user to add additional filters and sorting options to each datablock included within the dataset of the report. Filters and Orders that are set will have to be reentered each time the report is generated from within this configuration screen.

Once the additional configurations are entered, select the **Back Arrow** at the top left of the screen to regenerate the report with the new configurations.