

# Administration Tool Formulary Synchronization with Epic

## Technical Brief

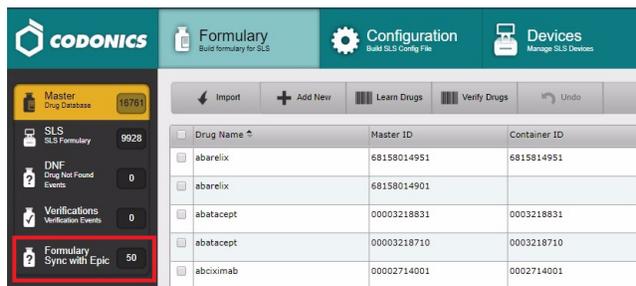
### Overview

Version 2.5.0 or newer software for Codonics® Safe Label System® (SLS) Administration Tool (AT) includes support for AT Formulary Synchronization (FS) with Epic Willow (Epic).

Epic currently supports communication with hospital information systems (HIS) to transfer information about drugs that are added, changed or deleted from the Willow formulary. This aids the customer in keeping their formularies up-to-date.

With this release, communication will be extended to the SLS formulary in the Administration Tool so that management of the formularies can be synchronized.

Now within the AT Formulary, there is a Formulary Sync with Epic tab (see screenshot below) to help you manage additions, changes or deletions that are communicated to the AT from Epic.



**NOTE:** Formulary Synchronization with Epic requires a feature key for the AT. Contact your Codonics Sales Representative to obtain the proper key.

### Workflow

#### Synchronization

**NOTE:** The system works best if the AT Master Drug Database (MDD) and SLS formulary have been created for your site's application(s).

An Epic OR preference list can be configured on a predefined basis to automatically communicate to the AT all new drugs, changes to drugs, or deletion of drugs that it has received. The AT's Formulary Sync with Epic tab is then updated with these drug entries.

#### Confidence Level (CL)

A comparison between the Epic OR preference list and the AT formulary data occurs and, based on the information available in the MDD and formulary, a confidence level is assigned to each drug entry.

When the Formulary Sync with Epic entry (Epic sync entry) is matched with a drug in the AT MDD (AT sync entry), the match confidence is determined by comparing the Generic Name of the Epic sync entry with the Drug Name of the MDD sync entry (MDD sync entry) in a case-insensitive method.

When the Epic sync entry NDC (i.e., 10-digit NDC) matches the MDD Container ID (i.e., 10-digit NDC), the Confidence Levels (CL) are defined as follows:

- ◆ 90% CL - Generic Name matches MDD Drug Name exactly
- ◆ 80% CL - Generic Name contains MDD Drug Name
- ◆ 50-70% CL - Generic Name contains part of MDD Drug Name (at least one whole word)
- ◆ 40% CL - Generic Name does not contain any part of MDD Drug Name

In this 40-90% range, the confidence relates to the name matching since an NDC match has already been found. For these, you should focus on whether the names represent the same drug.

**NOTE:** The same confidence levels are also used if the Epic 10-digit NDC maps to the AT MDD 11-digit NDC. See Codonics AT User’s Manual for further definition of 10-digit matching and 10- to 11-digit mapping.

When no NDC match or mapping is found, then only a Hospital ID (HID) match is possible. In this case, a lower confidence value indicates uncertainty regarding the NDC value since it has not been confirmed against any known similar drugs from other sources. The confidence levels in this case are defined as follows:

- ◆ 30% CL - HID matches existing HID entry with identical Drug Names
- ◆ 20% CL - HID matches existing HID with similar Drug Name
- ◆ 10% CL - HID matches existing HID but with different Drug Name

In this 10–30% range, you should focus on verifying the NDC (or Container ID) as well as the drug name to the extent possible.

**NOTE:** If the Epic sync entry in the Epic preference list has no NDC, the NDC is non-numeric, or the NDC is invalid (not 10 digits), then the CL is 0%. The entry is not included in the Formulary Sync with Epic tab. A report (see section on Report) can be generated to see all entries that have been communicated from Epic as well as their CL.

**NOTE:** A process flow diagram of how CL is determined is included at the end of this Technical Brief.

### Formulary Synchronization Configuration

**NOTE:** Formulary Synchronization with Epic only works when the AT Database Mode is set to US NDC.

To add an Epic Feature Key to the AT:

1. Click on **Advanced** link in the upper right corner of the AT.



2. The **Advanced** dialog box will be displayed.

3. Enter the Feature Key and click on **Submit**.

4. Formulary Sync with Epic will be enabled.

- To configure the location of the Formulary Synchronization shared folder, select **Configure** in the **Optional Features** section.

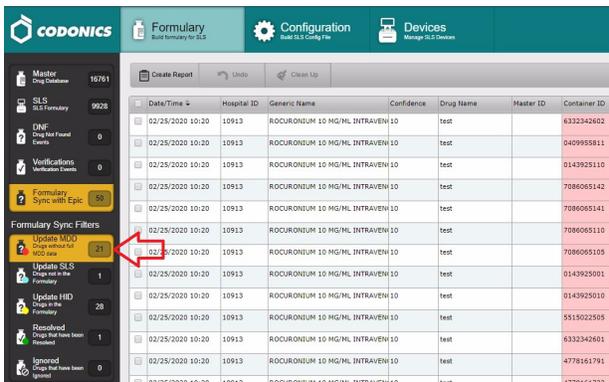


**NOTE:** By default the shared folder is located in the same folder where the AT Data Directory is stored.

### Update MDD Filter

The Update MDD filter contains AT sync entries for drugs that are currently missing or incomplete in the MDD and fall into the categories described below.

The AT user interface looks like this:



**NOTE:** Since these AT sync entries are for drugs that are currently missing or incomplete in the MDD, the background color for the Container ID column is red.

**NOTE:** You should review the Confidence Level and the information provided before deciding to add the entry to the SLS formulary. If something looks incorrect (e.g., Generic Name is a different drug than the Drug Name from the MDD), use the **Add** icon to choose a drug from the list or to create a different drug to match with the Epic sync entry.

Drugs shown on this filter fall into the two following categories:

- A drug is not found in the MDD at all but there is a drug in the MDD with the same HID (i.e. HID match).

**NOTE:** For those entries where the drug is not in the MDD but there is a drug in the MDD with the same HID, the filter displays the Date/Time that the sync occurred, the Hospital ID, the Generic Name and NDC as entered into Epic, the Confidence (see Confidence Level section above), the Drug Name of the drug entry in the MDD with the matching HID, the Tallman, Concentration, Route, and Status of the drug entry in the MDD.

- A drug is in the MDD but there is no Container ID (i.e., 10-digit NDC) assigned. However, there is a 10- to 11-digit map.

**NOTE:** If the Epic 10-digit NDC maps to the AT MDD Master ID (i.e., 11- digit NDC), where the drug is in the MDD but the MDD entry does not include a Container ID, the filter displays the Date/Time that the sync occurred, the Hospital ID, the Generic Name and NDC as entered into Epic, the Confidence (see Confidence Level section above), the Drug Name, Master ID, Tallman, Concentration, Route, Verification and Status of the drug entry in the MDD.

**NOTE:** See Codonics AT User's Manual for further definition on the 10- to 11-digit mapping.

### What to Do:

You will want to do one of two things with the drugs in the Update MDD filter:

- Create and/or update the AT sync entries for those drugs and then add them to the formulary, or
- Ignore entries since they aren't relevant to the SLS formulary (e.g., a drug from a route that isn't required in the SLS MDD or formulary).

The Actions column provides the following icons to help with those entries that require creating, updating or ignoring:



- ◆ Add to formulary icon.



- ◆ The Add to formulary icon is disabled (grayed out) for Update MDD entries as you first need to either add the drug to the MDD or update the existing AT sync entry. When you add or update the entry, you will be able to add the drug to the formulary (see below).

- ◆ Resolve icon.



- ◆ The Resolve switch is disabled (grayed out) for Update MDD entries as you first need to either add the drug to the MDD or update the existing AT sync entry. Once added or updated, you will be able to Resolve the drug.

- ◆ Add icon.



The Add icon is used to update or create an MDD drug entry.

**NOTE:** Manually editing the HID in the MDD will not change the HID value in the Formulary Sync with Epic filter. The Formulary Sync with Epic filter receives its information from the sync files provided from Epic. See HID Mismatch section.

- ◆ For HID matches, the Add action allows you to create a new entry in the MDD. When clicked, the New Drug dialog displays with the values from the existing HID match and the new Container ID is automatically filled in. You can select to Save or Cancel the edits. There is also an Add to Formulary checkbox to automatically add the drug to the formulary upon saving.

- ◆ For 11-digit mappings, the add action allows you to edit the existing MDD entry. You will be asked if the mapped drug is correct first.

- ◆ When selected, the Edit Drug dialog displays with the new Container ID automatically filled in. You can select to Save or Cancel the edits. There is also an Add to SLS formulary checkbox to automatically add the drug to the SLS formulary upon saving.

**NOTE:** AT sync entries that are Ignored will remain in the filter until they are purged. Using the Clean Up function allows you to purge entries manually.

**NOTE:** When you save a AT sync entry, it is added to the MDD and, if selected, also added to the SLS formulary. The AT sync entry is Resolved and the background color of the Container ID column turns green. These entries will continue to be displayed in the Update MDD filter until you switch filters manually (or switch AT screens).

**NOTE:** If the correct match/mapped drug is not available in the MDD, you can use the Not in List option to create a new drug in the MDD with the correct information. When Not in List is clicked, a New Drug dialog displays with the HID and the 10-digit NDC from the Epic sync entry is automatically entered.

- ◆ Ignore icon.



The Ignore icon allows you to ignore a given AT sync entry (e.g., a drug from a route that isn't required in the AT MDD or SLS formulary).

When selecting Ignore, you will be asked whether you want to ignore Container ID or Ignore Hospital ID. If you select Ignore Container ID, then only the selected CID will be ignored. If you select Ignore Hospital ID, then all drug entries with the same HID(s) will be automatically ignored going forward.

### Update SLS Filter

The Update SLS filter contains Epic sync entries that match AT sync entries in the MDD (i.e. an exact Epic NDC to MDD Container ID match was found) but are not yet in the SLS formulary.

The AT user interface looks like this:

Date/Time	Hospital ID	Generic Name	Confidence	Drug Name	Master ID	Container ID
02/25/2020 10:20	10913	ROCURONIUM 10 MG/ML INTRAVENOUS	40	test		3982242601

**NOTE:** The background color for the Container ID column is light blue since there is information for the drug in the MDD but is not yet added to the formulary.

## What to Do:

You will want to do one of three things with the drugs in this filter:

1. Resolve entries by adding them to the SLS formulary. Resolving an entry adds the Epic HID to the AT sync entry, or

**NOTE:** You should review the **Confidence Level** and the information provided before deciding to add the AT sync entry to the SLS formulary. If something looks incorrect (e.g., Generic Name is a different drug than the Drug Name from the MDD), use the **Edit** icon to correct the issue. If needed use the **Select Different Drug** button to choose or create a different drug to match with the Epic drug entry.

2. Edit an individual AT sync entry (e.g., Tallman lettering) in the MDD before adding the drug to the SLS formulary or assign a different drug to the Epic sync entry, in case the wrong drug was matched. This could be in the case where a different drug with the same CID exists in the MDD, or
3. Ignore entries since they aren't relevant to the SLS formulary (e.g., a drug from a route that isn't required in the SLS formulary).

The **Actions** column provides the following icons to help with those entries:



- ◆ Add to SLS formulary icon.



This icon is enabled (but not blue) for **Update SLS** entries because these drugs are not yet in the SLS formulary.

**NOTE:** When you add a AT sync entry to the formulary, the AT sync entry is **Resolved** and the background color of the Container ID turns green. These entries will continue to be displayed in the **Update SLS** filter until you switch filters manually (or switch AT screens).

**NOTE:** Adding an AT sync entry to the SLS formulary from this screen will automatically update the HID(s) of the drug(s) in the MDD with the HID(s) from the Epic sync entry(ies).

- ◆ Resolve icon.



This icon is used to acknowledge that the AT sync entry was acted upon without adding the drug to the SLS formulary and to automatically update the HID(s) of the drug(s) in the MDD with the HID(s) from the Epic sync entry(ies).

- ◆ Edit icon.



The **Edit** icon allows you to edit the AT sync entry (e.g., adding Tallman lettering) in the MDD before adding the drug to the SLS formulary or to assign a different drug to the AT sync entry.

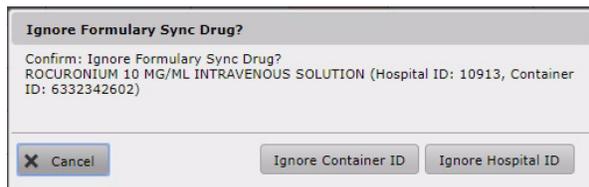
- ◆ Ignore icon.



The **Ignore** icon allows you to ignore a given AT sync entry (e.g., a drug from a route that isn't required in the AT MDD or SLS formulary).

**NOTE:** AT sync entries that are Ignored will remain in the filter until they are purged. Using the **Clean Up** function allows you to purge entries manually.

When selecting **Ignore**, you will be asked whether you want to **Ignore Container ID** or **Ignore Hospital ID**. If you select **Ignore Container ID** only the selected CID will be ignored. If you select **Ignore Hospital ID**, all AT sync entries with the same HID(s) will be automatically ignored going forward.



## Update HID Filter

The Update HID filter contains AT sync entries for drugs that are in the MDD (i.e., an exact Container ID match was found) and are already in the SLS formulary. The AT sync entry doesn't have an HID, so the user will want to add the HID from the Epic sync entry to the AT sync entry.

The AT user interface looks like this:

Date/Time	Hospital ID	Generic Name	Confidence	Drug Name	Master ID	Container ID
02/25/2020 10:20	33421	METOPROLOL TARTRATE 5 MG/S ML 80	80	metoprolol	00781307175	0781307175
02/25/2020 10:20	33421	METOPROLOL TARTRATE 5 MG/S ML 80	80	metoprolol	00781307195	0781307195
02/25/2020 10:20	33421	METOPROLOL TARTRATE 5 MG/S ML 80	80	metoprolol	6332366005	6332366005
02/25/2020 10:20	33421	METOPROLOL TARTRATE 5 MG/S ML 80	80	metoprolol	0014396010	014396010
02/25/2020 10:20	33421	METOPROLOL TARTRATE 5 MG/S ML 80	80	metoprolol	00409177805	0409177805
02/25/2020 10:20	33421	METOPROLOL TARTRATE 5 MG/S ML 80	80	metoprolol	55390007310	5539007310
02/25/2020 10:20	10913	ROCURONDIUM 10 MG/ML INTRAVEN 80	80	rocuronium	00703239501	0703239501
02/25/2020 10:20	10913	ROCURONDIUM 10 MG/ML INTRAVEN 80	80	rocuronium	00703239401	0703239401
02/25/2020 10:20	10913	ROCURONDIUM 10 MG/ML INTRAVEN 80	80	rocuronium	00703239503	0703239503
02/25/2020 10:20	10913	ROCURONDIUM 10 MG/ML INTRAVEN 80	80	rocuronium	00703239403	0703239403
02/25/2020 10:20	10913	ROCURONDIUM 10 MG/ML INTRAVEN 80	80	rocuronium	00409955810	0409955810
02/25/2020 10:20	10913	ROCURONDIUM 10 MG/ML INTRAVEN 80	80	rocuronium	63323042605	63323042605

**NOTE:** The background color for the Container ID column is yellow since there is a match for the drug in the MDD but the HID is not yet added to the MDD entry.

**NOTE:** You should review the Confidence Level and the information provided before deciding to resolve the entry. If something looks incorrect (e.g., Generic Name is a different drug than the Drug Name from the MDD), use the Edit icon to correct the issue. If needed, use the Select Different Drug button to choose or create a different drug to match with the AT sync entry.

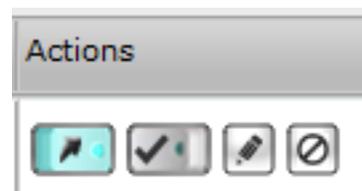
## What to Do

You will want to do one of four things with the drugs in the Update HID filter:

1. Resolve entries which adds the Epic HID to the AT sync entry and leave(s) the AT sync entry in the SLS formulary, or,

2. Edit an AT sync entry (e.g., Tallman lettering) in the MDD before adding the AT sync entry to the SLS formulary or assign a different drug to the AT sync entry, in case the wrong drug was matched. For example, if a different drug with the same CID exists in the MDD, or
3. Decide that a drug doesn't belong in the SLS formulary and remove it, or
4. Ignore entries since they aren't of interest for the SLS formulary.

The Actions column provides the following icons to help with those AT sync entries:



- ◆ Add to SLS formulary icon.



This switch is enabled (and turned blue) because these drugs are in the SLS formulary.

- ◆ Resolve icon.



This switch is used to acknowledge that the AT sync entry was acted upon and to automatically update the HID(s) of the drug(s) in the MDD with the HID(s) from the Epic sync entry(ies).

- ◆ Edit icon.



The Edit icon allows you to edit the AT sync entry (e.g., add Tallman lettering) in the MDD before adding the drug to the SLS formulary or to assign a different drug to the AT sync entry.

- ◆ Ignore icon.



The Ignore icon allows you to ignore a given AT sync entry (e.g., a drug from a route that isn't required in the SLS MDD or SLS formulary).

**NOTE:** Drug entries that are Ignored will remain in the filter until they are purged. Using the Clean Up function allows you to purge entries manually.

When selecting Ignore, you will be asked whether you want to ignore Container ID or Ignore Hospital ID. If you select Ignore Container ID, only the selected CID will be ignored. If you select Ignore Hospital ID, all drug entries with the same HID(s) will be automatically ignored going forward.

### HID Mismatch

In cases where there is an HID mismatch, for example, if the Hospital ID in the AT sync entry is different than the Hospital ID that came from Epic sync entry, the Formulary Sync with Epic tab will show both HID values in bold font. The first value is the HID from the AT sync entry while the second value (in parentheses) is the HID from Epic sync entry.

<input type="checkbox"/>	Date/Time	Hospital ID
<input type="checkbox"/>	12/19/2014 09:44	812576
<input type="checkbox"/>	12/19/2014 09:44	<b>13977V02 (13977V01)</b>

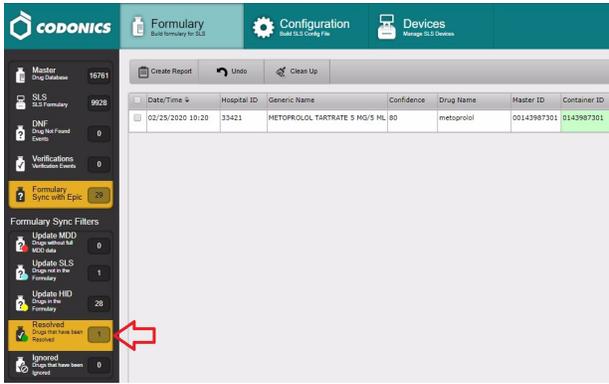
Adding to the SLS formulary or resolving the drug entry(ies) will present a dialog indicating that there is a mismatch. You will be asked whether to Keep the existing HID entered in the MDD (which is different than the HID that came from Epic sync entry ) or Overwrite (with the HID that came from Epic sync entry).

To manually change the HID, if necessary, select the Edit icon for the AT sync entry and the Edit Master Drug dialog will display the different HIDs. Select an HID to be used, either keep the HID from the Master Drug AT sync entry or overwrite it with the HID from the Epic sync entry. The selected HID will be displayed both in the MDD and the Formulary Sync with Epic tab.

### Resolved Filter

The Resolved filter contains AT sync entries that have an exact Container ID match and you have manually resolved.

The AT user interface looks like this:



**NOTE:** The background color for the Container ID column is green.

### What to Do:

You will want to do one of two things with the drugs in the Resolved filter:

1. Review entries and confirm the information is correct, or

**NOTE:** The system will automatically update the HID(s) of the drug(s) in the MDD with the HID(s) from the Epic sync entry(ies).

2. If an AT sync entry's information is incorrect, update the AT sync entry using the Edit icon.

The Actions column provides the following icons to help with those entries:



- ◆ Add to SLS formulary icon.



This switch is enabled for Resolved entries. Most of the time this icon will be blue because the entry is in the SLS formulary. There may be some Resolved entries that are not in the SLS formulary.

- ◆ Resolve icon.

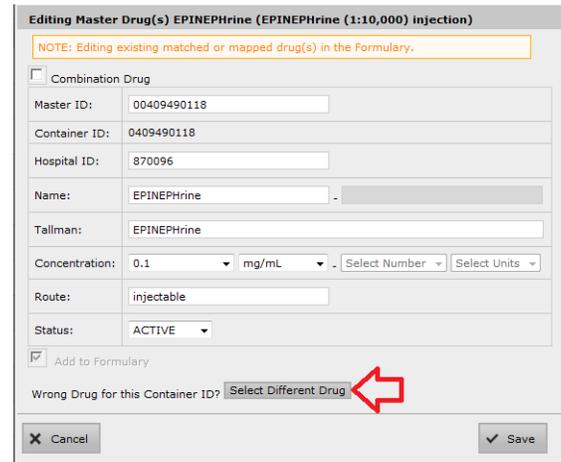


This switch is turned blue because this entry was acted upon.

- ◆ Edit icon.



The Edit icon allows you to edit the AT sync entry (e.g., adding Tallman lettering) in the MDD before adding the drug to the SLS formulary or to assign a different drug to the AT sync entry using the Select Different Drug button.



- ◆ Ignore icon.



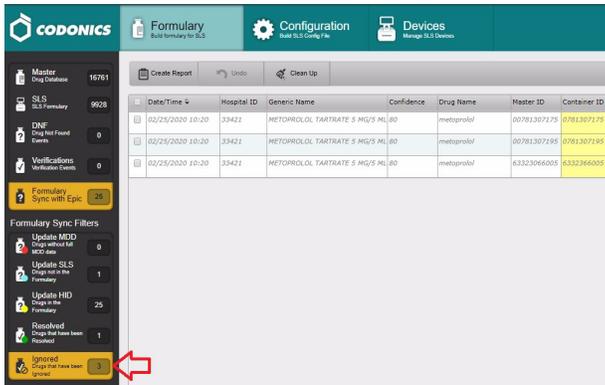
The Ignore icon allows you to ignore a given AT sync entry (e.g., a drug from a route that isn't required in the AT MDD or SLS formulary).

**NOTE:** AT sync entries that are Ignored will remain in the filter until they are purged. Using the Clean Up function allows you to purge entries manually.

## Ignored Filter

The Ignored filter contains AT sync entries that you have manually ignored.

The AT user interface looks like this:



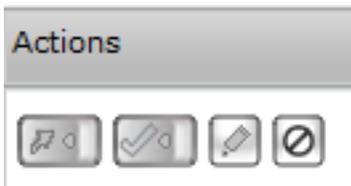
**NOTE:** The background color for the Container ID column is either red, blue, yellow, or green, depending on the disposition of the entry. The text for the entire entry is italicized and is displayed in gray.

### What to Do:

You will want to do the following with the drugs in the Ignore filter:

- ◆ Unignore them.

The Actions column provides the following icon to help with those entries:



- ◆ Unignore icon.



Possibly a drug was mistakenly ignored, or a reason has developed to now include it in the SLS formulary. Once unignored, the entry becomes available in one of the other filters and can be resolved.

**NOTE:** Drug entries that are Ignored will remain in the filter until they are purged. Using the Clean Up function allows you to purge entries manually.

### Undo

- ◆ The Formulary Sync with Epic tab Undo button can be used to undo adding or removing drugs from the SLS formulary.

### Report

An AT sync report can be generated to see information about all entries that have been transferred from Epic to the AT. Individual worksheets within the report are provided, including: a Summary, All Hospital IDs, Valid Adds and Changes, Valid Deletes, Unknown NDCs, Unknown NDCs - Non-Injectable, and Invalid/Missing NDCs.

**NOTE:** Drugs that are reported as deleted only show up in the report. There is not a filter for deleted drugs in the AT. You should review the drugs identified as deleted from Epic and determine if they should be deleted from the AT MDD and, if applicable, the SLS formulary.

The worksheets are auto-filtered and can be sorted to allow you to evaluate drugs that didn't match information in the current MDD but may be or are needed in the SLS formulary. The Unknown NDCs worksheet lists all drug entries that have a valid NDC (10-digit numerical) but didn't match an existing Container ID or HID in the AT MDD. The Invalid/Missing NDCs worksheet lists all Epic sync entries that are either invalid (do not have a 10-digit numerical NDC) or do not have an NDC. A Reason code for each Epic sync entry is provided to help investigate.

**NOTE:** The SLS Point of Care Station (PCS) requires valid 10-digit NDCs in the SLS formulary for each drug. This is because all drug containers in the U.S. are identified by a 10-digit NDC which is embedded in the barcode on the container. You should scan the container's barcode using the SLS PCS which will then identify/compare the drug based on the NDC in the barcode with the NDC in the SLS formulary.

To see a sample and run a report with your data, contact Codonics Technical Support.

### Technical Support

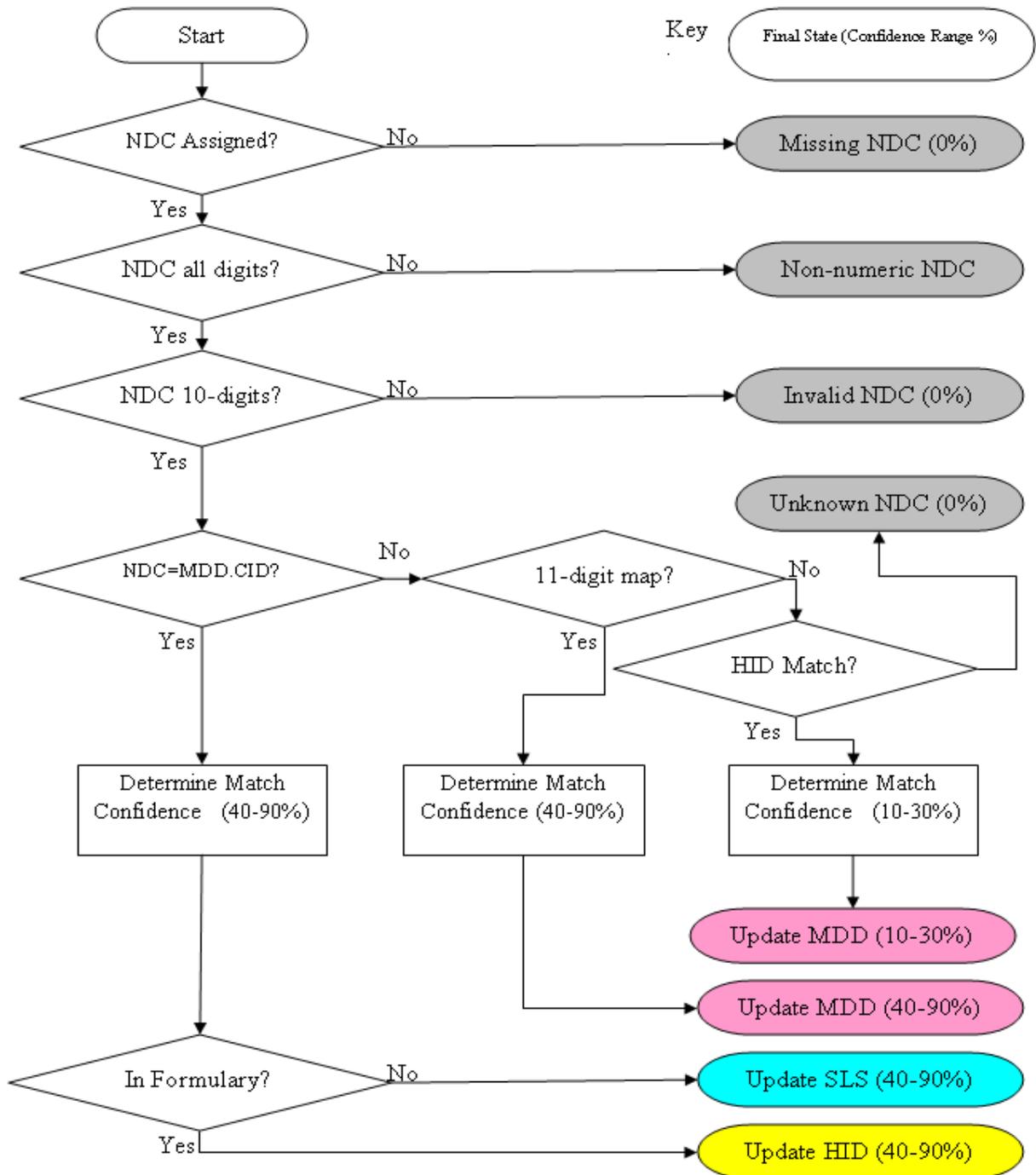
If problems occur during operation, contact Codonics Technical Support at any time.

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# Confidence Level Workflow



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