



CODONICS[®]
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Safe Label System[®] ***Administration Tool***

User's Manual ***Addendum***

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Release Notes

Summary

The following document provides information about new features and product improvements added since the release of the SLS Administration Tool (AT) User's Manual version 1.3.0 and up to version 1.8.0.

Recommended PC requirements for AT:

Intel Core™ 2 Duo Processor 2.66 GHz (or faster)
4 GB RAM
Windows® XP or newer
Internet Explorer (IE8 or newer)
Excel 2003 or greater to open reports

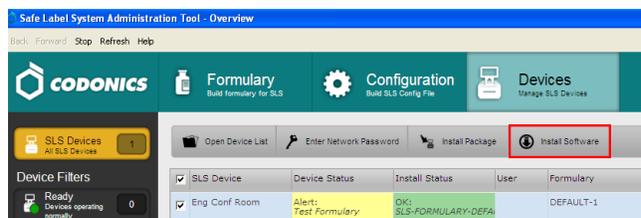
WARNING: The use of label colors is intended only as an aid in the identification of drug groups and does not absolve the user from the duty of reading the label and correctly identifying the drug prior to use.

Version 1.4.0 SLS Administration Tool

New Features

- ◆ The AT now provides the ability to remotely install software updates via wired (i.e., Ethernet) and wireless (i.e., Wi-Fi) networks.

After installing the 1.4.0 AT, start-up the AT and from the AT-DM, select Safe Label System 500i (SLS) Point of Care Stations (PCS) that you want to install software. Next, select Install Software.



NOTE: Upgrading the software on SLS PCS will erase the formulary on that system. A new formulary package should be created before upgrading SLS PCS software.

An Install Software window will open asking for the user to set the amount of time to delay the install after the time a user logs off SLS PCS. Select Install.

NOTE: Upgrade via the network does not require removing SLS PCS SmartDrive which is required when performing a manual install.



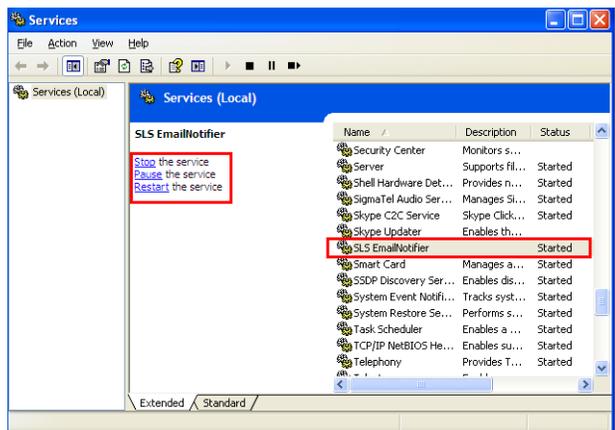
- ◆ The AT now has the ability to select or enter Total Dose (TD) and Total Volume (TV) for a syringe. The TD and TV as well as the equivalent concentration will be displayed on SLS PCS user interface and print on the label. Refer to "Total Dose/Total Volume" on page 19 for complete instructions.
- ◆ The AT now supports 80 x 30 mm labels. These labels are typically used for larger syringes (20 mL or larger). Refer to "Localization Enhancements" on page 23 for setting the templates in the AT.

NOTE: Make sure that the label template pack that is deployed to SLS PCS is the same as the labels installed. If a small label (48 x 17 mm) template pack is deployed to SLS PCS and large labels (80 x 30 mm) are installed, then the printed area on the label will be small.

- ◆ The AT now supports 48 x 17 mm labels. These labels are typically used for smaller syringes (10 mL or less). Refer to "Localization Enhancements" on page 23 for setting the templates in the AT.

NOTE: Make sure that the label template pack that is deployed to SLS PCS is the same as the labels installed. If a large label (80 x 30 mm) template pack is deployed to SLS PCS and small labels (48 x 17 mm) are installed, then SLS PCS will print outside the small label and ink will be sprayed inside the device.

- ◆ The Email Notifier (EN) application is now available as a service with the AT. As a service, the EN can run without being logged into the computer it is running on. The service can be started up and shut down. Refer to the Read Me file included with the EN for setup instructions.



- ◆ SLS now provides support for alphanumeric codes up to 13 characters. When Database Mode is set to Other mode in the AT, you can create a rule (refer to “Localization Enhancements” on page 23) and select a barcode symbology that will support alphanumeric codes. After a formulary is created with alphanumeric codes (e.g., 0010-28-061-J) and deployed to SLS PCS, scanning of barcodes with alphanumeric codes is supported.



Product Improvements

- ◆ An automatic installation and automatic migration utility is included with the AT. It is provided to install the 1.4.0 AT and migrate formularies created with formularies prior to 1.4.0 software. It is included on the AT disc and operational instructions are included in the AT User’s Manual version 1.3.0.

WARNING: Before migrating data, make sure to document settings that will not be migrated (currently custom WAV files). Further migration instructions are provided in Codonics Administration Tool Migration Utility Technical Brief 901-253-002.

- ◆ The barcode symbology EAN-13 displayed in the AT is now supported on SLS PCS.
- ◆ The barcode symbology Interleaved 2 of 5 in US NDC mode displayed in the AT is now supported on SLS PCS.
- ◆ Support is now provided for localization of all concentration units (e.g., Units, Units/mL, etc.).
- ◆ The Formulary Verification worksheet in the Formulary Report now lists all the drugs in the formulary and their statuses. Previously, the Formulary Report only displayed the unverified drugs.
- ◆ The dilution concentrations in the formulary are now organized the same as the Master Drug Database (MDD). The dilutions are organized by number and then alphabetically by concentration unit.
- ◆ SLS support new drug name WAV files. The new drug name WAV files included are Acetylcysteine, Cyanocobalamin, Dehydrated Alcohol, Thiamine, Acetylcholine, Butorphanol, Caffeine, Dalteparin, Enalaprilat, Fat Emulsion, Hepatitis B Vaccine, Insulin NPH, Iodixanol, Iohexol, Lidocaine with Dextrose, Lactated Ringers, Penicillin, Plasma Protein Factor, Sodium Tetradecyl Sulfate, Tetanus Diphtheria Toxoi, Augmentin, Cloxacillin, Ergometrine, Esomeprazole, Factor VIII, Glyceryl Trinitrate, Nimodipine, Penicillin G, Pethidine, Somatostatin, Suxamethonium, Tramadol, Heparinized Saline, Adrenaline, and Noradrenaline.
- ◆ SLS support new concentration numbers. The new numbers included are 0.064, 0.12, 0.16, 1.875, 4.2, and 12.5.

- ◆ **The AT and SLS PCS support new concentration units.** The new concentration units included are Each, mcg/INH, M Units/mL with the WAV file being Million Units per Milliliter.
- ◆ **The Lexicomp filters are now alphabetized.**
- ◆ **An additional text color was provided.** #890C58 (shade of purple) was added as a text color option in the Custom Template Definition of the AT.

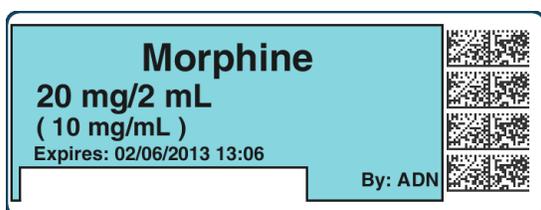
Version 1.5.0 Administration Tool

New Features

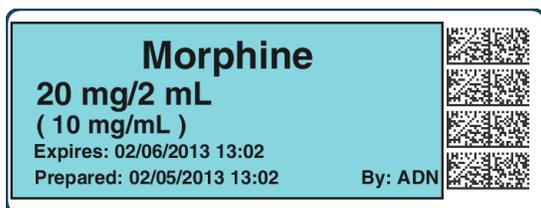
- ◆ **The AT now includes JAVA runtime.** The computer that is running the AT does not require JAVA to be installed.
- ◆ **In addition to the traditional label format, SLS PCS now supports labels with an Auxiliary 1-D barcode or labels with a Patient Write-In area on the Standard 22x60mm label (STD-2-v02).** Refer to “Auxiliary Barcodes” on page 34 for configuring the label in the AT. The functionality now prints the following labels depending on which of the following options is selected in the AT: a 1-D barcode on the standard label that provides compatibility with legacy BCMA (e.g., MediTech, Epic) and AIMS (e.g., McKesson, DocuSys, GE) systems that read NDC codes.



Alternatively in the AT, you can select to have a blank area print on SLS PCS to write-in information such as patient name.



Or, configure the use of a traditional label format.



- ◆ **SLS PCS now supports integration with the B.Braun Space pump.** B.Braun barcodes can be included on printed SLS syringe labels and then used to transfer data (i.e., drug name, concentration value, and concentration units) to a B.Braun Space pump. A feature key is required to enable this feature. Contact your Codonics Sales Representative to purchase the key. Refer to Codonics B.Braun Technical Brief (901-265-001) for complete instructions.
- ◆ **SLS PCS now supports variable length container IDs in Other mode.** SLS supports scanning and reading of variable-length Container IDs. For example, SLS PCS will now scan a drug container that uses a Data Matrix barcode with a 10-digit Container ID and a different container that uses an EAN-13 barcode with a 13-digit Container ID. Refer to “Variable Length Container IDs” on page 37 for complete instructions for setting up variable length rules in the AT.

WARNING: Some barcode parsing rules may not operate properly when minimum or maximum values are changed. This can result in drugs not being found when the container is scanned. Review all barcode parsing rules to ensure drug containers are recognized when scanned.

- ◆ **SLS PCS now supports Named Devices.** The network interface(s) on SLS PCS can be assigned dynamic IP addresses by the hospital network. Because the IP address of SLS PCS can change over time, providing a static device name will make it easier to configure the AT and Email Server to communicate with individual units. Each SLS PCS system includes a pre-defined device name that is unique to the Ethernet or Wireless interface on that device. The pre-defined device name(s) are associated with the SmartDrive to allow the device name(s) to remain the same when the SLS PCS is swapped and the SmartDrive is transferred to the new SLS PCS.

NOTE: The pre-defined device names conform to a uniform naming structure:

SLS-PPP-LLLLL-N

Where:

"SLS" is a static string

PPP = Codonics 500i product code (i.e., 060)

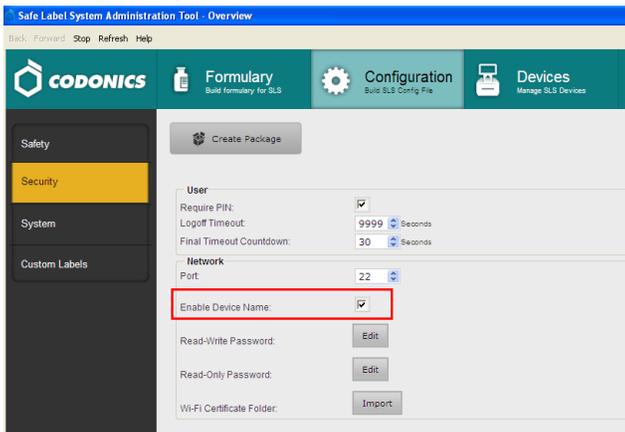
LLLLL = SmartDrive license code

N = "E" for Ethernet, "W" for WiFi

Example: SLS-060-12345-W

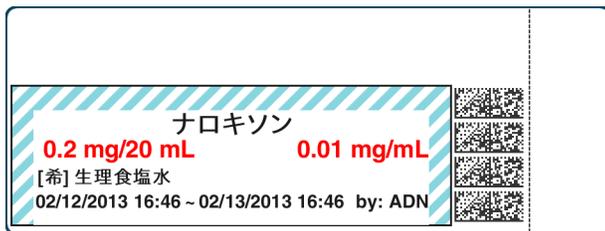
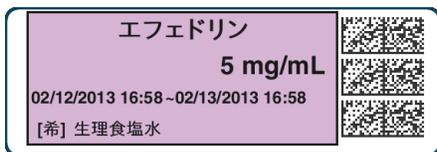
Users should setup their Master Device List (MDL) in the same manner as they did previously using a Comma Separated Value (CSV) file with the first column being the pre-defined device name and the second column being the device name you want to represent SLS PCS. For example, SLS-060-12345-W, OR-1. For further instructions on setting up an MDL, refer to the 1.3.0 AT User's Manual.

Named Devices by default is enabled in the AT Configuration tab but can be disabled by unchecking the box.



Product Improvements

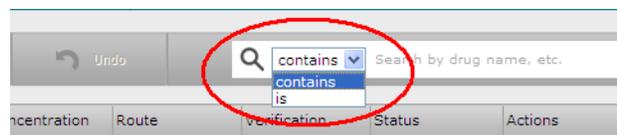
- ◆ A new Japanese small and large label version provides a "Use" date range (e.g., 02/12/2013 16:58 ~ 02/13/2013 16:58) when printed. The label template packs are selected in the Configure Locale and are JP-S1-v02 and JP-L1-v02.



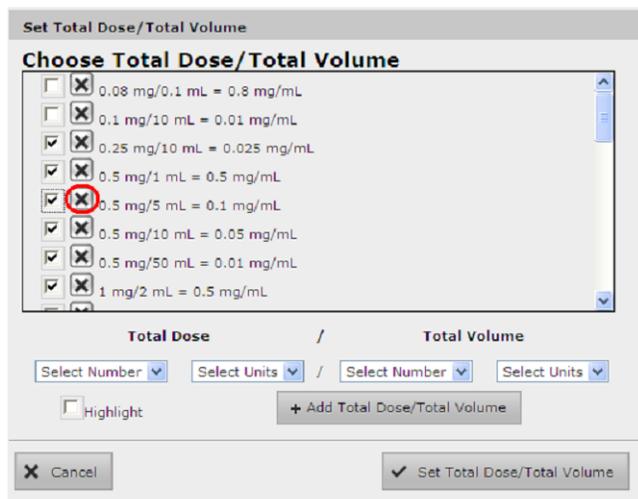
- ◆ Now a single character, [希], is provided to represent the word Dilution on the Japanese small and large labels.
- ◆ Additional Lexicomp import capability is provided. The enhancements included to the Lexicomp import are:
 - ◆ An Update Matches option has been added to the Import Results dialog box to allow you to update matching drugs in addition to overwriting or skipping them.
 - ◆ All drugs added or updated during a Lexicomp import will be assigned the drug status Active so that users can control the assignment of the Obsolete status.
 - ◆ The drug status Recall has been added to the MDD so that recalled drugs can be more clearly identified as Recalled. These drugs no longer have to be assigned a status of Obsolete to prevent their labels from being printed.

Refer to "Lexicomp Import Enhancements" on page 30 for details.

- ◆ The AT and SLS PCS support new concentration numbers. The new numbers included are 2.25, 3.375 and 40.5.
- ◆ The AT and SLS PCS support new concentration units. The new concentration units included are ng (nano-grams), ng/mL (nano-grams per milliliter) and K Units/mL (thousand units per milliliter).
- ◆ Older localization packs (i.e., 1.4.0 or newer) can now be used with newer software releases on SLS and AT. For example, JP-1.4.0 will now work with 1.5.0 software. If words or WAV files are not translated into the local language, they will default to English.
- ◆ Improved the AT-DM messaging when installing SW or packages from AT-DM to SLS PCS. The message will now indicate a progress of Transferring and then transitions to Installing. When SLS PCS reboots, the device will go Offline until the software restarts.
- ◆ Improved the Search functionality in the MDD and Formulary. Now a user can search by an exact match (i.e., is) or by a partial match (i.e., contains).



- ◆ Users now have the ability to delete dilutions and TD/TVs by clicking on the X next to the dilution or TD/TV value you want deleted from the list.



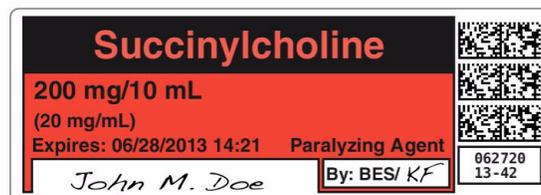
- ◆ AT passwords that were too short could cause the AT to stop working. Now, entering a new password with less than 6 characters causes the error message: Password is too short to display.
- ◆ Users can now create a formulary package of 50K drugs. Previously the AT would stop working.
- ◆ The migration tool now transfers custom audio files for drug names. You will not need to reload the custom audio files in the AT and then set each drug to the proper custom audio file.

- ◆ Selecting Enter after filling in the Package Profile name previously cleared a package build and returned the user to the main formulary page. Now when selecting Enter, a formulary or configuration package will be properly created.
- ◆ Speed improvements were made to AT operations. For example, responsiveness of the Edit Selected button and package creation time were improved.

Version 1.6.0 Administration Tool

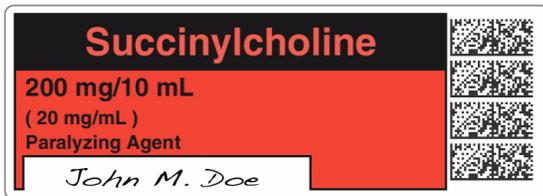
New Features

- ◆ SLS PCS now supports Batch Mode. Users can now automatically print multiple copies of the same label. The label can include a defined lot number and an additional initial area for use cases where one person prepares the label and another person prepares the syringe (for example in pharmacy). A feature key is required to enable this feature. Contact your Codonics Sales Representative to purchase the key. Refer to "Batch Mode" on page 42 for complete instructions.



- ◆ SLS PCS now supports an additional label template, RBX-1-v01, for over labeling in specific applications (e.g., Intelligent Hospital System (IHS) RIVA robot, Baxter, and Health Robotics). This label (sample below) is only supported in English. Contact your Codonics Sales Representative for further information. The label template is selected from the Configure Localization screen in the AT.

WARNING: For RBX-1-v01, users should not rely on the expiration date embedded in the SLS PCS label 2D barcode. The expiration date/time on the original label already affixed to the syringe should be used. This is because the time that the SLS PCS label was prepared will be different than when the syringe was actually filled/prepared. Users should either leave the expiration time blank or set it to 0 in the Administration Tool.

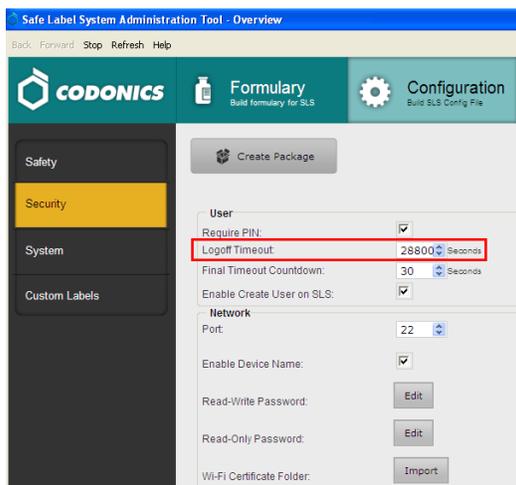


Product Improvements

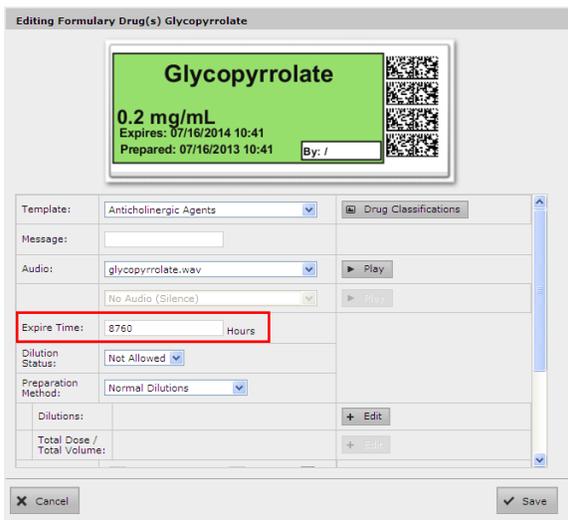
- ◆ The Make User Badge on SLS PCS can be disabled from the Security tab of the AT. If this configuration is selected, when a user selects the Make User Badge button on SLS PCS, a dialog message will alert the user to contact the system administrator and a badge will not be able to be made. By default, the AT Configuration is set to allow the SLS PCS to make a user badge. To disable making a user badge, you should uncheck the box, create a configuration package, and deploy it to SLS PCS.

- ◆ The length of the Title Text in Custom Label was increased. The AT now provides the ability to add a new custom label in the Configuration tab with a drug name longer than 10 characters (e.g., BupivacaineEpinephrine).

- ◆ The auto-logout was extended to a maximum of 8 hours (28,800 seconds). The auto-logout value is set in the Security tab of the Configuration tab of the AT.



- ◆ The maximum expiration time for a drug was increased from 28 days (672 hours) to 1 year (8760 hours). The expiration time is set when editing a drug in the formulary.



- ◆ The AT and SLS PCS support new drug names. The new drug names included are abatacept, abcximab, amino acids, benztropine, caspofungin, cefotetan, cosyntropin, daptomycin, clevidipine, darbepoetin alfa, denosumab, desflurane, diclofenac, dihydroergotamine, emla cream, epoetin alfa, ertapenem, filgrastim, folic acid, glucose, granisetron, hyaluronidase, immune globulin, infliximab, ipratropium, iron sucrose, isoflurane, levothyroxine, methocarbamol, methotrexate, moxifloxacin, omalizumab, pamidronate, paracetamol, pegfilgrastim, pralidoxime, pyridoxine, refresh PM, RHO (D) immune globulin, sevoflurane, sodium thiosulfate, sumatriptan, testosterone, tetanus immune globulin, tirofiban, tocilizumab, xylometazoline, valproic acid, zoledronic acid.

- ◆ The AT and SLS PCS support new concentration numbers. The new numbers included are 0.225, 225, 360, 900.
- ◆ The AT and SLS PCS support a new concentration unit. The new unit is ml/ml.

Version 1.7.0 Administration Tool

New Features

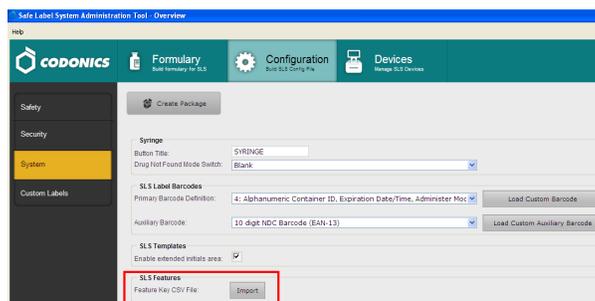
- ◆ Feature keys can be installed (and removed) on SLS PCSs over the network. This is done through the Configuration tab of the AT.

1. Prepare a CSV file using Excel or a text editor. The file can be saved as a .csv or .txt file.

NOTE: The format needed in the CSV is <License Code>, <Serial Number>, <Feature Number>, <Feature Name>, <Start Date>, <Duration>, <Key>. Contact Codonics Technical Support for this information.

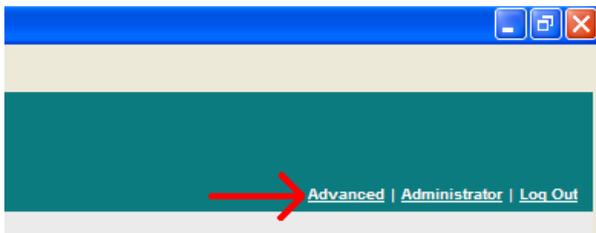
The system will also support removal of a key by giving it XX0000000000, where XX is the 2-digit key number.

2. Import feature keys from a CSV by selecting Import (see below) and browsing to the location where you stored the CSV file created in step 1.

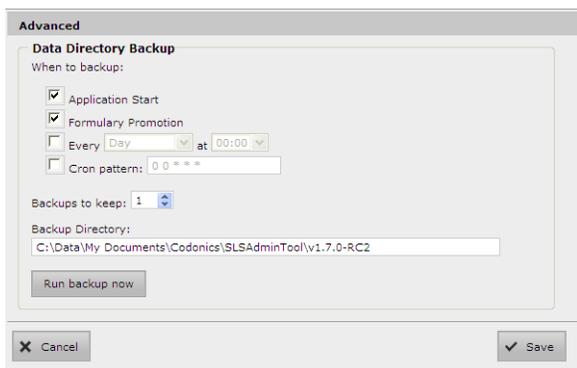


3. Create a Configuration Package as defined in the SLS AT Users Manual (Codonics Part Number 905-063-030).
 4. Install the Configuration Package from the AT over the network as defined in the SLS AT Users Manual. The feature keys will be included and properly installed or removed on each SLS PCS.
- ◆ **The AT data directory can be backed up manually (i.e., Run Backup Now) or automatically (i.e., scheduled).** The backup functionality is accessed through the new **Advanced** link on the main AT screen.

1. Click on **Advanced** which is found in the upper right hand corner of the main AT screen.



2. The **Advanced** screen will open with the **Data Directory Backup** information displayed.



3. By default, the Data Directory will be backed up every time the AT starts and when a formulary is promoted. In addition, a user can schedule automatically a backup by checking the **Every** box and selecting the day and time. Users can select how many backups to keep and where they want the backup directory to be stored. By default the Data Directory is backed up to the same location where the AT directory was created (e.g., C:\Data\My Documents\Codonics\SLSAdminTool\v1.7.0), but can also be backed-up to locations such as a network drive.

NOTE: Contact your IT administrator for correctly setting up the Cron pattern.

NOTE: A back up will not occur, if the AT is not open and running.

NOTE: If the backup fails, there is a warning that will be displayed in the **Advanced** tab and can be found in the AT logs.

4. Users can also manually backup the AT data directory by clicking on **Run Backup Now**.

- ◆ **The ability to scan a Container ID (CID) and search the Master Drug Database (MDD) or formulary is supported.**

1. Click on the magnifying glass/barcode icon in the MDD (or formulary).



2. A Scan to Search for Drug dialog box will be displayed.



3. Scan a container barcode. The CID will be displayed in the search field and if the CID is in the MDD (or formulary), the individual entry will be displayed.



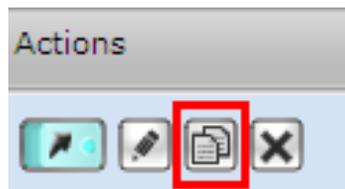
4. You can also search on multiple phrases with AND or OR statements. For example, you can search for Lidocaine 0.005 g/mL by setting the search field to IS and search on Lidocaine AND 0.005.
5. The ability to select, double-click (to select a word) and triple-click (to select all words) in the search field information is supported. You can then right click and cut, copy, paste information already contained in the search field.

NOTE: The same scan to search functionality works in the formulary.

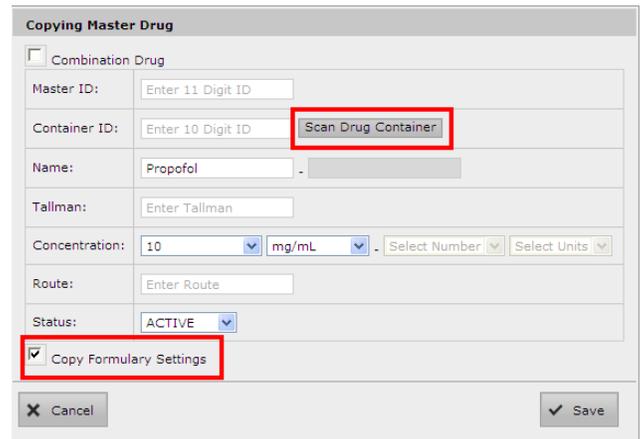
- ◆ **The ability to copy a drug entry in the MDD is supported.** This simplifies the process for adding a new drug entry to the MDD and formulary; for example, when there is a new supply source for an existing drug.

NOTE: A CID is needed when using the copy functionality.

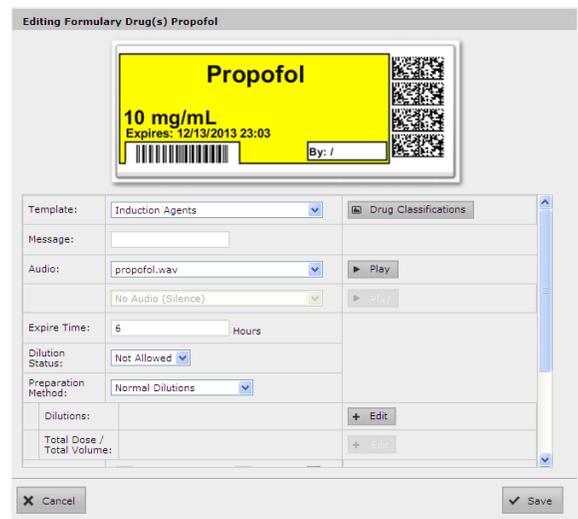
1. Select an existing drug entry to copy, and then select the copy button which is available in the Actions column.



2. A Copying Master Drug dialog box will appear with all the information (i.e., Name, Tallman, Concentration(s) Route, Status) from the selected drug entry in step 1 except the Master ID (MID) and/or the CID. By default a Copy Formulary Settings box will be checked to automatically add the new drug entry to the formulary.



3. Enter the CID manually or by selecting Scan Drug Container and scanning the barcode.
4. Enter/change any additional information (e.g., Tallman, change concentration) that is needed.
5. Select Save.
6. A confirm Create Drug dialog box will appear. If the Copy Formulary Settings box was checked, when you select Yes in the Create Drug dialog box, a preview of the Edit Formulary Drug will be provided.



7. Review all the settings for the drug. If all are correct, select **Save**. If there are formulary settings that need to be changed (e.g., **Message**), make the change and select **Save**. If the preview is not what you want, select **Cancel** and the system will be returned to the Copying Master Drug dialog box in the MDD (shown in step 2).

- ◆ **When verifying a drug in the MDD, the Verify Drug screen provides new additional options.** There is now the capability to search for the verified drug entry in the MDD after verifying the drug, as well as the ability to automatically add the verified drug to the formulary.

NOTE: The Search For Drug checkbox will be checked or unchecked based on the last setting chosen by the user for a successful verification. When unchecked, verifications are performed in a batch with one vial after another being able to be verified until completed. When checked, the AT will close the Verify Drug dialog and search for each drug upon scanning. After searching, the user must then click the Verify Drugs button to verify another drug.

NOTE: The Add To Formulary checkbox will be disabled if the drug being verified is already in the formulary. If the drug is not already in the formulary, then the Add To Formulary checkbox will be checked or unchecked based on the last setting chosen by the user for a successful verification. When enabled and checked, the AT will automatically add the verified drug to the formulary.

Verify Drug	
Is this the correct drug?	
Master ID	
Container ID	0409662902
Name	Succinylcholine
Tallman	
Concentration	20 mg/mL
In Formulary?	No
<input checked="" type="checkbox"/> Add To Formulary	
<input checked="" type="checkbox"/> Search For Drug	
<input type="button" value="No"/>	<input type="button" value="Cancel"/> <input type="button" value="Yes"/>

- ◆ **The AT supports an additional label drug classification for Beta Blocker drugs such as Labetalol.** A label sample is below. This drug classification is selected in the Editing Formulary Drug screen of the AT.

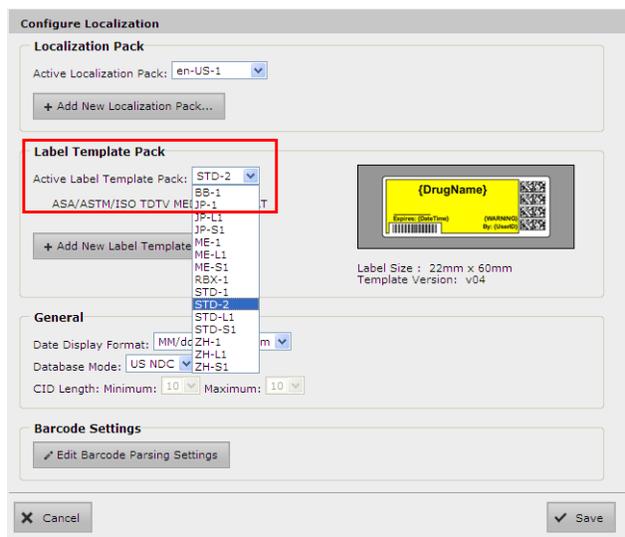
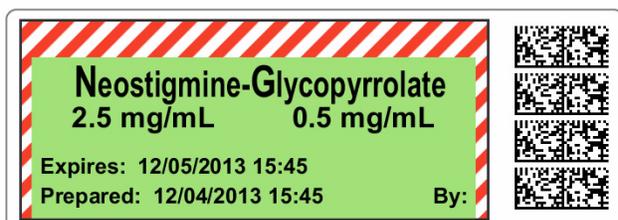


Editing Formulary Drug(s) Labetalol

- ◆ **The AT supports China label template packs for small (ZH-S1), standard (ZH-1), and large labels (ZH-L1).** A label sample is provided below. A new template pack is selected via the Label Template Pack in Configure Localization screen of the AT.



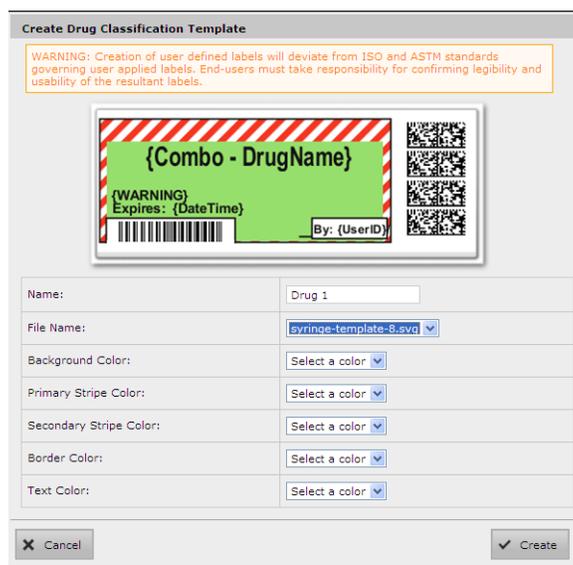
- ◆ The AT supports additional label template packs for small (ME-S1), standard (ME-1), and large labels (ME-L1). There are two new combination drug labels included. They are a Local Anesthetic with Narcotic combination drug and a Relaxant Antagonist with Anticholinergic Agent combination drug. A label sample of each is provided below. A new template pack is selected via the Label Template Pack in the Configure Localization screen of the AT.



- ◆ The AT supports a Japan label template pack for standard (JP-1) labels. A label sample is provided below. A new template pack is selected via the Label Template Pack in the Configure Localization screen of the AT.



- ◆ ME-1, ME-S1 and ME-L1 template 8 (and template 7 in all other template packs) provides capability to change all the color fields. This is accomplished in the Create Drug Classification Template.



Product Improvements

- ◆ The ability to highlight dilutions, similar to highlighting Total Dose/Total Volume (TD/TV), is now provided. If you want to have a dilution concentration highlighted, when creating a dilution in the Set Dilutions dialog box, check the Highlight box and then select Add Dilution. The highlighted dilution will be added to the Choose Dilutions options. Then check the box(es) if you want it as an option for the drug entered in the formulary and select Set Dilutions.

Set Dilutions

Choose Dilutions

- 0.1 mg/mL
- 0.103 mg/INH
- 1 mg/mL
- 10 mcg/mL
- 10 mcg/mL
- 10 mg/mL
- 100 mg/mL
- 2.5 mg/mL

Select Number Select Units Highlight

+ Add Dilution

Cancel Set Dilutions

- ◆ The AT now provides two Other options for Total Dose/Total Volume; Other - Diluted and Other - Not Diluted. The capability allows a user to configure SLS PCS to automatically display a Total Dose/Total Volume (TD/TV) drug in cases where the drug is not diluted but Other is an option in the formulary. Previously for example, a scrolling wheel would be displayed on SLS PCS with both 5 mg/10 mL and Other (with None for diluents) and a user would have to select 5 mg/10mL if they didn't want Other. Now, if the formulary has TD/TV options of 5 mg/10 mL and Other - Diluted and if a user doesn't select the Dilute switch on SLS PCS, when they scan the vial, the drug label (no scrolling wheel) will automatically display on the screen with 5 mg/10 mL as the TD/TV and ready to print.

Set Total Dose/Total Volume

Choose Total Dose/Total Volume

- Other - Diluted M KIU/mL
- Other - Not Diluted M KIU/mL
- Other - Diluted mcg/mL
- Other - Not Diluted mcg/mL
- Other - Diluted mg/mL
- Other - Not Diluted mg/mL
- Other - Diluted PE/mL
- Other - Not Diluted PE/mL
- Other - Diluted Units/mL

Total Dose / Total Volume

Select Number Select Units / Select Number Select Units

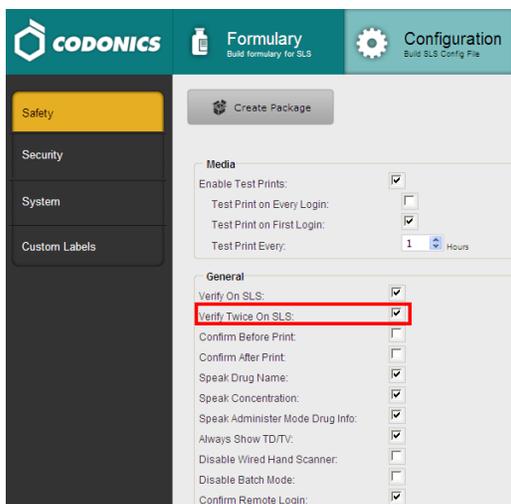
Select Number Select Units

+ Add Total Dose/Total Volume

Set Total Dose/Total Volume

0.001
0.002
0.003
0.004
0.005

- ◆ **The second verification screen on SLS (i.e., confirming the first verification screen with the question Are You Sure?) is now configurable and is set in the Configuration tab of the AT.** By default, the second verification screen is checked. However, by unchecking the Double-Check When Verifying On SLS box, a SLS PCS user will only have one verification screen on SLS instead of also having the second, Are You Sure?, verification screen.



NOTE: All drug entries still need to be verified at least once. If the drug has not been verified in the AT, the first time it is scanned on SLS PCS, a verification will need to occur. The user will be prompted on SLS PCS via a dialog box to verify the drug name and concentration.

- ◆ **Refresh/Stop buttons on top of AT were removed to prevent confusion.** Clicking refresh would navigate back to MDD tab and clear network passwords without notice.
- ◆ **Administer Mode announcement on SLS PCS is now configurable.** By default, the announcement is set to on in the Configuration tab of the AT. If you do not want Administer Mode announced, then uncheck the box, create a configuration package, and deploy the package to SLS PCS.
- ◆ **Primary Barcode Compatibility report improvements were made to make it easier for users to review the list.** The list is now sorted by the Error Message as the primary key, so all the messages of a certain type are grouped together.

- ◆ **The AT and SLS PCS support new drug names.** The new drug names included are antithrombin III, balanced salt solution, bicitra, bivalirudin, bupivacaine spinal, dantrolene, dextran, eptifibatide, etidocaine, fospropofol, granisetron, indocyanine green, iohalamate, ioversol, levonordefrin, metronidazole, mineral oil, phentolamine, sodium tetradecyl, somatropin, sterile mineral oil, tenecteplase, thiamine, and thrombin.
- ◆ **The AT and SLS PCS support new concentration numbers.** The new numbers included are 0.48, 1.75, 65, 140, 251, 450, 650, 1050, 1250, 1750, 30000.
- ◆ **The AT and SLS PCS support new concentration units.** mL (i.e., milliliter) and L (i.e., Liter) were added to the MDD Concentration drop-down. The Set Total Dose/Total Volume dialog added mL and L as selectable options in the Total Dose drop-down. Dose and ea (i.e., each) were added as selectable options in the Total Volume drop-down.

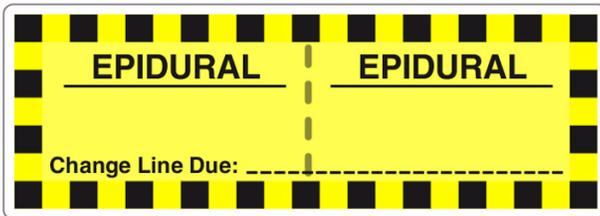
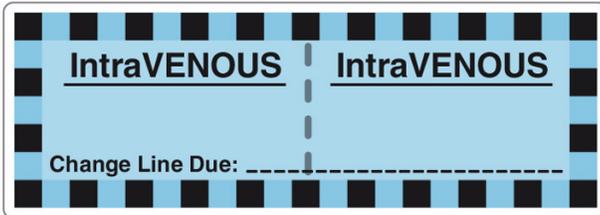
Version 1.8.0 Administration Tool

New Features

- ◆ **The AT Device Manager (AT-DM) now receives communication of Drug Not Found (DNF) events from SLS PCS.** With this DNF information, the AT user can update the existing formulary and distribute a new formulary package to all SLSs so that other SLS users do not also experience a DNF issue for the same drug. Refer to “Workflow Improvements” on page 43 for further information.
- ◆ **The AT-DM now receives communication of Verification events from SLS PCS.** With this verification information, the AT user can update the existing formulary and distribute a new formulary package to all SLS PCSs so that other SLS users do not also have to verify the same drug that had been verified on a different SLS PCS. Refer to “Workflow Improvements” on page 43 for further information.
- ◆ **The AT Formulary manager now identifies those drugs added to the SLS Formulary that have not been edited.** New filters (i.e., All and Unedited) were added to the SLS Formulary tab to assist with identifying those drugs which had been added but not yet edited. To also aid in editing drugs that have been added to or are already in the formulary, a new workflow improvement, Smart Copy, has been added. Refer to “Workflow Improvements” on page 43 for further information.

- ◆ The AT now supports the Australian standard for line labels in the standard (ME-1) and large (ME-L1) template packs. A sample of the labels is provided below. These are set in the Custom Labels tab of the Configuration manager.

NOTE: The labels specified in the standard (e.g., Intrathecal, Intravenous, Regional, etc.) need to be manually entered in the Lines label of the Custom Labels tab, with the exception of Epidural.



8. In the AT, click on Configure Locale. Set the Active Label Template Pack to either ME-1 (standard labels) or ME-L1 (large labels) and select Save.
9. Click on Configuration manager tab and select the Custom Labels tab.

10. Select the Lines Section.
11. Click on Add Label.
12. A Create Custom Label dialog will be displayed. The default position for the first additional label is position six (6) (after the first five (5) standard Line labels). If you don't want the five standard Line labels, delete them by clicking on the X in the Actions column.
13. To add a new Australian Line label, click on SVG Template and select custom-iv-template.svg.

Create Custom Label

Position:	6
SVG Template:	Select a template <div style="border: 1px solid #ccc; padding: 2px;"> Select a template custom-iv-template.svg custom-label-template.svg custom-label-template-2.svg patient-id-template.svg patient-template.svg </div>
Title Text:	
Copies:	
Pattern:	Solid
Color:	Select a color
Primary Stripe:	Select a color
Secondary Stripe:	Select a color
Text Color:	#191919
Text Background:	Select a color
Expire Hours:	0

✕ Cancel
+ Add

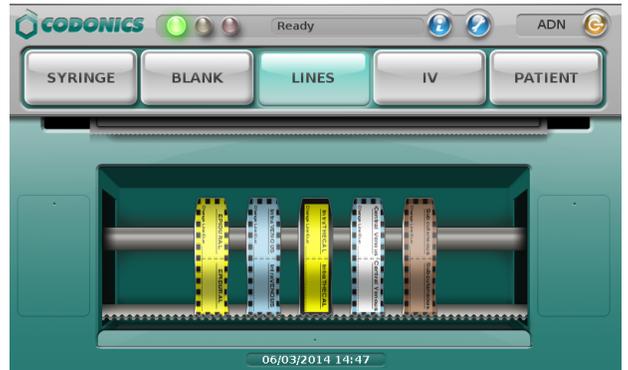
- Enter the Title Text (e.g., IntraVENOUS), the Pattern (e.g., striped for checkerboard pattern), the Primary Stripe color, the Text Color, and the Expire Hours (0 if you want a blank line to write-in), and then click on Add.

NOTE: Specifying the Primary Stripe color will set the color of the tile. If black is selected, a thick border, like the one found on Intrathecal, will be rendered. By default, the interior of the box color will match the primary stripe color, unless specified by the Text Background. For example, Regional, and Central Venous have white as their interior box area, so Primary Stripe AND Text Background must be set for the desired results.

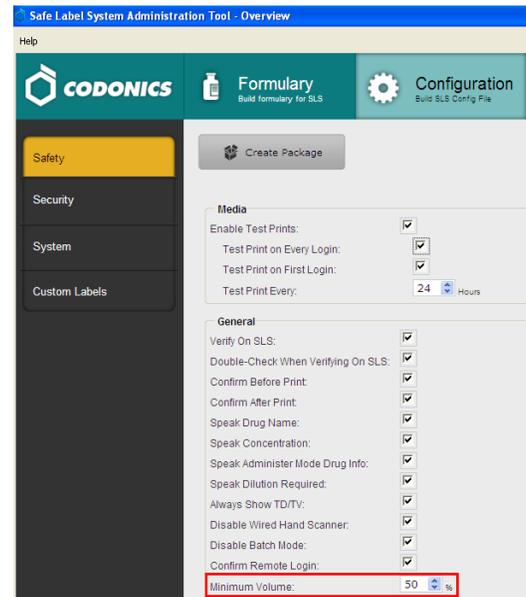
- The new Lines label is added.

Title Text	Pattern	Color	Primary Stripe	Secondary Stripe	Text Color
Arterial	Solid	#F54029			
CVP	Solid	#87D5DF			
PA	Solid	#FFD00			
ICP	Solid	#FFFFFF			
EPIDURAL	Striped		#FFD00		
IntraVENOUS	Striped		#0057B8		#191919

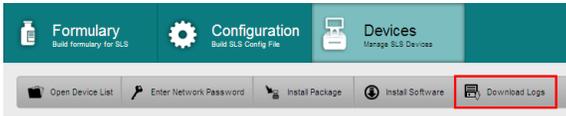
- Repeat steps 4-7 to add additional Lines labels. When all the Lines labels are added, create a Configuration package and deploy to SLS PCS.



- The AT provides the capability to prevent muting of audible announcements on SLS PCS. Minimum volume settings are set in the Safety tab of the Configuration manager. When all the Configuration settings are complete, create a Configuration Package and deploy to SLS PCS.



- ◆ **Network-wide collection of SLS PCS logs can now be done from the AT-DM.** A Download Logs button was added to the AT-DM which when clicked will download logs files from all the selected SLS units in the AT-DM. A ZIP file is created of all logs from selected SLS PCSs. If any unit cannot be reached over the network during download, the logs from the unit will not be added to the archive, and a warning will be displayed.

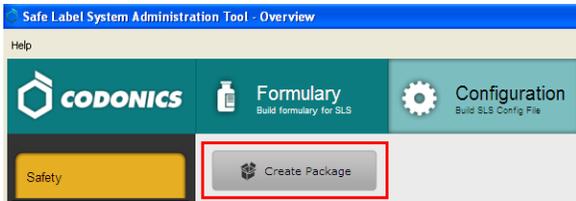


- ◆ **A strong AT Login Password is now required.** When changing a password (i.e., Login, Read-Write, Read-Only), a minimum length of 8 characters is required. The following characters % + \ / ! # \$ ^ ? : . , () { } [] ~ ` - _ are supported. Default and existing passwords are not required to meet the new requirements.

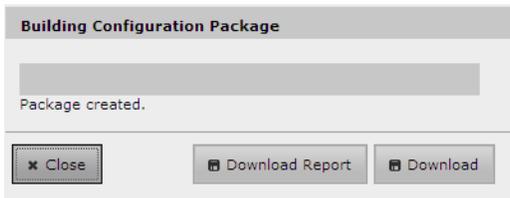
Product Improvements

- ◆ **There is now a Configuration Report available.** When creating a Configuration Package, a new option is available to create a Configuration Report.

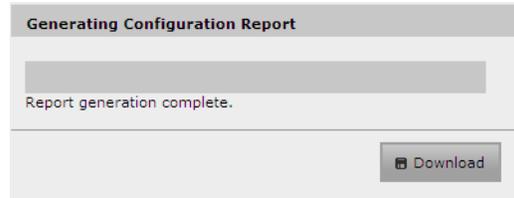
1. After selecting all your configuration settings, from the Configuration manager select Create Package.



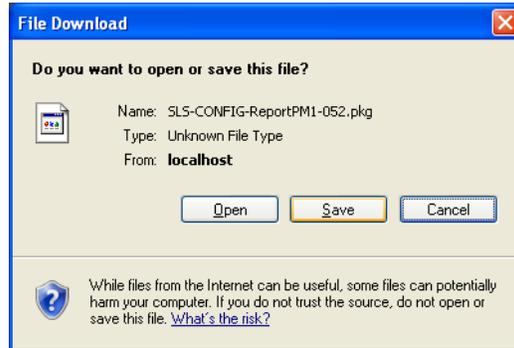
2. A Configuration Package and Configuration Report will be created. A dialog will be displayed. To view the Configuration Report, select Download Report.



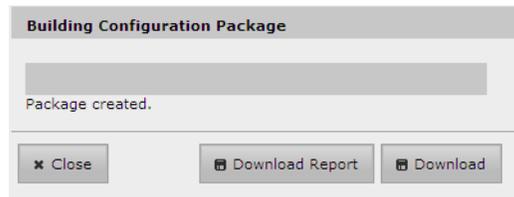
3. The report will be downloaded. A Configuration Report will be generated.



4. Select Download. A dialog will be displayed to Open or Save the report.



5. When you Open the report, there will be an Excel workbook with four individual worksheets. They are (1) a Summary worksheet for approvals, (2) a Configuration worksheet with all settings from the Safety, Security, System tabs identified, (3) a Custom Labels worksheet with all Custom Labels' settings, and (4) a Safety worksheet that identifies all configuration settings that are not set to their default value.
6. After downloading the report, you can Download the Configuration Package and deploy to SLS PCS.



- ◆ **Changes to tallman now unverify a drug entry in all instances.** Since tallman is what is printed on the label, a drug entry will be unverified if the tallman field is changed in the AT. The tallman field is now part of the information displayed when performing verification in the AT. The other fields that are displayed are CID, Drug Name, and Concentration.

- ◆ **The AT and SLS PCS support new drug names.** The new drug names included are Bupivacaine Liposome, Dimethyl Sulfoxide, Ephedrine Sulfate, Fosaprepitant, Insulin Isophane, Insulin Lispro Protamine, Lidocaine Topical, Olanzapine, Oxymetazoline, Polymyxin B,

Nalbuphine Hydrochloride, and Sodium Chloride Bacteriostatic.

- ◆ **The AT and SLS PCS support new concentration numbers.** The new numbers included are 0.045, 0.067, 320, 325, and 666.

Administer Mode

Overview

Version 1.4.0 and newer software includes support for Administer Mode with the Codonics Safe Label System™.

This document explains how to configure Administer Mode for use with Codonics Safe Label System 500i (SLS) Point of Care Station (PCS).

An additional safety check, Administer Mode allows a SLS PCS user to scan the barcode of a syringe label that has been applied to a syringe prior to administering a drug to:

- ◆ Confirm the drug indicated on the syringe label with an audible announcement and a visual display of the drug name and concentration on the touch screen.
- ◆ Determine whether the drug in the syringe has passed its expiration date.

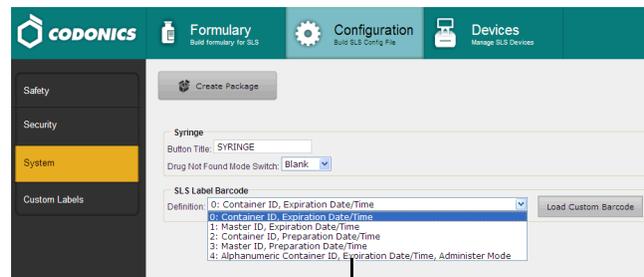
NOTE: Administer Mode requires a feature key on SLS PCS. Contact your Codonics Sales Representative to obtain the proper key.

Configuring Support for Administer Mode

To support Administer Mode, you have to configure the Administer Mode barcode label setting in the Codonics SLS

Administration Tool (AT) and then deploy the configuration package to the appropriate SLS PCS.

1. In the Configuration Manager section of the AT, go to the System tab.
2. In the SLS Label Barcode Definition list, select the definition entry with Administer Mode in its name.



SLS Label Barcode Definition list

3. Modify other configuration settings as needed, create the configuration package, and deploy the package to SLS PCS. For more information about these tasks, refer to the SLS AT User's Manual.

Total Dose/Total Volume

Overview

Version 1.4.0 and newer software includes support for Total Dose/Total Volume (TD/TV) drug preparation method with the Codonics Safe Label System™.

This document explains:

- ◆ How Administration Tool (AT) users can enter TD/TV information for drugs in a formulary

SLS Drug Preparation Methods

There are two preparation methods for managing how drugs are labeled: Normal Dilution and TD/TV.

The Normal Dilution method is commonly used in OR environments where the amount and frequency of drug administration can vary. Since the total dose being administered might not be known ahead of time, the primary information required on the syringe label is the drug name and prepared concentration.

TD/TV is commonly used when an order or prescription for a drug is issued and the drug is prepared according to the instructions in the order. TD/TV is also used in applications involving infusion pumps. Drugs prepared in this manner include the drug name, the total dose to be administered, and the total volume of the drug and diluent in the final preparation. Safe Label System 500i (SLS) Point of Care Station (PCS) also includes the equivalent concentration of the preparation on the label for regulatory compliance.

SLS allows multiple TD/TV preparations to be associated with each drug. The preparations are set up using the AT and included as part of the SLS formulary. When a drug container is scanned on SLS PCS, the user can select from the TD/TV preparations associated with that drug.

Notes About the TD/TV Preparation Method

Note the following about the TD/TV preparation method:

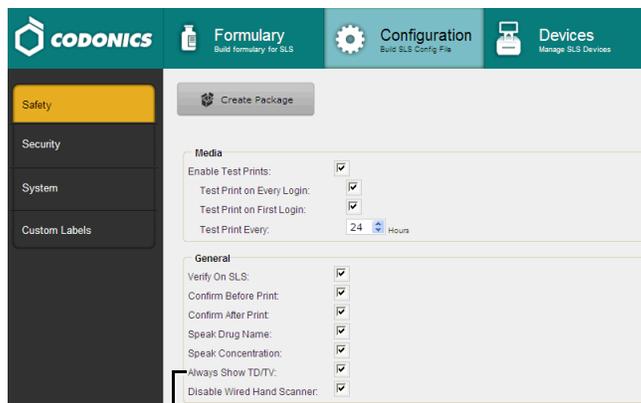
- ◆ The TD/TV information will be printed on labels that support it [for example, 30 x 80-mm Japan labels (JP-L1_vxx)] and shown on any applicable previews.
However, if the selected drug classification template does not support TD/TV information, the TD/TV dialog boxes described in this Technical Brief will still appear on SLS PCS, but the label will not have any TD/TV information printed on it.

- ◆ TD/TV information is not encoded in the syringe barcode.
- ◆ The TD/TV function is only supported for single drugs in the formulary. It is not supported for combination drugs.
- ◆ Administer Mode will only announce the drug name and equivalent concentration, but not the TD/TV values.

On the AT— Setting the Always Show TD/TV Option

The Always Show TD/TV option, which is located on the Safety tab of the AT's Configuration Manager section, controls when the TD/TV prompt displays during the label printing procedure on SLS PCS.

NOTE: The Always Show TD/TV option applies only to drugs that are assigned the TD/TV preparation method. For drugs that are assigned the Normal Dilution preparation method, the prompt for dilutions and diluents works as described in the SLS User's Manual.



Always Show TD/TV option

- ◆ If the Always Show TD/TV option is selected (the default), the TD/TV prompt will always display during the label printing procedure on SLS PCS.
- ◆ If the Always Show TD/TV option is deselected, then the TD/TV prompt will not display if there is only one TD/TV entry and one diluent. In that case, the procedure will go directly to displaying or printing the label.

To disable the Always Show TD/TV option, you must deselect the option, create a configuration package, and deploy the configuration to each SLS PCS.

On the AT— Specifying TD/TV Entries for a Drug in the Formulary

The following procedure covers only the drug formulary settings that are specific to TD/TV. For more information about other drug formulary settings, refer to the SLS Administration Tool User’s Manual.

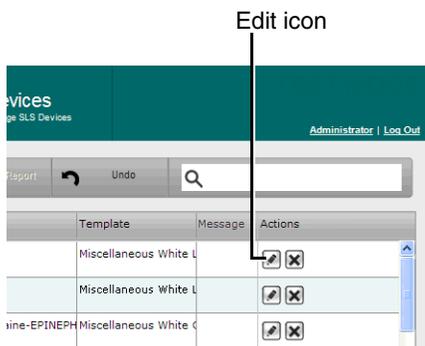
1. Select the Label Template Pack that you want to create for the specific formulary.

All Label Template Packs support TD/TV if the drug’s preparation method is set to TD/TV:

- ◆ The JP-L1 Label Template Pack supports printing of TD/TV on the label.
- ◆ The JP-S1 and STD-1 Label Template Packs will show TD/TV on the SLS PCS user interface but not print TD/TV on the label.

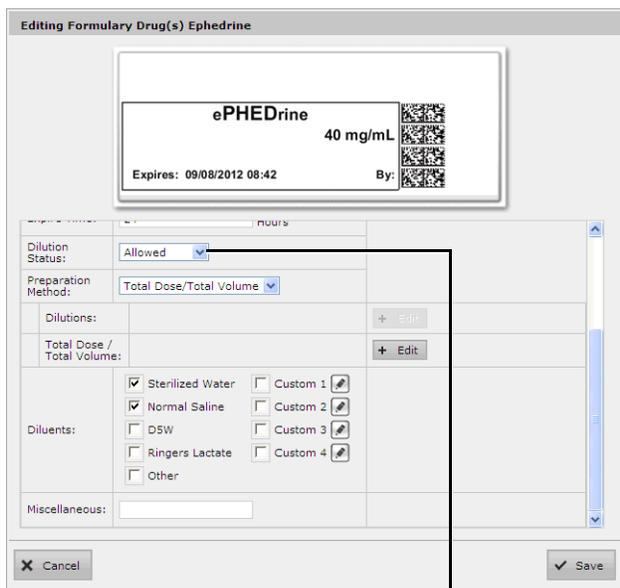
For more information about the Label Template Packs, refer to “Localization Enhancements” on page 23.

2. With the formulary drug list displayed, click the drug record’s Edit icon.



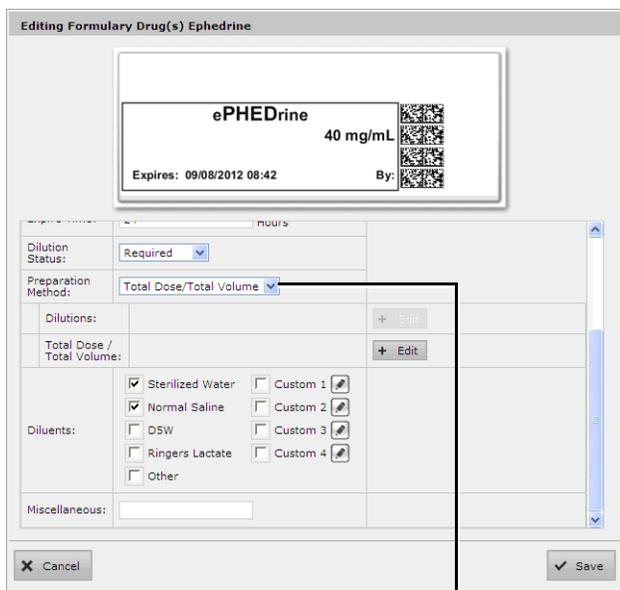
The Editing Formulary Drug(s) dialog box displays.

3. In the Dilution Status list, select the dilution status: Allowed, Not Allowed, or Required.



Dilution Status list

4. In the Preparation Method list, select Total Dose/Total Volume.



Total Dose/Total Volume selected in the Preparation Method list

5. Click the Total Dose/Total Volume Edit button.

The Set Total Dose/Total Volume dialog box displays.

If the TD/TV entries that you want to use are listed, go to step 7.

If the TD/TV entries that you want to use are not listed, you can add them. Go to step 6.

6. To add a TD/TV entry:
 - a. Select the values and units for the new entry in the Total Dose and Total Volume number and units lists.

The number lists include an **Other** option to create an **Other** TD/TV entry. An **Other** TD/TV entry allows you to specify only the combination of TD/TV units. For an **Other** entry, a SLS PCS user will enter the values for the TD/TV unit combination when creating the label.

- b. To allow TD/TV and equivalent concentrations to be highlighted in cases for which there is a non-standard equivalent concentration that should be alerted on the SLS PCS user interface and on printed labels, select the Highlight check box.

- c. Click the Add Total Dose/Total Volume button.

The new entry is added to the list.

- d. Create additional entries as needed.

7. Select the check boxes for the TD/TV entries that apply to the drug.

8. To save your selections, click the Save Total Dose/Total Volume button.

The selected TD/TV entries are displayed in the Editing Formulary Drug(s) dialog box.

9. Enter the other formulary information required for the drug.

10. Click the Save button to save the formulary drug information.

The TD/TV information is displayed in the Total Dose/Total Volume column in the drug list.

Create Package Create Report Undo Search by drug name,			
otions	Total Dose/Total Volumes	Diluents	Actions
	10 mg/10 mL, 20 mg/10 mL, 40 mg	Sterilized Water,	 
	N/A	Sterilized Water,	 

- When you have finished entering information for the drugs in the formulary, create a formulary package and deploy it to SLS PCS. For more information, refer to the SLS Administration Tool User’s Manual.

Localization Enhancements

Overview

Version 1.4.0 and newer software for Codonics Safe Label System™ (SLS) Administration Tool (AT) includes enhancements to the localization functionality:

- ◆ Label template packs can be loaded and managed to support local requirements for label sizes and formats
- ◆ Large and small format label templates are now available
- ◆ Barcode parsing rules can be created to support local barcode encoding formats

NOTE: This Technical Brief includes the user interface updates that are provided in Version 1.5.0 or newer software.

Label Template Management

Label Template Packs

Label template management is based on the use of Label Template Packs, which are Zip files that contain a complete set of templates as well as the information required for the template pack to be installed and operated in the AT.

The drug classification templates in a template pack have the same size and are used to address the label requirements for a locale.

Label template packs are only developed and released by Codonics.

Label Template Pack Zip File Naming Convention

Label template pack Zip files use the following naming convention:

- ◆ A region identifier. This will typically be a country code (for example, JP for Japan), but can also be other codes such as STD (for the SLS standard template pack based on the ASTM 4774 standard) and DIVI (for German DIVI templates).
- ◆ A unique identifier for packs in the same region (for example, -1 or -2).
- ◆ A version number (for example, v01).

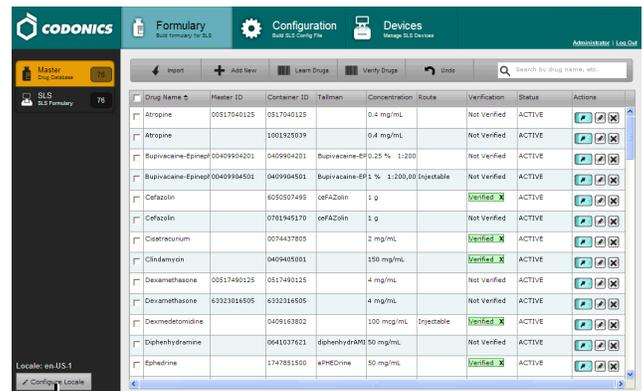
Examples of template pack names are:

- ◆ STD-1-v01.zip, for the standard SLS pack 1, version 1
- ◆ JP-L1-v01.zip, for Japanese large format pack 1, version 1

Installing a Label Template Pack

To install a template pack:

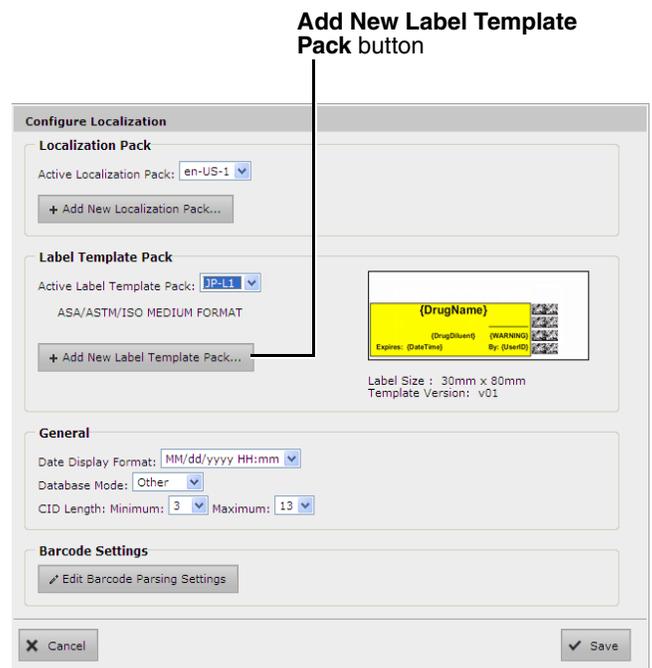
1. Click the Configure Locale button at the bottom left corner of the Formulary tab.



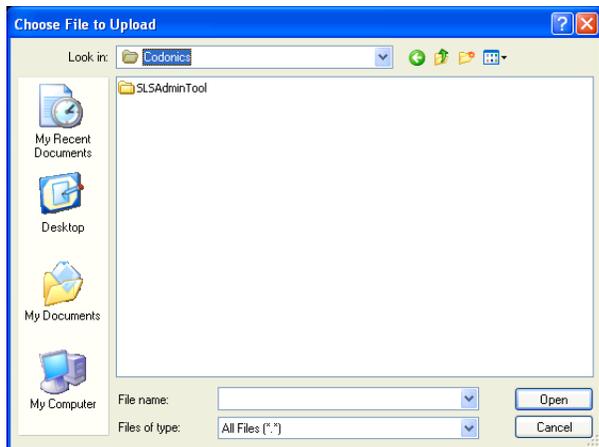
Configure Locale button

The Configure Localization dialog box displays.

2. Click the Add New Label Template Pack button.



The Choose File to Upload dialog box displays.



3. Navigate to and select the Label Template Pack file to be added and click the Open button.

The template pack is imported into the AT. When the import process is complete, it will be included for selection in the Active Label Template Pack list in the Configure Localization dialog box.

Selecting the Active Label Template Pack for a Formulary

You can select which Label Template Pack to use for the formulary. When you create the formulary update package, the label templates from the active template pack will be included in the package for deployment to Safe Label System 500i (SLS) Point of Care Station (PCS).

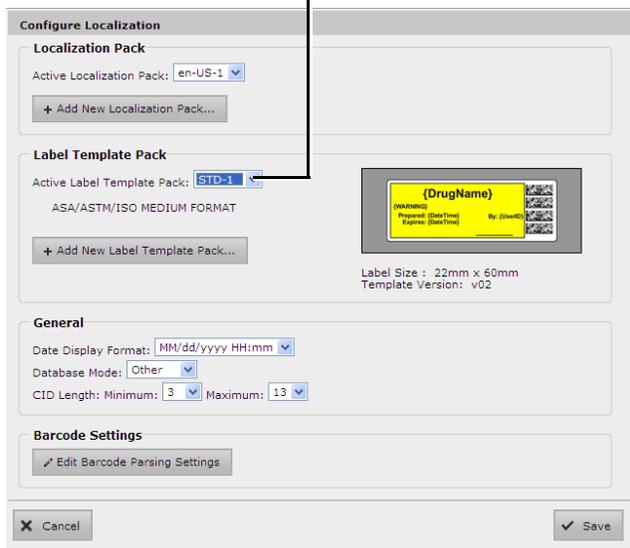
To select the active Label Template Pack:

1. Click the Configure Locale button at the bottom left corner of the Formulary tab.

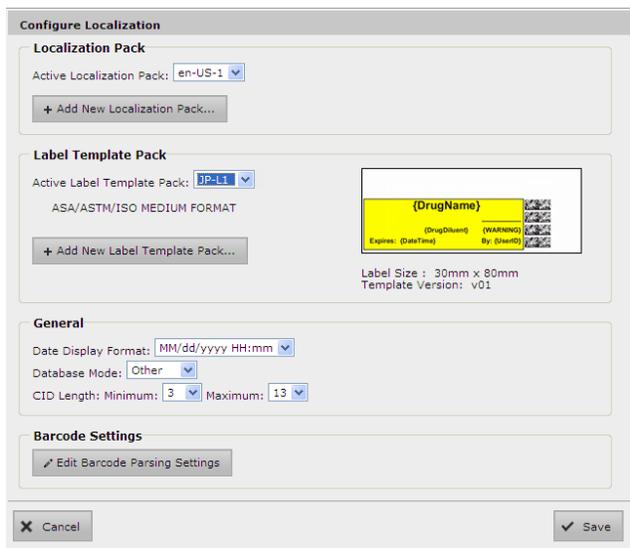
The Configure Localization dialog box displays.

2. In the Active Label Template Pack list, select the template pack.

Active Label Template Pack list



The sample label template image in the dialog box updates to reflect the selected template pack.



3. Click the Save button to save your selection.

Currently Available Label Template Packs

Version 1.5.0 software includes the following Label Template Packs:

- ◆ STD-1, the standard label (22 x 60 mm) format template pack that is based on the ASTM 4774 standard
- ◆ STD-2, the standard label (22 x 60 mm) format template pack with support for Total Dose/Total Volume, Auxiliary Barcode, and patient write-in
- ◆ STD-L1, the large label (30 x 80 mm) format template pack in English
- ◆ STD-S1, the small label (17 x 48 mm) format template pack in English
- ◆ JP-L1, the large label (30 x 80 mm) format template pack for Japan
- ◆ JP-S1, the small label (17 x 48 mm) format template pack for Japan

Large and Small Format Labels

Version 1.4.0 and newer software included two new sets of syringe label templates: a large and a small format.

For examples of the medium format syringe label templates that are available with previous software releases, refer to the SLS Administration Tool User's Manual.

NOTE: The template pack is selected for each formulary. Create a formulary package and deploy the formulary package to SLS devices. For information about creating and deploying formulary packages, refer to the SLS Administration Tool User's Manual.

NOTE: Make sure that the correct size labels are loaded on SLS PCS for the template pack selected. If the wrong label size is installed (for example, a large template was selected but small labels are installed, ink will overspray in SLS PCS).

Creating Separate Formularies with Large and Small Label Formats

To create separate formularies that include the same drugs but use large and small labels:

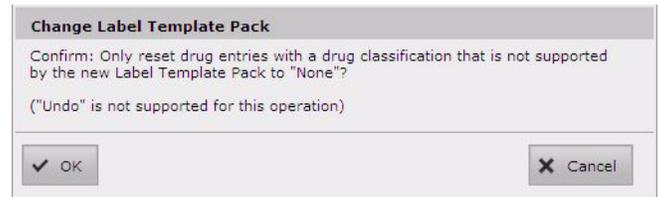
1. In the Configure Localization dialog box, select the large label format as the active Label Template Pack.

When changing the active Label Template Pack, the following warning message displays. It explains that some drug classifications in the formulary might not be supported by the selected Label Template Pack. You have the option of resetting the drug classification for those drugs to **None**, or resetting the drug classifications for all drugs in the formulary to **Miscellaneous White Label**.



NOTE: This message is displayed whether there are drugs in the formulary or not.

2. Select the appropriate reset option:
 - a. To reset the drug classification for all drugs in the formulary to **Miscellaneous White Label**, click the **Reset All** button.
 - b. To reset the drug classification to **None** for only those drugs in the formulary whose classifications are not supported by the selected Label Template Pack, click the **Reset Only Missing Templates** button. If you click this button, you are prompted to confirm this selection.



Click the **OK** button to confirm the selection of this option.

3. Review the drug classifications that were changed based on the chosen reset option and set them as appropriate for the Label Template Pack that you selected.
4. Create the formulary package that will use the large label format.

NOTE: You can assign a name to the formulary package that indicates what label format was specified for it.

5. Close the AT.
6. Make a copy of the **AdminTool-Data** directory and rename it (for example, **AdminTool-Data-Small-Label**).

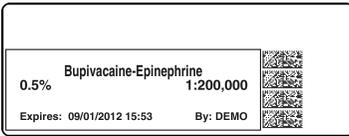
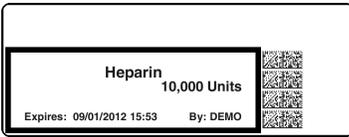
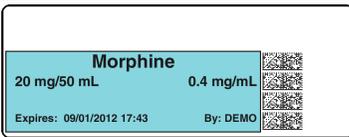
NOTE: You create unique formularies when using different label sizes because it is common for the set of drugs that will use small labels to be different than the set of drugs that will use large labels.

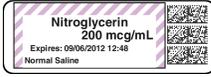
7. Restart the AT.
8. During startup, when you are prompted to locate the data directory, select the directory copy that you made and renamed (for example, AdminTool-Data-Small-Label).
9. In the Configure Localization dialog box, select the small label format as the active Label Template Pack.
10. Repeat steps 2 and 3 above to select a reset option and review the drug classifications that were changed.
11. Create the formulary package that will use the small label format.

Large and Small Format Label Examples

Examples of the large and small format syringe label templates are shown below.

NOTE: The syringe label properties of the drug classification templates, such as background color, primary stripe color, and label pattern, are the same for all label formats, regardless of the format size. For a list of sample labels for each of the label templates, refer to the SLS Administration Tool User's Manual.

Large Format Syringe Label Examples	
Miscellaneous White Combination Label	
Heparin	
Narcotic Antagonists	
Narcotics	
Succinylcholine	

Small Format Syringe Label Examples	
Anticholinergic Agents	
Epinephrine	
Hypotensive Agents	
Narcotic Tranquilizer Combinations	
Protamine	

Barcode Parsing Rules

The Barcode Parsing Rule function allows you to create parsing rules to support barcode encoding formats that are not included in the standard release of the software. A barcode parsing rule specifies which characters in the barcode constitute the Container ID.

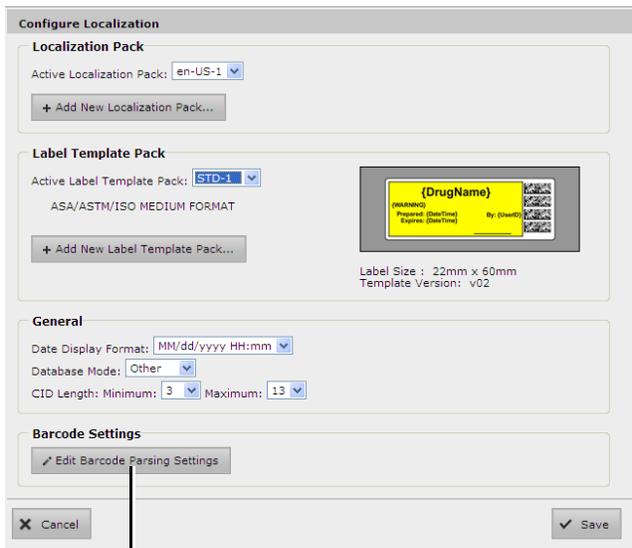
Creating a Barcode Parsing Rule

Before attempting to create a barcode parsing rule, obtain the information about the encoding format for the barcode that you want to use. To simplify the rule creation process, you should also have a sample barcode with the proper encoding format to scan.

CAUTION: Until you are thoroughly familiar with entering barcode parsing rules, only perform the following procedure under the direction of Codonics Technical Support.

To create a barcode parsing rule for a barcode encoding format:

1. Click the Configure Locale button at the bottom left corner of the Formulary tab.
The Configure Localization dialog box displays.
2. Click the Edit Barcode Parsing Settings button.



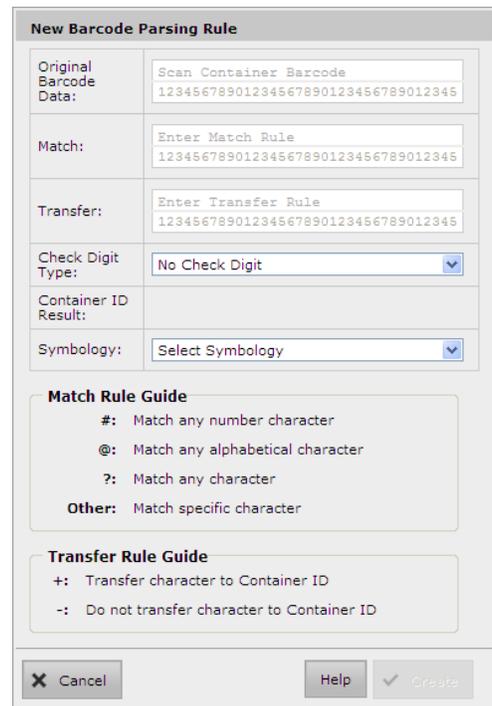
Edit Barcode Parsing Settings

The Configure Barcode Parsing dialog box displays. Initially, the barcode parsing rules that are included with the standard software are listed. As you create custom rules, they are added to the list.

3. Click the Add New Rule button.

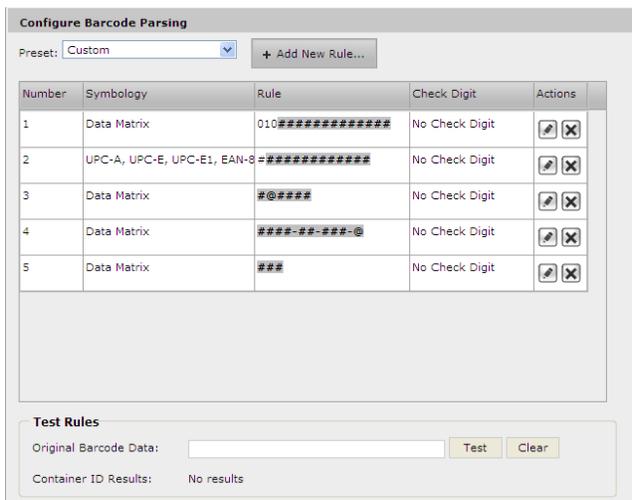


The New Barcode Parsing Rule dialog box displays.



4. Enter the parsing rule parameters in the fields and lists.

The rule parameters are described in the following table.



Field	Description
Original Barcode Data	Scan a sample barcode that uses the encoding for which you are creating this parsing rule. The code is entered in this field with the symbology characters removed. Also, the symbology that is detected is automatically selected in the Symbology list. You can also enter the barcode manually.

Field	Description
Match	<p>For each character in the code, enter one of the following to identify the character type:</p> <ul style="list-style-type: none"> # A numeric character @ An alphabetic character ? Any alphanumeric character <p>To specify a literal alphanumeric character, enter that character.</p> <p>For example:</p> <p>?2-###-###-@@@</p> <p>This example has:</p> <ul style="list-style-type: none"> ◆ A prefix of any character ◆ The literal character 2 ◆ Two sections of any three numeric characters ◆ One section of any four alpha characters <p>The sections of numeric and alpha characters are separated by hyphens.</p>
Transfer	<p>This entry serves as a mask to identify the characters in the code that constitute the Container ID. For each character in the code:</p> <ul style="list-style-type: none"> ◆ Enter a plus sign (+) if the character is part of the Container ID ◆ Enter a dash (-) if the character is not part of the Container ID <p>For example, the entry:</p> <p style="text-align: center;">- - + - - - + - - - - + - - - - + - - - - +</p> <p>indicates that characters 3, 4, and 7 through 14 constitute the Container ID.</p>
Check Digit Type	Select the check digit type for the symbology from the list.
Container ID Result	<p>When you have entered enough information in the other fields and lists to determine the Container ID, it is automatically entered by the system here.</p> <p>Use the result entry here to verify that you have made correct entries in the other fields.</p>

Field	Description
Symbology	<p>Enter the barcode symbology that is being used.</p> <p>If you scanned a sample barcode, the appropriate symbology is automatically selected by the system.</p>

5. When you are finished entering the parsing rule parameters, click the **Create** button to save the rule.

The rule is saved and added to the list in the **Configure Barcode Parsing** dialog box.

In the **Rule** column in the **Configure Barcode Parsing** dialog box, the characters that constitute the Container ID are displayed in bold type.

6. When you are finished configuring barcode parsings, click the **Close** button in the **Configure Barcode Parsing** dialog box.

The **Configure Localization** dialog box displays.

NOTE: Your barcode parsing configuration changes are saved when you click the **Closed** button in the **Configure Barcode Parsing** dialog box. Clicking the **Cancel** button in the subsequent **Configure Localization** dialog box does not undo the barcode parsing configuration changes.

Barcode Parsing Rule Parameters Entry Validation

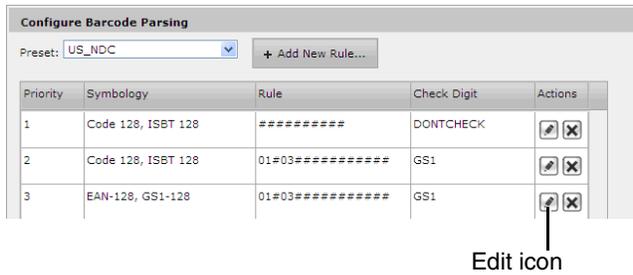
The system performs validation of your parameter entries. Errors are displayed at the top of the dialog box.

Entry errors can include:

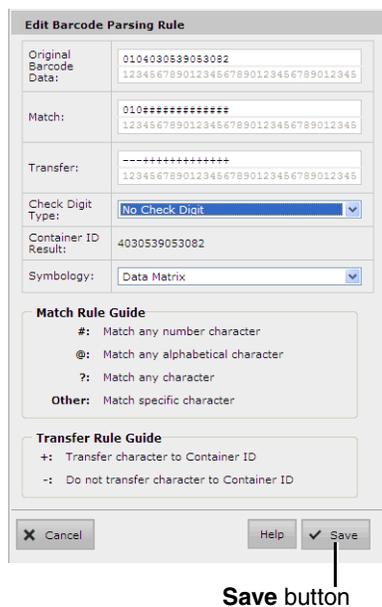
- ◆ The **Match** and **Transfer** field entries are not the same character length.
- ◆ An entry is too short.
- ◆ A symbology has not been selected in the **Symbology** list.

Editing a Barcode Parsing Rule

To edit a barcode parsing rule, in the Configure Barcode Parsing dialog box, click the Edit icon.

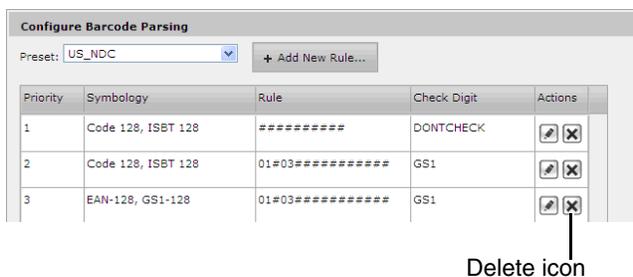


The Edit Barcode Parsing Rule dialog box displays. The functionality of this dialog box is similar to the Edit Barcode Parsing Rule dialog box; the only difference is that you click the Save button to save your entries.



Deleting a Barcode Parsing Rule

To delete a barcode parsing rule, in the Configure Barcode Parsing dialog box, click the Delete icon.



You are prompted to confirm the deletion.

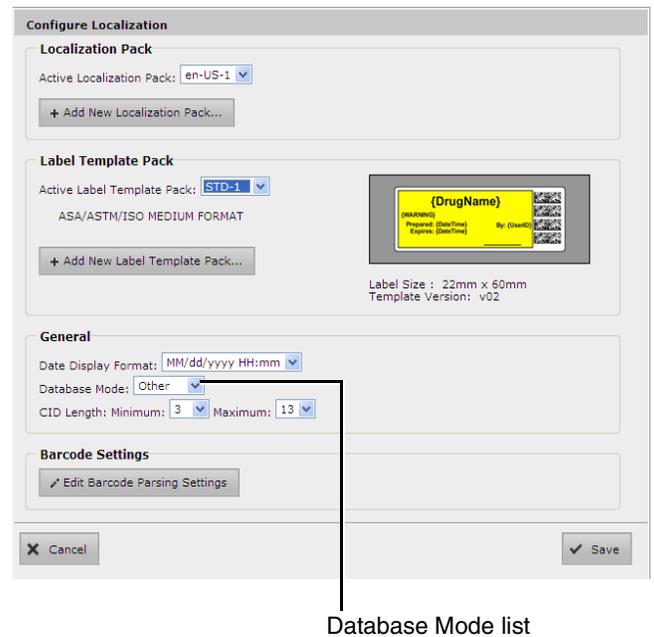
Setting the Order of Barcode Parsing Rules

When a barcode is scanned from the AT or SLS PCS, the system first identifies the barcode's symbology. It then applies the barcode parsing rules in their order of priority looking for a match. When a match is found, the system identifies the Container ID within the code.

To change the priority order of the barcode parsing rules, in the Configure Barcode Parsing dialog box, click and drag a rule entry to a different position in the list.

Database Mode in the Configure Localization Dialog Box

In Version 1.4.0 AT software, the functionality of the Database Mode list selection changed. It no longer controls how barcodes are parsed; that is, handled by the Barcode Parsing Rules function. Now, Database Mode only determines whether the Master Drug Database (MDD) is in US NDC or Other mode.



Lexicomp Import Enhancements

Overview

Version 1.5.0 and newer software for Codonics Safe Label System™ Administration Tool (AT) includes enhancements to the Lexicomp import function:

- ◆ An Update Matches option has been added to the Import Results dialog box to allow you to update matching drugs in addition to overwriting or skipping them.
- ◆ All drugs added or updated during a Lexicomp import will be assigned the drug status ACTIVE so that users can control the assignment of the OBSOLETE status.

NOTE: Starting in 1.7.0 SW, when importing from a Lexicomp database, a drug's status field will be set to OBSOLETE in the MDD if the drug's end of manufacture date is prior to the Lexicomp database creation date. In addition, when importing into the AT via the Update action, the status field will not be updated if a drug in the AT is already edited, in the formulary or verified.

- ◆ The drug status Recall has been added so that recalled drugs can be more clearly identified as Recalled and no longer have to be assigned a status of Obsolete to prevent those labels from being printed.

Lexicomp Import Behavior Prior to Version 1.5.0

In software versions prior to version 1.5.0, when Lexicomp data was imported into an existing Master Drug Database (MDD), the AT identified drug matches based on the Master ID (i.e., the 11-digit NDC value).

The AT user then had two options: either overwrite all matching entries or skip importing all matching entries.

If the Overwrite Matches option was chosen, the following fields were overwritten (i.e., all fields except Tallman and Verification):

- ◆ Drug Name or Combination Drug Name
- ◆ Container ID
- ◆ Concentration (number and units), or Combination Concentration (number and units)
- ◆ Route
- ◆ Status

Both the Overwrite Matches and Skip Matches options always added new (non-matching) drugs.

To apply potential Lexicomp updates, the AT user would select the Overwrite Matches option, potentially undoing local edits to the drug records in the MDD.

To avoid undoing drug edits in the MDD, the user would select the Skip Matches option. However, this would cause some updates to be missed, such as to 10-digit Container IDs.

Update Matches Option

In version 1.5.0, the Lexicomp import function now includes an Update Matches option. This option allows you to update matching drugs when performing a Lexicomp import, rather than just overwriting or skipping the drugs. This provides a more intelligent update to the MDD, based on Lexicomp updates and the state of the MDD.

NOTE: The Update Matches import option is only available for Lexicomp imports. CSV imports do not support this function.

Which Drugs Will Not Be Updated

When selecting the Update Matches option, drugs with the following conditions will not be updated:

- ◆ Drugs that have already been verified, since their data has already been confirmed during the verification step.
- ◆ Drugs in the MDD that have been edited, so that edits are retained.
- ◆ Drugs in the formulary.

However, even for drugs with these conditions, if you select the Update Matches option during the Lexicomp import, the following will be updated:

- ◆ The Route value, so you can correlate drugs in the MDD with the import filter used to import them from Lexicomp.
- ◆ The Container ID value if it has not already been assigned in the MDD. This eliminates learning before verifying a drug on the AT and eliminates learning a drug on the SLS.

When Drug Records in the MDD Are Considered Edited

A drug entry in the MDD will be considered edited if any of the following conditions are true:

- ◆ The drug entry was manually created by a user via Learn mode or manual text entry (i.e., not via Lexicomp import).

- ◆ The drug entry was imported from a CSV file.
- ◆ Any of the drug data was manually edited and saved (except Tallman data).

Database Migration and the Edited State

When a database (MDD and formulary) is migrated from a previous version to version 1.5.0, all of the drugs in the MDD will be considered and set to an Edited state. This is because it is impossible to know in databases from previous versions whether a drug has been edited or not.

Lexicomp Imports and the Edited State

Once migrated, and then after a Lexicomp import is performed, drugs in the MDD that have the same attributes as in the Lexicomp database will be considered and set to an Unedited state. This is because when the MDD values match what is in Lexicomp, the system determines that the drug records in the MDD have not been edited.

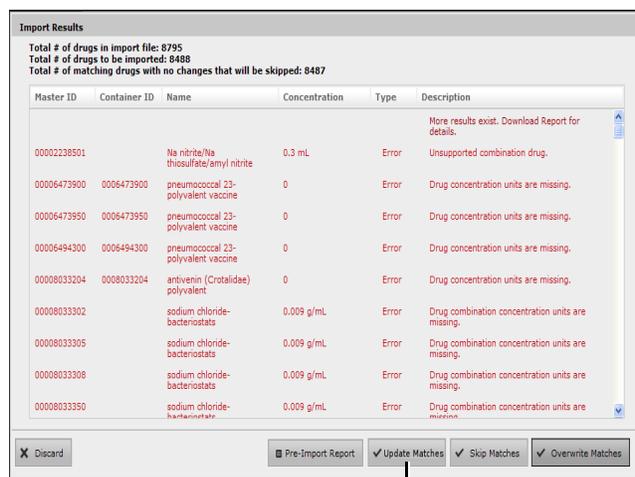
Similarly, any drugs that are selected for Overwrite Matches will be considered Unedited, since they will also match the Lexicomp database attributes after the import is completed.

CSV Imports and the Edited State

After a CSV import, all drugs that are added or overwritten will be considered Edited, since CSV importing is considered to be similar to manual editing.

Performing an Update Matches Import

When importing Lexicomp data using the AT, the Import Results dialog box includes an Update Matches button, as shown below.



Drug Information in the Pre-Import Report Enhancements Related to the Update Matches Option

The Pre-Import Report includes two new columns relative to the Update Matches option:

- ◆ **Edited.** Values are Yes (the drug has been edited in the MDD) or No (the drug has not been edited).
- ◆ **Is In Formulary.** Values are Yes (the drug has been added to the formulary) or No (the drug has not been added to the formulary).

You can use this information to determine which drugs have been edited in the MDD or added to the formulary and, therefore, could be affected by choosing the Update Matches option.

NOTE: The Pre-Import Report contains the Lexicomp values for all the drugs considered for import, so it is a valuable reference for manually reconciling any drugs post-import that were not completely updated.

After reviewing the Pre-Import Report, if you select the Update Matches option, the following will occur:

- ◆ All new drug entries will be added to the MDD.
- ◆ Existing drug entries that are verified in the MDD will not be updated.
- ◆ Drug entries that have Yes entered in the Edited column or Yes entered in the Is In Formulary column will be updated but will have only their Container ID value filled in, if not already filled in, or their Route value updated if the route has changed.
- ◆ Drug entries that have No entered in the Edited column AND No entered in the Is In Formulary column will be updated for all attributes (except Tallman and Status) in the MDD with any different values from Lexicomp for those drugs.

Selecting the Update Matches Option

After clicking the Update Matches button, you are prompted to confirm the operation.

Drug Information in the Post-Import Report Enhancements Related to the Update Matches Option

Once the import occurs, a Post-Import Report is generated.

The Post-Import Report now includes the new Edited and Is In Formulary columns that are in the Pre-Import Report.

You can use this information to determine which drugs had been previously edited in the MDD or added to the formulary. You might want to manually edit these drugs to restore drug information that had been manually added or changed prior to the Lexicomp import.

If you had selected the Update Matches option, all new drug entries in Lexicomp will be added to the MDD. In addition, the Post-Import Report will include status messages for the following cases when drug entries in Lexicomp matched drug entries in the MDD:

- ◆ Drug entries that were verified in the MDD will not have been updated. The following message will be included in the report for these drug entries:

Matching drug was skipped during import because it was already verified.

Since you had previously verified the drug information (drug name, drug concentration, and Container ID) against an actual container, no further action for these drug entries is suggested.

- ◆ Drug entries that were not previously verified and now have Yes in the report's Edited column or Yes in the Is In Formulary column will have been partially updated but will have had only their Container ID value entered (if not already entered) or their Route value updated (if it was changed). The following message will be included in the report for these drug entries:

Matching drug was partially updated during import.

- ◆ If Yes is entered in the Edited column, then there is a difference in the drug entry between the MDD and Lexicomp. If Yes is entered in the Is In Formulary column, check the drug entry to make sure that its data is correct. A formulary report can be generated to evaluate the data and compare it to the Pre-Import Report, which contains the Lexicomp values for all of the drugs that were partially updated.

- ◆ Drug entries that have No in the report's Edited column AND No in the Is In Formulary column will have been updated for all attributes (except Tallman and Status) in the MDD with values from Lexicomp. Therefore, these drug entries will now be the same for the MDD and Lexicomp. The following message will be included in the report for these drug entries:

Matching drug was updated during import.

You should evaluate these drug entries if you are going to add the drug to the formulary.

Changes to Drug Status Settings

In versions prior to version 1.5.0, the Lexicomp drug status values, Active or Obsolete, were included in the imported drug information. However, there was an issue with this approach: Given only the two statuses Active and Obsolete, users were not able to indicate that a drug had been recalled. To prevent the label of a recalled drug from being printed, users had to assign a status of Obsolete to it, causing potential confusion about a drug's actual status.

To address this issue, the following enhancements to the drug Status settings are included in version 1.5.0:

- ◆ All drugs being imported during a Lexicomp import will be assigned a status of **ACTIVE**. Any existing drug entries in the MDD will no longer have their **Status** value altered as the result of a Lexicomp import.

NOTE: Starting in 1.7.0 SW, when importing from a Lexicomp database, a drug's status field will be set to **OBSOLETE** in the MDD if the drug's end of manufacture date is prior to the Lexicomp database creation date. In addition, when importing into the AT via the **Update** action, the status field will not be updated if a drug in the AT is already edited, in the formulary or verified.

- ◆ In addition to the **ACTIVE** and **OBSOLETE** drug statuses, a **RECALLED** status is now supported and can be set in the MDD, as shown in the following **Editing Master Drug(s)** dialog box.

The screenshot shows a software dialog box titled "Editing Master Drug(s) Propofol". At the top left, there is a checkbox labeled "Combination Drug". Below this are several input fields: "Master ID" with a placeholder "Enter 11 Digit ID", "Container ID" with the value "6332327050", "Name" with the value "Propofol", and "Tallman" with a placeholder "Enter Tallman". There are also two dropdown menus for "Concentration" (set to "10") and "mg/mL", and two more for "Select Number" and "Select Units". The "Route" field has a placeholder "Enter Route". The "Status" dropdown menu is open, showing three options: "ACTIVE" (highlighted in blue), "OBSOLETE", and "RECALLED". At the bottom left is a "Cancel" button with a close icon, and at the bottom right is a "Save" button with a checkmark icon.

The Safe Label System 500i (SLS) Point of Care Station (PCS) handles drugs with a **RECALLED** status the same way that it handles drugs with an **OBSOLETE** status; that is, by not printing the label and displaying and announcing the following message:

Drug not approved for use.

Auxiliary Barcodes

Overview

Version 1.5.0 and newer software for Codonics Safe Label System™ (SLS) includes support for Auxiliary Barcodes on standard size labels.

Auxiliary barcodes can be included on printed standard size syringe labels to encode the Container ID number of the original drug container.

Auxiliary barcodes can contain:

- ◆ A 10-digit Container ID when the SLS Master Drug Database (MDD) mode is set to US NDC.
- ◆ A 10- or 13-digit Container ID when the SLS MDD mode is set to Other.

Only the original Container ID of the drug container will be encoded in the auxiliary barcode.

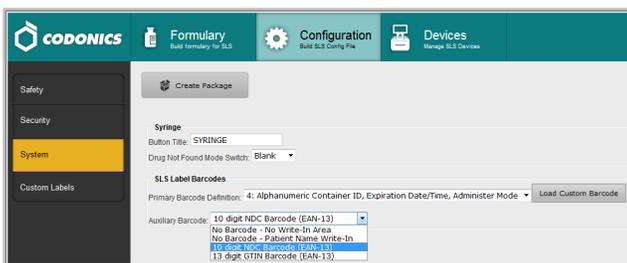
Currently, only 1D barcodes are supported for auxiliary barcodes.

Configuring Support for Auxiliary Barcodes

To support auxiliary barcodes, they must be configured in the SLS Administration Tool (AT). Then, the configuration and formulary packages must be deployed to the appropriate Safe Label System 500i (SLS) Point of Care Stations (PCS).

To configure auxiliary barcodes:

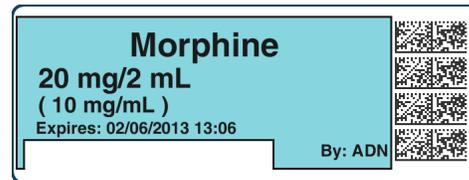
1. In the Configuration Manager section of the AT, go to the System tab.
2. In the Auxiliary Barcode list, select the desired auxiliary barcode option.



- ◆ No Barcode - No Write-In Area. An area for an auxiliary barcode will not be included on the syringe labels.



- ◆ No Barcode - Patient Name Write-in. A blank area will be included on the syringe labels for information such as patient name to be manually written in.



- ◆ 10 digit NDC Barcode (EAN-13). A 10-digit auxiliary barcode that includes the Container ID will be included on the syringe labels.



- ◆ 13 digit GTIN Barcode (EAN-13). A 13-digit auxiliary barcode that includes the Container ID will be included on the syringe labels.



If you choose an option other than No Barcode - No Write-In Area, a dialog box displays that indicates that the auxiliary barcode requires that an appropriate label template be selected. Click the OK button to close the dialog box.

3. Modify other configuration settings as needed and create the configuration package. For more information about the other configuration settings and how to create a configuration package, refer to the SLS Administration Tool User's Manual.

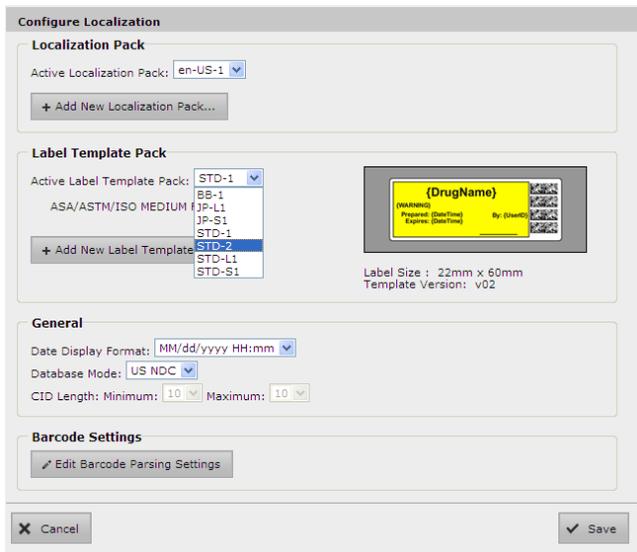
If you chose an option other than No Barcode - No Write-In Area, go to step 4 to select the auxiliary barcode label template pack.

If you chose the No Barcode - No Write-In Area option, you have finished the procedure.

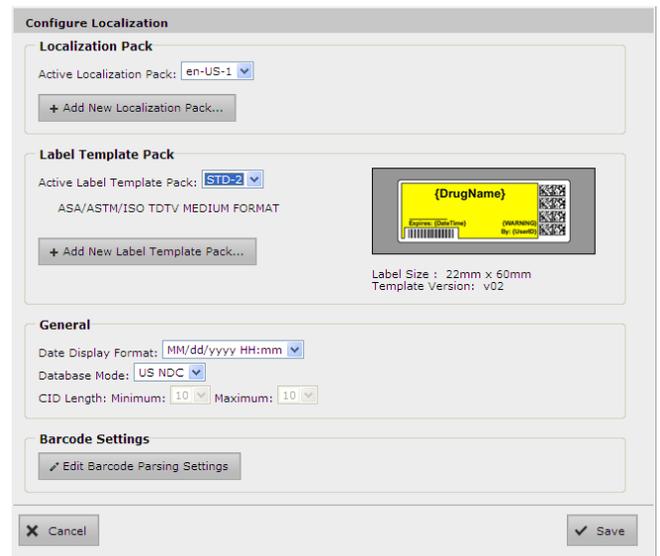
4. Go to the Formulary tab.
5. Click the Configure Locale button at the bottom left corner of the Formulary tab.

The Configure Localization dialog box displays.

6. In the Active Label Template Pack list, select the auxiliary barcode template pack, STD-2.



The sample label template image in the dialog box updates to reflect the selected template pack.



7. Modify other localization options as needed, then click the Save button to save your selections. For more information about the localization options, refer to the “Localization Enhancements” on page 23 and to the SLS Administration Tool User’s Manual.
8. Create the formulary package and deploy the package to SLS PCS. For more information about these tasks, refer to the SLS Administration Tool User’s Manual.

NOTE: If the label template pack selected for a configuration package does not include support for the auxiliary barcode, and an auxiliary barcode was selected in the System tab in the AT, then the barcode will not print on the syringe labels. No errors or warnings will be displayed on SLS PCS.

Auxiliary Barcode Warnings in the Formulary Report

The formulary report in the AT includes a Barcode Compatibility tab that will display warning messages for each drug that has a Container ID that is not 10 digits or 13 digits, or that includes non-digit characters.

You can continue promoting and deploying a formulary package even if barcode compatibility warnings exist in the formulary report.

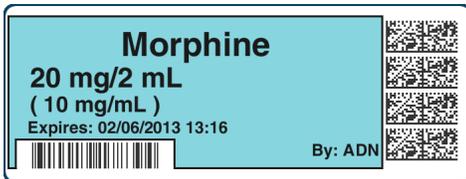
Auxiliary Barcode Labels

The label template pack for auxiliary barcodes is STD-2. The standard size for auxiliary barcode labels is 22 x 60 mm.

The barcode symbologies are EAN-13 and UPC-A.

Barcode Location on Labels

The auxiliary barcode will be located on the lower left portion of the label, opposite of the primary barcode, as shown in the example label below.



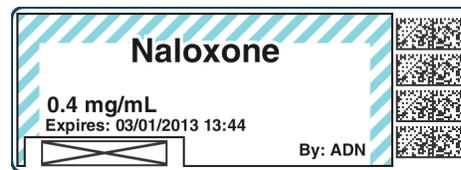
The primary and auxiliary barcodes are separated to minimize accidental reading of the wrong barcode. To prevent scanning of the auxiliary barcode when performing

Administer Mode on SLS PCS, it is recommended that you cover the auxiliary barcode with your finger prior to scanning on SLS PCS.

WARNING: Scanning the auxiliary barcode in Administer Mode or when the SLS PCS main screen is displayed will create another label. If creating this label was unintended, either cancel the label's printing at the pre-print confirmation screen or discard the label.

Printing a Placeholder Graphic for a Non-Compliant Container ID

If SLS PCS detects that a drug's Container ID is not compliant with the 10-digit or 13-digit limit, it will print a label with a special "X" graphic, as shown in the example below.



For example, the last digit of a 13-digit Container ID must be a check digit for the rest of the Container ID. If it is not, then the Container ID will be non-compliant.

SLS PCS will not display any error or warning messages when non-compliant Container IDs are encountered. The placeholder graphic will act as the only indicator to the user that the drug Container ID is not compatible with the auxiliary barcode.

Variable Length Container IDs

Overview

Version 1.5.0 and newer software for Codonics Safe Label System™ (SLS) supports scanning and reading of variable-length Container IDs. For example, Safe Label System 500i (SLS) Point of Care Station (PCS) will now scan a drug container that uses a Data Matrix barcode with a 10-digit Container ID and a completely different container that uses an EAN-13 barcode with a 13-digit Container ID.

Previous releases supported only one predefined Container ID (that is, 10-digit) in a formulary. In version 1.5.0, Container IDs can be from 1 to 18 digits in length within a specific symbology (e.g., Data Matrix) or across symbologies (e.g., a 10-digit Container ID Data Matrix and a 13-digit EAN-13). This allows SLS to support scanning drug containers and printing syringe labels in sites that:

- ◆ Source drugs from multiple countries that have different standards for defining Container IDs.
- ◆ Use a combination of pre-labeled drugs and over-labeled drugs that have different length Container IDs and different symbologies.
- ◆ Prepare their own medications (compounding) and label the compounded drugs in the pharmacy with hospital-unique pharmacy ID codes as well as use prepared medications in vials and ampoules.

NOTE: Container IDs greater than 15 characters are not guaranteed to fit in the standard syringe barcode, depending on the format of the data they contain. However, if the data is mostly numeric or follows a well-defined pattern, then it is likely to fit. Otherwise, another field from the syringe barcode has to be removed to accommodate the long Container ID. In those cases where the Container ID is greater than 15 and less than 18 characters and does not fit the standard numeric or well defined pattern, a Custom Barcode Definition could be created and added to the Safe Label System™ (SLS) Administration Tool (AT). This definition is part of the configuration package, and applies to all drugs in the formulary of a SLS PCS on which such a configuration has been applied. Contact Codonics for further instructions.

Barcode Length and Container ID Length

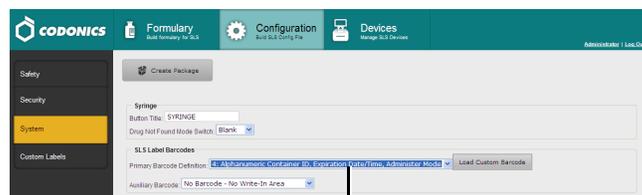
The length of a barcode is not necessarily the same as the length of the Container ID that it contains. For example, a Codonics Container Labeling System™ (CLS) barcode can contain the Container ID as well as expiration and lot information. The barcode length can be 20 or more characters; however, the Container ID portion of the barcode might only be 10 or 12 characters.

In version 1.5.0, barcode parsing rules can accommodate printing barcodes that include the Container ID and additional information. The barcode has a practical limit of 35 characters.

Configuring Container ID Lengths

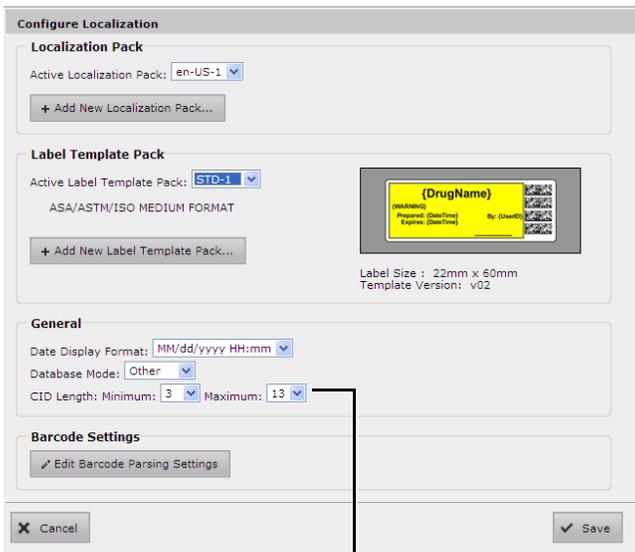
To configure a range of Container ID lengths to be supported:

1. In the Configuration Manager section of the AT, go to the System tab.
2. In the Primary Barcode Definition list, select option 4.



Primary Barcode Definition option 4

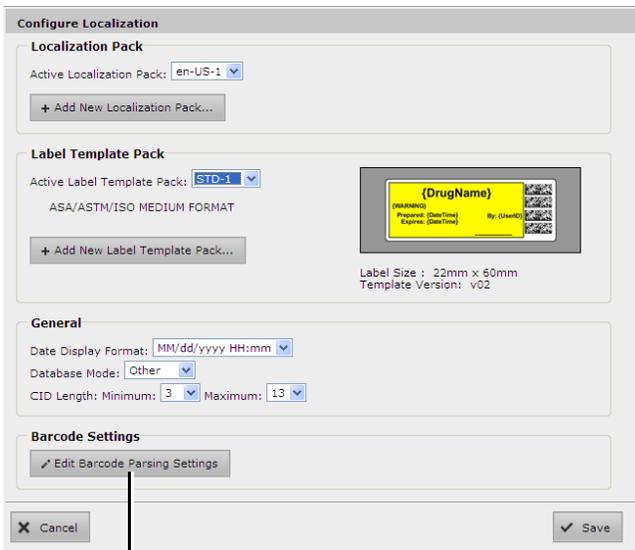
3. Modify other configuration settings as needed and create the configuration package. For more information about the other configuration settings and how to create a configuration package, refer to the SLS Administration Tool User's Manual.
4. Go to the Formulary tab.
5. Click the Configure Locale button at the bottom left corner of the Formulary tab.
The Configure Localization dialog box displays.
6. In the Container ID Length Minimum and Maximum lists, enter the minimum and maximum Container ID lengths to be supported. To specify a single length, select the same value in both lists.



CID Length Minimum and Maximum lists

NOTE: SLS barcode parsing rules will enforce the specified minimum and maximum Container ID lengths.

7. Click the Edit Barcode Parsing Settings button.



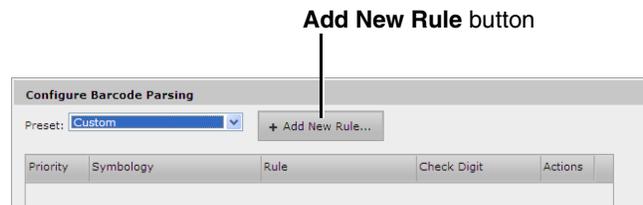
Edit Barcode Parsing Settings

The Configure Barcode Parsing dialog box displays.

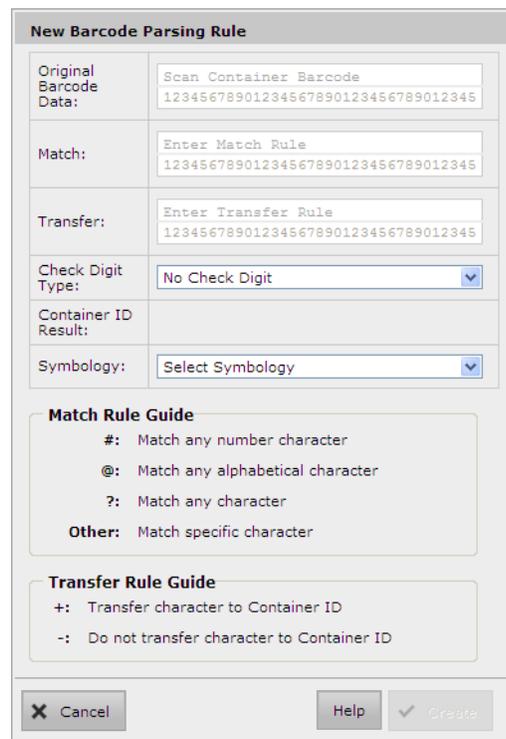
8. In the Preset list, select Custom.



9. Click the Add New Rule button.



The New Barcode Parsing Rule dialog box displays.



10. Enter the parsing rule parameters in the fields and lists.

For information about the parsing rule parameters, refer to the topics “Barcode Parsing Rules and Finding Matching Container IDs” on page 40, “Example Barcode Parsing Rules” on page 40, and “Localization Enhancements” on page 23.

New Barcode Parsing Rule

Original Barcode Data: 8Q1422
12345678901234567890123456789012345

Match: #@####
12345678901234567890123456789012345

Transfer: ++++++
12345678901234567890123456789012345

Check Digit Type: No Check Digit

Container ID Result: 8Q1422

Symbology: Data Matrix

Match Rule Guide

- #: Match any number character
- @: Match any alphabetical character
- ?: Match any character
- Other: Match specific character

Transfer Rule Guide

- +: Transfer character to Container ID
- : Do not transfer character to Container ID

Cancel Help Create

11. When you are finished entering the parsing rule parameters, click the Create button to create the parsing rule.

The dialog box closes and the parsing rule is added to the list in the Configure Barcode Parsing dialog box. Next, you will test the barcode rule.

12. Click the Original Barcode Data field.

Configure Barcode Parsing

Preset: Custom + Add New Rule...

Number	Symbology	Rule	Check Digit	Actions
1	Data Matrix	010#####	No Check Digit	[Copy] [Delete]
2	UPC-A, UPC-E, UPC-E1, EAN-8	#####	No Check Digit	[Copy] [Delete]
3	Data Matrix	@####	No Check Digit	[Copy] [Delete]
4	Data Matrix	###-##-###-@	No Check Digit	[Copy] [Delete]
5	Data Matrix	###	No Check Digit	[Copy] [Delete]

Test Rules

Original Barcode Data: [] Test Clear

Container ID Results: No results

Close

Original Barcode Data field

13. Scan the barcode.

The barcode contents are entered in the Original Barcode Data field.

14. Click the Test button.

Configure Barcode Parsing

Preset: Custom + Add New Rule...

Number	Symbology	Rule	Check Digit	Actions
1	Data Matrix	010#####	No Check Digit	[Copy] [Delete]
2	UPC-A, UPC-E, UPC-E1, EAN-8	#####	No Check Digit	[Copy] [Delete]
3	Data Matrix	@####	No Check Digit	[Copy] [Delete]
4	Data Matrix	###-##-###-@	No Check Digit	[Copy] [Delete]
5	Data Matrix	###	No Check Digit	[Copy] [Delete]

Test Rules

Original Barcode Data:]d10104030539053082 Test Clear

Container ID Results: No results

Close

Test button

The parsing rules that match the barcode are listed in the Matching Rule field. The resulting Container IDs as rendered by the parsing rules are listed in the Container ID Result field.

Configure Barcode Parsing

Preset: Custom + Add New Rule...

Number	Symbology	Rule	Check Digit	Actions
1	Data Matrix	010#####	No Check Digit	[Copy] [Delete]
2	UPC-A, UPC-E, UPC-E1, EAN-8	#####	No Check Digit	[Copy] [Delete]
3	Data Matrix	@####	No Check Digit	[Copy] [Delete]
4	Data Matrix	###-##-###-@	No Check Digit	[Copy] [Delete]
5	Data Matrix	###	No Check Digit	[Copy] [Delete]

Test Rules

Original Barcode Data:]d10104030539053082 Test Clear

Container ID Results: 4030539053082 (Rule 1)

Close

Test results

15. When you are finished adding barcode parsing rules to support the variable length Container IDs that you will be using, create the formulary package and deploy the package to SLS PCS. For more information about these tasks, refer to the SLS Administration Tool User’s Manual.

Barcode Parsing Rules and Variable-Length Container IDs

The following topics describe how barcode parsing rules are used to support variable-length Container IDs. For more information about creating and managing barcode parsing rules, refer to “Localization Enhancements” on page 23.

Barcode Parsing Rules and Finding Matching Container IDs

In version 1.5.0, when parsing a scanned barcode during the Container ID matching process, the system uses a “Match All Rules” approach. This means that the system must compare an incoming barcode with all possible parsing rules. If there are multiple matches and thus multiple possible Container IDs, the system allows the user to choose which match is correct.

For example, let’s say that the barcode parsing rules include the following two rules:

Rule 1:

Match = 01#### Transfer = --++++ (Container ID = 4 digits)

Rule 2:

Match = ##### Transfer = ++++++ (Container ID = 6 digits)

With these rules, any 6-digit barcode that starts with **01** will match the first rule and will generate a 4-digit Container ID. However, there may be a barcode that starts with **01** that is a legitimate 6-digit barcode intended to match Rule 2.

So, using these sample rules, a barcode string of **012345** would match both rules and would generate two possible Container IDs:

- ◆ Container ID = 2345 (from Rule 1)

- ◆ Container ID = 012345 (from Rule 2)

On SLS PCS, both Container IDs would be compared against the formulary. If there were more than one match, then the user would have to choose between the matches (similar to when there are multiple instances of a single Container ID in the formulary). However, if only one match is found, then it would be assumed to be correct and the user would not be prompted to make a choice.

Example Barcode Parsing Rules

The set of barcode parsing rules listed in the following Configure Barcode Parsing dialog box includes examples of rules for variable-length Container IDs.

Number	Symbology	Rule	Check Digit	Actions
1	Data Matrix	010#####	No Check Digit	[Edit] [Delete]
2	UPC-A, UPC-E, UPC-E1, EAN-8	#####	No Check Digit	[Edit] [Delete]
3	Data Matrix	@####	No Check Digit	[Edit] [Delete]
4	Data Matrix	###-##-###-@	No Check Digit	[Edit] [Delete]
5	Data Matrix	###	No Check Digit	[Edit] [Delete]

Test Rules

Original Barcode Data: Test Clear

Container ID Results: No results

Close

The following example Edit Barcode Parsing Rule dialog box shows the details of the first rule in the list above. In this example, there is a prefix of **010** that identifies the matching barcode/rule, and then the following 13 characters comprise the Container ID. Therefore, the total barcode length is 16.

New Barcode Parsing Rule

Original Barcode Data:	0104030539053082 12345678901234567890123456789012345
Match:	010##### 12345678901234567890123456789012345
Transfer:	---##### 12345678901234567890123456789012345
Check Digit Type:	No Check Digit
Container ID Result:	4030539053082
Symbology:	Data Matrix

Match Rule Guide

- #: Match any number character
- @: Match any alphabetical character
- ?: Match any character
- Other: Match specific character

Transfer Rule Guide

- +: Transfer character to Container ID
- : Do not transfer character to Container ID

Barcode Parsing Rules and Verification

Because the barcode parsing rules determine how a scanned barcode is interpreted, and thus what its corresponding Container ID is, any changes to the rules might invalidate drugs that have already been verified in the AT. For example, a rule could be edited or superseded by another rule that would cause a particular container barcode to be interpreted differently, resulting in a different Container ID or in the drug not being found when the container is scanned.

As a result, when the barcode parsing rules are **modified** and/or **deleted**, drugs in the Master Drug Database (MDD) might need to be unverified and then re-verified. However, because re-verifying all drugs in the MDD can take substantial time and effort, the AT allows the user to choose to unverify all the drugs or not.

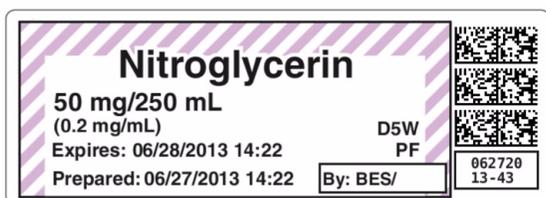
When a barcode parsing rule is **added**, the only possible effect on existing drugs would be another potential match based on the new rule. The “Match All Rules” behavior already accommodates this scenario, so adding a new barcode parsing rule does not require re-verifying drugs.

Batch Mode

Overview

Version 1.6.0 and newer software includes support for Batch Mode with the Codonics Safe Label System™ (SLS).

Batch Mode allows a Safe Label System 500i (SLS) Point of Care Station (PCS) user to automatically print multiple copies of the same label. The label can include a user defined lot number and a larger initial area for use cases where two sets of initials are required on the label. This may occur because a different person prepared the label than prepared the syringe or in a case when a second check for safety is required (for example in pharmacy).



NOTE: Batch Mode requires a feature key on SLS PCS. Contact your Codonics Sales Representative to obtain the proper key.

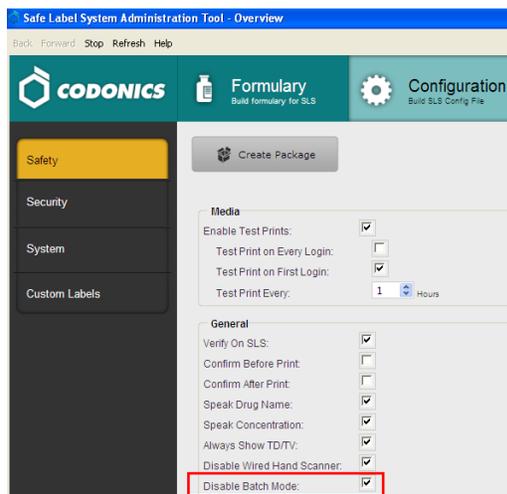
WARNING: The safest means to label a syringe (or any container of medication) using SLS PCS is to scan a vial or ampoule, draw up the drug as the label is being printed, and then immediately label the syringe before setting it down. Batch Mode introduces the risk of a mislabeled syringe since more than one label from a single vial/ampoule scan is being created, changing the one-to-one relationship (e.g. one vial and one syringe with a single label). For example, if there is more than one filled syringe without a label, there is a potential for a syringe to be mislabeled. Or if there are more labels than there are filled syringes, there is a potential for a rogue label to be placed on the wrong syringe. Be sure to visually confirm the label you are applying is the correct one for the syringe being labeled.

Configuring Support for Batch Mode

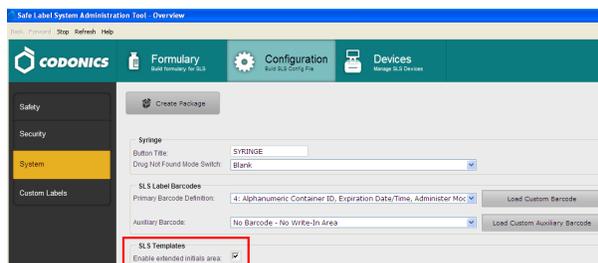
To support Batch Mode, enable the Batch Mode setting in the Codonics Safe Label System™ SLS Administration Tool (AT) and deploy the configuration package to the appropriate SLS PCS. By default, Batch Mode is disabled.

NOTE: Before starting a batch job of strips or many single cuts (e.g., greater than 15 labels), consider if and how you want them to be collected to prevent having them collect on the floor or backing up into SLS PCS.

1. In the Configuration Manager section of the AT, go to the Safety tab.
2. Uncheck Disable Batch Mode.



3. By default an additional initial area is included on the label for labels (i.e., standard and large) that include preparer's initials. Go to the System tab and uncheck the Enable extended initials area if not required.



4. Modify other configuration settings as needed, create the configuration package, and deploy the package to SLS PCS. For more information about these tasks, refer to the SLS Administration Tool User's Manual.

Workflow Improvements

Overview

Version 1.8.0 and newer software for Codonics Safe Label System (SLS) Administration Tool (AT) includes workflow improvements for updating formularies. These new enhancements include:

- ◆ Reporting drug Verifications that occurred on SLS Point of Care Stations (PCS) back to the AT.
- ◆ Reporting Drug Not Found (DNF) events that occurred on SLS PCS back to the AT.
- ◆ Identification of drugs in the SLS Formulary that have not yet been edited (i.e., Unedited).
- ◆ Smart Copy of DNF drugs or newly added drug(s) to the formulary.

NOTE: A hand scanner, preferably the one used for adding and verifying drugs in the AT, should be connected to the personal computer (PC) running the AT for managing verification and Drug Not Found processes.

NOTE: If the AT was closed, in order to receive the latest updates from SLS PCSs, log into the AT, go to the AT Device Manager, open up the MDL, and connect to the SLS PCSs.

Drug Verification

Previously, the AT user wouldn't be able to immediately know when a drug that was not verified in the AT was verified on an SLS unless they were told or they received notification from Email Notifier.

Now when a drug is verified on SLS PCS rather than on the AT, the verified drug information is sent back to the AT letting the AT user know of the issue. To support this improved workflow, the AT Formulary tab now has a Verifications tab and Verification Events groups.

NOTE: With this verification information, the AT user can update the existing formulary and distribute a new formulary package to all SLS PCSs so that other SLS PCS users do not also have to verify the same drug that had been verified on a different SLS PCS.

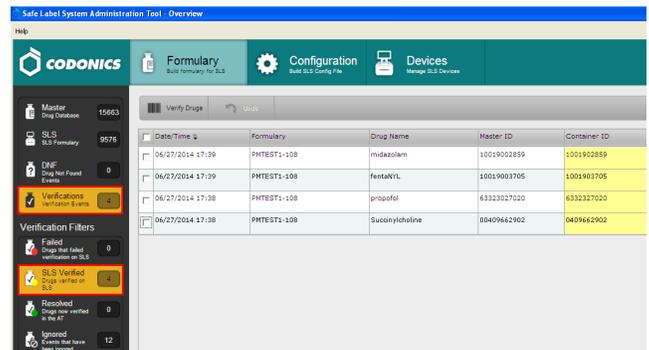
For those SLS PCSs that aren't updated, when a subsequent verification occurs, they will report back to the AT and add the specific formulary package number to the drug entry whether it is in the SLS Verified or Resolved group.

The following are recommended workflows for different use cases to process drug verification(s) that have occurred on SLS PCS and been reported back to the AT.

NOTE: If a verification event is identified, the AT user should obtain the container(s) associated with the event.

Use case: A drug is verified on SLS PCS because it was not verified in the AT

1. When a drug is verified on SLS PCS, the AT will display information for that drug in the SLS Verified filter. It will show the Date/Time of the verification, the formulary in which the drug entry exists, and all the information defined for the drug in the MDD including Drug Name, Master ID (MID), if available, and the Container ID (CID), highlighted in yellow. The AT screen looks like:



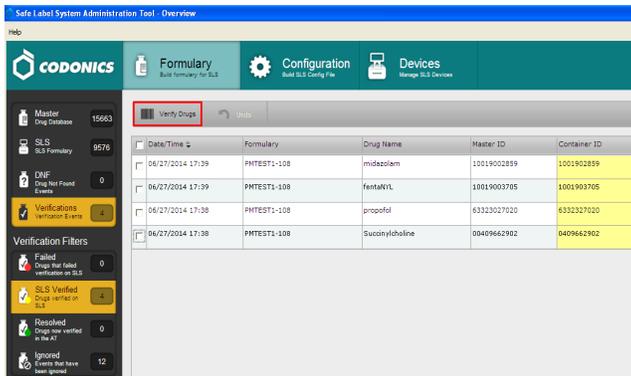
Date/Time	Formulary	Drug Name	Master ID	Container ID
06/27/2014 17:39	PHTEST1-108	midazolam	10019002859	1001902859
06/27/2014 17:39	PHTEST1-108	fentanyl	10019003705	1001903705
06/27/2014 17:38	PHTEST1-108	propofol	43323027020	4332327020
06/27/2014 17:38	PHTEST1-108	Succinylcholine	00409662902	0409662902

NOTE: The SLS Verified group only appears when Verify on SLS is turned off as part of the Configuration settings.

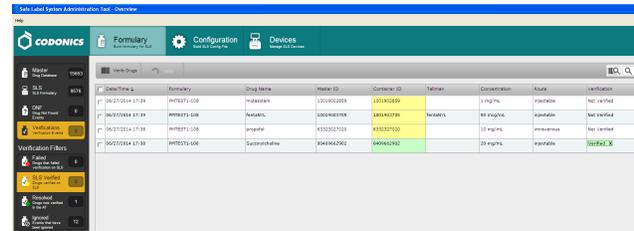
2. Clicking the information button,  for the verification event will provide verification event information including which SLS PCS the verification occurred, the user who verified it, and the drug information reported.



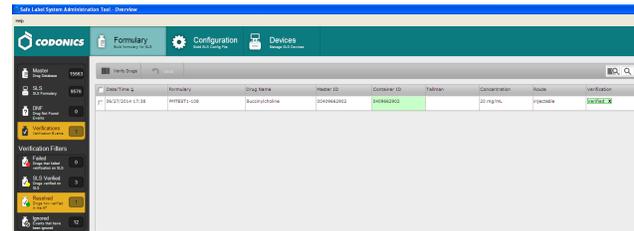
- Once you have the drug container associated with the verified drug on SLS PCS, you should click Verify Drugs.



- The Container ID (CID) of the drug that was verified will turn green and its status will be displayed as Verified.



- Although the entry is updated, it will be displayed in the SLS Verified group until you click over to another part of the AT. Then it will be displayed in the Resolved group.

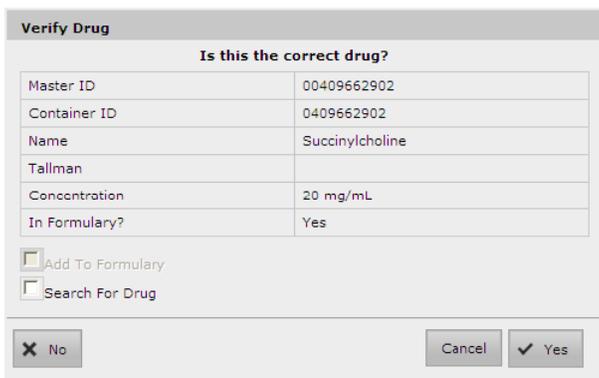


NOTE: In order to verify drugs, the formulary needs to be demoted to Under Development.

- The AT will display a Verify Drug dialog. Scan the container with the hand scanner attached to the AT computer.



- A Verify Drug dialog will be displayed. Verify that the information about the drug is correct. Since the drug is already in the formulary, the Add to Formulary box will be grayed out.



NOTE: Drug entries that are Resolved will remain in the group for 60 days and then purged.

- The AT user can now update the existing formulary and distribute a new formulary package to all SLS PCSs so that other SLS PCS users do not also have to verify the same drug that had been verified on a different SLS PCS.

NOTE: For those SLS PCSs that aren't updated, when a subsequent verification occurs, they will report back to the AT and add the specific formulary package number to the drug entry whether it is in the SLS Verified or Resolved group.

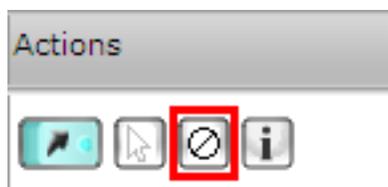
Use case: Drugs that fail verification on SLS PCS

- When a drug fails verification on SLS PCS, the AT will display information for that drug in the Failed verification filter. There it will report the Date/Time of the failed verification, the formulary in which the drug entry exists, and all the information defined for the drug in the MDD including Drug Name, MID (if available), and the CID, highlighted in red.
- Review the drug information and find the container that was scanned that caused the failed verification.
- It is possible that either the information in the formulary is incorrect (e.g., drug name, concentration, concentration units) or there is another drug that has the same CID.

- If the information in the formulary is incorrect, update the formulary and deploy it to all SLS PCSs.
- If it is another drug (e.g., name, concentration) with the same CID, then the second drug (along with all its drug information) should have its own drug entry entered in the MDD and formulary with the same CID as the first drug. The formulary should be deployed to all SLS PCSs. Once both drug entries are in the formulary, SLS PCS will ask a user which of the two drugs it is each time a container with this same CID is scanned.

Use case: Ignoring drugs that are verified on SLS PCS (successfully or failed)

- If there is a drug entry that you do not want to verify in the AT, you can select the ignore icon in the Actions column.



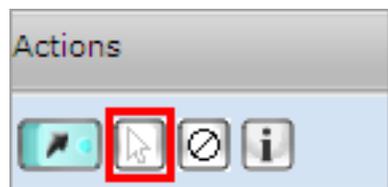
- You will be asked to confirm that you want to move the drug entry to the Ignored filter. Select Yes.
- The drug entry will be moved to the Ignored filter.

NOTE: Drug entries that are ignored will remain in the filter for 60 days and then purged.

Drugs verified with 1.7.0 or older software

For drugs that were verified on an SLS PCS with 1.7.0 or older software within 30 days of upgrading SLS PCS to 1.8.0, only the CID will be reported back to the AT.

- The AT will determine if there are any matching drugs (i.e., CID matches). If the CID of the verified drug matches a single CID in the MDD, the AT will automatically populate the drug information in the drug entry. If there is not a single match, the AT will only show the CID, highlighted in red.
- If there is not a single match, the AT will only show the CID that was scanned on SLS. In this use case, you should click the select icon.



- If there isn't an exact match, but there are 10 to 11 digit MID mappings, then the AT will display the mapping option(s) for the user to review and select.
- If you select a mapped drug, the AT will automatically populate all the drug information on the Edit Drug dialog and prompt you to Save the drug information (including the CID) in the MDD. The AT will then return you to the SLS Verified group with all the information now filled-in for the drug.
- Review the drug entry information.
- Follow the steps starting with step 3 in the previous section, Use Case: A drug is verified on SLS PCS because it was not verified in the AT.

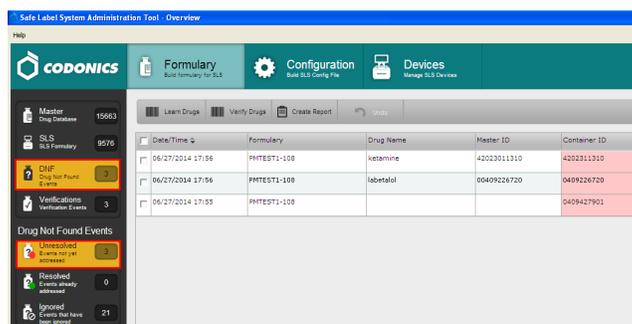
Drug Not Found

When a drug is not in the formulary and a SLS PCS user scans the drug container on SLS PCS, a Drug not found (DNF) message is displayed on the SLS PCS. A user has always been able to print a custom Blank label to ensure proper labeling of a syringe. Now the DNF information is sent back to the AT Formulary letting the AT user know of the issue.

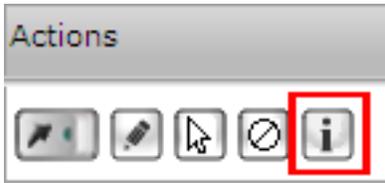
NOTE: With this DNF information, the AT user can update the existing formulary and distribute a new formulary package to all SLSs so that other SLS users do not experience a DNF issue for the same drug.

For those SLS PCSs that aren't updated, when a subsequent DNF occurs, they will report back to the AT and add the specific formulary package number to the drug entry(ies) whether it is resolved or still unresolved.

To support this workflow, the AT Formulary tab now has a DNF tab and a Drug Not Found Events group. Now when a DNF on SLS occurs, the SLS will report the CID to the DNF tab in the AT. Clicking on the Unresolved group displays an entry with the available information.



Clicking the information button, i, in the Actions column for the DNF event will provide DNF event information including which SLS PCS the event occurred and the user who scanned the container.



Once the i button is clicked, a screen will appear:

Drug Not Found Information

Master ID: _____
 Container ID: 0409427901
 Name: _____
 Tallman: _____
 Concentration: _____
 Route: _____
 Status: _____
 Request Created: 05/05/2014 15:27

Events (1)

Date/Time	Event Type	Details	Event ID	User Name	User Initial	Formulary	SLS Device	IP Address
05/05/2014 15:40	DRUG_NOT_FOUND	CID = 0409427901	110	ROSS GOO	RSG	100PHTEST-106	Ross's Cube	10.1.132.156

OK

To process any DNF event(s) that have occurred on SLS PCS and been reported back to the AT, the following are recommended workflows for different use cases.

NOTE: If a DNF event is identified, the AT user should obtain the container(s) associated with the event.

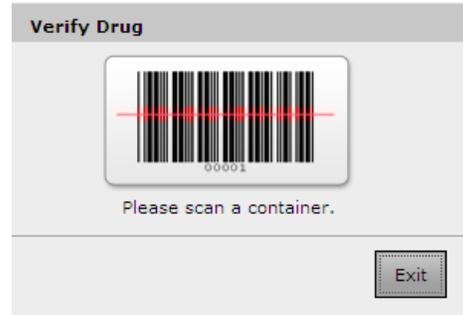
Use case: DNF with a single Container ID (CID) match in the MDD

1. If the CID of the DNF event matches a single CID in the MDD, the AT will automatically populate the drug

information in the Unresolved screen. The CID will be highlighted in red.

Date/Time	Formulary	Drug Name	Master ID	Container ID
06/27/2014 17:56	PHTEST1-108	ketamine	42023011310	4202311310

2. Once you have the container, you should click on the Verify tab to verify the drug container.
3. The Verify Drug dialog will appear.



4. Using the hand scanner attached to the AT PC, scan the container. A Verify Drug dialog box is displayed which allows you to verify the drug container information as well as automatically add the drug to the formulary.

Verify Drug

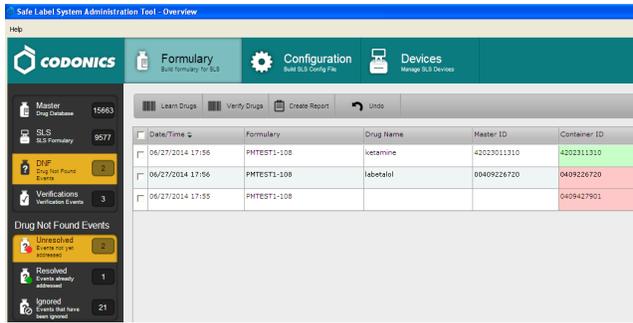
Is this the correct drug?

Master ID	42023011310
Container ID	4202311310
Name	ketamine
Tallman	
Concentration	10 mg/mL
In Formulary?	No

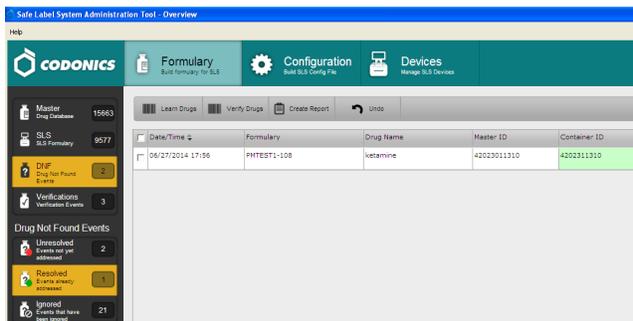
Add To Formulary
 Search For Drug

No Cancel Yes

- After verifying the information is correct, click Yes. The entry is updated, turns green, and is added to the Resolved group.



NOTE: The entry is updated and will be displayed in the Unresolved group until you click over to another part of the AT. It then will be displayed in the Resolved filter.



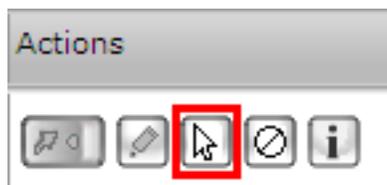
- You can then go to the Unedited filter in the formulary (see Unedited filter later in this Technical Brief) to define the drug's formulary settings.

Use case: DNF whose 10 digit CID maps to a drug's 11 digit MID in the MDD

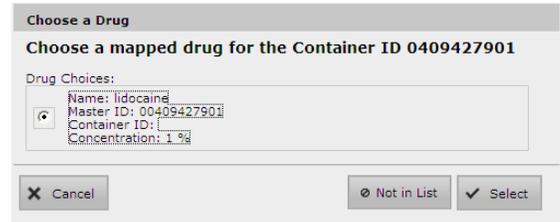
- If the CID of the DNF event doesn't match a CID in the MDD, the DNF event will only display the CID of what was scanned on SLS PCS. The CID will be highlighted in red.

Date/Time	Formulary	Drug Name	Master ID	Container ID
06/27/2014 17:56	PMTEST1-108	labetalol	00409226720	0409226720
06/27/2014 17:55	PMTEST1-108			0409427901

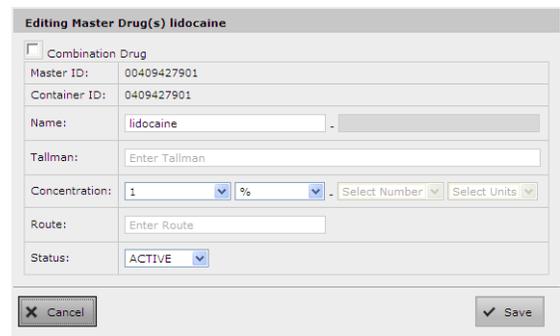
- You should click on the select arrow in the Actions column.



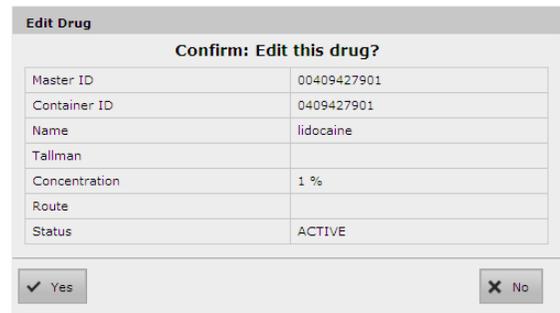
- The AT will determine if there are any matching drugs (i.e., CID matches). If there isn't an exact match, but there are any 10 to 11 digit MID mappings, the AT will display mapping option(s) for the user to review and select.



- If you select a mapped drug, the AT will automatically populate all the drug information in the Editing Master Drug dialog.



- After clicking Save, a dialog will ask you to confirm the entry. Click Yes and the entry will be added to the MDD.



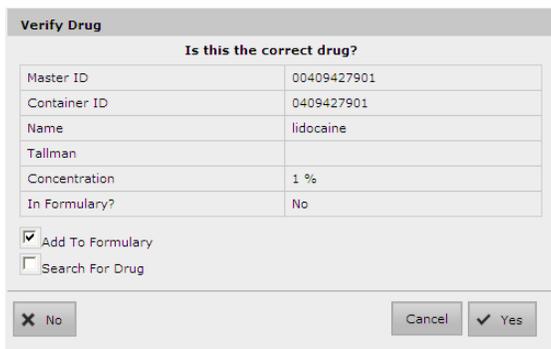
- The AT will then return you to the Unresolved group with all the information now filled-in for the drug.



- Review the drug entry information. Once you have the container, you should click **Verify**. The AT will display a **Verify Drug** dialog and you should scan the container using the hand scanner attached to the AT PC.



- A **Verify Drug** dialog will be displayed. Verify the information about the drug is correct. If the drug is not already in the formulary, you can check the box **Add to Formulary**.



- If the information is correct, click **Yes**. The drug's CID will turn green, it will be verified and shown as added to the formulary via the green arrow in the **Actions** column.

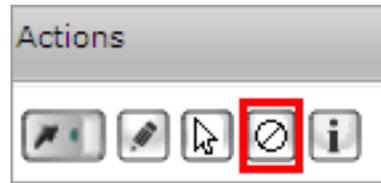
Date/Time	Drug Name	Master ID	Container ID	Tallman	Concentration	Route	Verification	Status	Actions
15/07/2014 15:38	lidocaine	00409427901	0409427901		1 %	Ingestible	Verified X	ACTIVE	[Icons]

NOTE: The entry is updated and will be displayed in the **Unresolved** group until you click over to another part of the AT. Then it will be displayed in the **Resolved** group.

- You can then go to the **Unedited** filter in the formulary (see **Unedited** filter later in this Technical Brief) to define the drug's formulary settings.

Use case: Ignoring DNF Events from SLS PCS

- If there is a DNF that you do not want to reconcile in the AT, you can select the ignore icon in the **Actions** column.



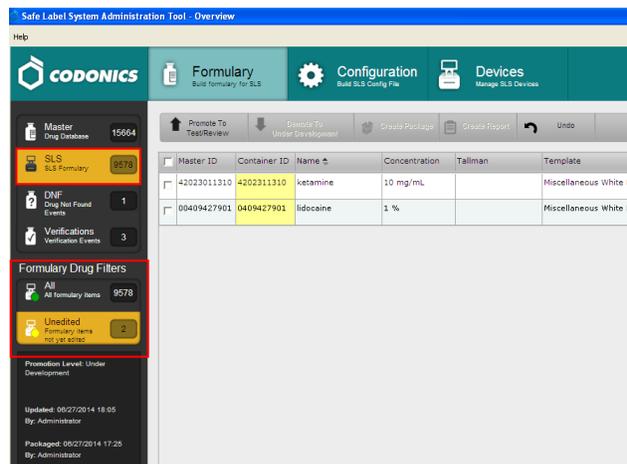
- You will be asked to confirm that you want to move the drug entry to the **Ignored** filter. Click **Yes**.
- The drug entry will be moved to the **Ignored** group.

NOTE: Drug entries that are **Ignored** will remain in the group for 60 days and then purged.

Unedited Formulary Drugs

When a drug is added to the SLS Formulary (whether it is manually from the MDD, from the verification process, or from the DNF process previously discussed), but you haven't edited the entry's drug settings (e.g. drug classification template, message, dilution, diluents etc.), a new workflow improvement has been added to easily find those drugs.

Now, the SLS Formulary tab has a **Formulary Drug Filters** group and an **All** and an **Unedited** filter. To easily find those drug entries that have not yet been edited, click the **Unedited** filter which will display each drug in the formulary which has not yet been edited.



The CID will be highlighted in yellow until the drug is edited.

NOTE: Once the drug is edited, the entry is updated and displayed in the Unedited list but no longer highlighted in yellow. The entry remains in this filter until you click over to another filter or tab. You can edit the drug again at any time.

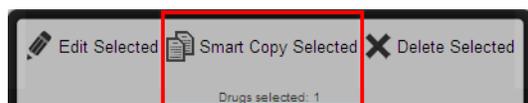
It is recommended that you complete all your edits on a drug before clicking on another filter or tab because this will be the easiest way to see which drug(s) you have been editing.

Smart Copy

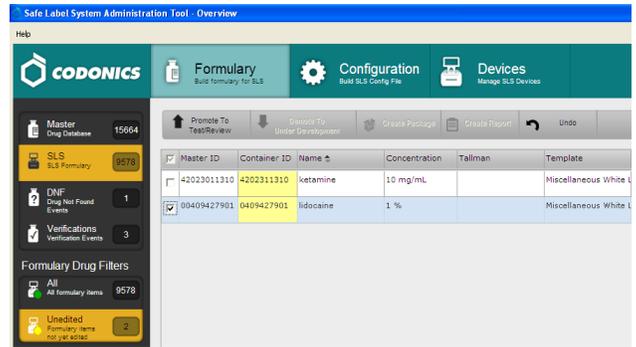
To aid in editing drugs that have been added to or are already in the formulary, a new workflow improvement, Smart Copy, has been added.

Smart Copy allows you to copy formulary settings from an already-edited drug with the same name and concentration so that settings do not need to be manually entered for each formulary drug.

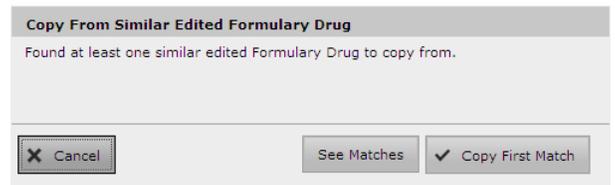
A new icon for Smart Copy was added to the Actions column of the formulary and to the Edit selected buttons at the bottom of the formulary.



1. Select the desired drug entries that have the same name and concentration.



2. Click the Smart Copy icon.
3. A dialog box will be displayed. You will be asked whether you want to see all the matching drugs already in the formulary or whether you want to copy the first matching drug in the formulary.



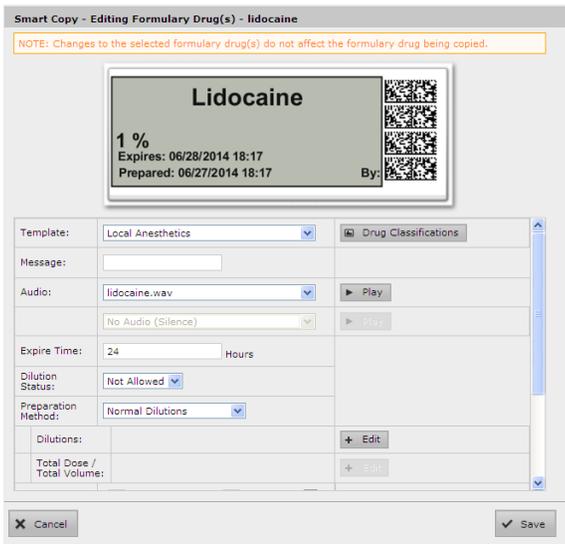
WARNING: Clicking Copy First Match can result in an entry that has different or no messages or unwanted information. See Matches is recommended for safety to see all the options and select the best choice.

4. If you click See Matches, all already-edited formulary drug entries that have matching drug name and concentration as the selected drug(s) will be displayed.

NOTE: The list of similar drugs will be sorted by the Message column in ascending order.



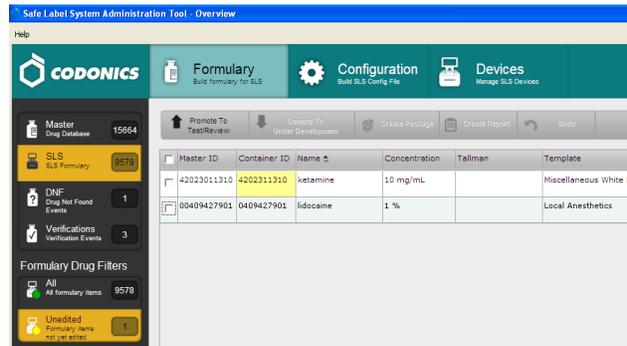
- Review all of the drug entries and select the one you want to Smart Copy the drug information from..
- The Smart Copy - Editing Formulary Drug(s) dialog will be displayed showing all the settings for the edited drug selected in step 5 that will be applied to the unedited drug(s). Saving (and possibly changing) these settings will not affect the edited drug selected in step 5. It will only affect the drug(s) selected for Smart Copy.



- Review all the settings (e.g., Drug Classification, Message, Audio, Expiration Time etc.) and make any modifications to the drug entry. When done editing, click Save to update the drug(s) selected for Smart Copy.

NOTE: Any changes made on the Smart Copy Edit dialog, for example adding a message, will NOT affect the edited drug that you have copied from step 5.

- The selected entries are updated. If you remain on the Unedited filter, previously unedited entries are now no longer highlighted in yellow. The entry remains in this filter until you click over to another filter or tab. You can edit the drug again at any time.



NOTE: It is recommended that you complete all your edits on a drug before clicking on another filter or tab because this will be the easiest way to see which drug(s) you have been editing.