

Codonics SLS[®] Administration **Technical Brief** Tool Workflow Improvements

Overview

Version 1.9.0 or 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, to receive the latest updates from SLS PCSs, log into the AT, go to the AT Device Manager, open 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 PCS 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.

When a subsequent verification occurs on any SLS PCS that has not been updated, those PCSs 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 verifications that have occurred on SLS PCS and have been reported back to the AT.

NOTE: If a verification event is identified, the AT user should obtain the drug 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 verification information is communicated back to the Administration Tool Verifications filter so that the formulary can be updated and deployed to all SLS PCSs.
2. 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:

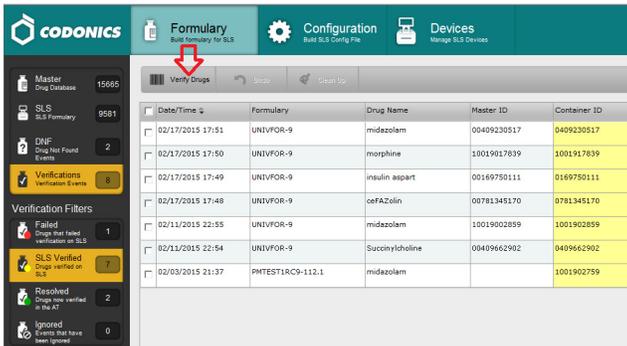
Date/Time	Formulary	Drug Name	Master ID	Container ID
02/17/2015 17:51	UNIVPOR-9	midazolam	00409230517	0409230517
02/17/2015 17:50	UNIVPOR-9	morphine	10019017639	1001917639
02/17/2015 17:49	UNIVPOR-9	insulin aspart	00169750111	0169750111
02/17/2015 17:48	UNIVPOR-9	cefAZolin	00781345170	0781345170
02/11/2015 22:55	UNIVPOR-9	midazolam	10019002859	1001902859
02/11/2015 22:54	UNIVPOR-9	Succinylcholine	00409662902	0409662902
02/03/2015 21:37	PHTEST1BC9-112.1	midazolam		1001902759

NOTE: The SLS Verified group only appears when Verify on SLS is turned off (i.e., unchecked) as part of the Configuration settings.

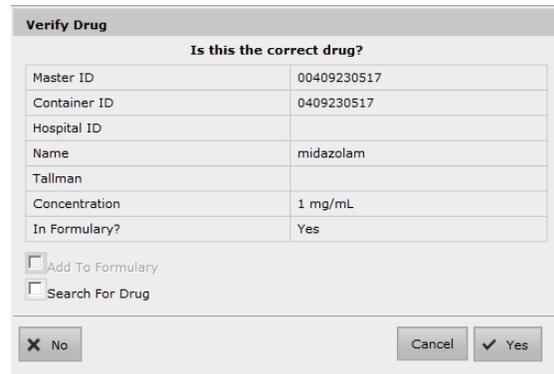
- Clicking the information button, **i**, for the verification event will provide verification event information, including on which SLS PCS the verification occurred, the user who verified it, and the drug information reported.



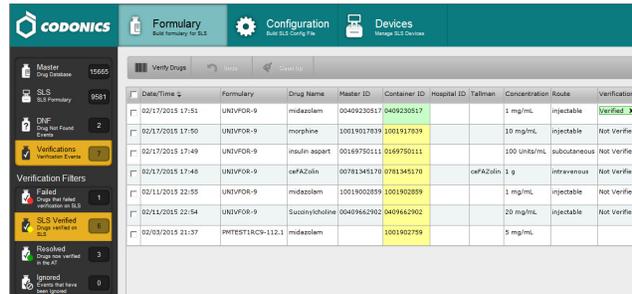
- Once you have the drug container(s) associated with the verified drug(s) on SLS PCS, you should click Verify Drugs.



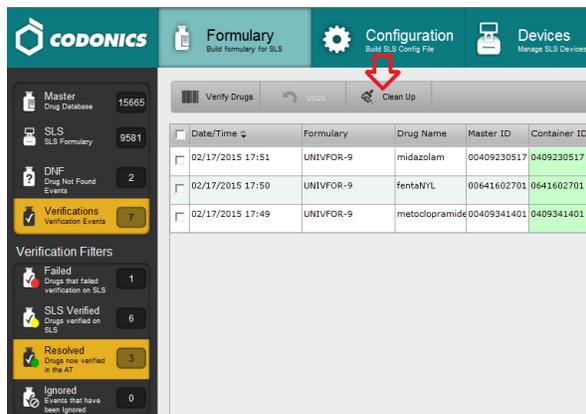
- A Verify Drug dialog will be displayed. Verify that the information about the drug is correct. Since the drug is already in the formulary, the Add to Formulary box will be grayed out. If the information is correct, click Yes. If the information is not correct either click No or Cancel and investigate why it's not correct.



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



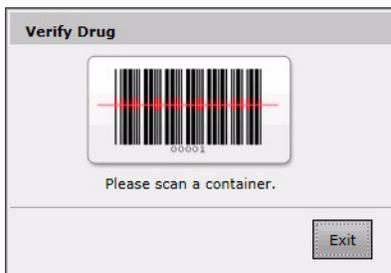
- Although the entry is updated, it will be displayed in the SLS Verified group until you click over to another part of the AT. Then it will be displayed in the Resolved group.



NOTE: Verification issues that are Reconciled or Ignored and are more than 30 days old can be manually pruned from the system using the Clean Up button on the top toolbar.

NOTE: To verify drugs, the formulary needs to be in the Under Development state.

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



- 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: When a subsequent verification occurs on any SLS PCS that has not been updated, those PCSs 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.

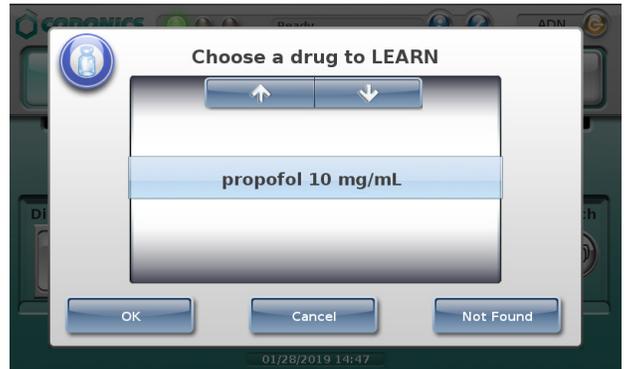
Use case: a drug is verified on SLS PCS after being identified on SLS PCS via 9-digit mapping

- Starting in 1.9.0 software, to reduce the number of Drug Not Finds on SLS PCS, an additional search algorithm using the first 9 digits of the Container ID was implemented on SLS PCS to identify possible matching drug entries in the formulary.

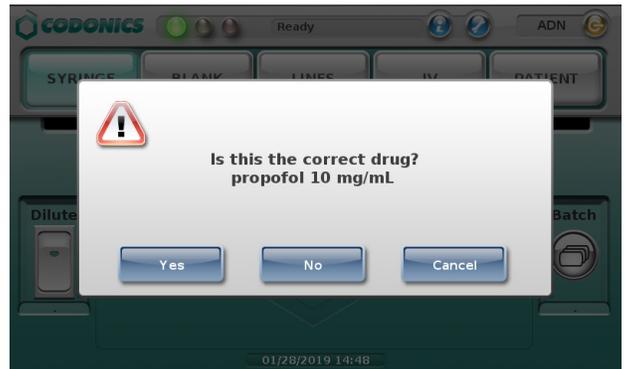


NOTE: 9-digit mapping only works in US NDC mode. It is enabled in the AT on the Safety tab.

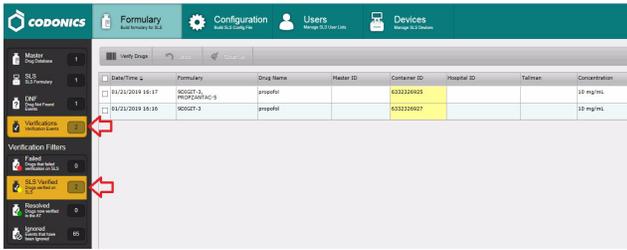
- At the SLS PCS, the user will be required to select a matching drug and then scan the vial again to verify the drug name and concentration.



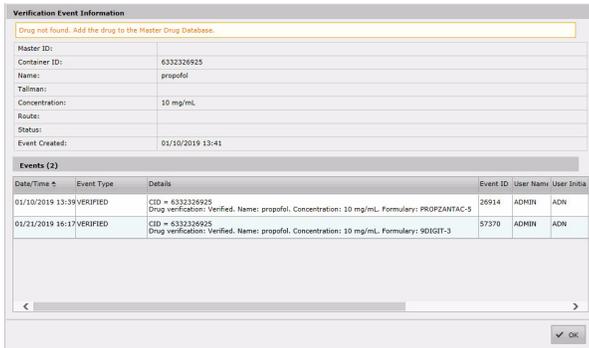
- The verification information is communicated back to the Administration Tool Verification filter so that the formulary can be updated and deployed to all SLS PCSs.



- Information including the vial's Drug Name, Concentration, and Container ID (i.e., NDC) are provided. An example of what is communicated back to the AT Verification tab is shown here.



- The AT user should select a drug in the SLS Verified tab and if further information is needed as to where, when, or who scanned and verified the vial, click the **i** button in the Actions column for additional information about the event.



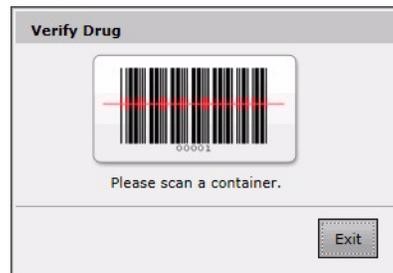
- The AT user should then click on the **+** button in the Actions column to add this drug to the MDD and formulary.



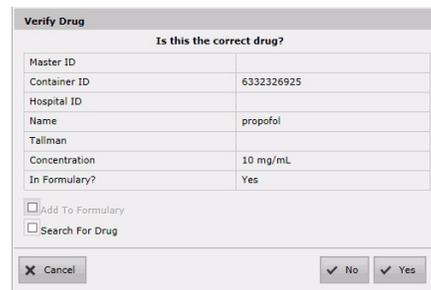
- The New Drug dialog will open in the AT. Confirm the information that's populated, add Hospital ID, Tallman lettering and Route as required. The Add to Formulary box is checked by default. Click Create, which will create both a new drug entry in the MDD and add the drug to the SLS formulary.



- If you have the vial, click Verify in the AT, which will open the Verify Drug dialog.



- Scan the vial's barcode. A Verify Drug dialog will display all the drug's information for the user. If correct, click Yes. If not, click No or Cancel and investigate why the information is not correct.



- The Container ID and Verification field will be updated to green and Verified.

Container ID	Hospital ID	Tailman	Concentration	Route	Verification
6332326925			10 mg/mL		Verified

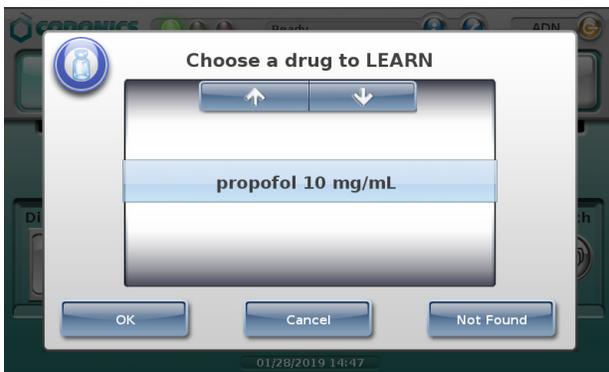
- The drug entry is Resolved. Once you click off the filter, it will be removed from the SLS Verified filter interface.

Date/Time	Formulary	Drug Name	Master ID	Container ID
01/21/2019 16:16	901017-3	propofol		6332326927

- 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.

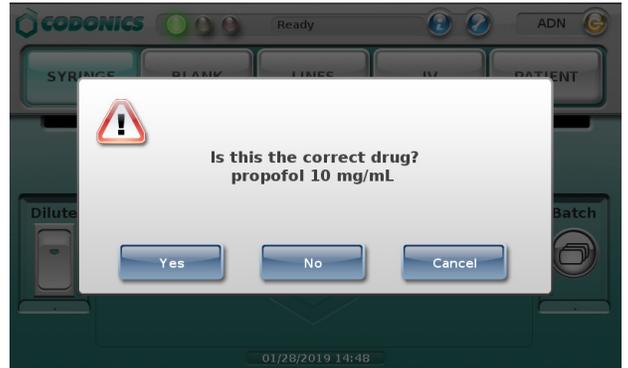
Use case: a drug is mapped from a 10-digit Container ID to an 11-digit Master ID in the formulary. It is learned and then verified on SLS PCS.

- At the SLS PCS, the user will be required to select a matching drug and then scan the vial again to verify the drug name and concentration.



NOTE: 10-digit mapping only works in US NDC mode.

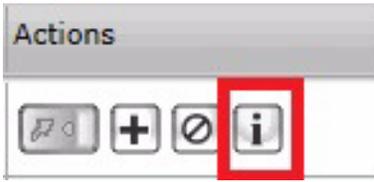
- The verification information is communicated back to the Administration Tool Verification filter so that the formulary can be updated and deployed to all SLS PCSs.



- Information including the vial's Drug Name, Concentration and Container ID (i.e., NDC) are provided. An example of what is communicated back to the AT Verification tab is shown here.

Date/Time	Formulary	Drug Name	Master ID	Container ID	Hospital ID	Tailman	Concentration
01/21/2019 16:17	901017-3	propofol		6332326925			10 mg/mL
01/21/2019 16:16	901017-3	propofol		6332326927			10 mg/mL

- The AT user should select the drug in the SLS Verified tab and if further information is needed as to where, when, or who scanned and verified the vial, click the **i** button in the Actions column for additional information about the event.



Verification Event Information

Drug not found. Add the drug to the Master Drug Database.

Master ID: 6332326925
 Container ID: propofol
 Name: propofol
 Tallman: 10 mg/mL
 Concentration: 10 mg/mL
 Route:
 Status:
 Event Created: 01/10/2019 13:41

Events (2)

Date/Time	Event Type	Details	Event ID	User Name	User Initial
01/10/2019 13:39	VERIFIED	CID = 6332326925 Drug verification: Verified. Name: propofol. Concentration: 10 mg/mL. Formulary: PROZANTAC-5	26914	ADMIN	ADN
01/21/2019 16:17	VERIFIED	CID = 6332326925 Drug verification: Verified. Name: propofol. Concentration: 10 mg/mL. Formulary: 90IGT-3	57370	ADMIN	ADN

OK

- The AT user should then click the **+** button in the Actions column to map the 10-digit information from this drug to the 11-digit MDD drug entry.



- The Choose A Drug dialog will be displayed. Review the information and if correct, click Select.

Choose a Drug

Choose a mapped drug for the Container ID 6332326927

Drug Choices:

Name: propofol
 Master ID: 06332326927
 Container ID: 1
 Hospital ID:
 Concentration: 10 mg/mL

Cancel Not in List **Select**

- The Edit Master Drug dialog will open in the AT. The drug's 10-digit Container ID will map to the 11-digit Master ID drug entry that is in the MDD. Confirm the information that's populated, add Hospital ID, Tallman lettering, and Route as required. The Add to Formulary box is grayed out and checked by default because the drug entry is now updated in the formulary. Click Save, which will update the drug entry in the MDD and the SLS formulary.

Editing Master Drug(s) propofol

Combination Drug

Master ID: 06332326927
 Container ID: 6332326927

Hospital ID: Enter Hospital ID

Name: propofol

Tallman: Enter Tallman

Concentration: 10 mg/mL Select Number Select Units

Route: Enter Route

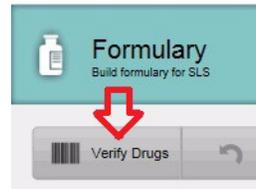
Status: ACTIVE

Add to Formulary

Wrong Drug for this Container ID? Select Different Drug

Cancel Save

- If you have the vial, click Verify in the AT which will open the Verify Drug dialog.



Verify Drug

00401

Please scan a container.

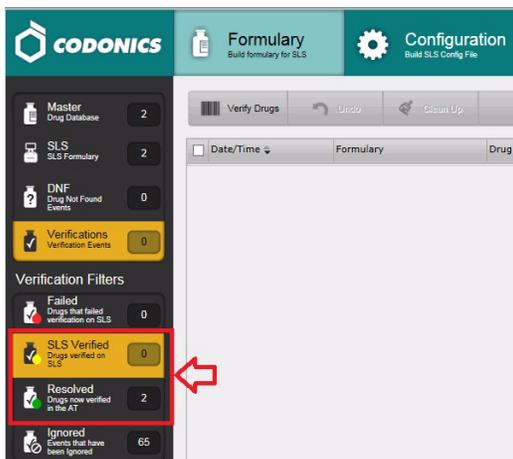
Exit

- Scan the vial's barcode. A Verify Drug dialog will display all the drug's information for the user. If the information is correct, click Yes. If not, click No or Cancel and investigate why the information is not correct.

- The Container ID and Verification fields will be updated to green and Verified.

Drug Name	Master ID	Container ID	Concentration	Route	Verification
propofol	06332326927	6332326927	10 mg/mL		Verified

- The drug entry is Resolved. Once you click off the filter, it will be removed from the SLS Verified filter interface.



- 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.

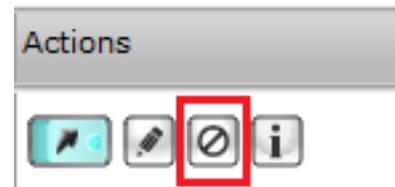
Use case: Drugs that fail verification on SLS PCS

- 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 of the SLS Verified filter.



- 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 filter.

NOTE: Drug entries that are Ignored and are more than 30 days old can be manually pruned from the system using the Clean Up button on the top toolbar.

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 1.9.0, 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 yellow. If the drug is a verified failed, the CID will be highlighted in red.

- If there is not a single match, the AT will only show the CID that was scanned on SLS PCS. In this use case, you should click the Add icon.



- If there isn't an exact CID match, but there are 10 to 11-digit MID mappings, then the AT will display the mapping options for the user to review and select.

NOTE: If there are multiple CID matches (i.e., duplicate CIDs for different drugs), both drug entries will be displayed and you will need to choose the correct drug. However, because there are two drugs with the same CID in the MDD, you will not be able to verify the drug.

- 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 filter 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."

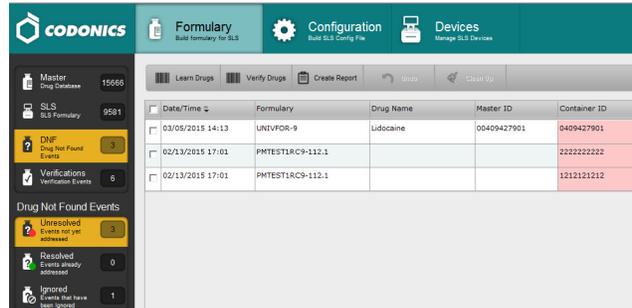
Drug Not Found

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 SLS PCSs so that other SLS PCS 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 entries whether it is resolved or still unresolved.

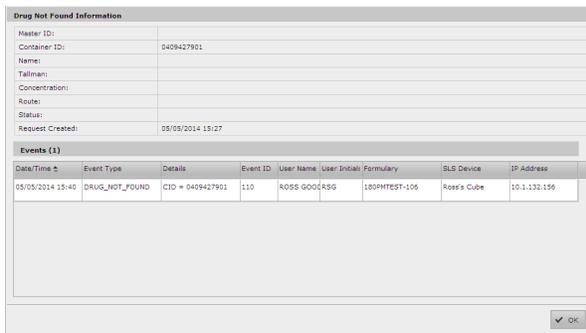
To support this workflow, the AT Formulary tab now has a DNF tab and a Drug Not Found Events group. Now when a DNF on an SLS PCS occurs, the PCS will report the CID to the DNF tab in the AT. Clicking the Unresolved group displays an entry with the available information.



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, the following screen will appear:



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

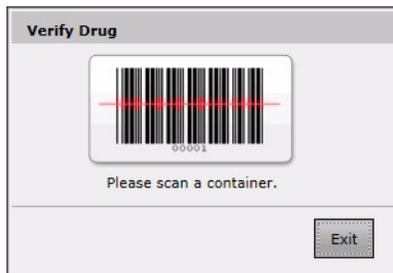
NOTE: If a DNF event is identified, the AT user should obtain the containers associated with the event.

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
03/05/2015 14:13	UNIVFOR-9	Lidocaine	00409427901	0409427901

2. Once you have the container, you should click 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.

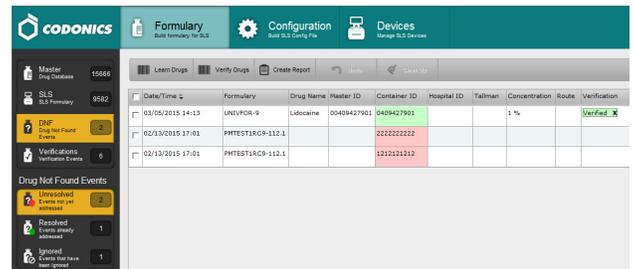
Verify Drug

Is this the correct drug?

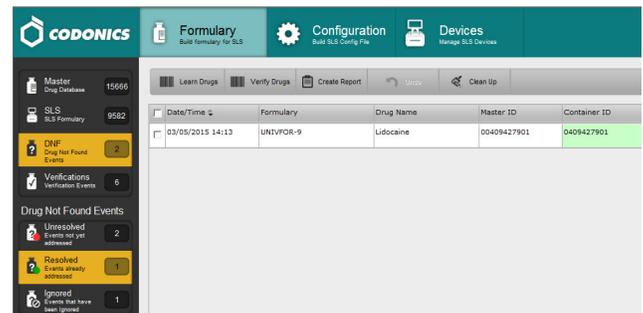
Master ID	00409427901
Container ID	0409427901
Hospital ID	
Name	Lidocaine
Tallman	
Concentration	1 %
In Formulary?	No

Add To Formulary
 Search For Drug

5. 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 to another part of the AT. It then will be displayed in the Resolved filter.



6. You can then go to the Unedited filter in the formulary (see “Unedited Formulary Drugs” 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

1. 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
03/05/2015 14:13	UNIVFOR-9			0409427901

2. You should click the Add icon 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 options 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.

Date/Time	Formulary	Drug Name	Master ID	Container ID	Hospital ID	Tallman	Concentration	Route	Verification	Status	Actions
08/08/2015 14:13	UNIVF08-9	Lidocaine	00409427901	0409427901			1 %		Not verified	ACTIVE	[Icons]
08/10/2015 17:01	PHTESTIACH-112.1		222222222								[Icons]
08/10/2015 17:01	PHTESTIACH-112.1		111111111								[Icons]

- 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.

Verify Drug

Is this the correct drug?

Master ID	00409427901
Container ID	0409427901
Hospital ID	
Name	Lidocaine
Tallman	
Concentration	1 %
In Formulary?	Yes

Add To Formulary

Search For Drug

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

Data/Time	Formulary	Drug Name	Master ID	Container ID	Hospital ID	Tallman	Concentration	Route	Verification	Status	Actions
03/05/2015 14:13	UNRESOLVED	Lidocaine	00409427901	0409427901			1 %		Verified	ACTIVE	

NOTE: The entry is updated and will be displayed in the Unresolved group until you click 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 Formulary Drugs" 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 and are more than 30 days old can be manually pruned from the system using the Clean Up button on the top toolbar.

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 that has not yet been edited.

Master ID	Container ID	Name	Concentration	Tallman	Template
42023011310	4202311310	ketamine	10 mg/mL		Miscellaneous White I
00409427901	0409427901	lidocaine	1 %		Miscellaneous White I

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 another filter or tab. You can edit the drug again at any time.

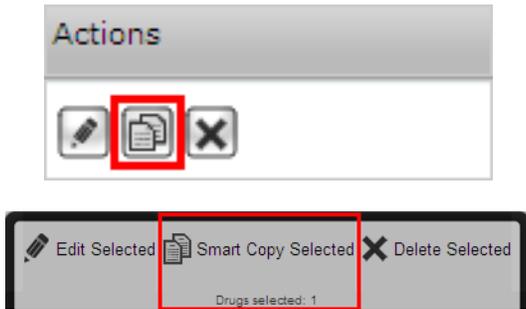
It is recommended that you complete all your edits on a drug before clicking on another filter or tab because this will be the easiest way to see which drugs you have been editing.

Smart Copy

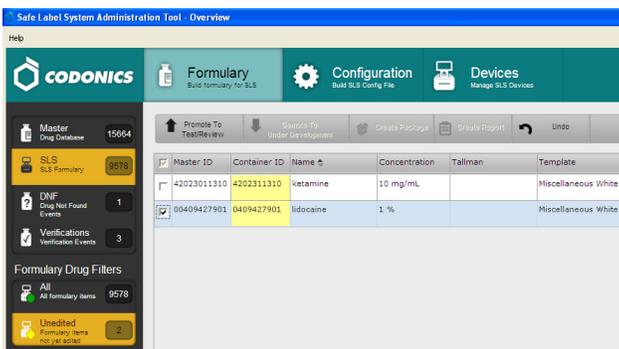
To aid in editing drugs that have been added to or are already in the formulary, a new workflow improvement, Smart Copy, has been added.

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.

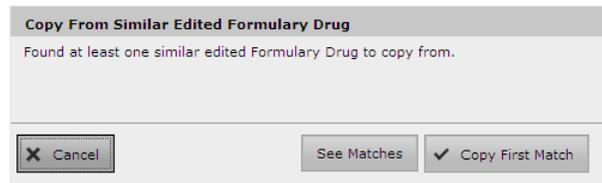
A new icon for Smart Copy was added to the Actions column of the formulary and to the Edit selected buttons at the bottom of the formulary.



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.



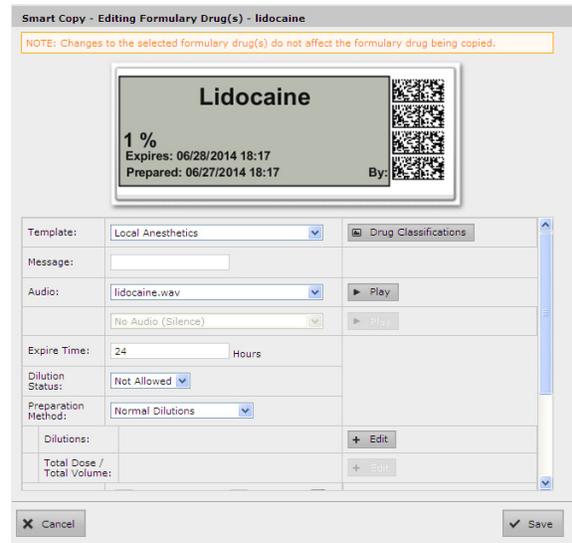
WARNING: Clicking Copy First Match can result in an entry that has different or no messages or unwanted information. See Matches is recommended for safety to see all the options and select the best choice.

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

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

Master ID	Container ID	Name	Concentration	Tallman	Template	Message	Dilution Status	Dilution
0002411207		lidocaine	1 %		Local Anesthetics		Not Allowed	
00074196601	0074196601	lidocaine	1 %		Local Anesthetics		Not Allowed	
00074206305		lidocaine	1 %		Local Anesthetics		Not Allowed	
00074471381		lidocaine	1 %		Local Anesthetics		Not Allowed	
00074478601		lidocaine	1 %		Local Anesthetics		Not Allowed	

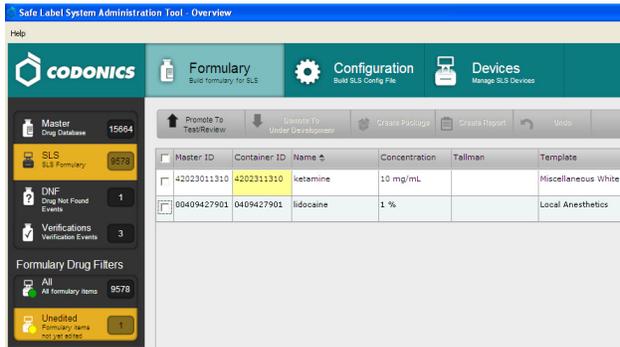
5. Review all of the drug entries and select the one you want to Smart Copy the drug information from.
6. The Smart Copy - Editing Formulary Drug(s) dialog will be displayed, showing all the settings for the edited drug selected in step 5 that will be applied to the unedited drugs. Saving (and possibly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



7. 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 drugs 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 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 drugs you have been editing.

Technical Support

If problems occur during operation, contact Codonics Technical Support at any time.

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