



# Explaining and Ensuring Interoperability Working with Guardrails

## Editor Data Set

- Interoperability with the pumps works by programming the order data from Cerner directly into the Alaris pumps by associating the pump when the nurse is charting administration. This screen shows where the nurse does this in the administration charting process. This nurse will click Program on this screen to start the pump association:

**azithromycin**  
500 mg, IV Piggyback, Injection, Pulmonary - Healthcare-acquired pneumonia, First Dose: 02/16/24 15:00:00 EST, Stop Date: 02/16/24 15:00:00 EST, 02/16/24 14:13:00 EST

**\*Performed date / time :** 02/16/2024 1355 EST  
**\*Performed by :** Bauer, Nick  
Witnessed by :

**\*azithromycin:** 500 mg Volume : 250 ml  
Diluent : sodium chloride 0.9% 250 ml  
**\*Route :** IV Piggyback **\*Site :** Right Brachial  
Rate : 250 mL/hr Back Pressure :  
Device :  
Total Volume : 250 Infused Over : 60 minutes  
2/16/2024 2/16/2024 2/16/2024 2/16/2024 2/16/2024 2/16/2024  
1200 EST 1300 EST 1400 EST 1500 EST 1600 EST 1700 EST  
20.83 229.17  
  
☐ Not Given  
Reason :  
Comment Program Select Program to scan pump  
No pump associated  
OK Cancel

- After clicking that button, the nurse scans the barcode on the pump and all order information is automatically programmed.
- In order for the Guardrails Editor Data Set to match the drug with the same drug in Cerner, the correct “Alias” has to be put into the Data Set for both each drug and each concentration. The aliases are shown in the Master Drug List in Guardrails Editor:

Drug	Concentration	Used As	Aliases
<b>azithromycin</b>		<b>Intermittent</b>	
	250 mg / 250 mL (1 mg / mL)		2750452I
	500 mg / 250 mL (2 mg / mL)		2750452I
	--- mg / --- mL		2750452I

- The “Alias” in Guardrails Editor corresponds to the term Cerner uses called a “Catalog Code”. A Catalog Code is unique PER DRUG and not per product (i.e. an acetaminophen rectal suppository and acetaminophen IV both have the same catalog code).
- To get the Catalog Code for a drug in Cerner, get to a screen where you’re either inquiring or entering an order for that drug in Med Manager. Here shows an Inquire on azithromycin and where you click to get to the screen that shows a Catalog Code:

The screenshot shows the 'Inquire Intermittent Order' window. On the left is a sidebar with a list of actions and their statuses. The main area contains a 'Drug' dropdown menu, which is highlighted by a red arrow. Below the dropdown, there are fields for 'Route', 'Rate', 'Duration', 'Start date', 'Time: EST', 'Stop date', 'Time: EST', 'Stop type', and 'Remaining doses'. The 'Drug' dropdown is currently set to 'azithromycin'. The 'Route' is set to 'IV Piggyback'. The 'Rate' is set to '250 mL/hr'. The 'Duration' is set to '(None)'. The 'Start date' is '02/16/2024' and the 'Time: EST' is '14:30'. The 'Stop date' is '02/21/2024' and the 'Time: EST' is '14:29'. The 'Stop type' is 'Hard Stop'. The 'Remaining doses' field is empty. The 'Physician' field is 'Stang, DO, Christopher M'. The 'Order comments' and 'Product notes' fields are at the bottom.

- This pops up a small window showing a lot of behind the scenes IDs that Cerner uses for that drug and product, but we are only interested in one for this:

The screenshot shows the 'Inquire Intermittent Order' window in the background. The 'Drug' section lists 'azithromycin' with a dose of '500 mg'. Below it, 'azithromycin 500 mg IV Inj' is selected. The 'Route' is set to 'IV Piggyback' and the 'Frequency' is 'every 24 hr'. The 'Rate' is '250 mL/hr'. The 'Dispense category' is 'IVPB'. The 'Product Information' pop-up window is in the foreground, displaying the following data:

Attribute	Value
AWP	\$17.30
Catalog Code	2750452
CKI	MUL.FRMLTN!5940
Cost 1	\$0.00
Cost 2	\$0.00
Dispense category	IVPB
Dispense quantity	1 EA
Drug form	Powder-Inj
Formulary status	Formulary
Item ID	77390668
Manufacturer	Slate Run Pharmaceut...
Minimum divisibility	Infinitely divisible
Multum ID	MUL.ORD!d00091
NDC	70436-0019-82

- The Catalog Code shown here matches the Alias in Guardrails Editor with one difference. The Alias in Guardrails Editor has a capital I on the end of it.
- Guardrails Editor has three different categories of Aliases: continuous, intermittent, and fluids.

- INTERMITTENT aliases like this only receive the drug strength, total volume, and rate from Cerner. In this order, these fields from Med Manager are programmed into the pump by using the capital I at the end of the alias:

- This lets it match this specific drug and concentration in Guardrails Editor:

Drug	Concentration	Used As	Aliases
azithromycin		Intermittent	
	250 mg / 250 mL (1 mg / mL)		2750452I
	500 mg / 250 mL (2 mg / mL)		2750452I
	--- mg / --- mL		2750452I

- The one thing to be careful of when entering concentrations into Guardrails Editor, is a drug that is a liquid that adds its own volume to the total volume, like this example:

- The total volume sent to the pump must match an entry for a concentration in your Guardrails Editor Data Set (unless you have a units only concentration like

--- mg / --- mL active, then it will always match). Here is how that concentration for iron sucrose looks in Guardrails Editor:

Drug	Concentration	Used As	Aliases
	mg / mL		2761376I
<b>iron sucrose</b>		<b>Intermittent</b>	
	100 mg / 55 mL (1.8182 mg / ...		2761376I
	100 mg / 105 mL (0.9524 mg / ...		2761376I
	200 mg / 110 mL (1.8182 mg / ...		2761376I
	300 mg / 265 mL (1.1321 mg / ...		2761376I
	400 mg / 270 mL (1.4815 mg / ...		2761376I
	500 mg / 275 mL (1.8182 mg / ...		2761376I
	--- mg / --- mL		2761376I

- CONTINUOUS aliases in Guardrails Editor receive a piece of information from Cerner that's not in Med Manager, but in the nursing charting screen, the dosing units:

☒ **norepinephrine IV additive 16 mg + dextrose 5% in water diluent cardiac 484 mL**
Change Order Version

Total Volume (mL): 500, Injection, IV, TITRATE, Order Duration: 30 days, Start Date: 02/13/24 0:35:00 EST, Stop Date: 03/14/24 1:34:00 EDT, Starting dose: 2 mcg/min, Titration range: 1 to 60 mcg/min, Titration instructions: May titrate by 2 mcg/min ev...

Obtain BP and heart rate upon initiation, with all titrations, Q 5 min x 4 after Norepinephrine started, then Q 15 x 4 ...

2/16/2024 2:26 EST - 2/17/2024 2:26 EST					
	2/16/2024 12:59 EST	2/16/2024 13:00 EST	2/16/2024 13:48 EST	2/16/2024 13:53 EST	2/16/2024 13:58 EST
Begin Bag					
Site Change					
Infuse	29.43 mL				
Bolus					
Waste					
Rate Change		30 mL/hr	37.5 mL/hr	46.88 mL/hr	46.88 mL/hr
norEPINEPHrine		16 mcg/min	20 mcg/min	25.0027 mcg/min	25.0027 mcg/min

☒ Yes ☐ No norepinephrine (norepinephrine IV additive) 16 mg/16 mL  
☒ Yes ☐ No dextrose 5% in water (dextrose 5% in water diluent cardiac) 484 mL

<b>*Performed date / time :</b>	<input type="text" value="02/16/2024"/>	<input type="text" value="1427"/>	<b>EST</b>	<input type="button" value="Comment"/>
<b>*Performed by :</b>	<input type="text" value="Bauer, Nick"/>			<input type="button" value="Clear"/>
<b>*Witnessed by :</b>	<input type="text" value=""/>			<input type="button" value="Apply"/>
<b>*Bag # :</b>	<input type="text" value="8"/>			
<b>*Site :</b>	<input type="text" value="Right Intern Jugular"/>			
<b>*Volume (mL) :</b>	<input type="text" value="500"/>			
<b>*Rate (mL/hr) :</b>	<input type="text" value="46.88"/>			
<b>*norEPINEPHrine Dose :</b>	<input type="text" value="25.0027"/>	<input type="text" value="mcg/min"/>		
<b>Device :</b>	<input type="text" value="M8100S15974336 A"/>			

M8100S15974336 A

### Begin Bag



- In order for this to program the pump the pump, their documented units here need to match the units in Guardrails Editor, as shown here:

Continuous/Bolus Drug Setup Group - Adult

Drug Concentration Therapy Advisory

Drug Name: **norepinephrine**

**Standard** Double Concentrated

Non-Weight Based Weight Based

Setup: norepinephrine / Standard / Non-weight based

Concentrations:

Concentration	Pump	Syringe	Anesthesia Only
<b>4 mg / 250 mL (0.016 mg / mL)</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8 mg / 250 mL (0.032 mg / mL)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>8 mg / 500 mL (0.016 mg / mL)</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16 mg / 250 mL (0.064 mg / mL)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Continuous Infusion:

Dosing Units: **mcg/min**

Dosing range: 0.0001 to 99,999

Soft Min: 0.3

Soft Max: 80

Hard Max: (Optional)

Initial Value: (Optional)

☐ Bolus Dose:

☐ Weight Based

Bolus Dose Administration Rate:

Dosing Units:

Dosing range:

Soft Min:

Soft Max: (Optional)

Hard Max: (Optional)

Initial Value: (Optional)

☐ Weight Based

Rate range:

Soft Min:

Soft Max: (Optional)

Hard Max: (Optional)

Initial Value: (Optional)

☐ Concentration Limits:

Units:

Hard Min:

Soft Min: (Optional)

Soft Max:

Clinical Advisory:

Name: Levophed

\*\*\*\*\*Must have physician order for rates greater than 60 mcg/min\*\*\*\*\*

Advisory

OK Cancel Apply

- The main difference between a CONTINUOUS alias in Guardrails Editor and a FLUID alias, is that a fluid only sends over the Rate from Cerner and nothing else.
- Generally, only actual (i.e. in real life) fluids, like normal saline or dextrose, but is also useful if you only want the pump to be programmed to an entry only by the rate where the dose/amount of the drug does not matter for the pump. An example would be a Bicarb Drip, where the main concern from the pump isn't how many mg of sodium bicarbonate there is, but how fast the bag is being given:

Fluids	Supports Secondary	Aliases
Bicarb Drip	Yes	2768888F
Blond (RRCs)	No	