eMaRC Plus™

ePath Reporting

Administrator's Manual

Centers for Disease Control and Prevention

National Center for Chronic Disease Prevention and Health Promotion

Division of Cancer Prevention and Control

National Program of Cancer Registries

Registry Plus™ Software for Cancer Registries

Version 7.0

Table of Contents

Introduction

The eMaRC (Electronic Mapping, Reporting and Coding) Plus software was initially developed for the NPCR- Advancing E-cancer Reporting and Registry Operations' ePath Project by the Registry Plus Development Team of the U.S. Centers for Disease Control and Prevention (CDC) in 2006. The eMaRC Plus ePath (electronic Pathology) Reporting Module reads HL7 version 2.3.1 and 2.5.1 Observation Result (ORU 01) message batch files, parses messages, and stores HL7 data elements as discrete field values into tables in the Pathlab database. In a typical setting, the Public Health Information Network Messaging System (PHINMS) is used to securely send HL7 batch files from a laboratory to a cancer registry or some other agency working on the cancer registry's behalf. The eMaRC Plus resides at a cancer workstation and polls the worker queue of the PHINMS receiver for any new incoming files. When a new file arrives in the queue, the application selects it based on the text containing cancer terms, processes it, and then goes back in the waiting mode until another new file arrives. eMaRC Plus ePath Reporting Module can be used in an interactive mode where the user manually selects a file to import into the Pathlab database.

During import, eMaRC Plus uses a terms table to search reports for potential cancer reports. Additionally, a built-in negation terms finder algorithm (NegEx) enhances the program's text interpretation capabilities by discriminating the cancer term when used in a negative manner. For example, patient was determined not to have lymphoma, where *lymphoma* would be a cancer term searched to include as a cancer related report. The program shows imported pathology reports in the user readable format with cancer terms highlighted in red and negated terms highlighted in blue. An administrator can customize both the terms table and the negation phrases table.

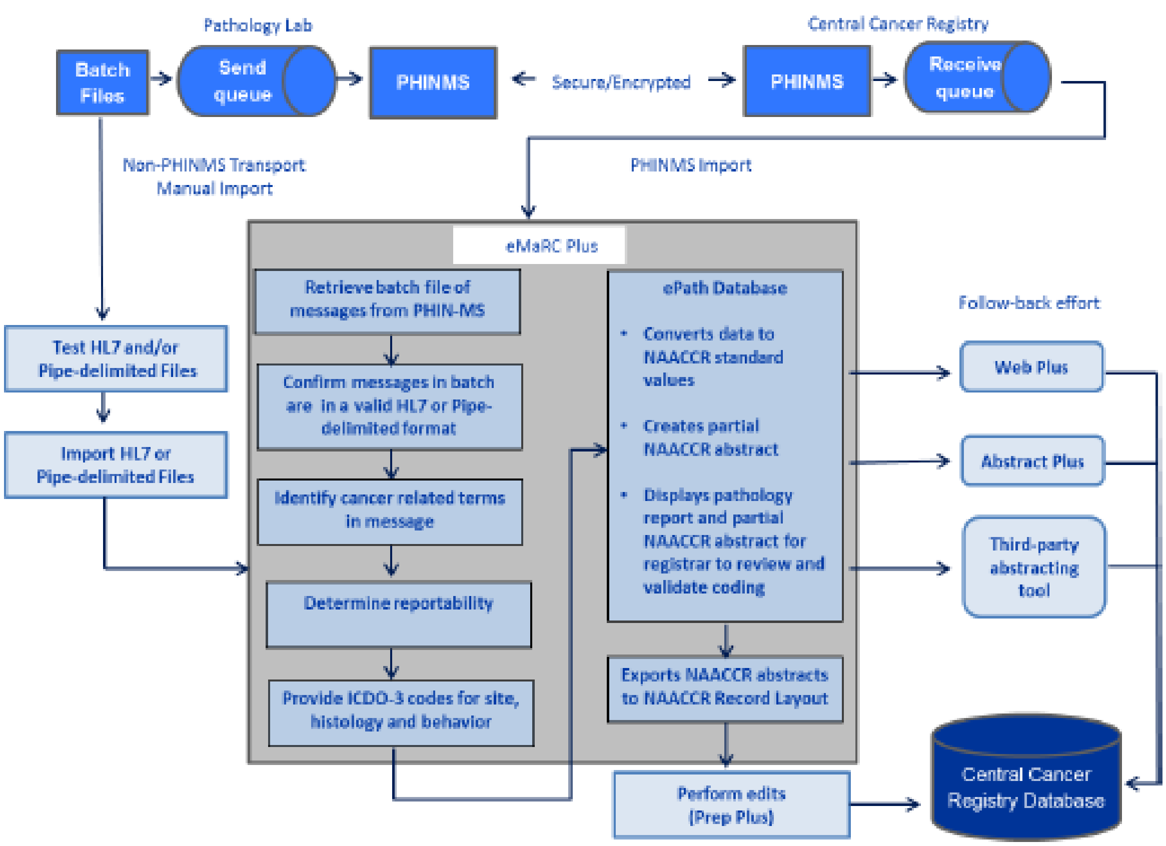
eMaRC Plus also creates partial abstracts from HL7 version 2 messages during import, translating coded values from the HL7 coding standard to the North American Association of Central Cancer Registries (NAACCR) standards. It allows you to view pathology report data items from the HL7 message side-by-side with abstract data items on the same screen. This allows you to look at the text of pathology reports and code data items, such as primary site and histology, in partial abstracts. The autocode histology feature suggests pertinent histology codes by analyzing the text of the report while the user codes abstracts.

In June 2014, the CDC's Cancer Surveillance Branch staff distributed the first production release of the Physician Reporting Module as part of the eMaRC Plus application. The Physician Reporting module imports HL7 Clinical Document Architecture (CDA) documents from physician office electronic health record (EHR) or electronic medical record (EMR) as part of Stage 2 and Stage 3 Meaningful Use. The documents can be imported manually or directly from a folder or the PHINMS queue, checked to ensure the files contain the required data items, parsed by the HL7 documents, mapped and, if needed, the HL7 data elements translated to NAACCR data elements.

This manual presents the information required by users of the Electronic Mapping, Reporting, and Coding (eMaRC) Plus ePath Module system. The following chapters of this manual cover the subjects that enable you to:

- Log in to eMaRC Plus ePath Module.
- Use the features of eMaRC Plus to work with reports received in either Health Level Seven International Standard (HL7) or pipe-delimited files by importing and processing batch files.

➤ Use functions within eMaRC Plus to review pathology reports and create abstracts for exporting to the registry.



Data Flow Overview Diagram

Overview of Administrator's Guide

Through this manual, users will be introduced to eMaRC Plus Administrator functionalities and capabilities in a detailed step by step manner. This manual provides information on tasks to be performed by Administrator Users. For information regarding Registrar User functionality, please see document "User's Guide: eMaRC Plus" located on SharePoint.

System Requirements

eMaRC Plus program works with 64-bit Microsoft® Windows® operating systems on x86-compatible processors. The minimum hardware requirements are the same as those of the Microsoft Windows operating system used.

System requirements include:

- ➤ Minimum Processor 1GHz, but recommended Intel i5 with 1.9GHz or better processor.
- ➤ Microsoft operating system Window 7, 8 and 10 or newer; Windows Server 2012 or newer.
- ➤ Minimum of 2 GB, but recommended 4 GB (or more) memory for improved user experience.

- Latest version of Microsoft Internet Explorer (recommended).
- A minimum of 200 MB free hard drive space is required, which excludes eMaRC Plus database.
- Microsoft .NET Framework Version 4.5 Full Version or newer version.
- Application comes with a default Microsoft Local Database for configuration and low budget use. **For enterprise/production use, it must be reconfigured to work with SQL Server 2012 or newer version**.

It is highly recommended to use a professional grade database server to avoid data loss. Database hosted on separate server gives you a more reliable platform. It is strongly recommend that users do a backup periodically, etc.

User Support

For technical support via e-mail, contact cancerinformatics@cdc.gov.

The CDC Registry Plus Development group is funded primarily to support NPCR-funded state central cancer registries. As a result, CDC helps state central cancer registries set up the software and perform basic customizations. CDC also provides periodic software updates and problem solving to the extent available resources allow. CDC does not provide on-site services, and does not support hospitals, clinics, laboratories, or other private users.

eMaRC Plus is intended for distribution to central cancer registries after as-needed customization by the central registry. The state central registry or other institution using Registry Plus software should provide all support to end users submitting data to the system.

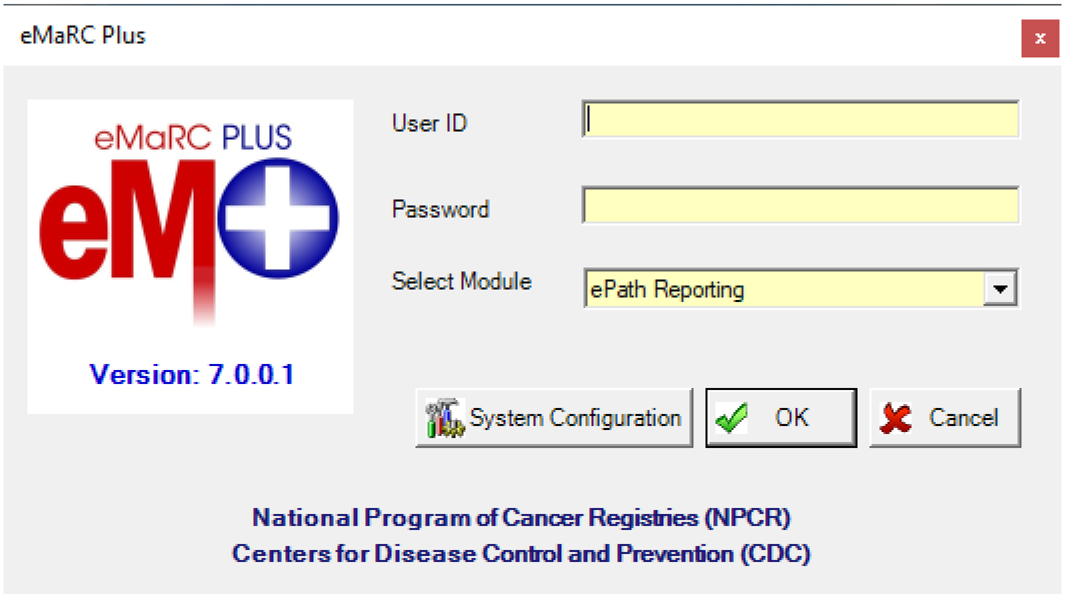
State registry contact information can be found at the National Program of Cancer Registries Web site: https://nccd.cdc.gov/dcpc_Programs/index.aspx#/3 .

Other users of eMaRC Plus will need to independently understand and maintain the software application.

Getting Started

Logging In

Now that eMaRC Plus is successfully installed, start by selecting the eMaRC Plus icon on your desktop. The default user ID is doe and the password is guest. These credentials can be used to log in the first time. After your initial login, you should immediately create a new user account with System Administrator rights. Refer to the Creating User Accounts section for more information on creating new accounts and managing user roles. After the newly created account has been tested, it is strongly recommended that the default user ID be deleted before the application is used in a production environment.



eMaRC Login dialog box.

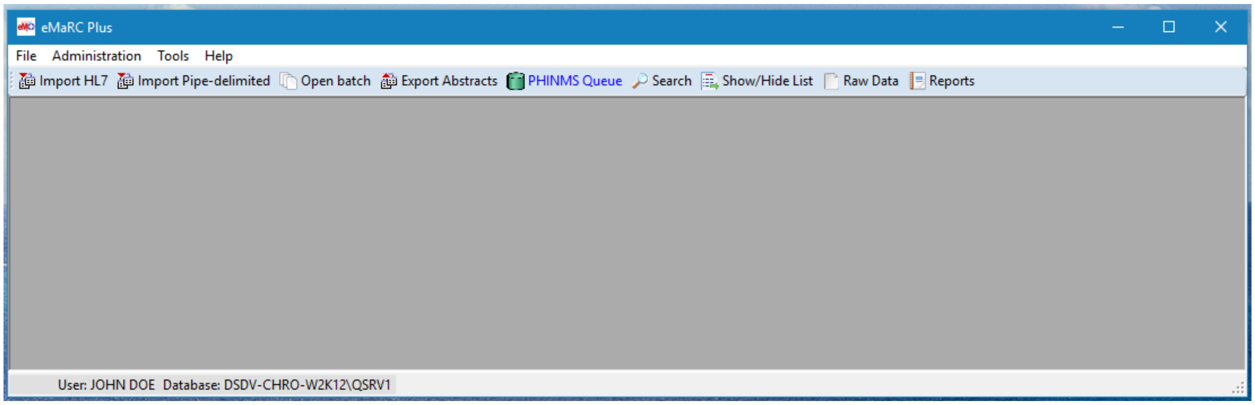
1. Enter your eMaRC User name and Password and select ePath Reporting Module.

2. The Administrator now has an option to sign into the System Configuration from the initial login dialog box.

NOTE: Please contact an eMaRC Administrator to set up a User name and password for your initial login.

eMaRC Plus Main Window

When a user successfully logs in to eMaRC Plus, the main window will open.



eMaRC Plus main window.

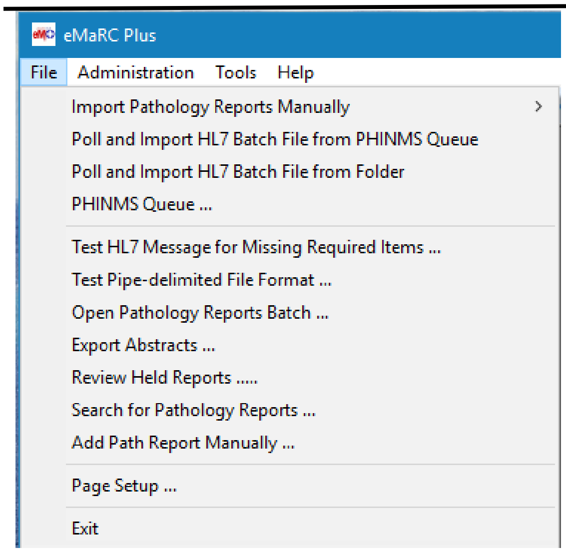
The Menu Bar

The menu bar contains the following options:

eMaRC Plus menu bar.

File

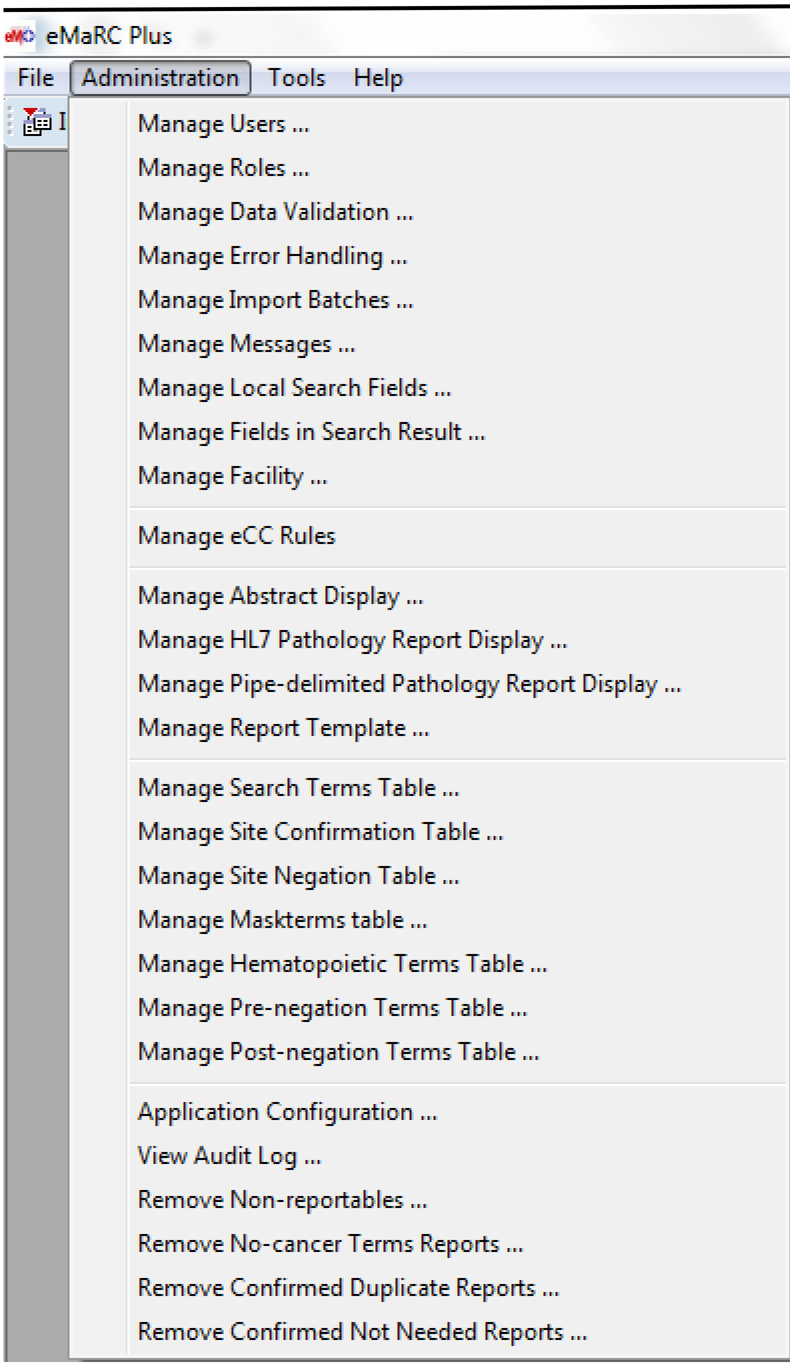
Contains options commonly performed by users assigned a role of "Registrar" in eMaRC Plus.



eMaRC Plus File menu.

Administration

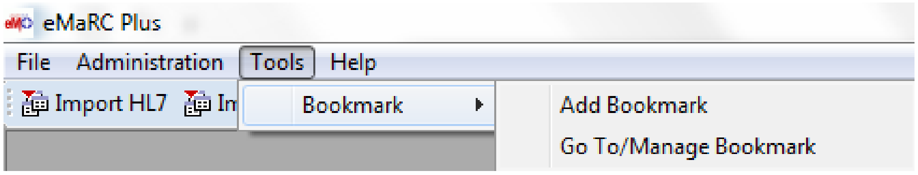
Many of the options and functionalities in the Administration menu can only be performed when a user is assigned an "Administrator" role in eMaRC Plus.



eMaRC Plus Administration menu.

Tools

Contains the Bookmark options, which allows a user to save their spot and easily navigate back to a report of interest.

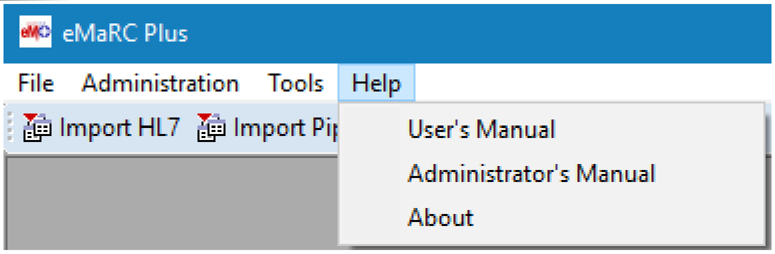


eMaRC Plus Tool menu.

For more details on bookmarking reports, please see the "User's Guide: eMaRC Plus" located on SharePoint.

Help

Provides access to the manuals and a dialog box that displays the eMaRC Plus version.

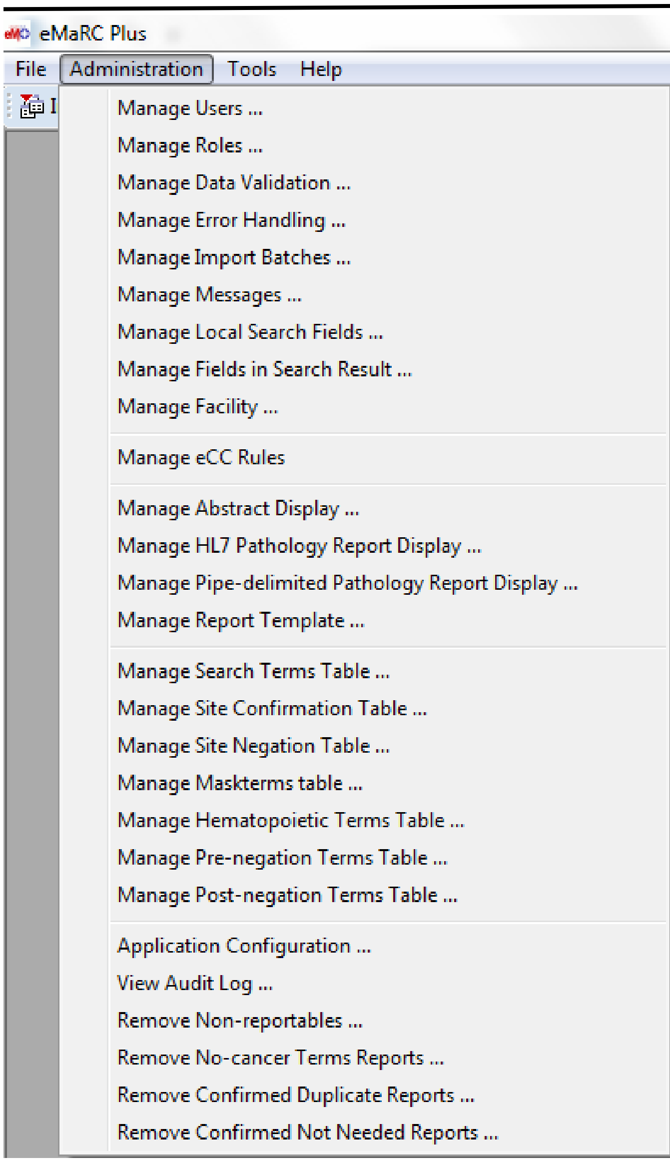


eMaRC Plus Help menu.

- **User's Manual**: Opens the online User's Manual for eMaRC Plus provided by CDC.
- **Administrator's Manual**: Opens the online Administrator's Manual for eMaRC Plus provided by CDC.
- **About**: Opens the About dialog box to view the current version of eMaRC Plus.

Administration Dropdown Menu

The Administration Dropdown Menu, on the main Menu Bar of eMaRC Plus, contains many tasks that are only accessible to users who have Administrator level permissions.



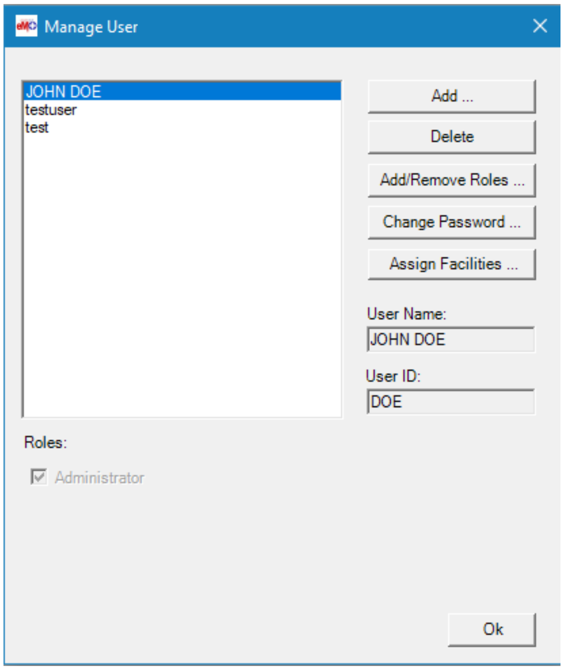
eMaRC Plus Administration menu.

When a user has been assigned the role of Administrator within the eMaRC application, they are given permission to perform most tasks found under the **Administration** menu. To assign a user Administrator rights, please see Add/Remove Roles section below.

Manage Users

An administrator has the ability to manage eMaRC Plus user accounts.

1. Click the **Administration** tab and select **Manage Users**… from the Menu Bar.
   - The *Manage User* dialog box opens.

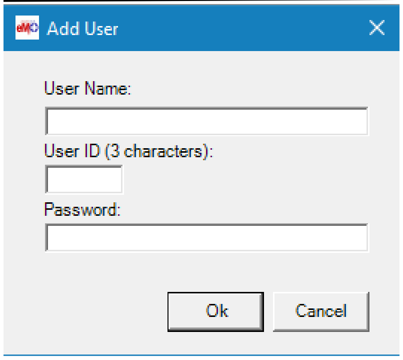


Manage User dialog box.

Add User

To give a new user access to the eMaRC application:

1. Click the Add… button within the *Manage User* dialog box.
   - The *Add User* dialog box opens.



Add User dialog box.

2. In the *Add User* dialog box:
   - Enter the user's full name in the User Name field.

- Enter the user’s initials or three-letter user ID in the User ID field.
- Enter the user’s password in the Password field.

3. Click the **OK** button.

Delete User

To delete a user, select the user’s name from the Manage User list and click the Delete… button.

Add/Remove Roles

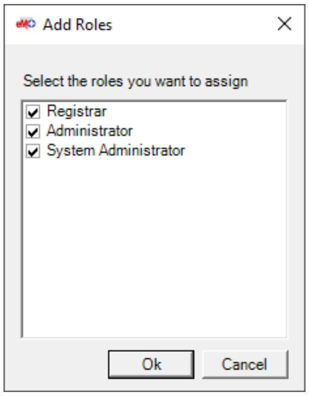
Each user is assigned a role (or roles), which determines their permissions level and ability to perform tasks. Default roles in eMaRC are:

1. **Registrar**: Registrars manage imports of HL7 and pipe-delimited files manually, and test messages for required data items. They can perform all of the functions to process a batch of pathology reports, including polling and viewing the PHINMS queue, exporting abstracts, and reviewing consults.
2. **Administrator**: Administrators setup eMaRC Plus and have access to all of its features except managing the database and PHINMS connection. An administrator can customize the authorizations of all of the other users. All administrators must have a general user account, and log in to the application using a user ID and password.
3. **System Administrator**: System administrators manage the system configuration, including database and PHINMS connections, mail-server address, Simple Mail Transfer Protocol (SMTP), and the password policy.

The default roles can also be modified by an Administrator (please see Manage Roles section below).

To manage the roles assigned to a user within the eMaRC application:

1. Select a user from the list and click the **Add/Remove Roles**… button within the *Manage User* dialog box.
   - The *Add Roles* dialog box opens.



Add Roles dialog box.

2. In the *Add Roles* dialog box:
   - Select the role you want the user to perform.

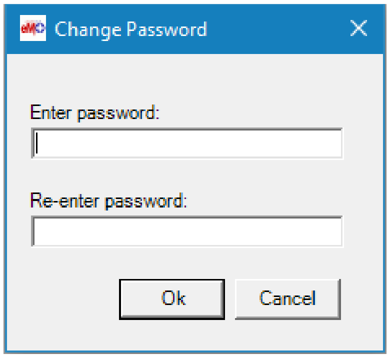
3. Click the **SAVE** button.

> ***NOTE***: *Roles are managed via the Manage Roles option. Please see Manage Roles section below for details.*

Change Password

To reset a user's password within the eMaRC application:

1. Select a user from the list and click the Change Password… button within the Manage User dialog box.
   - The Change Password dialog box opens.



Change Password dialog box.

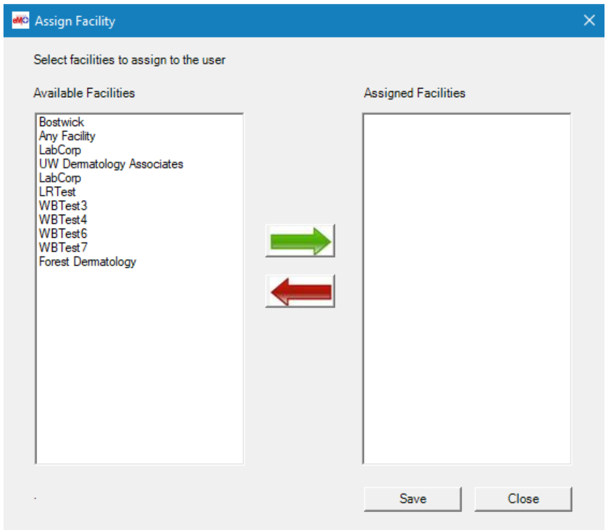
2. Enter the new password in both fields.
3. Click the OK button.

> ***NOTE***: *Each user has the ability to change their own password, regardless of role access granted. Only an Administrator can change the password of another user.*

Assign/Remove Facilities

To assign facilities to a specific user:

1. Select a user from the list and click the Assign Facilities… button within the Manage User dialog box.
   - The Assign Facility dialog box opens.



Assign Facility dialog box.

2. In the Assign Facility dialog box:
   - Select a facility from the Available Facilities column and use the green arrow to move the select facility to the Assigned Facilities column to assign a facility to the user.
   - Select a facility from the Assigned Facilities column and use the red arrow to move the select facility to the Available Facilities column to remove a facility from the user's assigned facilities.
3. Click OK to save your changes.
   - A note will appear in the bottom left of the dialog box to indicate a successful save.

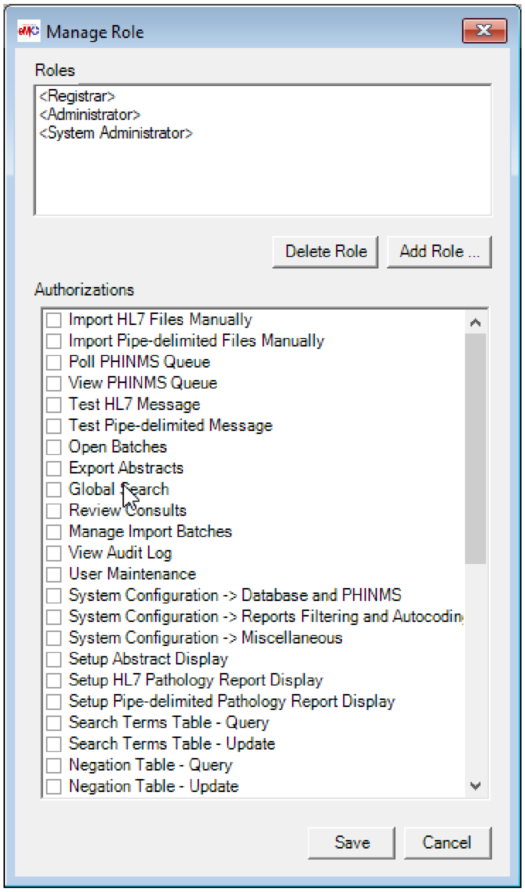
Assigned Facilities saved successfully message.

> ***NOTE****: Using this functionality means that only the assigned user will be able to code Abstracts from a specific facility.*

Manage Roles

eMaRC Plus allows you to set the access privileges of users according to specified roles. An Administrator can modify the default roles available or can customize a new role.

1. Select Administration>Manage Roles… from the eMaRC Menu Bar.
2. The Manage Role dialog box will appear.



Manage Role dialog box.

Add a Role

To add a new role:

1. Click the Add Role… button.
2. In the Add Role dialog box, enter the role title in the Role field and click the OK button.
3. Select your new role title from the Roles pane.
4. Select the tasks that will be available for the new role in the Authorizations pane by checking an item (access granted) or unchecking an item (access denied).

Edit a Role

Edit a Role can only be done on newly or previously created role. Roles with brackets <Registrar> cannot be edited.

To edit a created role:

1. Select a role from the Roles pane.
2. Select the tasks that will be available for the selected role in the Authorizations pane by checking an item (access granted) or unchecking an item (access denied).

Delete a Role

To delete a role:

1. Select the role in the Roles pane and click the Delete Role button.

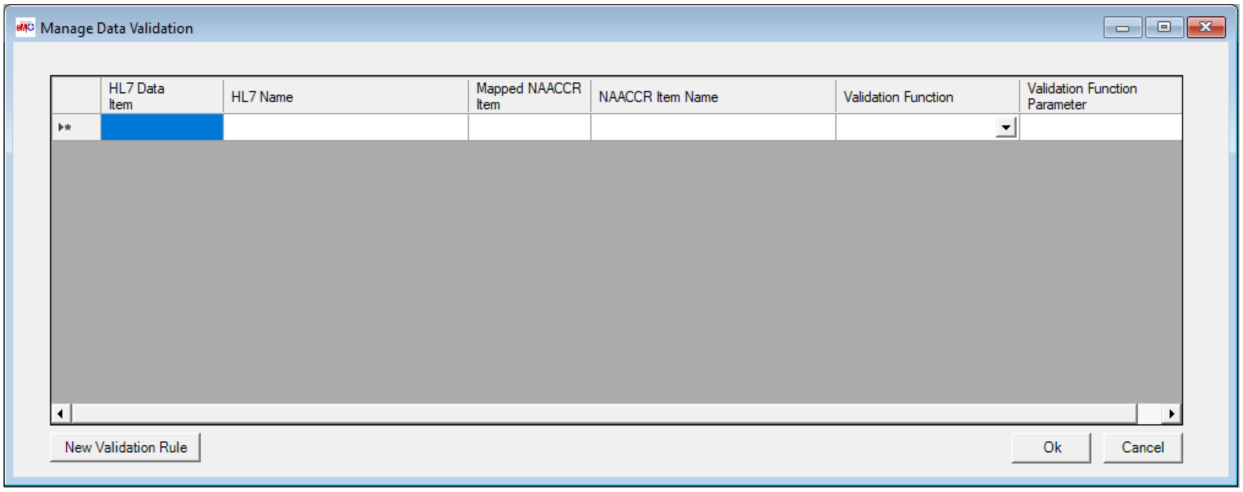
2. To confirm delete, click the Yes button in the dialog box.

> ***NOTE**: Before deleting a role, you should remove the role from all users in the Manage Users dialog box using the Add/Remove Roles… button.*

Manage Data Validation

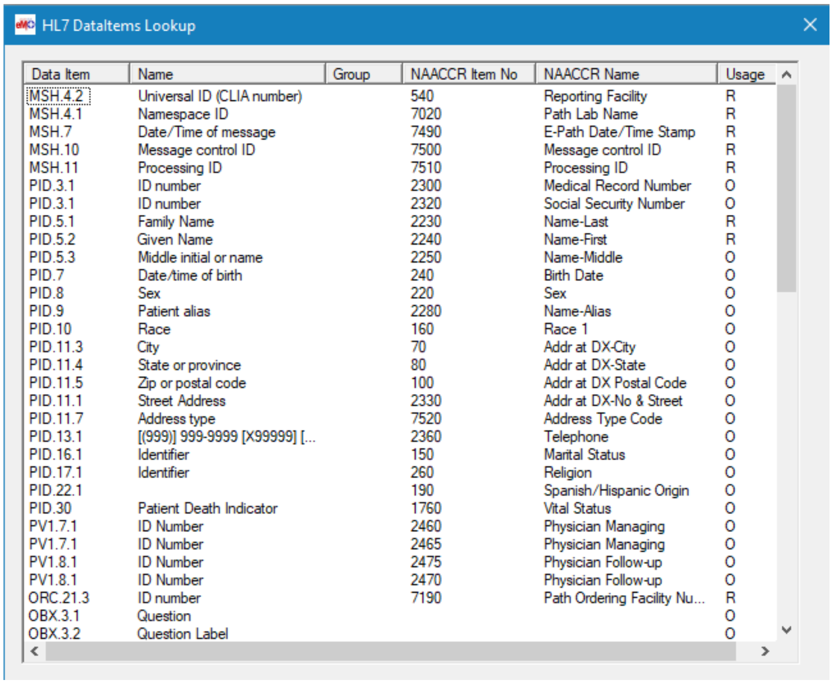
eMaRC Plus allows an Administrator to set the data for inclusion into an error report. If a pathology report does not meet the validation criteria for your data item, the report will generate an error in the error report during import.

1. Select Administration>Manage Data Validation… from the menu bar.
2. The Manage Data Validation dialog box will appear.



Manage Data Validation dialog box.

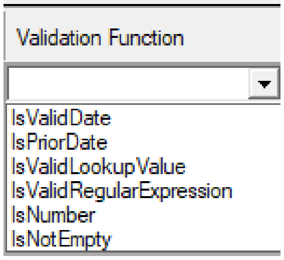
3. To select an item for validation, click in the HL7 Data Item column.
4. The Data Items Lookup dialog box appears.



Data Item	Name	Group	NAACCR Item No	NAACCR Name	Usage
MSH.4.2	Universal ID (CLIA number)		540	Reporting Facility	R
MSH.4.1	Namespace ID		7020	Path Lab Name	R
MSH.7	Date/Time of message		7490	E-Path Date/Time Stamp	R
MSH.10	Message control ID		7500	Message control ID	R
MSH.11	Processing ID		7510	Processing ID	R
PID.3.1	ID number		2300	Medical Record Number	O
PID.3.1	ID number		2320	Social Security Number	O
PID.5.1	Family Name		2230	Name-Last	R
PID.5.2	Given Name		2240	Name-First	R
PID.5.3	Middle initial or name		2250	Name-Middle	O
PID.7	Date/time of birth		240	Birth Date	O
PID.8	Sex		220	Sex	O
PID.9	Patient alias		2280	Name-Alias	O
PID.10	Race		160	Race 1	O
PID.11.3	City		70	Addr at DX-City	O
PID.11.4	State or province		80	Addr at DX-State	O
PID.11.5	Zip or postal code		100	Addr at DX Postal Code	O
PID.11.1	Street Address		2330	Addr at DX-No & Street	O
PID.11.7	Address type		7520	Address Type Code	O
PID.13.1	[(999)] 999-9999 [X99999] [...		2360	Telephone	O
PID.16.1	Identifier		150	Marital Status	O
PID.17.1	Identifier		260	Religion	O
PID.22.1			190	Spanish/Hispanic Origin	O
PID.30	Patient Death Indicator		1760	Vital Status	O
PV1.7.1	ID Number		2460	Physician Managing	O
PV1.7.1	ID Number		2465	Physician Managing	O
PV1.8.1	ID Number		2475	Physician Follow-up	O
PV1.8.1	ID Number		2470	Physician Follow-up	O
ORC.21.3	ID number		7190	Path Ordering Facility Nu...	R
OBX.3.1	Question				O
OBX.3.2	Question Label				O

HL7 DataItems Lookup dialog box.

5. Select the data item you want to edit from the list.
6. Within the Manage Data Validation dialog box, highlight the row of the HL7 Item you wish to edit. Select the applicable Validation Function.



Validation Function dropdown menu.

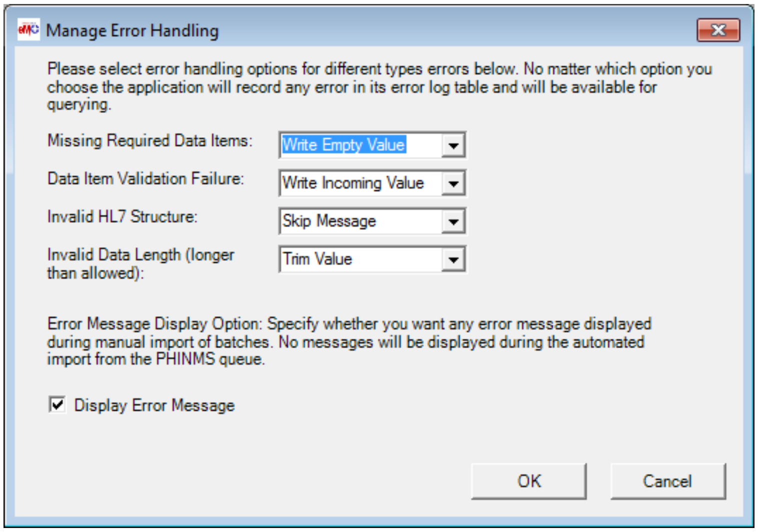
7. Click the **OK** button.

> ***NOTE****: When importing a report into eMaRC that does not meet validation criteria, the report will still load but will generate an error in the error report.*

Manage Error Handling

An Administrator can adjust the way eMaRC handles errors during the import of a batch.

1. Click the Administration tab and select Manage Error Handling… from the dropdown. The Manage Error Handling dialog box will appear. You can use the drop down menus to change the following options (underlined are set defaults):
   - Missing Required Data Items: Abort Batch, Skip Message, Write Empty Value
   - Data Item Validation Failure: Abort Batch, Skip Message, Write Empty Value, Write Incoming Value
   - Invalid HL7 Structure: Abort Batch, Skip Message
   - Invalid Data Length (longer than allowed): Abort Batch, Skip Message, Write Empty Value, Trim Value
   - Display Error Message: You can check this box (checked as a default) to display error messages during the automated import from the PHINMS queue.

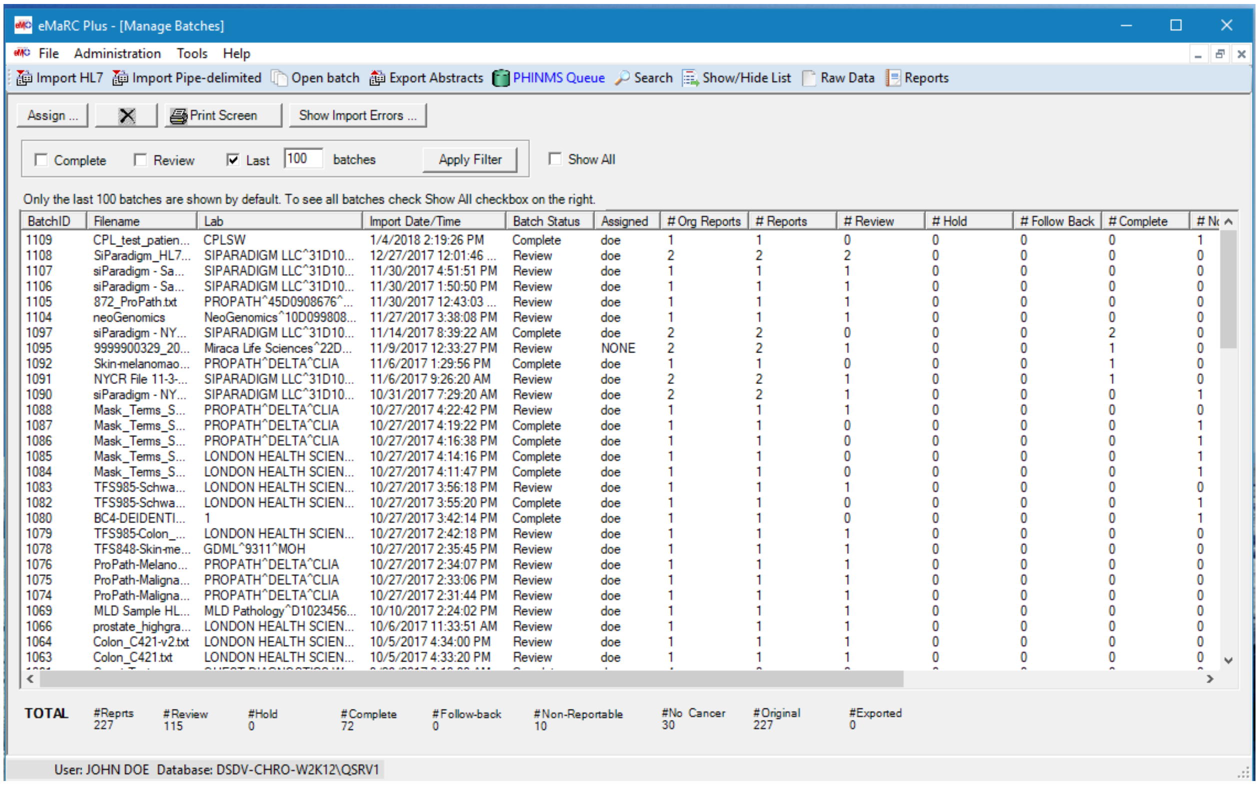


Manage Error Handling dialog box.

Manage Import Batches

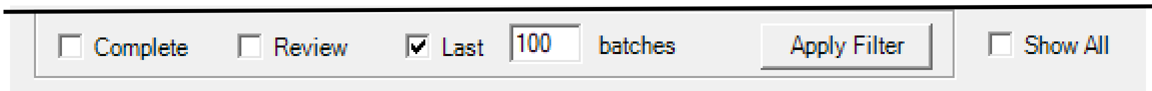
To manage batches that have been imported into eMaRC:

1. Select Administration>Manage Import Batches… from the menu bar.
2. A list of all batches contained in the database will be populated.



Manage Batches dialog box.

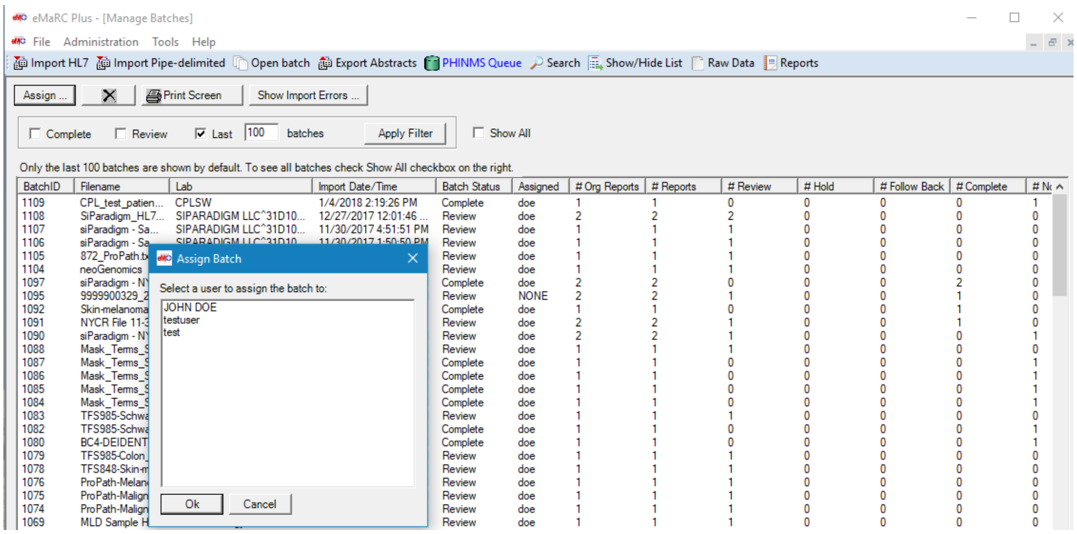
The user has the option to select complete, review, number of batches, or show all by selecting from this box located in the upper left hand corner and click apply filter.



Assign Batch to User

To assign a batch to a specific user:

1. Select a batch from the list and click **Assign**…
2. The Assign Batch dialog box opens.



Assign Batch dialog box.

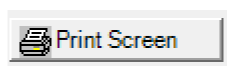
3. Select a user you would like to assign the batch to and click **Ok**.

Delete a Batch

To delete a batch, select a batch from the list and click the **X** icon  .

If the Open Batch screen is open click the ***Refresh*** button to update.

Print Batch Screen

To print the batch screen, click on the **Print Screen** button 

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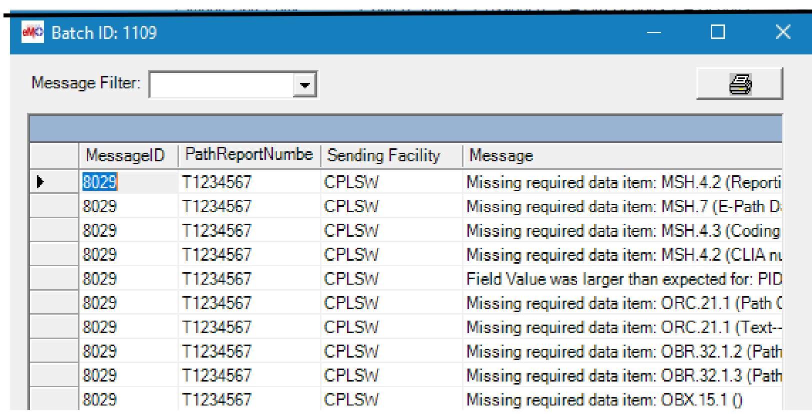
Show Import Errors of Batch

To view Import Errors created during import, select a batch from the list and click **Show Import** Errors. The below window will appear and show any errors in the selected batch.



Show Import Errors dialog box.

Manage Messages

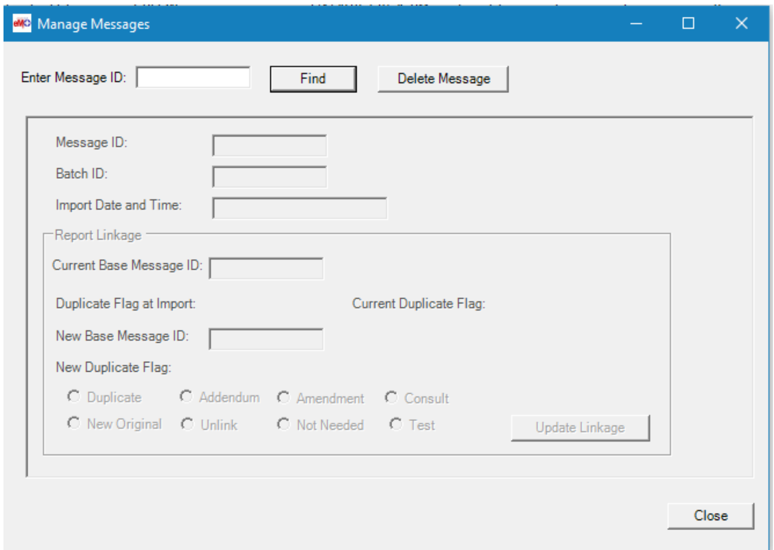
The Manage Messages option can be used to view message properties, manually link messages and delete individual messages.

Select Administration>Manage messages… from the menu bar.

Delete Message

At this time, do **not** use the *Manage Messages* function to delete an individual message. Instead, open the report you wish to delete:

1. Click the **Non-Reportable** button from the message tool bar.
2. Select Delete pathology report and associated abstracts button and click **Ok**.



Manage Messages dialog box.

Link Reports

Link Reports Not Linked During Import

If related reports were not linked during import, they can be linked manually through the *Manage Messages* option.

1. Select **Manage Messages** from the Administration menu.
2. The *Manage Messages* dialog box opens
3. Enter a valid Message ID in the text field and click **Find**.
4. Defined message properties are populated into the dialog box.
5. In the **New Base Message ID** field, enter the message ID of the report you would like to link to the current report.
6. Select a duplicate flag to identify how the reports are related.

   Dupflag_user codes:
   0 – Original or Unprocessed

5 – Confirmed duplicate
6 – Addendum
7 – Consult
8 – Retained original
9 – Discarded original
10 – Test
11 – Amendment
12 – System Generated Discarded Original

7. Select **Update Linkage** and **Close** to save changes.

Unlink Reports

If you wish to unlink reports, you can remove their Base Message ID via the *Manage Messages* window.

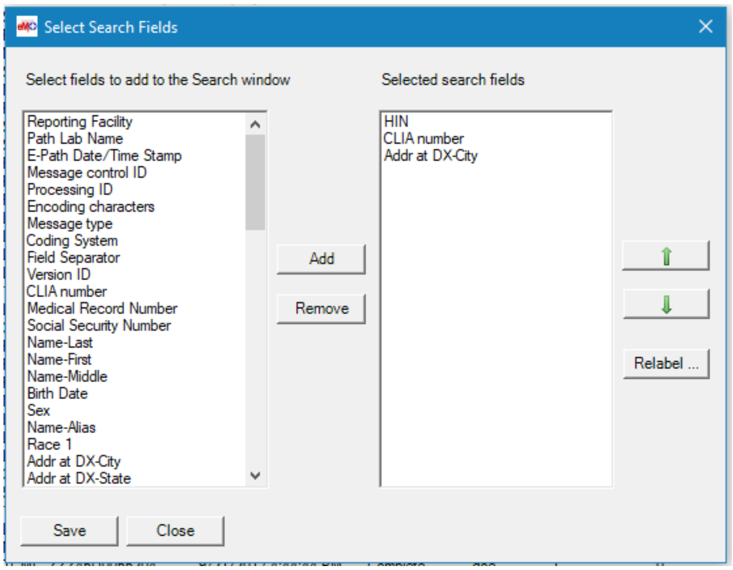
1. Enter the Message ID and select Find.
2. Message properties will be populated into the dialog box. The Current Base Message ID will be populated if the report is linked. Reports may be assigned the following duplicate flags at import:

   Dupflag_import codes:
   0 – no duplicate/independent report
   1 – potential duplicate
   2 – potential consult
3. In the *New Duplicate Flag* field, set the flag **Unlink** and click **Update Linkage**.

Manage Local Search Fields

An Administrator can adjust the search fields in the Custom Search Items tab of the Search window.

1. Click Administration>Manage Local Search Fields…
   - The *Select Search Fields* dialog box opens.



Local Data Items for selection.

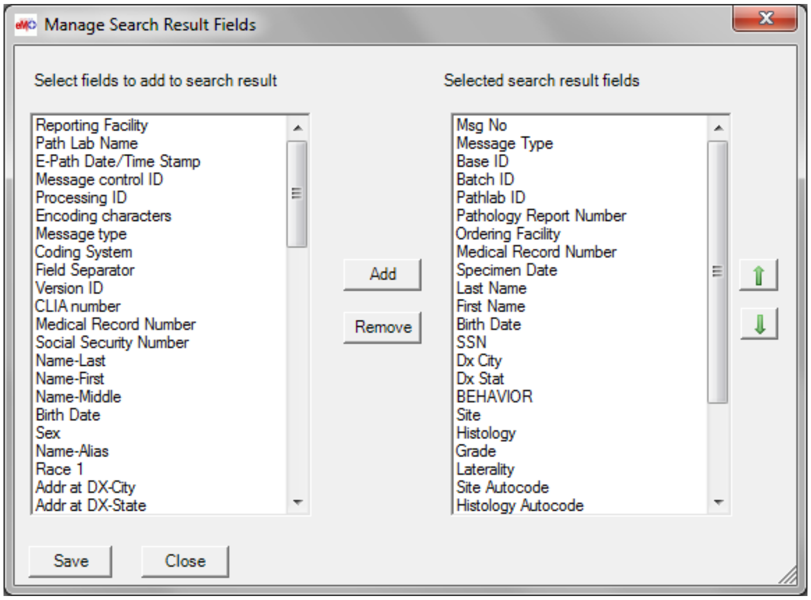
- Items in the right-hand column (Selected search fields column) will appear in the Custom Search Items in the search tab.

2. Use the Add and Remove buttons to move data items to the Selected search fields column.
3. Use the up and down arrows to change the order of the data items in the Selected search fields column.
4. Select a data item in the Selected search fields column and click Relabel… to change the name of the data item displayed in the Search window.

Manage Fields in Search Results

An Administrator can adjust the search fields that are displayed in the search results box.

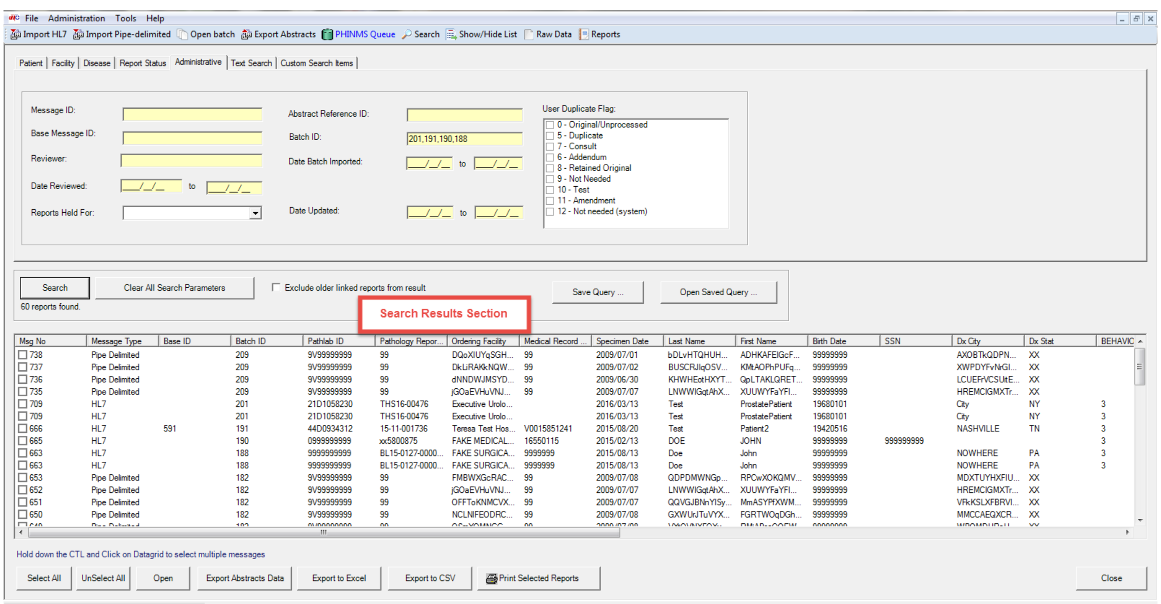
1. Click Administration>Manage Fields
   - The Manage Search Results Fields dialog box opens.



Search Fields Results for selection.

- Items in the right-hand column (Selected search results fields column) will appear in the Search results section.

2. Use the Add and Remove buttons to move data items to the Selected search results fields column.
3. Use the up and down arrows to change the order of the data items in the Selected search results fields column.

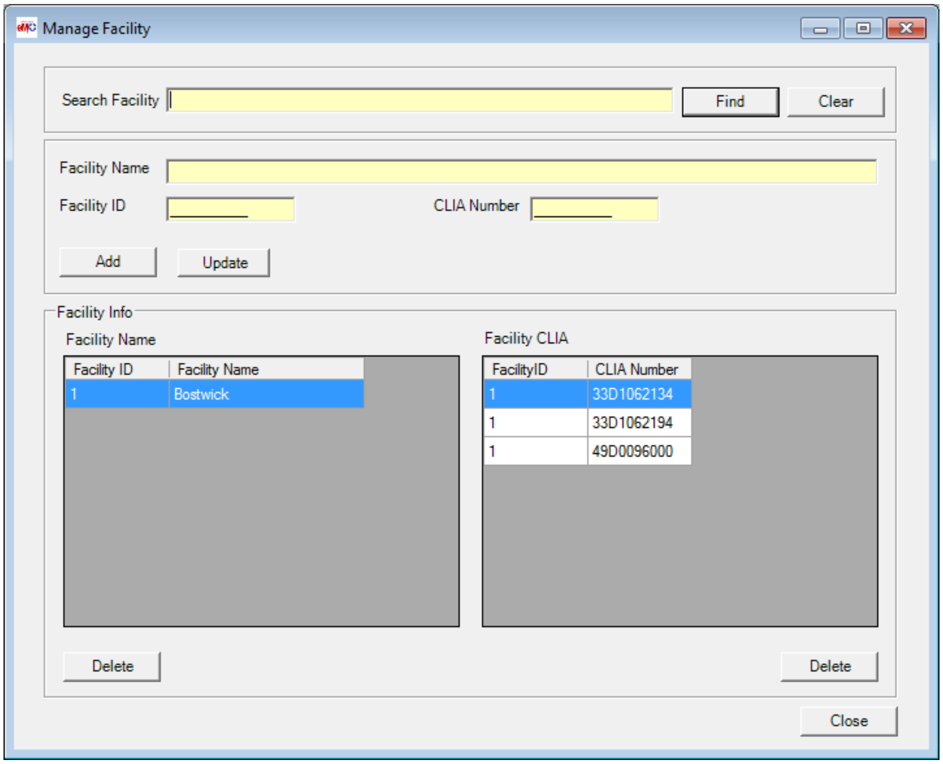


Search Fields Results.

Manage Facility

An Administrator must maintain the facilities used in eMaRC Plus. To manage facilities:

1. Select Administration>Manage Facility….
2. The Manage Facility dialog box appears.



Manage Facility dialog box.

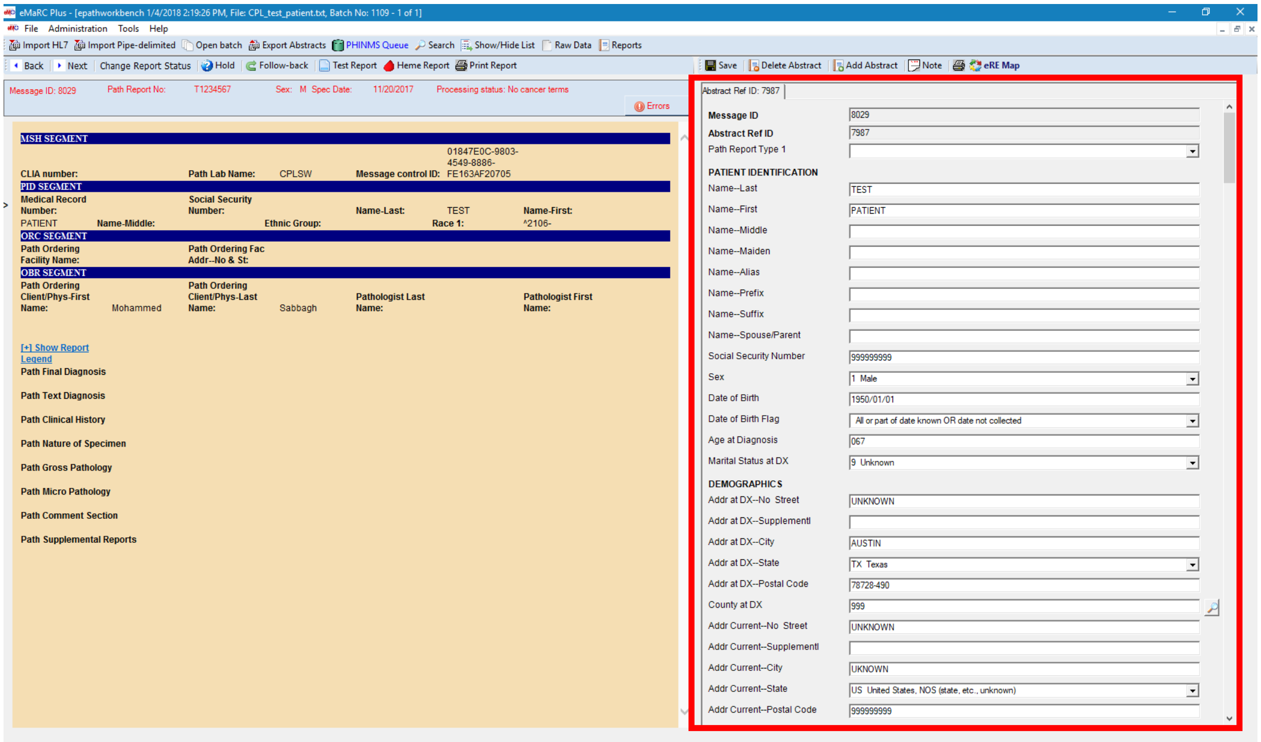
1. To find a facility, enter a portion of the facility name in the **Search Facility** field and click the **Find** button.
   - All facilities with the search text are displayed in the list pane.
2. To add a new facility:
   - Enter the new facility's ID in the **Facility ID field**.
   - Enter the new facility's name in the **Facility Name field**.
   - Enter the new facility's CLIA number in the **CLIA field**.
   - Click the **Add** button.
3. To edit an existing facility:
   - Select it in the list and **edit the ID or number** as required and click the **Update** button.
4. To add multiple CLIA's to a single facility id:
   - Enter the facility name in the **Facility Name field**.
   - Enter the facility ID in the **Facility ID field**.
   - Enter the CLIA number in the **CLIA Number field**.
   - Click the **Add** button.
5. To **remove** a facility from eMaRC Plus:
   - Select the facility in the list pane and click the **Delete** button.
6. When all facilities have been added and edited as desired, click the **Close** button.

Manage eCC Rules

Manage eCC Rules is unavailable at this time.

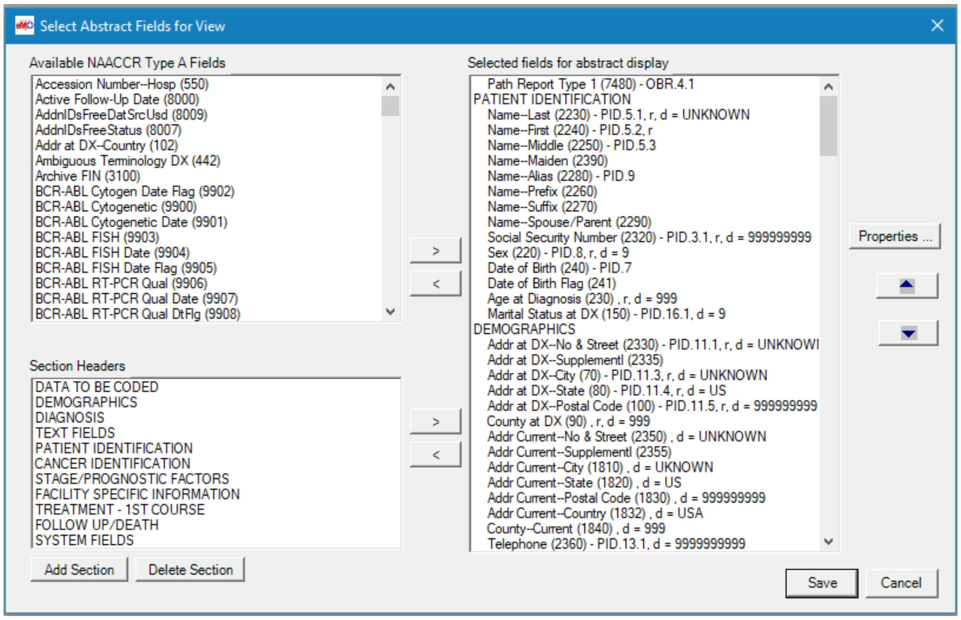
Manage Abstract Display

To manage the abstract displayed in the Pathology Report Workbench, use the *Manage Abstract Display* option.



Abstract pane of Pathology Report workbench.

1. Select Administration>Manage Abstract Display….
2. The Select Abstract Fields for View dialog box appears.



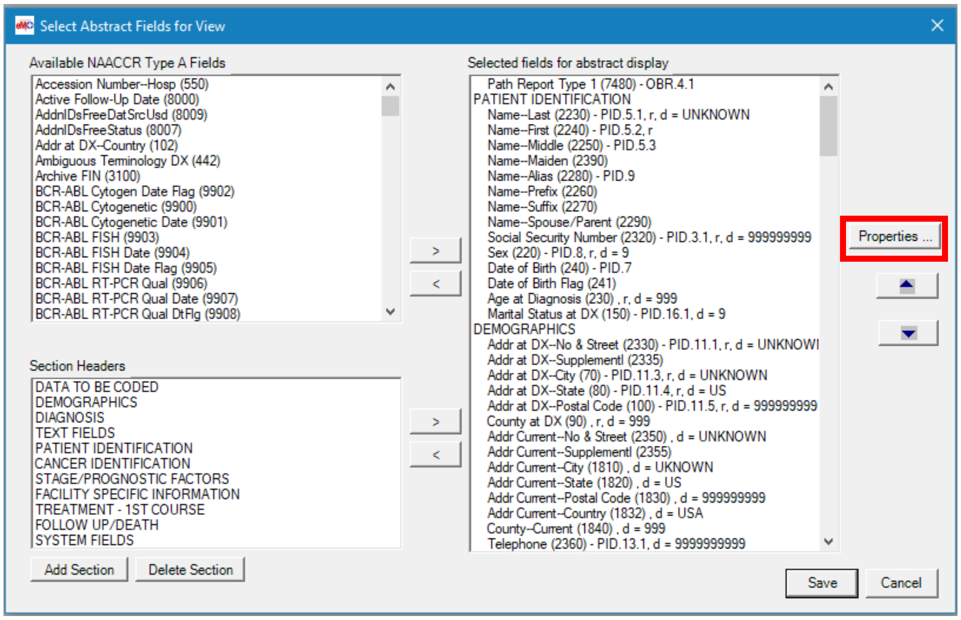
Select Abstract Fields for View dialog box.

3. Items in the *Selected* fields for abstract display list in the right hand pane will appear in the Pathology Report Workbench Abstract.
4. Add and remove fields from the *Available NAACCR Type A fields* or *Section Headers* to appear in the abstract display using the directional arrows (> and <).
5. Click **Save** to close window.

Abstract Field Properties

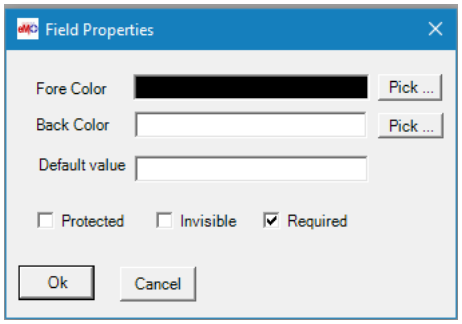
For Registrars coding a report, error messages can be displayed to check validity of coding.

6. Click Administration>Manage Abstract Display….
7. The Select Abstract Fields for View dialog box appears.



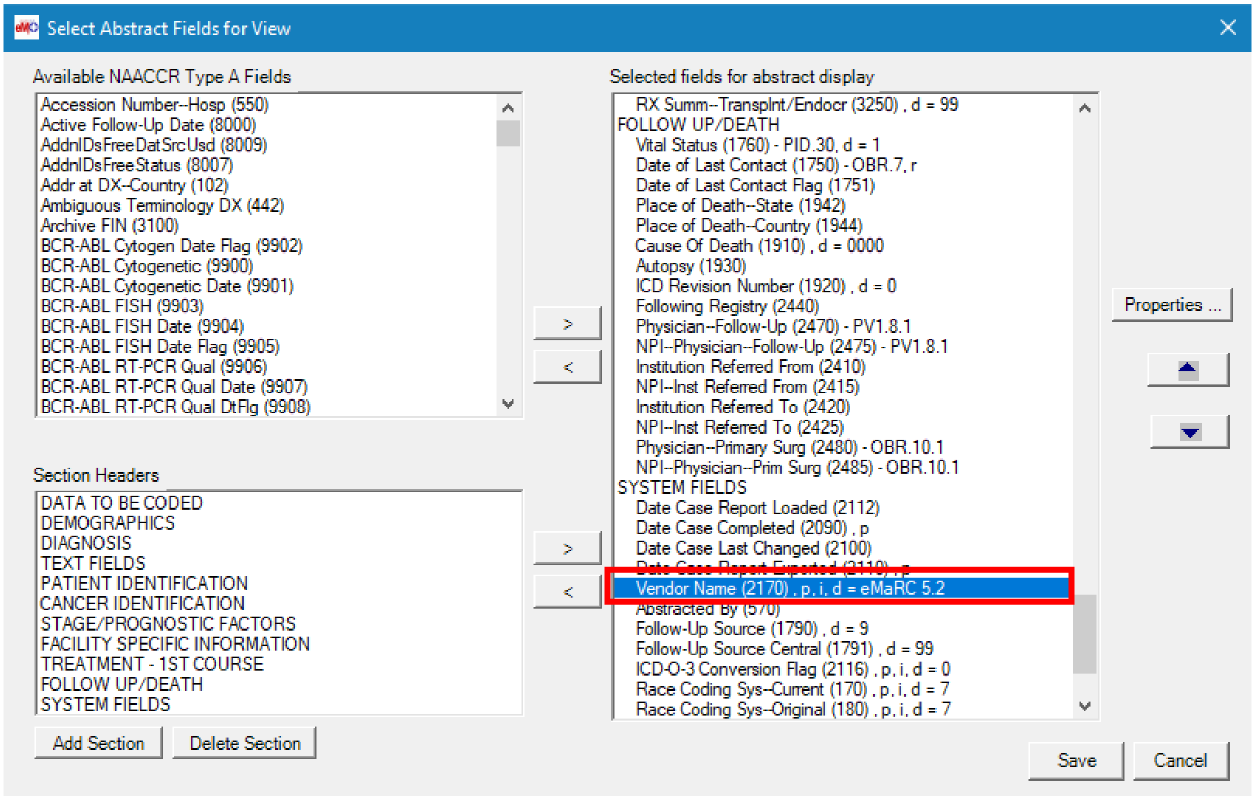
Select Abstract Fields for View dialog box.

8. In the **Selected** fields for abstract display column, highlight the field you want to make changes to and click Properties.
9. The **Field Properties** dialog box appears.



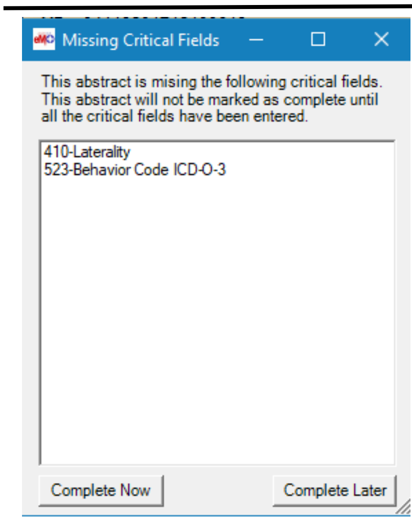
Field Properties dialog box.

10. Adjust the properties as required:
    - ***Fore Color***: Adjusts the font color of the field.
    - ***Back Color***: Adjusts the background color of the field.
    - ***Default Value***: Sets a default value to the field (which can be changed in the abstract, if necessary).
11. ***Protected***: When this checkbox is selected, the field is considered “Protected”. The user will not be able to enter data or change data into this field.
12. ***Invisible***: When this checkbox is selected, the field is considered “Invisible”. This field will no longer be in the abstract view to enter data. This field can only be viewed in “Manage Abstract Display”:



Vendor Name (2170).p(protected).i(invisible)

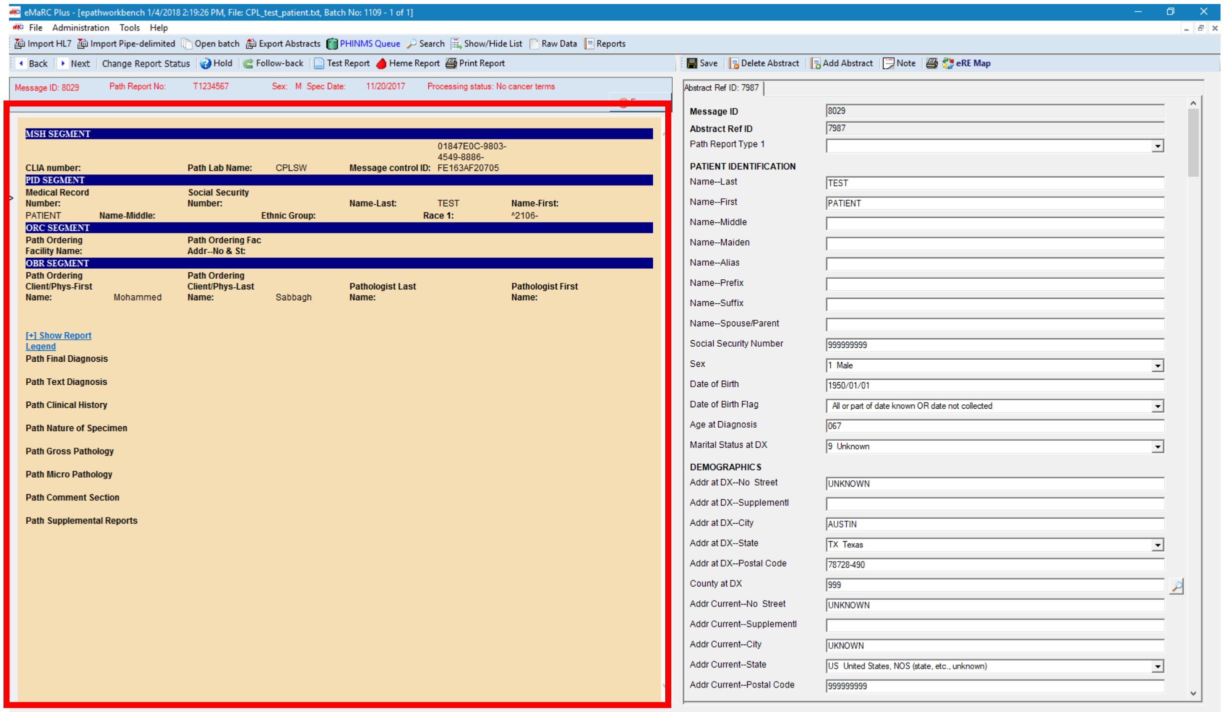
13. ***Required***: When this checkbox is selected, the field is considered a "**Critical Field**". The report will not be marked as **Complete** while this field is blank.
14. User receives the following error message when attempting to save a report with a blank "**Critical Field**":



Missing Critical Fields dialog box.

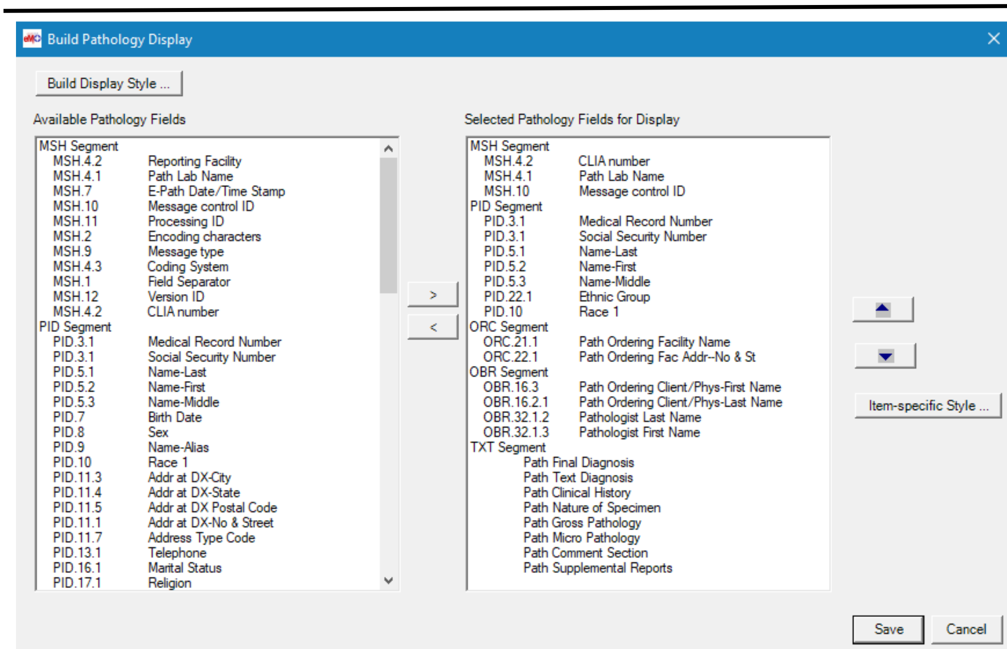
Manage HL7 Pathology Report Display

To manage the fields displayed in the Pathology Report Workbench, use the *Manage HL7 Pathology Report Display* option.



Pathology Report pane of workbench view.

1. Select Administration>Manage HL7 Pathology Report Display….
2. The Build Pathology Display dialog box opens.

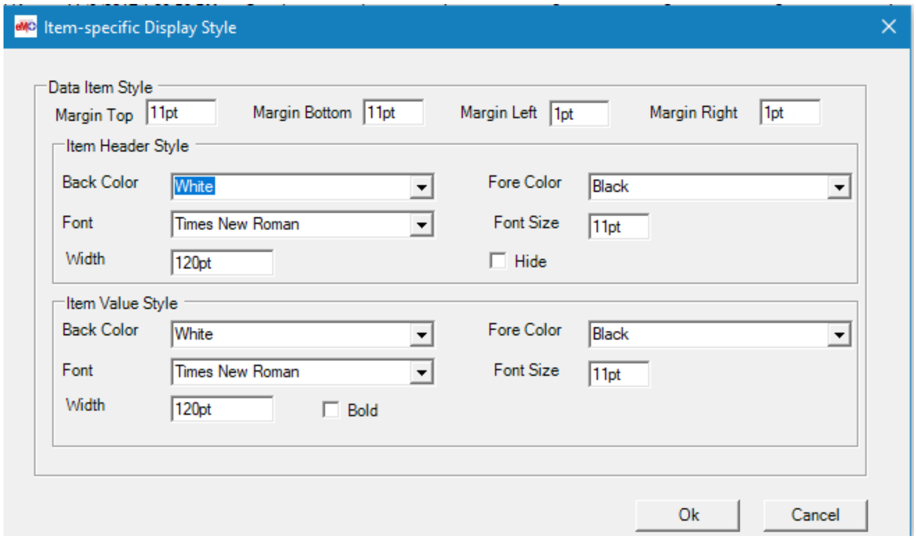


Build Pathology Display dialog box.

3. Items in the *Selected Pathology Fields for Display list* in the right hand pane will appear in the Pathology Report Workbench Abstract.
4. Add and remove fields from the *Available Pathology Fields* to appear in the pathology report display using the directional arrows (> and <).
5. Click **Save** to close window.

Item-specific Style

6. Select Administration>Manage HL7 Pathology Report Display….
7. The **Build Pathology Display** dialog box opens.
8. Select an item from the **Selected Pathology Fields for Display** and select Item-specific Style…
9. The Item-specific **Display Style** dialog box opens.



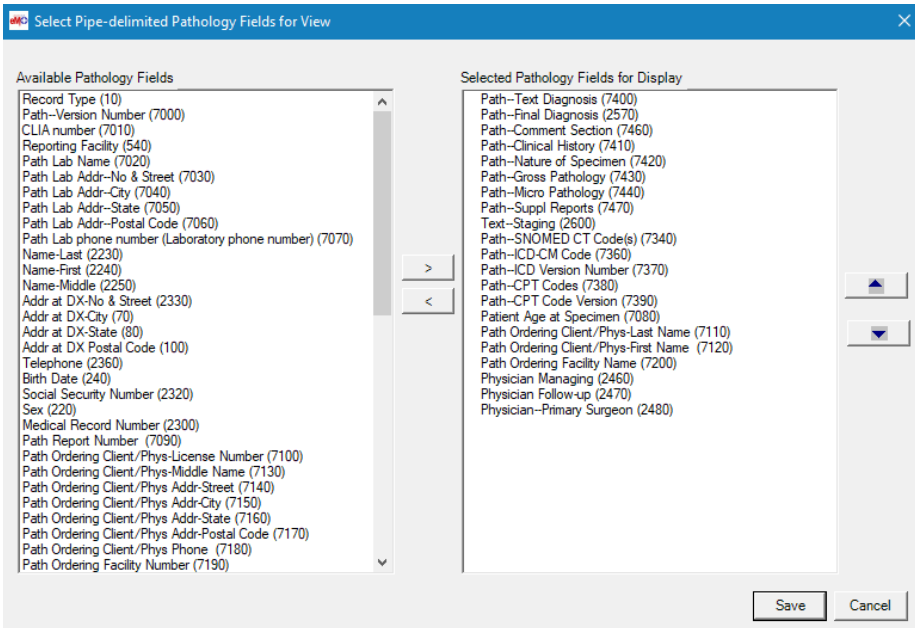
Item-specific Display Style dialog box.

10. ***Change*** the style as desired and click **Ok**.

Manage Pipe-delimited Pathology Report Display

The *Manage Pipe-delimited Pathology Report Dis*play menu option of the Administration menu enables the customization of the pathology pane portion of the Workbench dialog box for pipe-delimited batch file messages.

1. Select Administration>Pipe-delimited Pathology Field for View…
2. The Select Pipe-delimited Pathology Fields for View window will appear.



Select Pipe-delimited Pathology Fields for View dialog box.

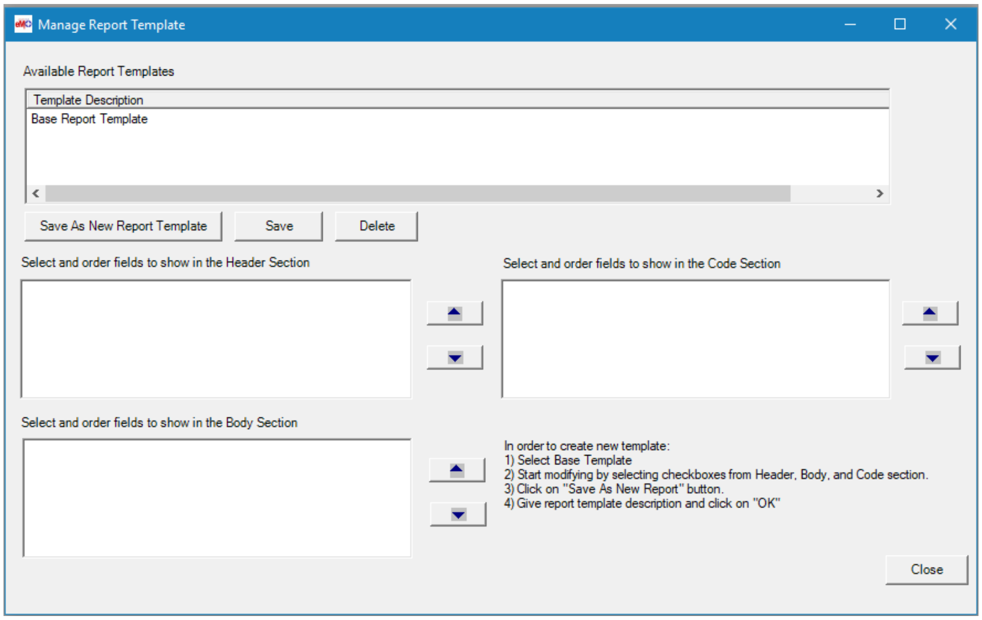
3. Items in the *Selected Pathology Fields for Display* list in the right hand pane will appear in the Pathology Report Workbench Abstract.
4. Add and remove fields from the *Available Pathology Fields* to appear in the pathology report display using the directional arrows (> and <).
5. Click **Save** to close window.

Manage Report Template

The *Manage Report Template* function allows an Administrator to manage which fields will be visible on printed Pathology Reports.

Create a New Template for Printed Reports

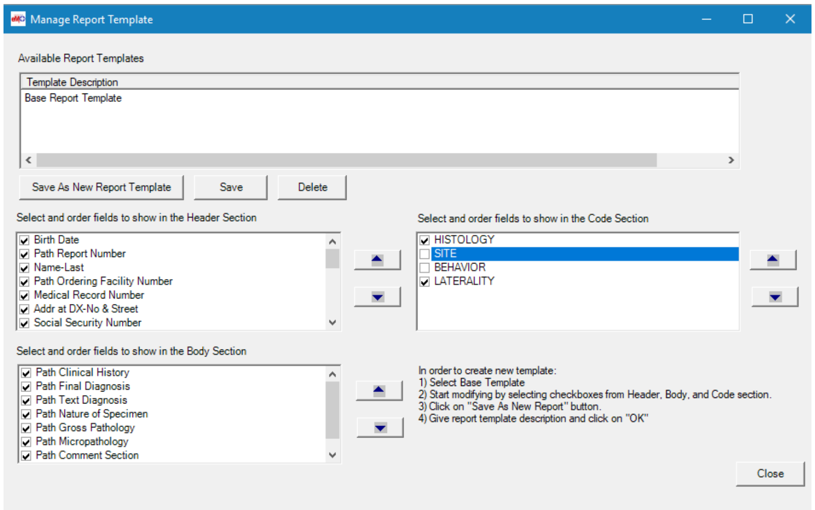
1. Select Administration>Manage Report Template….
2. The Manage Report Template dialog box opens.



Manage Report Template dialog box.

From the *Available Report Templates* pane, select **Base Template**.

3. Modify which fields will be printed in the Header, Body, and Code Sections of the printed report by selecting and deselecting the items.



Select and deselect fields to print in the report.

4. Change the order in which fields will be printed in the Header, Body, and Code Sections of the printed report by using the directional arrows.
5. Click Save As New Report Template and enter a name to describe the template. Click Ok.

Edit an Existing Template for Printed Reports

1. Select Administration>Manage Report Template….
2. The *Manage Report Template* dialog box opens.
3. From the *Available Report Templates* pane, select the report template to edit.

4. Modify which fields will be printed in the Header, Body, and Code Sections of the printed report by selecting and deselecting the items.
5. Change the order in which fields will be printed in the Header, Body, and Code Sections of the printed report by using the directional arrow.
6. Click **Save**.
7. To delete a report template, select the report template to be deleted and click **Delete**.

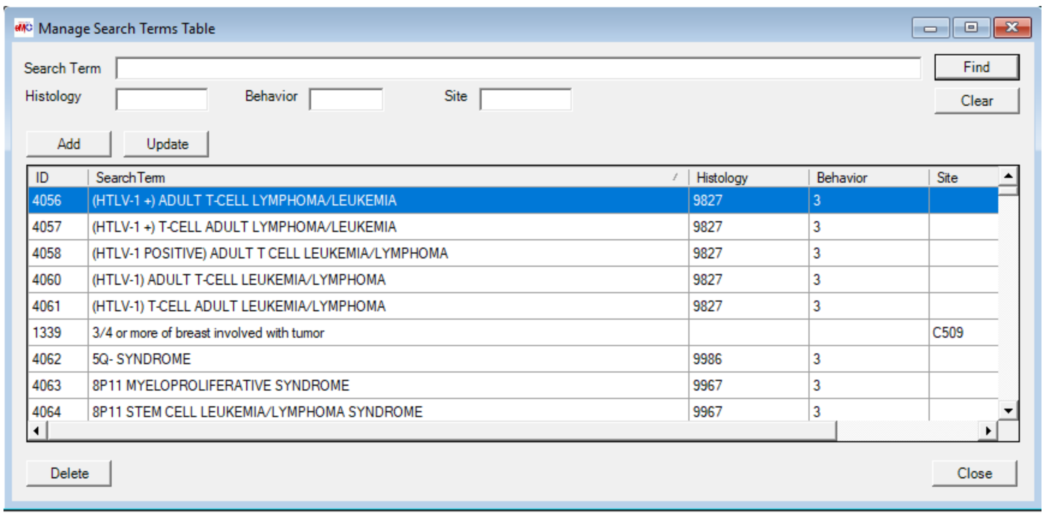
Manage Search Terms Table

The *Search Terms Table* manages the terminology used to determine cancer cases within the Pathology Reports. This table is also used to store ICD-03 codes for autocoding Histology, Behavior, and Site fields into the Pathology Report Abstract.

eMaRC Plus comes with this table already populated, but there may be a need to remove, add, or edit terms.

Add a Search Term

1. Select Administration>Manage Search Terms….
2. The Manage Search Terms dialog box appears.



Manage Search Terms Table dialog box.

3. To add a term, Click the *Add* button.
4. Enter the new term in the *Search* Term field.
5. Type appropriate information, if known, into Histology, Behavior and Site fields.
6. If no Histology, Behavior, and Site codes are entered, then the search term will be used only to identify reportability (i.e. set the Report Processing Status to Review).
7. If only Site field is filled in, this will create two entries into the Search Table by default. If you do not want the Site Search term to determine reportability, delete the second copy of the search term with Type equal to 1 – Filter/Reportability/Histology/Behavior.

Remove a Search Term

1. Select Administration>Manage Search Terms….
   - The *Manage Search Terms* dialog box appears.
2. Select the term in the *Search Term* list and click the **Delete** button.

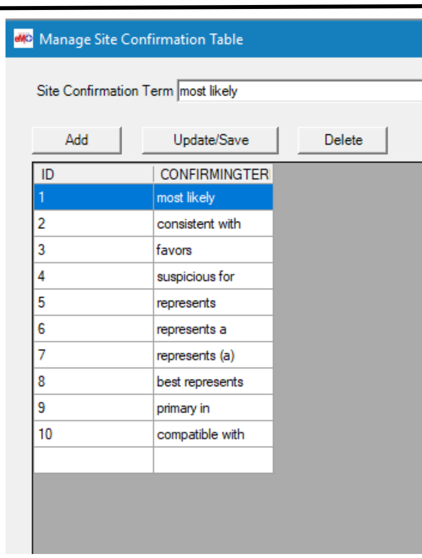
Update a Search Term

1. Select Administration>Manage Search Terms….
   - The *Manage Search Terms* dialog box appears.
2. Select the term in the *Search Term* list.
3. Edit the text in the Search Term, Histology, Behavior and Site fields.
4. Click the **Update** button.

Manage Site Confirmation Table

The Site Confirmation Table allows the Administrator to set terms that will be used in conjunction with the Site Search Terms table to determine positive locations of cancer.

1. Select Administration>Manage Site Confirmation Table….
   - The Manage Confirmation Table dialog box opens.



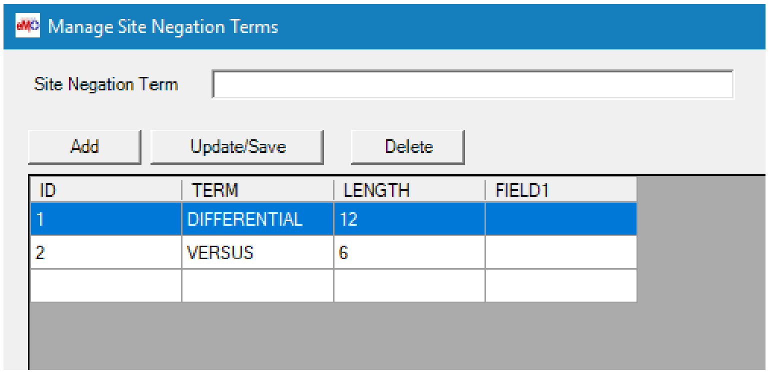
Manage Site Confirmation Table dialog box.

2. To add a Site Confirmation term:
   - Type term you want to add into the *Site Confirmation Term* text box and click **Add**.
3. To delete a Site Confirmation term:
   - Select the term you want to remove and click **Delete**.
4. To update a Site Confirmation term:
   - Select the term you want to change, alter the text in the *Site Confirmation* text box and click **Update/Save**.

Manage Site Negation Table

The Site Negation Table allows the Administrator to set terms that will be used in conjunction with the Site Search Terms table to determine negative locations of cancer.

1. Select Administration>Manage Site Negation Table….
    - The Manage Site Negation Terms dialog box opens.



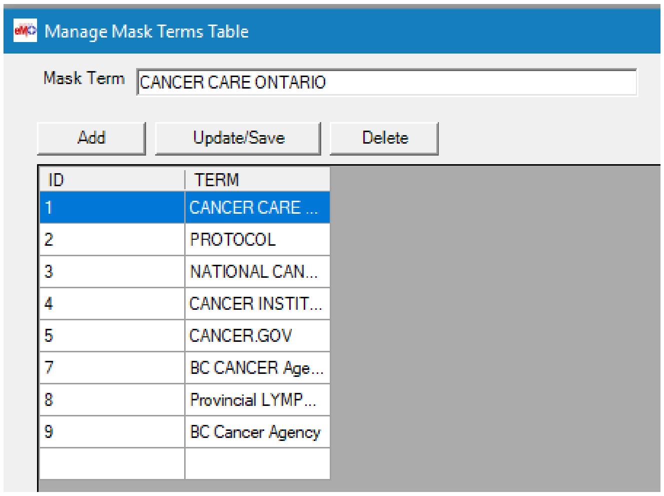
Manage Site Negation Terms dialog box.

2. To add a Site Negation term:
    - Type term you want to add into the Site Negation Term text box and click Add.
3. To delete a Site Negation term:
    - Select the term you want to remove and click **Delete**.
4. To update a Site Negation term:
    - Select the term you want to change, alter the text in the Site Negation Term text box and click **Update/Save**.

Manage Maskterms Table

eMaRC Plus can mask terms defined by the user to help remove false positive cancer reports from the Review list. Use this table to remove terms such as “Cancer Care Ontario” as this is not a cancer term and should not be used to flag a case.

1. Select Administration>Manage Maskterms Table….
2. The Manage Mask Terms Table dialog box opens.



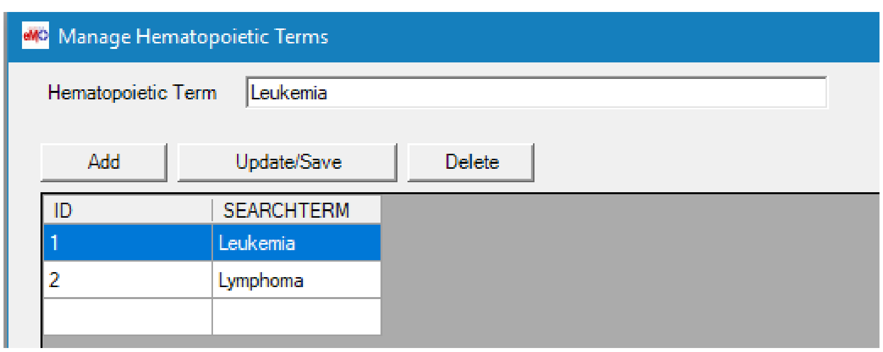
Manage Mask Terms Table dialog box.

3. To add a Mask Term:
    - Type term you want to add into the Mask Term text box and click **Add**.
4. To delete a Mask Term:
    - Select the term you want to remove and click **Delete**.
5. To update a search term:
    - Select the term you want to change, alter the text in the Mask Term text box and click **Update/Save**.

Manage Hematopoietic Terms Table

An Administrator can determine which terms will automatically assign the *Heme* flag.

1. Select Administration>Manage Hematopoietic Terms Table….
    - The Manage Hematopoietic Terms dialog box opens.



Manage Hematopoietic Terms dialog box.

2. To add a Hematopoietic Term:
    - Type term you want to add into the Hematopoietic Term text box and click Add.
3. To delete a Hematopoietic Term:
    - Select the term you want to remove and click Delete.
4. To update a Hematopoietic Term:

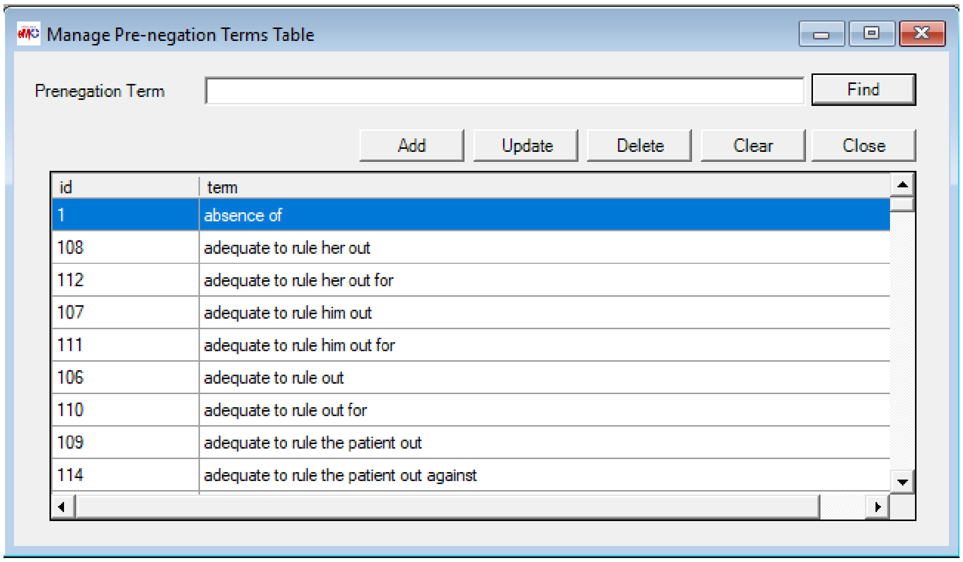
- Select the term you want to change, alter the text in the Hematopoietic Term text box and click Update/Save.

Manage Pre-negation Terms Table

The Pre-negation Table allows the Administrator to set terms that will be used in conjunction with the Reportability cancer search terms table to determine positive cases of cancer (terms can be managed using **Manage Search Terms Table**). eMaRC Plus comes populated with a pre-negation table of terms commonly used to negate cancer terms in abstracts.

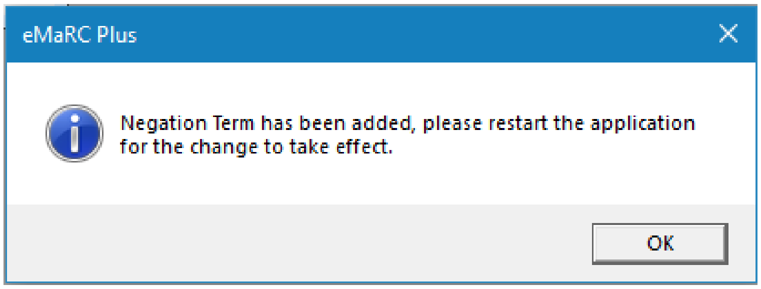
A *pre-negation term* is a negation term that comes before the cancer term in the text.

1. From the Administration menu, select *Manage Pre-negation Terms Table*….
   - The Pre-*negation Terms Table* dialog box opens.



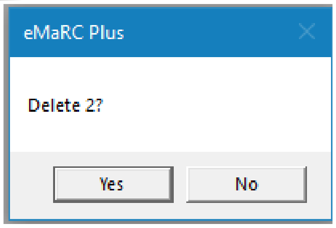
Manage Pre-negation Terms Table dialog box.

2. To add a term, type the term into the *Pre-negation Term* field and click the **Add** button.
   - A Negation Term has been added message appears.



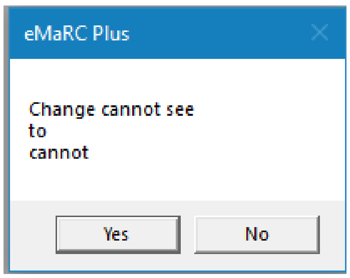
Negation Term has been added message.

3. Click **OK**, then click the **Close** button to exit the *Pre-negation* dialog box.
4. Exit eMaRC Plus and restart it for changes to take effect.
5. To delete a term, select the term in the list or type it into the *Pre-negation Term* field and click the **Delete** button.
   - A confirmation dialog box appears.



Delete Pre-negation Term confirmation dialog box.

6. To delete the term, click **Yes** and click the **Close** button to exit the *Pre-negation Terms Table* dialog box.
7. To update a term, select the term in the list or type it into the *Pre-negation Term* field and edit the term. Then click the **Update** button.
   - A confirmation message dialog box appears.



Update Pre-negation Term confirmation dialog box.

8. Click **Yes** to confirm the term change and click the **Close** button to exit the *Pre-negation Terms Table* dialog box.

NOTE: Reportability is determined at the time pathology reports are imported. Any changes made will take effect at the time of the next import.

Manage Post-negation Terms Table

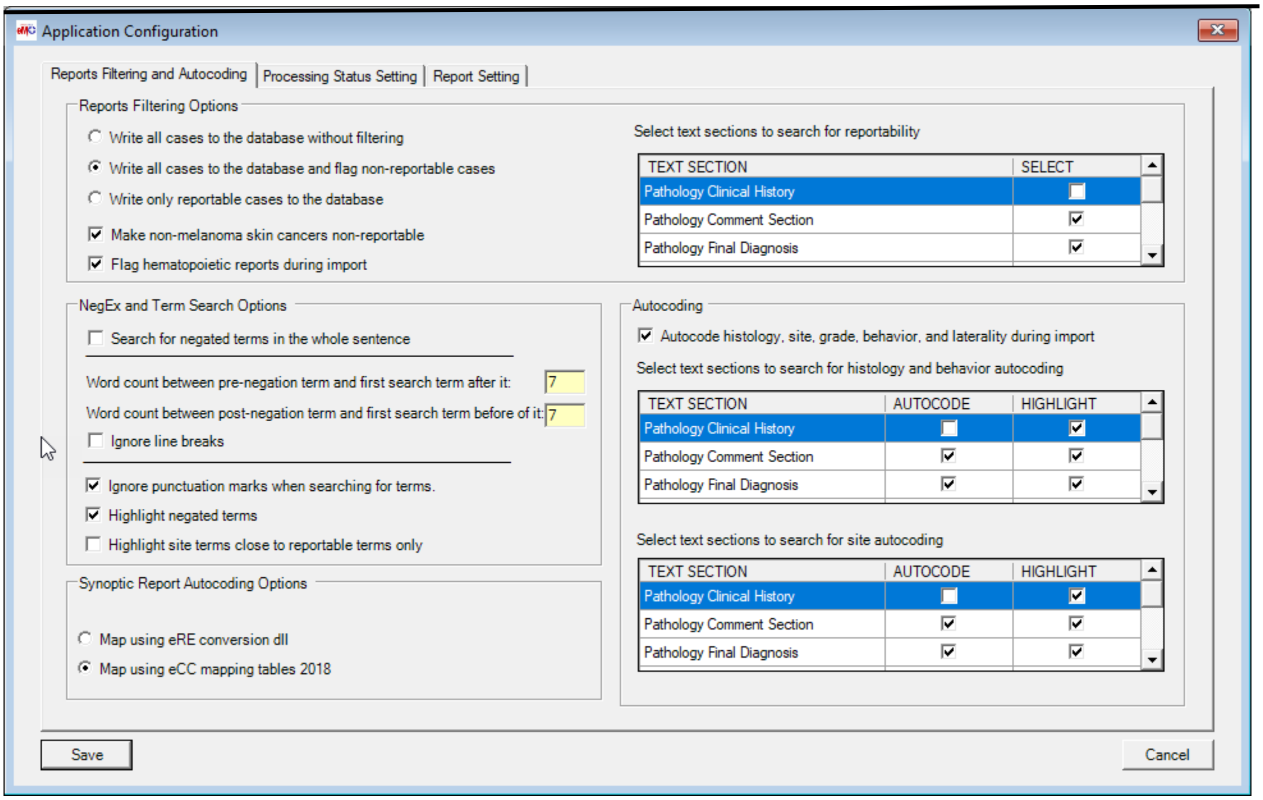
The Post-negation Table allows the Administrator to set terms that will be used in conjunction with the Reportability cancer search terms table to determine positive cases of cancer (terms can be managed using **Manage Search Terms Table**). eMaRC Plus comes populated with a post-negation table of terms commonly used to negate cancer terms in abstracts.

A *post-negation* term is a negation term that comes after the cancer term in the text. Negation terms can be added, deleted, or updated in the same manner as *Pre-negation Terms* above.

Application Configuration

The Application Configuration option allows an Administrator to configure eMaRC Plus to meet user's needs.

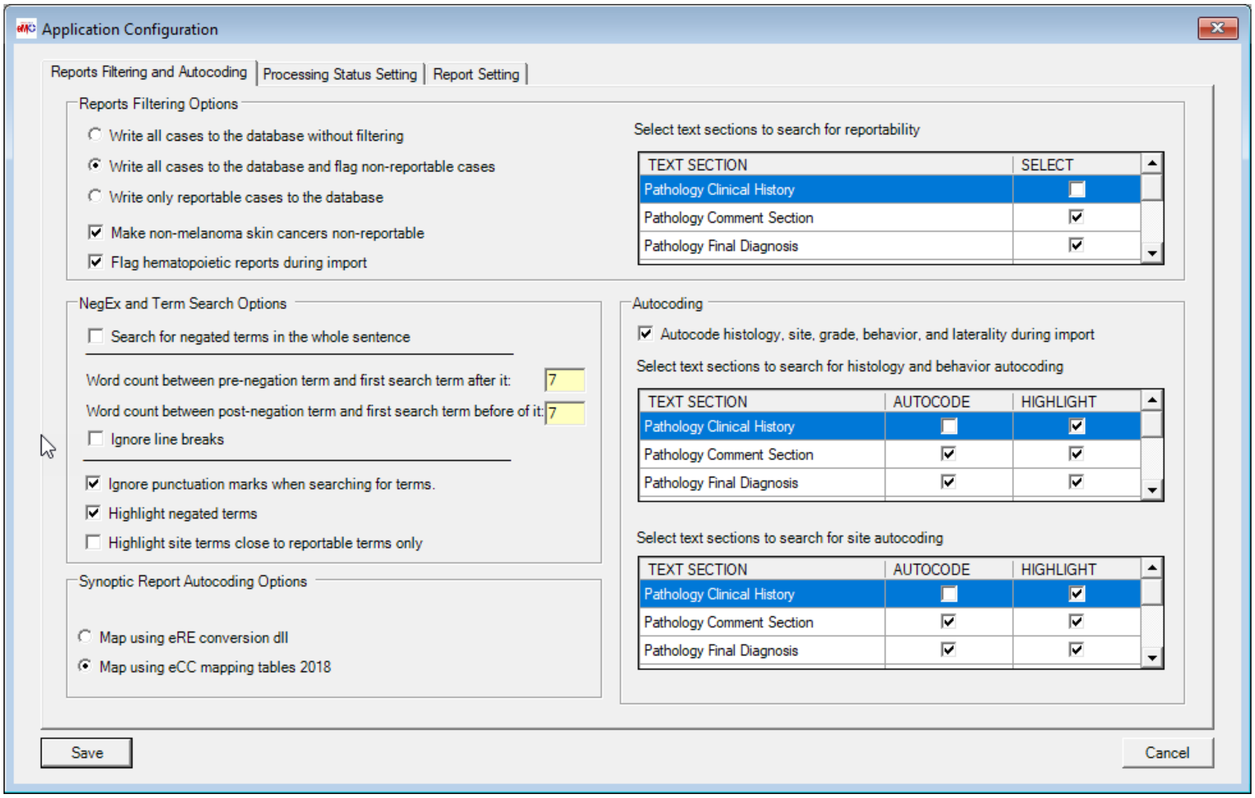
1. To access these options, click Administration> Application Configuration….
   - The Application Configuration dialog box opens.
   - There are three tabs available in the Application Configuration options: *Reports Filtering and Autocoding, Processing Status Setting*, and *Report Setting*.



Application Configuration Tabs

Reports Filtering and Autocoding

This tab allows an Administrator to configure options for reportability of pathology reports and autocoding of cancer cases.

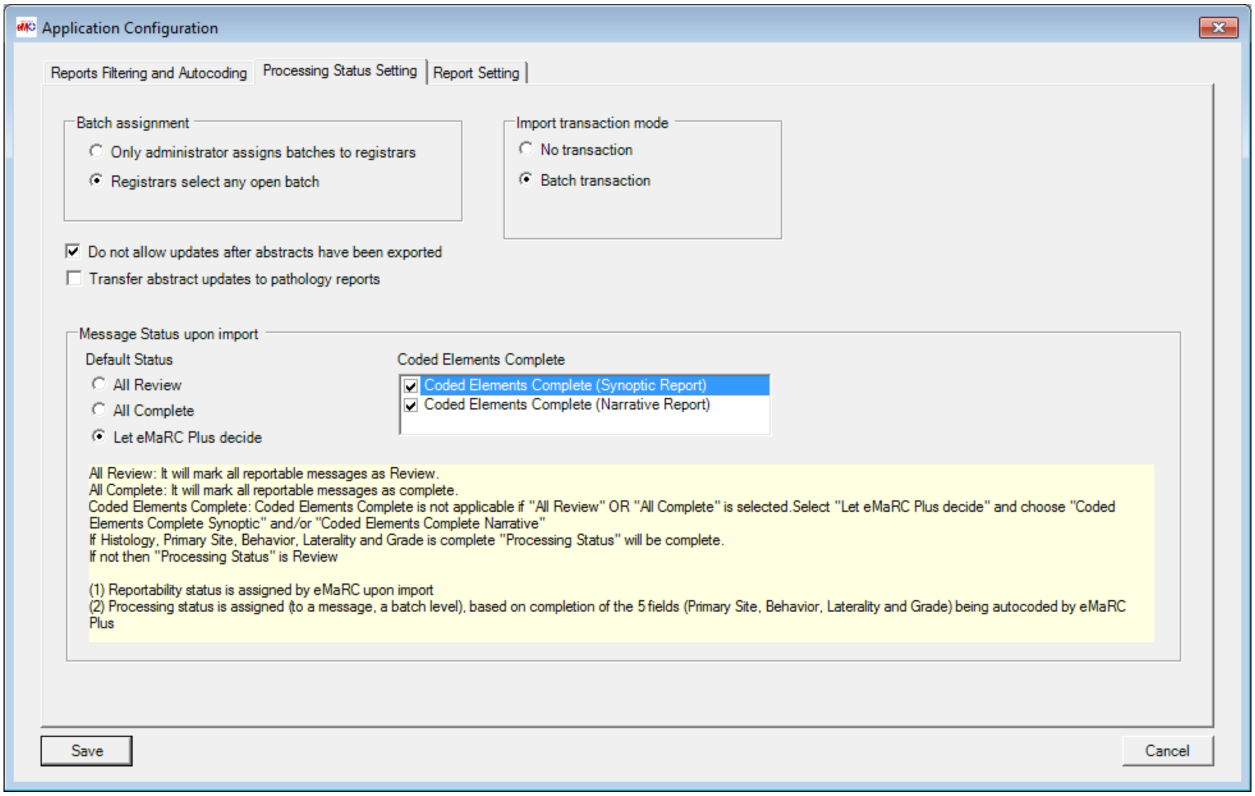


System Configuration - Reports Filtering and Autocoding Tab.

- **Reports filtering options**: adjusts options for determining reportability of Pathology Reports at import.
- **NegEx and Term Search Options**: controls options for determining negative cancer reports.
- **Autocoding**: selects which narrative data sections will be used in determining automatic coding.
- **Synoptic report autocoding options**: controls which tool will be used to autocode synoptic reports in eMaRC.

Processing Status Setting

This tab allows the administrator to configure options on Batch Assignments, Batch Options, Transaction Mode and Message Status upon import.

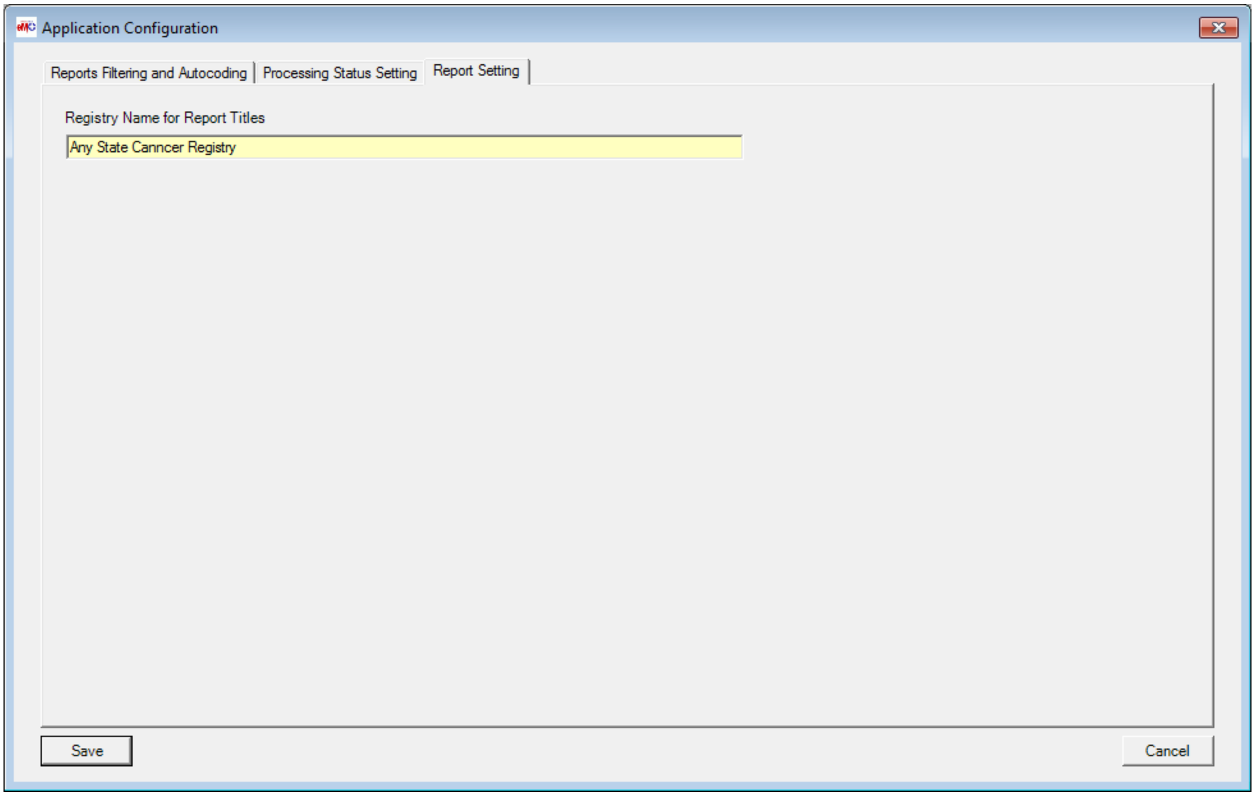


Processing Status Setting Tab

- **Batch assignment**: controls how batches are assigned to users.
- **Additional administrative options**: Do not allow updates after abstracts have been exported and Transfer abstract updates to pathology reports are available by simply checking the box.
- **Import Transaction Mode**:
  - Adjust the properties as required:
    - **No transaction**: users can view Pathology Reports during an import.
    - **Batch transaction**: users cannot view Pathology Reports during an import.
- **Message Status Upon Import**:
  - Adjust the properties as required:
    - **Review**: all batches/cases being imported will be marked for Review.
    - **Complete**: all batches/cases being imported will be marked as complete.
    - **Let eMaRC Plus decide**: choose Coded Elements Complete Synoptic Report and/or Coded Elements Complete Narrative Report. If Histology, Primary Site, Behavior, Laterality, and Grade are provided then the processing status will indicate complete. If these 5 elements are not provided then the processing status will indicate review.

Report Setting Tab

Report Setting allows the Administrator to set a title for reports.



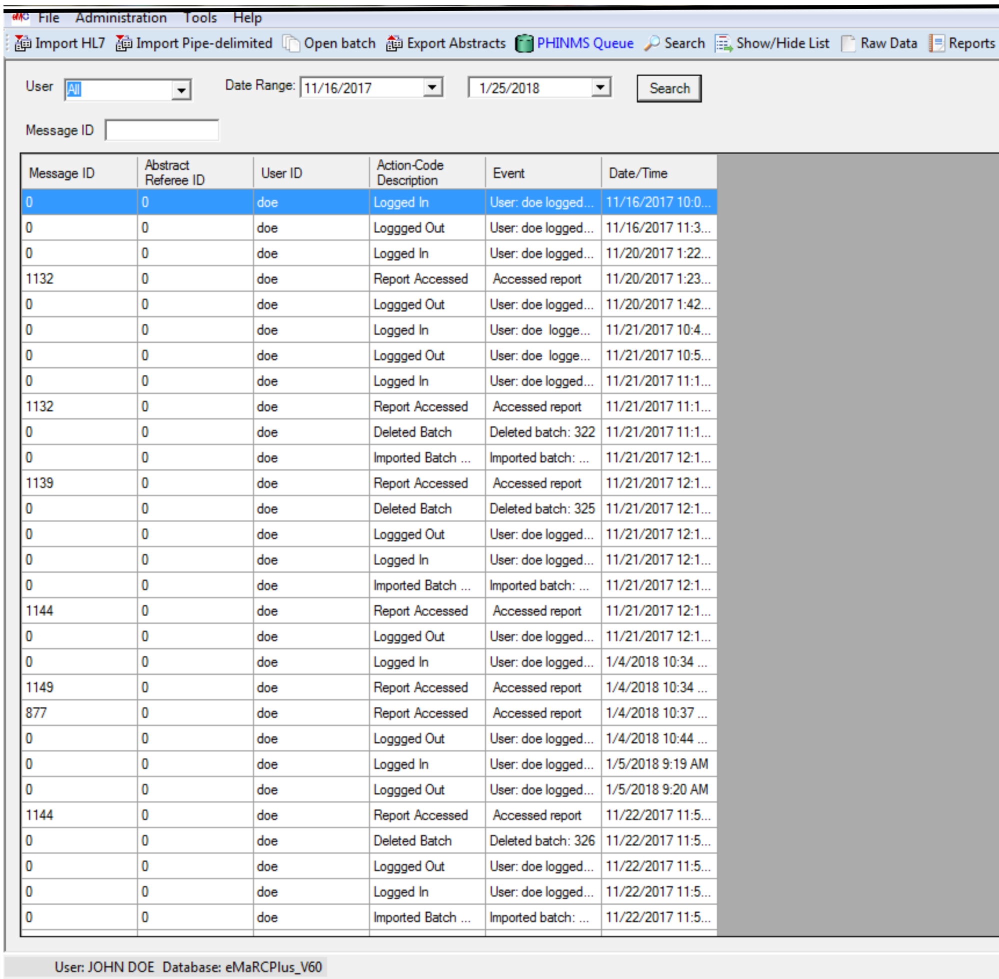
Report Setting Tab.

The administrator can enter the Registry Name, this will appear on all reports.

View Audit Log

An Administrator has the ability to access the audit log, showing actions performed by all users within eMaRC along with a date/time stamp.

1. To view the Audit Log, click **Administration>View Audit Log**….
2. The Audit dialog box opens.



Message ID	Abstract Referee ID	User ID	Action-Code Description	Event	Date/Time
0	0	doe	Logged In	User: doe logged...	11/16/2017 10:0...
0	0	doe	Loggged Out	User: doe logged...	11/16/2017 11:3...
0	0	doe	Logged In	User: doe logged...	11/20/2017 1:22...
1132	0	doe	Report Accessed	Accessed report	11/20/2017 1:23...
0	0	doe	Loggged Out	User: doe logged...	11/20/2017 1:42...
0	0	doe	Logged In	User: doe logge...	11/21/2017 10:4...
0	0	doe	Loggged Out	User: doe logge...	11/21/2017 10:5...
0	0	doe	Logged In	User: doe logged...	11/21/2017 11:1...
1132	0	doe	Report Accessed	Accessed report	11/21/2017 11:1...
0	0	doe	Deleted Batch	Deleted batch: 322	11/21/2017 11:1...
0	0	doe	Imported Batch ...	Imported batch: ...	11/21/2017 12:1...
1139	0	doe	Report Accessed	Accessed report	11/21/2017 12:1...
0	0	doe	Deleted Batch	Deleted batch: 325	11/21/2017 12:1...
0	0	doe	Loggged Out	User: doe logged...	11/21/2017 12:1...
0	0	doe	Logged In	User: doe logged...	11/21/2017 12:1...
0	0	doe	Imported Batch ...	Imported batch: ...	11/21/2017 12:1...
1144	0	doe	Report Accessed	Accessed report	11/21/2017 12:1...
0	0	doe	Loggged Out	User: doe logged...	11/21/2017 12:1...
0	0	doe	Logged In	User: doe logged...	1/4/2018 10:34 ...
1149	0	doe	Report Accessed	Accessed report	1/4/2018 10:34 ...
877	0	doe	Report Accessed	Accessed report	1/4/2018 10:37 ...
0	0	doe	Loggged Out	User: doe logged...	1/4/2018 10:44 ...
0	0	doe	Logged In	User: doe logged...	1/5/2018 9:19 AM
0	0	doe	Loggged Out	User: doe logged...	1/5/2018 9:20 AM
1144	0	doe	Report Accessed	Accessed report	11/22/2017 11:5...
0	0	doe	Deleted Batch	Deleted batch: 326	11/22/2017 11:5...
0	0	doe	Loggged Out	User: doe logged...	11/22/2017 11:5...
0	0	doe	Logged In	User: doe logged...	11/22/2017 11:5...
0	0	doe	Imported Batch ...	Imported batch: ...	11/22/2017 11:5...

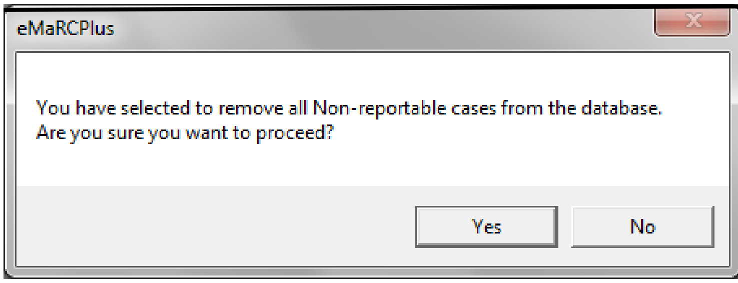
Audit Log table.

3. To search for a specific event:
   - Identify a user from the Users drop down menu, and/or;
   - Specify a **Date Range** or specify a **Message ID.**
   - Click **Search**.

Remove Non-Reportables

An administrator can select **Remove Non-Reportables** to purge the database of all non-cancer reports.

1. To remove reports with a Processing Status of **Non-Reportable, select Administration>Remove Non-Reportables**….
2. A confirmation dialog box opens.



Remove Non-Reportables confirmation message.

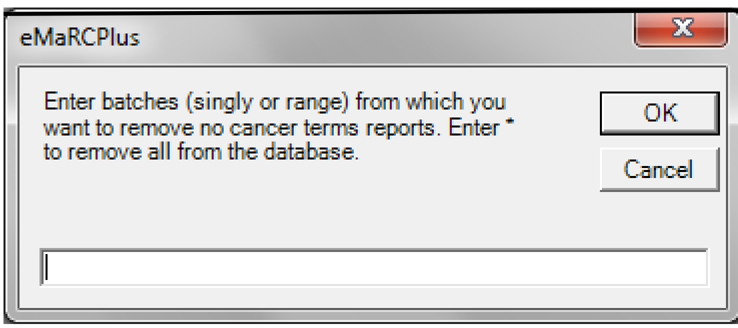
3. Click "Yes" to remove **Non-reportable** reports from the database.

*NOTE: This is a permanent action. The **Remove Non Reportables** feature should not be used until it is determined that these reports are not needed.*

Remove No-cancer Terms Reports

An administrator can select Remove No-Cancer Terms Reports to purge the database of all non-cancer reports.

1. To remove reports with a Processing Status of No-Cancer Terms, select **Administration>Remove No-Cancer Terms Reports**….
2. Enter a single batch or range, if you wish to remove all enter a *



Remove No-Cancer Terms Reports confirmation message.

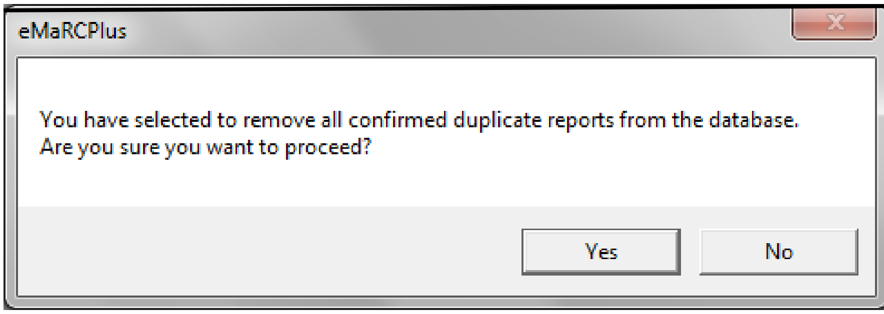
3. Click "**ok**" to remove **No-Cancer Terms** reports from the database.

*NOTE: This is a permanent action. **The Remove No-cancer Terms Reports** feature should not be used until it is determined that these reports are not needed.*

Remove Confirmed Duplicate Reports

An administrator can select **Remove Confirmed Duplicate Reports** to purge the database of all duplicate cancer reports.

1. To remove Confirmed Duplicate Reports, select **Administration>Remove Confirmed Duplicate Reports**….
2. Click "Yes" to remove **Confirmed Duplicate Reports** from the database.



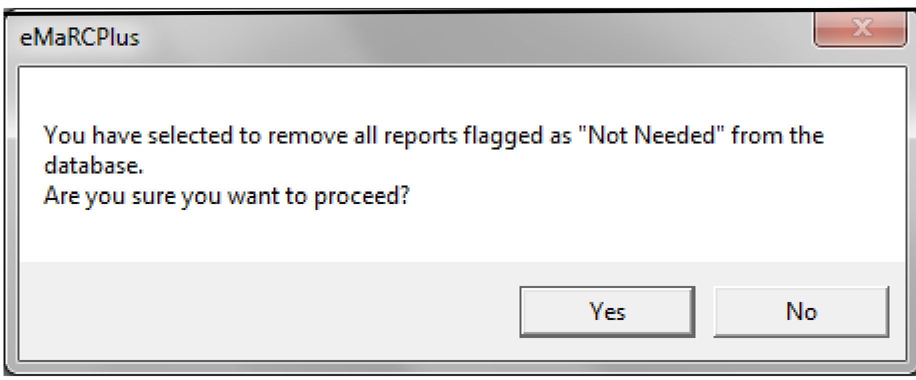
Remove Confirmed Duplicates Reports confirmation message.

NOTE: This is a permanent action. ***The Remove Confirmed Duplicate Reports*** *feature should not be used until it is determined that these reports are not needed.*

Remove Confirmed Not Needed Reports

An administrator can select **Remove Confirmed Not Needed Reports** to purge the database of all duplicate cancer reports.

1. To remove Confirmed Not Needed Reports, select **Administration>Remove Confirmed Not Needed Reports**….
2. Click "Yes" to remove **Confirmed Not Needed Reports** from the database.



Remove Confirmed Not Needed Reports confirmation message.

NOTE: This is a permanent action. ***The Remove Confirmed Not Needed Reports*** *feature should not be used until it is determined that these reports are not needed.*

Additional Technical Guidance

How to automate PHINMS Queue Import

Automate import using Batch process

eMaRC Plus can be automated to import message from Folder via Command Line Interface using batch file. It requires the following component need to be configured

1. Install, and configure eMaRC Plus on dedicated server
2. Place Batch file that imports message via Command Line Interface in some folder (See Batch file section below)
3. Configure Windows Scheduler on the server where eMaRC Plus is installed. Windows Scheduler need to run that batch file every night during X o' Clock

How to create batch file to Autoimport?
Copy and paste the following code into a text file by providing appropriate parameter as stated in remark section.

1. Click on File/Save
2. Make sure you choose "All Files (*.*) under "Save as type"
3. Name this eMaRCPlusAutoImport.bat.

```
REM ******************************************************************************
REM *  This batch file will trigger eMaRC Plus command line interface
REM *  Please use appropriate value for the following parameters
REM *  User          ==> doe       ==> This is your user id
REM *  Pwd           ==> guest     ==> This is your password
REM *  FileFormat =HL7  ==> This is type of file you are about to import. It could be HL7, PIPE etc.
REM *  File          ==> c:\MyHL7   ==> This is the path for file located. e.g
REM *
REM ********************************************************************************

@ECHO On
SET GONEXT=C:
%GONEXT%

CD C:\eMaRCPlus
START emarcplus.exe User=doe pwd=guest fileformat=hl7 file=c:\MyHL7
EXIT

REM ********************** END OF Batch FILE ************************************
```

Note:

A. The Command Line Interface imports all HL7 files from the specified folder path.
B. Make sure source folder name DOES NOT contain spaces (e.g. We cannot have folder name like My Documents/HL7 Files).
C. Importing message from file may take several minutes depending upon file-size.
D. System will create sub folder called "Archive" inside the source folder.

Each successfully imported file gets moved into this subfolder.

eMaRC plus will not move any file that has an issue, and user will need to figure out what is causing the file to not import into system.

How to use Command Line Interface

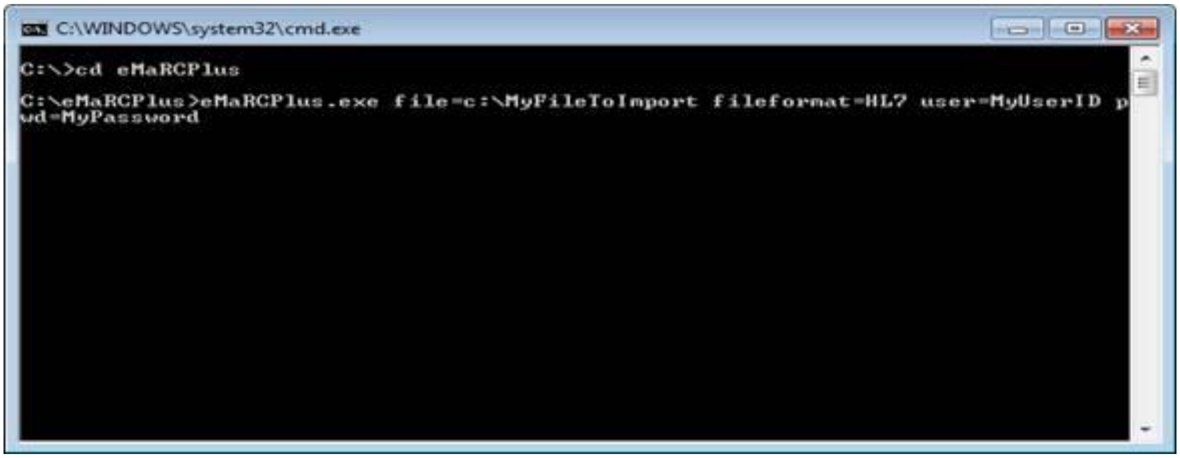
Using Command Line to import data

1. The command line interface can be used to import HL7 files, PIPE delimited files and files from the PHINMS Queue.
2. If you are importing from a folder structure:
   a. Make sure the source folder name DOES NOT contain spaces (e.g. We cannot have folder names like My Documents/HL7 Files).
   b. System will create a sub folder called “Archive” inside the source folder. Each successfully imported file gets moved into subfolder called “Archive” eMaRC plus will not move a file that has an issue. The user will need to figure out what is causing the file to not import into system.
3. Importing a file may take several minutes depending upon the file size.
4. Some common mistakes are:
   a. Trying to import already imported files
   b. Wrong file format (i.e. Binary file)

How to import data using command line interface

1. Run command Prompt
   a. Windows XP user
      i. Click on Start, then select Run
      ii. Type cmd in “Open” input box and press enter
   b. Windows Vista/ Windows 7/ windows server 2008 user
      i. Type cmd in the Vista Start Run box
      ii. Use the keyboard shortcut combination Ctrl + Shift + Enter instead of just pressing Enter.
      iii. This will open the Command Prompt in Administrator mode.
2. Once you are in command prompt
   a. Importing HL7 Messages from a Folder
      i. Type CD\ and press enter key to get on root prompt (i.e. C:\ prompt)
      ii. Type CD eMaRcPlus and press enter key
      iii. Type the following command with parameter and press enter

eMaRCPlus.exe file=c:\HL7FilesToImport fileformat=HL7 user=YourUserID pwd=YourPassword

b. 

Note:

FileFormat options are

i. PIPE
ii. HL7

b. **Importing PHINMS from Command Line Interface**
   i. Type CD\ and press enter key to get on root prompt (i.e. C:\ prompt)
   ii. Type CD eMaRcPlus and press enter key
   iii. Type the following command with parameter and press enter

   eMaRCPlus.exe POLL=1   user=YourUserID   pwd=YourPassword

   Note:

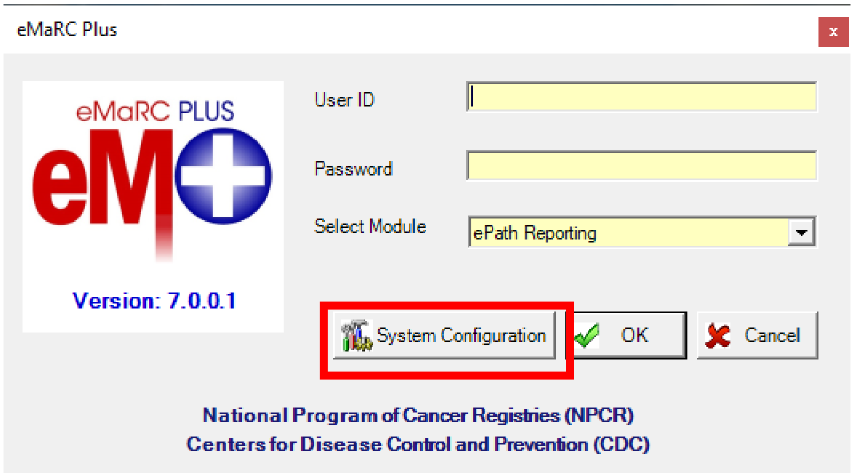
   Refer to System Configuration image below

   Before you run the above command:

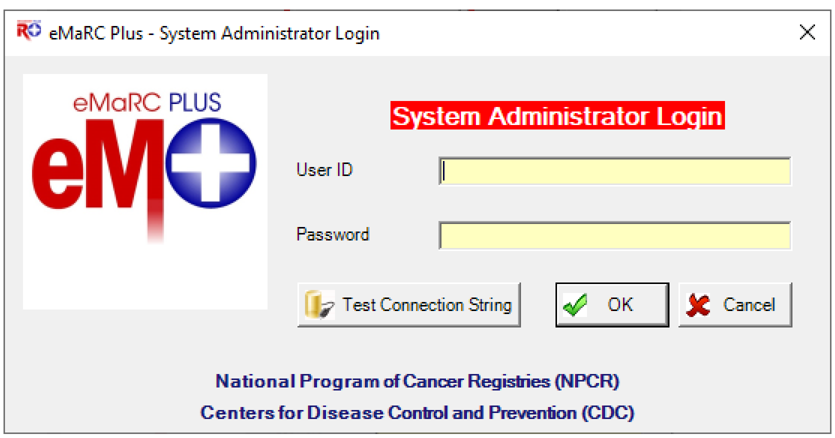
   1. You still need to make sure you have checked "Read file from PHINMS Queue" in Administration\System Configuration\Database and PHINMS Tab
   2. If you have PHINMS configured to put file in folder structure then you must configure that folder path in "PHINMS File Receiver Folder Path" under Administration\System Configuration\Database and PHINMS Tab

<u>**System Configuration for Polling data from PHIN Messaging System (PHIN MS)**</u>

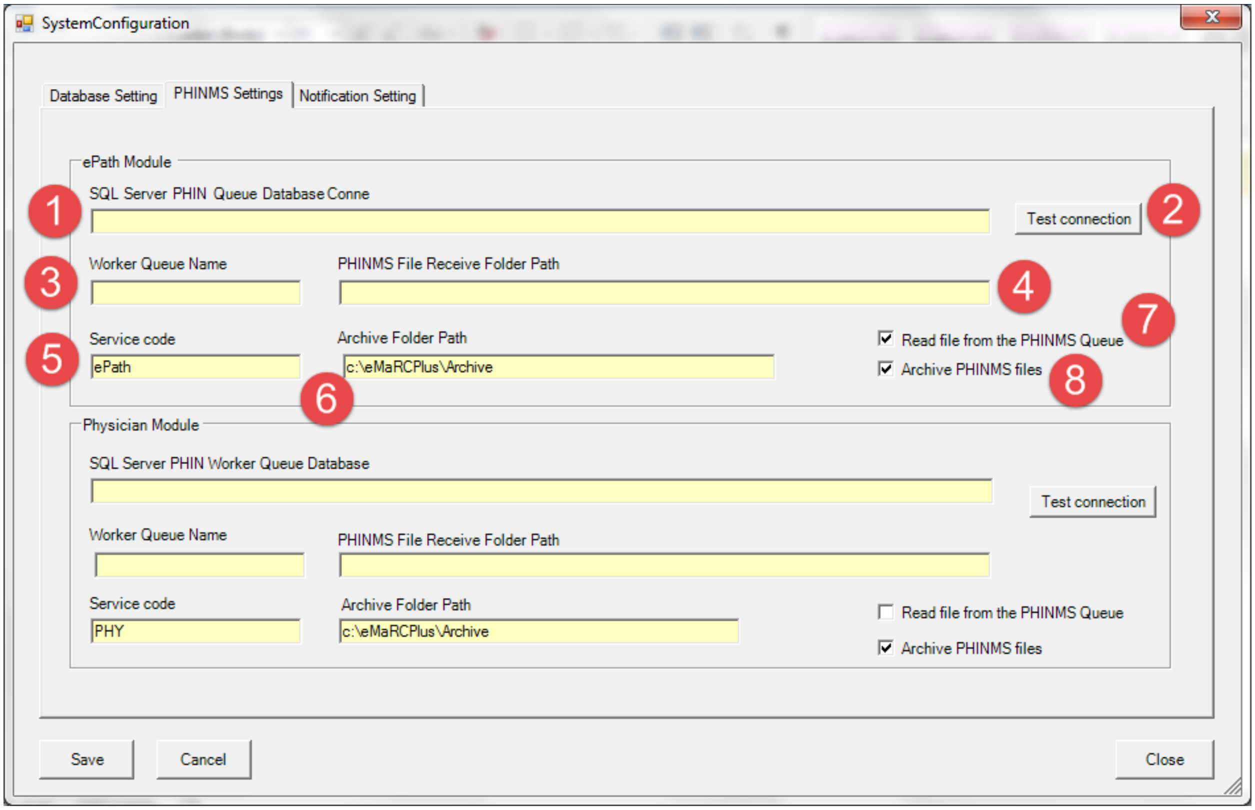
1. Launch eMaRC Plus login screen



2. Click on “System Configuration” button. You will see the following login screen



3. Login and you will see the following window



<table>
<tr><td colspan="2">

PHINMS Settings Tab

This tab allows user to configure to connect to the database table, in which messages are written. PHINMS mechanism, which delivers messages (or CDA documents), is separate from eMaRC Plus. eMaRC Plus simply read message (or CDA documents) from PHINMS Queue table.

Each module a) ePath and b) Physician Module can have a separate PHINMS Queue table. It is highly recommended not to setup PHINMS mechanism to write both ePath message, and Physician document in the same one table, although it can be done.

If both ePath message and CDA document are written in the same table, then different **Service Code** must be utilized to distinguish data.

Since both module use the same concepts, give below instruction/info is applicable for both module's PHIN MS Queues.

</td></tr>
<tr><td>1</td><td>

SQL Server PHIN Queue Database Connection
Put connection string to connect PHINMS database

It is highly recommended that you keep PHINMS database and eMaRC Plus database separate.

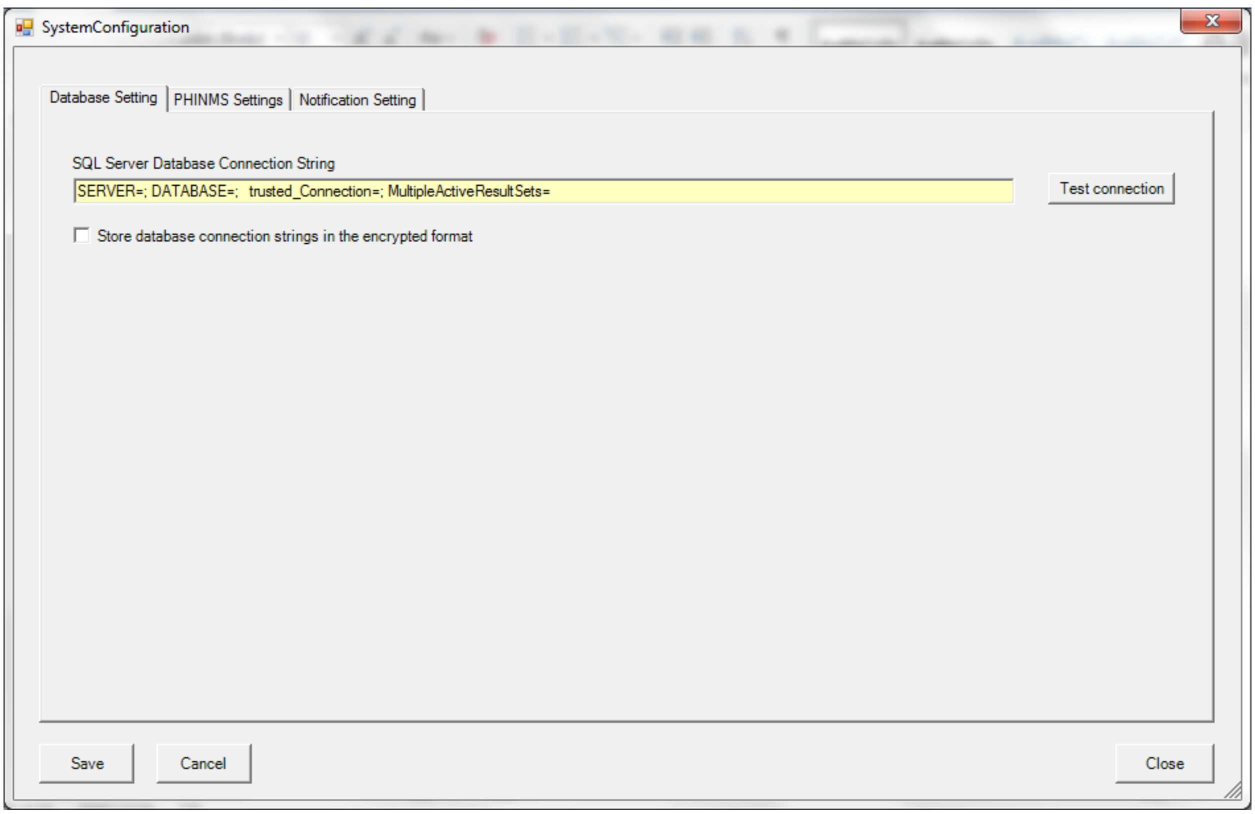
</td></tr>
</table>

2	**Test Connection Button:** You will see pop up message “Connection Successful” if connection is properly populated.
3	**Worker Queue Name:** This is the name of the table where PHINMS message is written by some other mechanism.
4	**PHINMS File Receive Folder Path:** Imports message from folder path. This approach allows user to dump message in text file into particular folder. And eMaRC Plus will import file from that folder path rather importing from PHINMS Queue. **FYI:** You have two distinct option to import Messages From PHINMS Queue From Folder Path
5	**Service Code:** PHINMS Message queue table could have a non-cancer related message. If this is the case, having service-code will allow eMaRC to grab only cancer related data. Each message must have proper service code populated in Service Column in PHINMS database.
6	**Archive Folder Path:** This folder path is used for two different purpose: a) Move files to this location when message gets imported (polling) form a Folder. b) In this location, a temporary text file is written, during importing message from PHINMS queue. After completion of importing messages, these files are deleted. **Note:** Since temporary file or Archived has personal information (PI), it is highly recommend to use network-drive-folder to secure files. If you want to keep in on local computer, then make sure you have BitLocker on to secure your Hard Drive.
7	**Read file from the PHINMS Queue Check box:**

	Check this checkbox to allow to poll from PHINMS Queue table. **Note:** PHINMS Queue mechanism (Not a part of eMaRC Plus) writes message (HL7 or CDA documents) into a database table. And eMaRC Plus import that message from database table
8	**Archive PHINMS files Check box:** If you want to keep temporarily written file that gets written during import form PHINMS Queue, please check this check box. See related info “Archive Folder Path”

Database Setting Tab

This tab simply displays and let you change database connection.



Glossary

User and System Generated Codes

Dupflag_user codes:

0	Original or Unprocessed
5	Confirmed duplicate
6	Addendum
7	Consult
8	Retained original
9	Discarded original
10	Test
11	Amendment
12	System Generated Discarded Original

Dupflag_import codes:

0	No duplicate/Independent Report
1	Potential Duplicate
2	Potential Consult

Reportability at_import codes:

1	Reportable
3	Non-Reportable
4	No Cancer Terms

Processing status codes:

0	Review
1	Complete
3	Non-Reportable
5	No Cancer Terms
6	Test Report
7	Hematopoietic Report

Site/Histology/Behavior coding Status codes:

0	Not Coded
1	Narrative Report, Autocoded
2	Synoptic Report, Autocoded
3	Manually Coded
4	Overwrite of Autocoded Narrative Report Manual
5	Overwrite of Autocoded Synoptic Report