Codonics Safe Label System Combination Drugs

Technical Brief

Summary

The Codonics Safe Label System™ Administration Tool with version 1.2.1 or later software supports two-ingredient combination drugs. This Technical Brief describes how to use this feature.

Importing Combination Drugs to the MDD

The Administration Tool supports importing two-ingredient combination drugs from both a CSV file and a Lexicomp database file into the Master Drug Database (MDD).

CSV Import

The CSV file format has changed from version 1.2.0 to support combination drugs. The new format is:

```
<master id>,<container id>,<drug name 1>,<drug name 2>,<tallman>,<concentration 1>,
<concentration 2>,<route>,<status>
```

A drug entry is considered a combination drug only if the **<drug name 2>** field is populated. In the following CSV entries, the first line is for a combination drug and the second line is for a non-combination drug.

Combination drug entry:

```
00409904201,0409904201,Bupivacaine,Epinephrine,Bupivacaine-EPINEPHrine, 0.5%,1:200000,,ACTIVE
```

Non-combination drug entry:

```
06050507495,6050507495,Cefazolin,,ceFAZolin,1 g,,,ACTIVE
```

If the **<drug name 2>** field is null (i.e., there is no entry in that position in the CSV file), any entry for **<concentration 2>** will be ignored. For example, in the following line from a CSV file, the second concentration entry will be ignored.

```
6050507495,6050507495,Cefazolin,,ceFAZolin,1 g,5 mg/ml,,ACTIVE
```

Lexicomp Import

During a Lexicomp import, a drug is considered a combination drug if it has more than one Lexicomp "ingredient" drug.

The first and second ingredient names for a drug are determined by splitting the manufacturer's generic name using a hyphen (for example, Bupivacaine-Epinephrine).

The concentrations for each ingredient are determined by matching the parsed names with the corresponding concentrations for the ingredient drugs.

A combination drug will be discarded and flagged as an unsupported combination drug in the Import Results dialog box and Pre-Import Report if any of the following are true:

◆ The drug has more than two ingredients

◆ The ingredient name does not include exactly one hyphen (-) delimiter

Support for Concentration Ratios

The Administration Tool supports concentration ratios (for example, 1:200000) when adding and editing a combination drug, and when importing combination drugs via CSV or the Lexicomp database.

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Adding a Combination Drug to the MDD Manually

When adding a drug manually in the MDD, the New Drug dialog supports designating the entry as a combination drug.

◆ To indicate that the new drug is a combination drug, select the Combination Drug check box.

◆ The Name entry includes two fields, one for each of the two ingredient drugs. The first field is for the first ingredient and the second field is for the second ingredient. If the Combination Drug check box is not selected, the second ingredient field is disabled.

◆ The Concentration entry has two sets of number and units lists, one for each of the two ingredient drugs. The first set is for the first ingredient and the second set is for the second ingredient. If the Combination Drug check box is not selected, the second ingredient lists are disabled.

Editing a Combination Drug in the MDD

The MDD Editing Master Drug(s) dialog box includes the same manual entry support for combination drugs as the New Drug dialog box.

Editing a Combination Drug in the Formulary

When editing a drug in the formulary, the Editing Formulary Drug(s) dialog box supports combination drugs.

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◆ For combination drugs, the Template list includes only drug classification templates that are compatible with combination drugs. There are two standard combination drug classification templates: Miscellaneous White Combination Label and Narcotic/Tranquilizer Combination.

NOTE: For non-combination drugs, templates that are intended for combination drugs are not listed.

◆ The Audio entry has two lists. The first list is for the first ingredient, and the second list is for the second ingredient. Each audio list has its own Play button to play the audio file selected. Each audio file defaults to a matching drug name if it exists; otherwise, the audio file defaults to No Audio (Silence).

NOTE: For non-combination drugs, the second audio list is disabled.

◆ Because specifying dilutions for combination drugs is not supported, the Dilution Status, Dilutions, and Diluents fields are disabled. The Diluents field is replaced with the text "Diluents are not editable for combination drugs."

Combination Drug Classification Templates

There are two standard drug classification templates that support combination drugs:

◆ Miscellaneous White Combination Label

◆ Narcotic/Tranquilizer Combinations

The Drug Name portion of the label takes the following form unless Tallman is specified for the drug:

drugname1-drugname2

concentration1 concentration2

NOTE: The concentration of each drug is printed below the drug name. See label example below.

If a Tallman entry is specified for the drug, then the Tallman entry is used in place of Drug Name entries, so that you can control what will be printed for the drug name.

Bupivacaine-EPINEPHrine
0.5 %   1:200,000
Prepared: 07/05/2011 14:14   By:
Expires: 07/06/2011 14:14
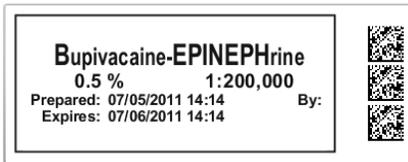
How Combination Drugs Are Displayed in the MDD and Formulary Drug Lists

MDD Drug List

The MDD drug list accommodates combination drug entries as follows:

◆ The Drug Name column uses the following format for combination drugs:

drugname1-drugname2

◆ The Concentration column uses the following format for combination drugs:

concentration1   concentration2

Drug Name
column

Concentration
column

Drug Name ▲	Master ID	Container ID	Tallman	Concentration	Route	Verification	Status
Bupivacaine-Epinephrine	00409904201	0409904201	Bupivacaine-EPINEPHrine	0.5 % 1:2000		Not Verified	ACTIVE

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◆ The Drug Name and Concentration columns sort according to the entries indicated above. The second drug is used as a secondary sort to the first drug.

◆ The Search function in the formulary searches based on the format:

drugname1-drugname2

For example, you can enter a search criteria of "Bupivacaine-Epinephrine" with the hyphen included and no spaces before or after the hyphen to find all the "Bupivacaine-Epinephrine" drugs listed in your formulary.

Formulary Drug List

The Formulary drug list accommodates combination drug entries in a manner similar to the MDD drug list, as described in the previous topic. In addition:

◆ There are two columns for the drug ingredient audio files. Audio displays the audio file name for the first ingredient, and Audio 2 displays the audio file name for the second ingredient.

Audio
column

Audio 2
column

Tallman	Template	Warning	Dilution Status	Dilutions	Diluents	Audio	Audio 2	Actions
Bupivacaine-EPINEPHrine	Miscellaneous White (		Not Allowed		Sterilized Water, (	bupivacaine.wav	epinephrine.wav	🖉 ✖

◆ For non-combination drugs, the Audio 2 column includes the entry N/A (that is, not applicable).

How Combination Drugs Are Displayed in Reports

Import Reports

Samples of the Pre-Import Report and Post-Import Report with combination drug entries in the Name and Concentration columns are shown below.

Pre-Import Report:

Master ID	Container ID	Name	Concentration	Type	Code
00135098459	0013598459	Propofol	20 mg/mL	Addition	Non-matching drug will be added.
004099004201	0409904201	Bupivacaine-Epinephrine	0.5 % 1:200,000	Addition	Non-matching drug will be added.
12586048954	1258648954	Cisatracurium	20,000 mg/mL	Addition	Non-matching drug will be added.

Post-Import Report:

Master ID	Container ID	Name	Concentration	Description
004099004201	0409904201	Bupivacaine-Epinephrine	0.5 % 1:200,000	Drug added.
12586048954	1258648954	Cisatracurium	20,000 mg/mL	Drug added.
00135098459	0013598459	Propofol	20 mg/mL	Drug added.

To assist the user in validating the results of the import (in particular, the drug name), an additional column named "Lexicomp Generic Product Name (For Reference Only)" is included in the pre-import Excel report when a Lexicomp database is used. Refer to "Lexicomp Import" on page 1 of this Technical Brief.

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Formulary Report

The Drug Name, Concentration, and WAV File columns in the Formulary Report have the same formatting as the Drug Name, Concentration, and Audio columns, respectively, in the Formulary drug list.

Master ID	Container ID	Drug Name	Tallman/Proper Name	Concentration	Route	Status	Miscellaneous	Classification
00409904201	0409904201	Bupivacaine-Epinephrine	Bupivacaine-EPINEPHrine	0.5 % 1:200,000	ALL	ACTIVE		Narcotic/Tranquilizer Combinations
00135098459	0013598459	Propofol		20 mg/mL	ALL	ACTIVE		Miscellaneous White Label
12586048954	1258648954	Cisatracurium		20,000 mg/mL	ALL	ACTIVE		Miscellaneous White Label

WAV File	WAV File 2	Warning	Expire Time	Dilution Status	Available Diluti	Available Diluents	
bupivacaine.wav	epinephrine.wav		0	Not Allowed			
propofol.wav	N/A		0	Not Allowed		Sterilized Water, Normal Saline, D5W, Ringers Lactate, Other	
cisatracurium.wav	N/A		0	Not Allowed		Sterilized Water, Normal Saline, D5W, Ringers Lactate, Other	

> **NOTE:** The WAV File column for non-combination drugs will have the entry "N/A" but will not be grayed out.

How Combination Drugs Are Announced and Printed on an SLS

Combination Drug Name Announcements

The drug names for combination drugs are announced by the SLS in the following format:

<drug name 1> <concentration 1> with <drug name 2> <concentration 2>

For example:

"Bupivacaine zero point five percent with Epinephrine one in two hundred thousand"

Combination Drug Syringe Labels

Syringe labels for combination drugs that are printed by the SLS include the concentrations printed below each drug ingredient name.

Because specifying dilutions for combination drugs is not supported, dilutions are not included on the syringe label.
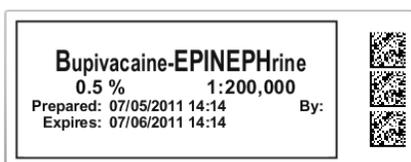
Syringe Label Barcodes

Combination drugs are not fully supported by the current syringe barcode.

Since combination drugs do not currently support dilution, it is possible for a system reading the barcode to determine the concentration via the Container or Master ID.

Combination drugs have the following barcode fields set as undefined:

- CTV (Concentration Raw Value)
- CTD (Concentration Decimal Position)
- CTU (Concentration Unit Index)

Known Limitations

Combination drug support has the following limitations:

◆ Only two drug ingredients are currently supported.

◆ Concentrations are not specified in the syringe barcode.

◆ Dilutions are not supported.

Technical Support

If problems occur when using an SLS or the Administration Tool, contact Codonics Technical Support at any time.

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