Chapter 11: The Patient Set Editor

A “Patient Set” stores all data pertaining to the same patient. These include patient demographic data and data related to each cancer diagnosis. Data summarized or consolidated from the source records are stored in Patient Set fields. The Patient Set editor also provides access to the source records that contributed the data. Refer to Chapter 2: Records and Patient Sets for more information related to Patient Set and record data.

The layout of the Patient Set editor is similar to the record editor. Navigation controls are on the left; data fields are displayed in the center of the page; system alerts, text fields, failing edits, comments from registry staff, and matches in reference data sets are shown in the right panel.

Two users may view the same Patient Set at the same time. SEER*DMS prevents one user from overwriting changes made by another. If fields are changed by the system or another user while you are viewing a Patient Set, you will not be able to save changes to the Patient Set. You will be notified that the data have been changed and will be able to reload the Patient Set. It is also possible to open a Patient Set that is in a worklist task. SEER*DMS will display an alert and provide a link to the worklist. You may wish to review the tasks before changing data values.

The features and tools of the Patient Set editor are described in this chapter. Step-by-step instructions for applying these tools to specific tasks are provided in: Chapter 12: Consolidating Data and Chapter 14: Resolving Patient Set Errors.

In this chapter, you’ll learn about

- Features of the Patient Set Editor
- Menus in the Patient Set Editor
- Editing Data Fields
- Demographic Information Viewer
- Diagnostic Information Window
- Viewing Text
- Comparing Consolidated Data to Source Data
- Treatment Data and Treatment Data Pages
- Consolidating and Editing Address Data
- Comparing Abstract Records
- Deleting a Linked Record
- Viewing the Logic of Integrated Edits
- Polishers
- Resolving Edit Errors
Features of the Patient Set Editor

The title bar shows the page title, Patient Set ID, and links to tools for viewing, comparing, and consolidating data (Demo Info, DX Info, Text, View Source Data). Demo Info and DX Info can be used to compare demographic and diagnostic information in the Patient Set with data in the source records. The Text viewer displays the text fields in a separate window. The Source Data viewer can be used to compare data fields on source records to the same fields in the Patient Set, and to copy values from record data fields to the Patient Set. In the figure below, the title bar indicates that the Demographics page is being displayed and the Patient Set ID is PAT-10047425.

You can use the links in the left panel to:

- View each page of Patient Set data (Demographics and CTC pages). Links to pages within a CTC are shown when you expand the section by clicking the CTC ID or the down arrow.
- Review the Patient Set’s Audit Log (AL). Each change made to a data field is documented in the audit log. Audit log entries include the user or process which modified the data, the task or system event in which the change was made, comments related to the change, the date and time of modification, and the original and modified value of each data field that was changed. Audit log events are described in Chapter 2: Records and Patient Sets.
- View, add, or delete Image Files (IMG) containing scanned documents for this patient. These may include images of pathology reports, death certificates, or other documents.
- View Special Studies (SS) to which this patient is assigned. Add or remove the Patient Set from a special study (Chapter 28: Special Studies).
- Review or submit a request to the reporting facility for Follow-back (FB) information. Please refer to the Requesting Follow-back Information section of this chapter.
• Review or create an Abstract Facility Lead (AFL) to indicate that an abstract record is needed for the patient (see Chapter 21: Managing Abstracting Assignments).

• The source records can be accessed within the Consolidated section. To see the types of records or view record data from a specific facility, click the down arrow adjacent to the facility ID. To expand the list for all facilities, click the down arrow adjacent to “Consolidated”. You may then click one of the record types to access the record data.

• In a consolidate task, the Patient Set navigation box will also include a separate list of Pending Records to distinguish new records from records that were previously linked. This feature is described in Chapter 12: Consolidating Data.

You can use the tabs in the right panel to:

• View system messages and task-specific instructions on the Alerts tab.

• View the Text fields stored in the Patient Set or source records.

• View and/or resolve the Edits triggered by data fields in the Patient Set, as described in the Resolving Edit Errors section of this chapter.

• View scanned Images of documents while viewing or editing data in the main editor.

• View or add to the Comments stored in the Patient Set. The comments include notes added by system users and messages auto-generated by SEER*DMS.

• View Reference data for the patient. This tab is only shown if reference data sources are defined in your system. Reference data sets may be defined by registry IT staff and may include data for the patient that are stored in the SEER*DMS database or data from external data sources.

• View matching Claims data. This is only visible if your registry imports claims data.

A Data Header is displayed at the top of each Patient Set data page, as shown above. Fields from the Demographics page are always displayed in the header. CTC fields are shown if the Patient Set only has one CTC (not including deleted CTCs); or if you are viewing a CTC page.

Menus in the Patient Set Editor

Throughout SEER*DMS, an arrow represents a system menu. To open the Patient Set menu, click the arrow shown next to the Patient Set ID in the left navigation (as shown in figure on left).

Click the arrow to open the Patient Set Menu.
The items on the menu differ according to the page that you are viewing. This shows the menu when viewing the Demographics page.

This is the Staging page menu. It has specific options for staging data. For example, Clear CS Fields changes Collaborative Stage fields to blank.

**Editing Data Fields**

To modify a field, you may either enter a value directly into the field or use a lookup to select a value from a pick list.

- Values can be typed directly into any data field that can be modified.
- Some fields are set by the system and cannot be changed. If a field can be modified, then its value is displayed in a white edit box; otherwise, you cannot change the value. In the example below, Race, Spanish/Hispanic Origin, Birth Place, and Birth Date can be modified. Computed Ethnicity, Computed Ethnicity Source, NHIA, NAPIIA, and the IHS linkage fields are read only. You cannot modify read only fields; SEER*DMS will auto-update their values.
Lookups are available for many fields in SEER*DMS. For these fields, you have the option of typing the field’s value or selecting a code after clicking the Lookup icon. Keyboard shortcuts can be used to open the lookup instead of mouse-clicking. Tab or use your mouse to go to the field and then press Alt+L. This shortcut does not work if the lookup requires a separate window (e.g., city, physician, and facility lookups).

For many fields, all values will be displayed when you open the lookup. You may use your mouse to select a value; or use the arrow keys to move to a value and press Enter.

If the field has too many values to display, enter search terms. Items that match your search terms will be listed. You may search by text or codes. You may use the down arrow to move to the list and select a value; or you may select a value with your mouse.

Click the field label to view documentation. Registry-specific instructions are shown first. If the field is a NAACCR item, the Info tab includes text from the NAACCR coding manual.
To document a change or enter a comment related to a field, enter text in the Comment box. All changes and comments will be displayed in the Patient Set audit log and in the field-specific audit log.

The **Mappings Tab** shows technical documentation. **Java Path** is used to reference the field in Mass Change imports and scripts; database name is used in SQL queries. **Java Type** and **Database Type** show field length and type. If **Updatable** is false, the field cannot be modified via Mass Change (this does not determine whether changes can be made in the editor). **Nullable** indicates whether the field can be blank. The **Lookup** is listed if there is a lookup associated with the field. The lookup may be a database table or it may be a query defined in the lookups.xml system file.

**Demographic Information Viewer**

The Demographic Information Viewer is opened by clicking **Demo Info** or pressing Alt+D. The viewer is only available if there are records linked to the Patient Set. Data from all records are displayed. If you are in a Consolidate task, the pending records will be listed separately at the top. The fields that are shown are those used for matching; therefore the Demographic Information Viewer may be used to confirm the results of a matching task.

Values that differ from the Patient Set or other records will be highlighted as shown below. The record values shown in Med Rec # column are not compared to values in the Patient Set. A value in the Med Rec # column will be shown in red if it differs from a value on another record from the same facility. Accession number is shown in the Med Rec # column if major record subtype is Pathology Rpt (currently, this record type is only used by the Seattle registry).
Click **Close** or press Alt+C to close the Demographic Information viewer. Simply pressing Enter will also close the window unless you moved focus to the print button. Click **Print** in the Demographic Information viewer to create a PDF version of the data. You may print the PDF or you may simply keep the PDF open on your screen while you review other pages in the Patient Set.

### Diagnostic Information Window

Click **DX Info** or press Alt+X to open the Diagnostic Information viewer. This window allows you to review basic diagnostic data items for each CTC. If you are reviewing a Patient Set with multiple CTCs, you may prefer to suppress the display of fields from the linked records. Click **Show Records / Hide Records** to toggle the display of the record fields.

When records are shown, the consolidated values for each CTC are shown in bold and the record values are listed below each CTC line. Records that are linked at the patient level are listed below the Patient sub-heading. In a Consolidate task, data from the unlinked records are shown first so that you can compare the values on the pending records to other data in the Patient Set.

The items in the **Link To** drop-down will vary based on the situation. Refer to Chapter 12: *Consolidating Data* for information on how to link records to the Patient Set, existing CTCs, or new CTCs.

### Viewing Text

Text fields are shown on the Text tab in the right panel of the Patient Set editor. If you prefer, you may open the text in a separate window by clicking the Text link in the title bar of the main data panel. You may display both the text window and a data page in the editor at the same time (you may need to resize the windows or show one on a separate monitor). To close the text window, either click the `×` in the top right corner or the **Close** button at the bottom of the viewer. Close the text window before exiting the editor or opening another Patient Set.
The screenshot below shows a partial Text tab in the right panel; the Text window uses the same format. You will use the top drop-down menu to select a CTC, a linked record, or a set of linked records. Text for your selection will be displayed in a read-only format. Use Hide/Show All to collapse and expand all text fields simultaneously.

Blank text fields are never shown in the text tab. However, many text fields will contain values that are equivalent to blank. In the example below, “NO TEXT” is entered for DX Proc PE.

Check the Hide non-values check box to suppress text fields with values like “NA”, “UNK”, “Unknown”, “No text”, “None”. You can view the terms that are considered to be non-values by clicking the Hide non-values label. The configuration parameter text.non.value determines what is considered a “non-value”. To add or remove items from these lists, please submit a request to the SEER*DMS Technical Support team.

Unless the Lock button is checked, the fields shown in the Text tab will change when you go to another record or CTC in the editor. If the panel is not locked the text fields on the new page will be loaded. The text pop out window does not adjust when you change pages, you must manually select a new page in the text window.

The drop-down menu determines which text fields are displayed. The screen shot below shows choices that may be available.
• Options listed for each CTC:
• Record and CTC Text fields – select this option to view text that is stored in CTC data fields and text in records linked to that CTC.
• CTC Text Fields – select this to view text stored in CTC data fields; text in linked records will not be shown.
• Record Text Fields – select this to view text stored in records linked to the CTC.
• Other options for viewing text that is only stored in record text fields:
• Records Linked at Patient Level – select this to view text stored in records that have not been linked to a CTC. For example, if you are reviewing a Patient Set with HL7 records and you need to determine if the pathology reports are related to a CTC.
• All Records – view text fields from all consolidated records. This includes records linked at the patient level and records linked to one of the CTCs.
• Each record is listed individually. The list shows the two or three character abbreviation for record type; an icon if it is auditable or not reportable; event date, the CTC to which it is linked, site and laterality, facility, and record ID.
• Pending Records - An option to view text from pending records will be included if you are viewing the Patient Set in a Consolidate task.

If the text panel includes record fields, you can control the way in which the text data are organized. You may group the fields by record, field, or facility. If grouped by field, SEER*DMS will automatically de-duplicate the display. If a field has the same text on two records, the text will only be shown once (two headers will be shown to indicate that it was provided on two different records). The same is true if the same text exists in a CTC and record field.
When you are viewing text By Record, you may limit the text to certain types of records. The Patient Set below has text from an HL7 Pathology Report, a NAACCR Abstract (NA) record, and NAACCR Casefinding (NCF) records. The user has chosen to view only the text from the NAACCR Abstract. The text from the HL7 and NAACCR Casefinding records will be hidden.

Comparing Consolidated Data to Source Data

A link in the upper right of the main data panel allows you to toggle the current page from one view to another. You can View Source Data or View Consolidated Data. The Source Data View enables you to compare data fields on records with the fields in the consolidated Patient Set, and it provides a convenient method to copy values into the appropriate Patient Set fields.

The Source Data Viewer is available on pages that contain data consolidated from multiple records. Therefore, it can be used on the Demographics, CTC, and Staging pages. The Summary TX page contains data summarized from other pages within the CTC; it is not consolidated directly from the records. The Course Page allows you to compare TX, TXr, and Summary TX values.

The screen shot below shows the Demographics page of a Patient Set in View Source Data mode. When consolidating data, work through each section of the page. Click the arrow to collapse a section as you complete your review of that section. The value of a record field will be highlighted when it differs from the Patient Set value. If you want to update the Patient Set field, you can modify the field directly or click one of the record values to copy it into the Patient Set field.
The drop-down menu allows you to multi-select by record type. In a Consolidate task, you may want to restrict the comparison to All Pending records. Check **Differences Only** to exclude records with the same values as the Patient Set. This exclusion is applied independently for each table in the Source Data view (if race were the only differences between a record and the Patient Set, that record would be excluded from Demographics Part 1, but shown in Demographics Part 2).

There are special actions for certain types of data. For example, you can copy all values for causes of death, site-specific factors, and other fields that occur in sets. When comparing text, you can append text to the Patient Set field or copy the text to over-write the Patient Set field.

### Treatment Data

There are 3 types of treatment data pages:

- **Summary TX** – Summary treatment fields that are stored at the CTC level. These are the consolidated treatment values. SEER*DMS calculates the values, but you may over-ride the calculations.

- **TX** – A TX is the registry’s copy of treatment both given and reported by one facility. These data are typically copied from the RX hospital fields on a NAACCR abstract record.

- **TXr** – A TXr is the registry’s copy of treatment given at one facility, but reported by a different facility. Two different facility IDs will be shown on a TXr data page. The facility that treated the patient is often unknown. When treatment data are incorporated into a CTC from a NAACCR abstract record, both TX and TXr data pages are created if there are treatment data in the NAACCR summary fields that are not included in the NAACCR hospital fields. The TXr data are built from the additional data in the Summary TX fields on the NAACCR abstract.

You may modify the Summary TX data fields; however, it is typically better to modify the data on the TX and TXr pages. SEER*DMS will automatically re-calculate the Summary TX values. The standard way of maintaining treatment data is described below.

- SEER*DMS copies data from a NAACCR abstract record into TX and/or TXr data pages. This happens when the record is linked to the CTC.

- A CTR at the registry corrects coding errors in the TX and TXr data pages. The original values on the abstract are retained for reference.

- SEER*DMS calculates the Summary TX values based on the TX and TXr data.
• The registry CTR may over-write the Summary TX values, if necessary. To prevent SEER*DMS from re-calculating, you must set a review flag. There is a review flag for each section which stops the polisher from re-calculating the fields in that section (Surg Rev, Radtn Rev, and Systemic Rev).

**Treatment Data Pages**

The links to the Treatment Data Pages in this Patient Set are:

- Course 1 – click this link to view Summary TX data. If you are using Comparison Mode, then all Course 1 TX data will also be shown.
- TX 1 – treatment reported by and provided at FAC-0007.
- TX 2 – treatment reported by and provided at FAC-0001. However, this TX page was deleted (as indicated by the strike-through font). The Summary TX calculations will not include data from this page.
- TXr 1 (9999~0007) – treatment reported by FAC-0007, but provided at FAC-9999. FAC-9999 is the unknown facility in this registry. FAC-0007 reported that the patient had treatment at another facility, but the facility name was not provided.

There are two screen layouts for viewing treatment data. You may view one page at a time or you may view all data for a course of treatment at once. If you view a single TX then you are in “Page Mode”. If you view all pages for a course at one time then you are in “Comparison Mode”. Your account preference determines which mode is shown by default.

This screen shot shows the Summary TX data in Page Mode. Only the Summary TX data fields are shown. All of the Summary TX data fits on one screen.
Clicking Compare TXs above will switch the display. The screen shot below shows the same Summary TX data, but in Comparison Mode. The Summary TX values are shown in the first column. The other columns contain the TX and TXr data.

You may edit all fields in the Page or Comparison Mode. To edit a data item, click the edit link for the TX column. If you wish to delete a TX page, click a delete link at the bottom of a section. In the example below, a delete link is shown in the Surgery section. However, clicking a delete link will delete the full TX or TXr page. In some registries, the data page is permanently removed when a treatment procedure is deleted. In other registries, the page is marked as deleted and the data are excluded from the summarization polisher.
You may limit the comparison to TX and TXr data from one facility. This allows you to manually consolidate the data for a single facility into one TX. Use the left navigation to open a TX page. Click Compare TXs (upper right). TX and TXr data pages for the same facility will be displayed.
Consolidating and Editing Address Data

There are special tools in the SEER*DMS Patient Set editor for consolidating and editing addresses, as shown in the figure below.

When a Patient Set address is changed, SEER*DMS will submit the address to the Texas A&M, NAACCR, NCI Geocoding Service. The geocoder will check to see if it is a valid street address for the city and zip. SEER*DMS will use results from the geocoder to set several variables, including: county for current address or address at diagnosis; census tracts, latitude, longitude, and other geo-spatial data items for the address at diagnosis. The data items that are geo-coded in your registry are listed in the Census Tract polisher documentation on the Polishers Help page.

A tutorial for Consolidating Address Data and Geo-coding in SEER*DMS is available with the SEER*DMS Users Manual (http://seer.cancer.gov/seerdms/manual/). It describes the tools that you will use to:

- Consolidate address data items.
- Review the search results returned by the geocoding service.
- Use the Address Review Flag appropriately
- Use the Census Tract Reviewed Flag appropriately
- Set Zip Centroid Values
Comparing Abstract Records

The Patient Set Editor includes a tool to compare one abstract record to another. You may use this to identify duplicate records. To compare records, open a consolidated abstract record in the Patient Set editor. Click the **Compare Records** at the top right of the main data panel. You may use this to compare a Health Record to other Health Records; or to compare NAACCR Abstract, NAACCR Modified, and NAACCR Casefinding records to each other. In the example below, a NAACCR Modified record linked at the patient level is compared to all candidate records in the Patient Set. As determined by registry algorithms, a record will not be considered as a candidate if it does not match the focus record on a standard set of fields such as facility, site, histology, or laterality.

Comparing two linked records within the Patient Set editor:

Deleting a Linked Record

If you have the appropriate system permission, you will be able to delete a linked record. This feature must be used with care. When deleted, a record is completely and permanently removed from the database. To delete a linked record, open the record in the Patient Set editor. Check the information at the top of the page to be sure that you are viewing the correct record. There are nine system permissions to control record deletion by record type: abstract, short health, case finding or pathology report, health index, death certificate, update record, and supplemental or follow-up record, reject records, and image files.

To delete a linked record:

1. Open the record in the editor. The record will be displayed in read only mode.
2. View the record header at the top of the page and confirm that it is the correct record.
3. Click the arrow to open the record menu (see screenshot below).
4. Select Delete Record. This menu item will not be available if you do not have the system permission to delete the record type.
Viewing the Logic of Integrated Edits

Documentation for edits in SEER*DMS is provided on the Edits help page. If you have the edit_manager permission, you can also use the Edits Manager to review edits. In the Patient Set or record editor, you can view documentation for any failing edit.

On the edits tab, click the information icon next to the Edit ID. Click on the Documentation tab to view documentation available for the edit. To view the source code, select the Definition tab. Documentation is available for all SEER edits and many SEER Extended edits. Documentation for registry-specific edits will be displayed, if available.

Polishers

A polisher is a function within SEER*DMS that sets the value of a field based on the values of other fields (changes to these fields “trigger” the polisher). A polisher executes when the value of a trigger field changes. All changes made by polishers are listed in the Audit Log (designated by a
The fields that trigger the polisher and the polisher’s algorithm are documented on the Polishers help page.

The Patient Set menu allows you to Force Polish, that is, run all polishers despite the fact that the fields were not changed. This feature should be used with caution. All polishers will execute and, therefore, there may be unexpected changes in fields unrelated to your editing task. If you use Force Polish, you must carefully review the list of changes displayed when you save the Patient Set. If an undesirable change was made to the data, you should either correct the data manually or reverse the changes before saving (see the Undo Changes section of this chapter).

Resolving Edit Errors

Requires system permission: pat_edit; other permissions that may be necessary to resolve all edit errors include: pat_edit_overrides, pat_edit_cs_overrides, pat_edit_visual_edit.

Edits are executed every time you move to a new page in the editor and when you click the Save button. To check modified fields for errors without leaving the current page, click Validate or press Alt+V. SEER*DMS will re-run the automated Patient Set edits and highlight any errors. If a modified field does not trigger any errors, it will be highlighted in yellow to show that it has been changed (color codes used in the editor are described in see Chapter 7: Edit Errors).

Review each error prior to making changes to a data field. To evaluate and correct the problem, you must determine if a single field is causing the error or if an inter-field edit has identified a conflict between multiple fields.

To review and correct edit errors in a Patient Set:

1. Open the Patient Set’s worklist task or open the Patient Set for ad hoc editing.
2. If you opened a Resolve Patient Set Errors task, the Edits tab will be displayed. Otherwise, you will need to open the Edits tab in the panel on the right side of the screen. If you are not using a widescreen monitor then you may need to scroll to see the right panel.
3. The following symbols are displayed next to each error in the S (Severity) column:
   - ! Critical – exclamation point is used to alert you to critical errors
   - ▲ High – directional symbols indicate the relative severity level of the other levels, the up arrow is used for high
   - □ Moderate – flat indicates a moderate severity level
   - ▼ Low – a down arrow indicates a low severity level
   
   Note: In SEER*DMS, if you hold your mouse over any symbol, its meaning will be displayed.

4. The following information is listed for each error:
   a. Edit ID – Edit name or identifier.
   b. Message – A brief description of the edit.
   c. The Page column provides link(s) to data pages containing the fields causing the error.
   d. To view additional information about the edit, click the Information Icon next to the ID. The information popup is described in the View Edit Information section of this chapter.
5. Click a link in the **Page** column to find and edit the fields. The fields validated by an edit may be shown on multiple pages. For example, links to the CTC and Staging pages will be shown for edits that validate staging fields based on year of diagnosis.

6. A data field is highlighted in a shade of red if it is associated with an edit that has been triggered. Hold your mouse over the field’s value to view a listing of the edit errors associated with the field.

7. If you are able to resolve the error, modify the appropriate fields.
   a. The color of an edited field will change when you move to another field (see Chapter 7: Edit Errors for a description of the color codes used in the editor).
   b. Click **Validate** to run the edits and to determine if your changes resolved the edit.

8. There are several edit errors that can be overridden using override fields or review flags.
   a. SEER, NAACCR, and Registry overrides are implemented as data fields displayed in the **Override** section of the CTC page. Click the field label for field documentation and registry-defined instructions. If you hover your cursor over the label of a SEER or NAACCR override, the NAACCR fieldname for the flag is listed. If the field overrides SEER edits, the edit IDs will also be shown.
   b. **OR CS 20** is shown on the Staging Page and is designated as a flag directly coded SEER Summary Stage 2000.
   c. The **Reviewed** field on the Demographics page can be used to override Registry and SEER Extended edit errors that are warnings. This flag overrides warnings related to fields on the Demographics page.
   d. Registry and SEER Extended edit errors of CTC data that are warnings can be overridden by setting the **Edit Over-ride** field on the CTC page to Yes.
   e. There are three treatment review flags on the summary treatment data page. Each is associated with a set of data fields; for example, the **Radiation Reviewed** field is associated with the radiation fields in the summarized treatment data. If the values of the associated data fields trigger the need for review, an edit error is generated. The following icon 🔄 is displayed next to the **Course** link in the navigation box and 🔄 is displayed next to the data fields on the page. You must review those fields to ensure that the summary values are correct. To view treatment data fields from all treatment pages, click the multi-page icon 🔄 that is displayed next to each review field. It is recommended that you change data values on the individual TX pages when possible. However, if you need to over-ride the summary values calculated by SEER*DMS, enter values into the data fields on the Summary TX data page and set the flag to **Reviewed**.

9. If you encounter a problem that you cannot resolve, follow the policies defined by your registry. You may be instructed to assign the current task to another user, create a Review Task, or submit a request for follow-back information.

**Creating and Completing Review Tasks**

A Review Task is a manual worklist task created by one user for another. For example, you could create a review task when you need a manager or lead editor to review an unusual case.

*To create a Review Task:*

1. Select **Create Review Task** from the Patient Set menu.
2. Select a user in the **Assign To** drop-down list.
3. You may assign one worklist **Flag** to the task.
4. Enter a **Subject**, if appropriate.
5. Enter **Instructions**.
6. Click **OK**.

**To complete a review task:**

1. Access the task from the Worklist and review the instructions provided on the Alerts tab.

   ![Alerts Tab Image]

2. Review the data and make any necessary changes.
3. Click **Save** to save your changes and exit the task.
4. Enter comments stating that you reviewed the data and provide any information that you think may be useful. Your notes and the original instructions for the task will be permanently recorded in the Patient Set audit log.
5. If you have completed the review, click **Close the task on Save & Exit**. If you wish to exit without closing the task, deselect this checkbox. The task will remain in your worklist.
Linking and Unlinking Records

Requires system permission: pat_edit

If you are consolidating data from an unlinked record that is new to this Patient Set, please follow all steps described in Chapter 12: Consolidating Data. Use the instructions below to make corrections when a saved Patient Set includes a record that was linked inappropriately.

To modify a record’s link or to unlink a record completely:

1. If a record is linked inappropriately, review the relevant Patient Set and/or CTC data fields to determine whether you must also modify some data fields manually. Use the Audit Log as a reference. You may also want to print the Patient Set prior to changing the links.

2. After completing your review, either use the record’s menu or the DX Info tool to modify the record’s link. The following instructions involve the use of the record’s menu.
   a. Open the record in the editor. The record will be displayed in read only mode.
   b. Click the arrow to open the record menu.
      i. To completely disassociate the record from this Patient Set, select Unlink. The record will be sent into the workflow at the point of matching. It will follow the workflow route designated for a record of its type.
      ii. To link the record to an existing CTC, select the appropriate CTC from the Move To sub-menu (sequence number is displayed for each CTC listed in the menu).
      iii. If you wish to use the record to create a new CTC, select New CTC from the Move To sub-menu. This menu item will not be available if the system is unable to build a CTC from a record of its type. If you are creating a CTC from a non-abstract record, you should perform the appropriate Casefinding and Death Clearance processes prior to creating a new CTC from the record.
      iv. To link the record at the Patient Set level, select Patient from the Move To sub-menu. If the pending record is not an abstract record and is for a new CTC, you may wish to link the record at the patient level and defer creating the new CTC until an abstract is received. Later, when the abstract record is received and used to build the new CTC, you can link this record to that CTC. This will minimize the level of effort required to consolidate the data for the new CTC.

3. Once the record’s link is moved, the new linkage will be indicated next to the record’s type in the navigation box:
   a. If the record is linked to a CTC, “C NN” will be displayed. This indicates that the record is now linked to the CTC that has a central sequence number equal to NN. SEER*DMS attempts to set the sequence number appropriately, based on the central sequence number coded in the record and the dates of diagnosis on CTCs in the Patient Set. If you have multiple CTCs with the same sequence number, you should review the CTCs and manually over-ride the sequence number polisher by setting the Auto-Seq field (refer to the help text for the Increase CTC Sequence Number polisher on the Polishers help page).
   b. If the record is linked at the patient level, P will be displayed.
   c. If the record is unlinked, an X will be displayed.

4. If you created a new CTC in step 2, determine whether any records linked at the patient level need to be linked to the new CTC. In the Patient Set navigation box, the labels for newly created CTCs are shown in bold type.
5. Perform a thorough review of the Patient Set data, including the data pages of all CTCs that were affected by the change. You must determine whether any admissions or treatments need to be manually deleted from the original CTC. If you have unlinked a record completely, you should verify that the patient’s follow-up information has been modified appropriately.

6. Save your changes by following the instructions in the Saving Changes to a Patient Set section of this chapter.

Identifying and Removing Duplicate Patient Sets

An automated system task is executed each night to identify Patient Sets that may be duplicates. The task is called Patient Set to Patient Set Matching. It uses a registry-specific matching algorithm that is documented on the Matching help page. The original logic for the matching algorithm was adapted from RPT-066A when SEER*DMS version 12 was released.

The nightly task only checks Patient Sets modified that day. Each Patient Set is matched against all Patient Sets in the database (deleted Patient Sets are ignored). The system task was executed to check all Patient Sets when version 12 was first released. If the matching algorithm is modified, a registry manager or system administrator can execute the task for all Patient Sets. The Patient Set to Patient Set Matching task is listed on the System > Tasks page (it will not be shown if you do not have the permission to execute it).

If a Patient Set is a possible duplicate then a Resolve Duplicate Patient Set task is created. Note: your registry may wish to use an auto-assignment script to assign these tasks to a particular person in the registry. The Resolve Duplicate Patient Set task simply identifies the possible duplicates. In the current version of SEER*DMS, there are no special features for combining data.

The matching algorithm is executed each time the Patient Set editor is opened. If a possible match is found, an Alert is displayed in the right panel. The Alert shows the values of patient identifiers for both Patient Sets. This alert is shown when a new Patient Set is built and every time a Patient Set is opened. The intent is to prevent duplicate Patient Sets from being created. It is much more time consuming to combine existing duplicates than to prevent.

<table>
<thead>
<tr>
<th>Property</th>
<th>PAT-00586836</th>
<th>PAT-00789537</th>
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<tr>
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<td>1</td>
</tr>
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<td>08-29-1961</td>
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<tr>
<td>Vital Status</td>
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<td>1</td>
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<tr>
<td>DOLC</td>
<td>01-01-2011</td>
<td>11-29-2012</td>
</tr>
</tbody>
</table>

Matched using Patient Matching: Duplicate Patient Sets

Not Duplicate - Set Match Status
If the matching algorithm falsely identified a Patient Set as a duplicate, click **Not Duplicate – Set Match Status** and indicate that it is a false positive match. If two Patient Sets exist for the same patient, follow the steps to consolidate all of the patient’s data into one of the Patient Sets and delete the other.

**To indicate that two Patient Sets identified as “duplicates” are not true duplicates:**
1. Open one of the Patient Sets.
2. Go to the Patient Matches page. To get there, you may:
   a. Click the **Not Duplicate – Set Match Status** button on the Alert tab (as shown on the screen shot above). This button is shown when a possible duplicate alert is displayed in a saved Patient Set.
   b. Or you may select Patient Matches from the Patient Set menu.
3. If you have reviewed both Patient Sets and have determined that they are not duplicates, set **Action** to **Not a Match**. The two Patient Sets will no longer be identified as a pair of potential duplicates when the nightly task is executed.
4. Save your changes by following the instructions in the **Saving Changes to a Patient Set** section of this chapter.

**To combine data from two Patient Sets and remove one of the duplicates:**
1. Review all data and compare the data pages in the two Patient Sets. To view two Patient Sets at one time, use the browser’s controls to open a second window or tab. You may also wish to print the Patient Sets before consolidating the data.
2. Select a Patient Set to retain. Ultimately, you will want to retain the Patient Set that has the most and/or best data. In making this decision, you should consider the following:
   a. The length of time that each Patient Set has existed in the system. If one of the Patient Sets was created recently, it may have been created from one or two records. If a Patient Set was created some time ago, it may be the consolidation of data from a large number of records. The sequence of the Patient Set IDs and the auto-generated messages stored in the Patient Set’s Comments are useful in determining the history of the Patient Set. Comments may be viewed in the right panel of the Patient Set editor.
   b. The number of records linked to each Patient Set. In Patient Sets created within SEER*DMS, this provides a rough measure of the amount of data consolidated into the Patient Set. However, source records may not be available for Patient Sets that were migrated to SEER*DMS from the registry’s previous data management system.
   c. Compare the audit logs of both Patient Sets. A Patient Set’s audit log documents all changes made to Patient Set data fields, including changes made by registry staff and those made in automated processes. The number of changes made manually by registry staff may impact your selection of the “best” Patient Set to retain. Print the audit logs for future reference.
3. The next step involves unlinking all source records from the unwanted Patient Set. Ultimately, you will be linking these records to the other Patient Set. To unlink all source records from the unwanted Patient Set:
   a. Verify that the unwanted Patient Set is displayed in the editor.
   b. For each record listed in the Consolidated record section of the navigation box:
      i. Click the Record Type label to open the record in the editor.
      ii. Record each ID on paper or in a text editor. You will need this information to verify that all records are ultimately consolidated into the other Patient Set.
iii. Click the arrow to open the record menu.

iv. Click **Unlink**.

4. To prevent additional data from being consolidated into the unwanted Patient Set, mark the Patient Set as deleted:
   a. To open the Patient Set in the editor, click **Demographics** in the Patient Set’s section of the navigation box.
   b. Click the arrow to open the Patient Set menu.
   c. Click **Delete Patient Set**. The Patient Set and all of its CTCs will be marked as deleted. This is a reversible delete. However, the Patient Set and each CTC would need to be undeleted individually.

5. Save your changes to this Patient Set and exit the editor (see the **Saving Changes to a Patient Set** section of this chapter).

6. Each record will be moved into the workflow at the point of a matching task (the exact matching task will vary by record type). In order to consolidate the records into the retained Patient Set, search the worklist for manual tasks initiated by these records. (Note: It may take a few minutes for the records to complete the auto-match task.) If there are no worklist tasks related to the records that you unlinked, use the Patient Lookup to search for the retained Patient Set. The records may have been auto-consolidated by SEER*DMS.

7. Open and complete one of the tasks:
   a. If one or more Match or Consolidate tasks were created, open and complete any one of those tasks. When selecting a Consolidate task, it does not matter which task you select. All of the patient’s records should be available for consolidation. After completing the match, SEER*DMS will auto-close the other tasks. Instructions for completing the Consolidate task are provided in Chapter 12: **Consolidating Data**.

8. Verify that each record that was unlinked from the deleted Patient Set has been linked to the retained Patient Set, if appropriate. Refer to the list of Record IDs created in step 3.

9. Once you have linked and consolidated data from all available source records, you must incorporate any data from the deleted Patient Set that was not loaded from a record. This includes data that was migrated and data that was entered manually. Even though the Patient Set was deleted, you may open it in the Patient Set editor to view or print it. If you wish to view both Patient Sets, use the browser’s controls to open two windows or tabs.

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### Printing Record or Patient Set Data

**To print the Patient Set data:**

1. Click the arrow to open the Patient Set menu. Select **Print**.
2. Or you may press **Alt+P** while viewing any of the Patient Set data pages.

**To print data fields on a pending or consolidated record:**

1. Click the record’s link (**Record Type**) in the navigation box.
2. Press **Alt+P**; or open the record menu and Select **Print**.

The data will be displayed in a preview window. Checkboxes will be displayed next to each section and all sections will be checked by default. Uncheck the box next to each section that you wish to exclude from the printed copy. Select File > Print from your browser menu.
Undoing Changes

Requires system permission: pat_edit

You may use the Undo Changes menu item (or press Alt+U) to undo all unsaved changes by reloading the Patient Set from the database. Any changes that you had saved will not be undone. However, all saved changes are documented in the Audit Log. If you need to reverse a saved change, manually edit the field and enter the original value as noted in the Audit Log.

Saving Changes to a Patient Set

Requires system permission: pat_edit

Use the steps below to save changes to a Patient Set that you are editing in an ad hoc editing session. If you are editing data in the context of a worklist task, you must consider issues related to the flow of data in the worklist. Refer to Chapter 12 if you are saving data in a Consolidate task; or Chapter 14 if saving a Resolve Patient Set Errors task.

To save changes to the Patient Set:

1. Click Save or press Alt+S.
2. Enter comments to document your changes. Enter general comments in the box at the top of the Review Changes page. Comment can be added for each revised data element by clicking add in the Cmt column. The general and data field comments will be stored and displayed in the Patient Set’s audit log.
3. Save your changes:
   a. If you would like to continue editing after saving, click the Save button at the bottom of the Review Changes page (or press Alt+S).
   b. If you would like to exit the editor, click Save & Exit or press Alt+E. The keyboard shortcut for Save & Exit will only work from the Review Changes page.
Keyboard Shortcuts

SEER*DMS supports the keyboard alternatives for many menu items and buttons. Select Help > Shortcuts or press F1 to view the list of shortcuts available for the current page.

<table>
<thead>
<tr>
<th>Command</th>
<th>Shortcut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Navigation</td>
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<tr>
<td>Shortcut Help F1</td>
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</tr>
<tr>
<td>Home Alt+H</td>
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<tr>
<td>Worklist Alt+W</td>
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<tr>
<td>Field Editing</td>
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<td>Copy Ctrl+C</td>
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<td>Cut Ctrl+X</td>
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<td>Paste Ctrl+V</td>
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<td>Redo Ctrl+Y</td>
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<tr>
<td>Select All Ctrl+A</td>
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<tr>
<td>Undo Ctrl+Z</td>
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<tr>
<td>Expand drop-down list Space</td>
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Patient Set Editor

<table>
<thead>
<tr>
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<tbody>
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<tr>
<td>Save &amp; Exit Alt+E</td>
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<td>Cancel Alt+C</td>
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<td>Lookup Alt+L</td>
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</tbody>
</table>

Requesting Follow-back Information

Requires system permission: pat_edit and fb_initiate

In SEER*DMS, a request for follow-back information is referred to as a “follow-back need.” If you determine that additional information must be obtained from the reporting facility, you should submit a follow-back need. It will be added to a bundle of requests to the same facility.

Periodically, a manager will review, edit, and send the follow-back requests to a physician or other representative at a facility. Subsequently, the manager will process the facility’s responses.

You will receive an e-mail when a response to your request is processed and the follow-back need is closed. You or another staff member may update data fields based on the new information. As determined by registry policy, one staff member may be responsible for processing all follow-back responses, or the information may be given directly to the staff members who entered the needs.

If you suspended a task pending the receipt of follow-back information, you must re-open and complete the task to allow the data to move forward in the workflow. You must either make changes to data fields based on the new information or verify that the appropriate changes were made. If you completed the task but need to update the Patient Set with the new information, use
the Patient Lookup to search for the Patient Set. Instructions for submitting follow-back requests and processing the responses are provided in Chapter 22: Follow-back.