

Sodium Bicarbonate Epic and Alaris Updates: Go-Live Tuesday, April 8th

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Background

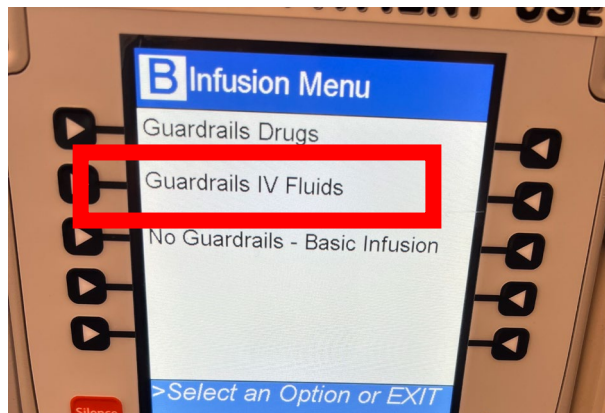
- Sodium bicarbonate can be made a few different ways:
 - Diluted
 - Sodium bicarbonate 150 mEq with 1000 mL of D5W or Sterile Water (SW) (0.15 mEq/mL concentration)
 - Sodium bicarbonate 75 mEq with 1000 mL of D5-0.45%NaCl or 0.45%NaCl (0.075 mEq/mL conc.)
 - Concentrated
 - Sodium bicarbonate 150 mEq added to empty IV bag to equal 150 mEq/150 mL (1 mEq/mL conc.)
- Diluted sodium bicarbonate infusion was available in Epic & Alaris
- There was provider interest for a concentrated drip built in Epic
 - ASHP Standardize for Safety recommends 1 mEq/mL concentration
- Fluid shortage occurred, which made it necessary to use a concentrated sodium bicarb infusion to preserve 1 L bags
 - Alaris sodium bicarbonate guardrails were adjusted to safeguard concentrated rates
- Fluid shortage is resolving
 - Interest remains in having **both** diluted and concentrated options available



Challenges

- Interest in changing the units to mEq/hr
- Many references and literature dose sodium bicarbonate infusion in mEq/hr
 - Currently ordered as mL/hr
 - This is due to Alaris having sodium bicarb infusion under “Guardrails IV Fluid”
 - Epic order cannot “back calculate” mEq/hr
 - Potential for ordering issues/confusion

Current
Alaris
Entry



sodium bicarbonate infusion ✓ Accept

Due to the ongoing fluid shortage, sodium bicarbonate infusions will be 150mEq/150 mL rather than in a 1 liter bag. Below is a conversion table of current practice to the concentrated infusion. If you have any questions, please contact the floor pharmacist.

NOTE: Concentrated sodium is associated with concentrated sodium bicarbonate infusion. May consider sodium monitoring.

Standard rate (150 mEq/1000 mL)	Conversion to concentrated (150 mEq/150 mL)	Amount of sodium (mEq/hr)
25 mL/hr	3.8 mL/hr	3.8 mEq/hr
50 mL/hr	7.5 mL/hr	7.5 mEq/hr
75 mL/hr	11.3 mL/hr	11.3 mEq/hr

Sodium
Every 6 hours for 48 hours, Blood, Blood, Venous

✓ sodium bicarbonate 150 mEq 150 mL infusion ✓ Accept ✗ Cancel

Reference Links: [Guidelines](#)

Report: Lab Test Results

Component	Time Elapsed	Value	Range	Status
Sodium	1 day (03/10/25 0335)	134	135 - 145 mEq/L	Final result
	2 days (03/09/25 0307)	132	135 - 145 mEq/L	Final result
CO2	1 day (03/10/25 0335)	24	22 - 32 mEq/L	Final result
	2 days (03/09/25 0307)	21	22 - 32 mEq/L	Final result

⚠ Dose: 3.8 mL/hr 7.5 mL/hr 11.3 mL/hr

Route: intravenous intravenous

Frequency: Once Continuous

Starting: 3/11/2025 Today Tomorrow For: Hours Days

At: 1830

Starting: Today 1830 Ending: Until Discontinued

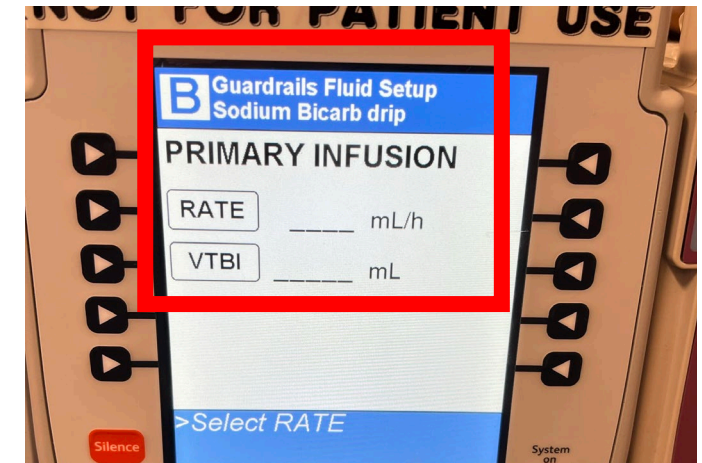
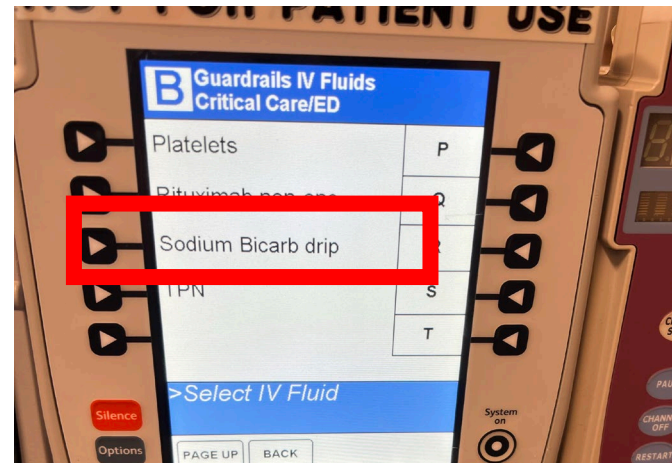
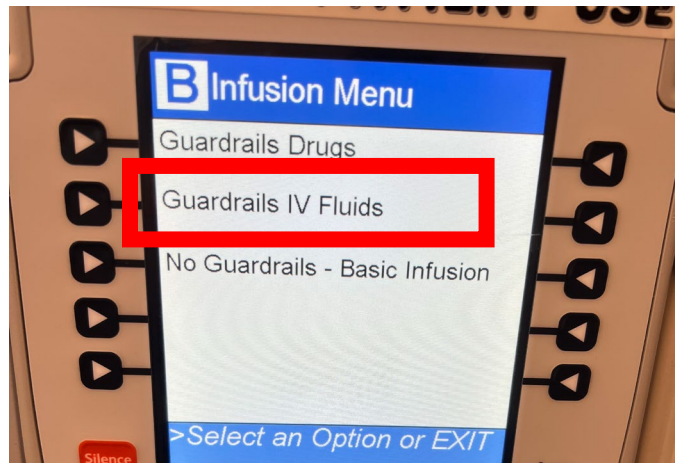
Admin Instructions: [Concentrated Sodium Bicarbonate](#)

Current
Epic
Entry

Additional Challenges

- Having two entries in separate parts of the library (i.e., diluted in Guardrails IV fluids and concentrated in “Guardrails Drugs”) could create selection mix-ups
- “Guardrails IV Fluids” entries are NOT able to be customized as much as Drug entries

**Current
Alaris
Entry**



Epic & Alaris Enhancement Needs



- Update sodium bicarbonate Epic and Alaris entries to ensure the:
 - Ordering Providers have:
 - ✓ Epic order dose based on mEq/hr
 - ✓ Ability to also see back calculated rate in mL/hr as double check
 - ✓ Clear distinction between “Diluted” vs. “Concentrated” orders
 - ✓ Flexibility for different diluted solutions (e.g., SW, D5W, 0.45%NaCl)
 - Nurses have:
 - ✓ Clear guidance in Admin Instructions:
 - ✓ Where to find the Alaris entry (i.e., moving from Guardrails IV Fluid to Guardrails Drug)
 - ✓ What to select (i.e., Diluted vs. Concentrated)
 - ✓ Ability to see mEq/hr for Alaris programming and use mL/hr as a double check
 - ✓ Both Alaris entries have proper guardrails to help ensure safe admin rates
 - ✓ Concentrated entry has an additional “Clinical Advisory” to confirm selection

Epic Updates: One-Off Orders

- **New Order Panel**

- Standardized sodium bicarbonate infusions:
 - 75 mEq or 150 mEq of sodium bicarbonate
- Single select choices
- Clear distinction on type of selection:
 - Diluted vs. Concentrated
- Three “Diluted” entries:
 - 75 mEq/1000 mL 0.45% NaCl
 - 150 mEq/1000 mL D5W
 - 150 mEq/1000 mL SW
- One “Concentrated” entry:
 - 150 mEq/150 mL

sodium bicarbonate infusion

- sodium bicarbonate 75 mEq/1000 mL in 0.45% sodium chloride DILUTED infusion
- sodium bicarbonate 150 mEq/1000 mL DILUTED infusion
- sodium bicarbonate 150 mEq/150 mL CONCENTRATED infusion +/- sodium level

Proposed Epic Order Panel

Next Required

sodium bicarbonate infusion

- sodium bicarbonate 150 mEq/1000 mL DILUTED infusion

Standard rate (150 mEq/1000 mL)	Conversion to mEq/hr of sodium (mEq/hr)
25 mL/hr	3.8 mEq/hr
50 mL/hr	7.5 mEq/hr
75 mL/hr	11.3 mEq/hr

- sodium bicarbonate in D5W 150 mEq/1,000 mL infusion
- sodium bicarbonate in sterile water 150 mEq/1000 mL infusion
- sodium bicarbonate 150 mEq/150 mL CONCENTRATED infusion +/- sodium level

Next Required

150 mEq Option: Choose a fluid type

Epic Updates: Order Panel (Continued)

- **Diluted Infusion:**

- Dose buttons in mEq/hr
- Rate visible in mL/hr as double check
- Clear admin instructions and order instructions as to Diluted entry
- Face-up dose and rate on the MAR

Example: 150 mEq Diluted Epic Build

Standard rate (150 mEq/1000 mL)	Conversion to mEq/hr of sodium (mEq/hr)
25 mL/hr	3.8 mEq/hr
50 mL/hr	7.5 mEq/hr
75 mL/hr	11.3 mEq/hr

sodium bicarbonate in D5W 150 mEq/1,000 mL infusion

Order Instructions: DILUTED infusion

Reference Links: Guidelines Administration Contraindications

Dose: 11.25 mEq/hr 7.5 mEq/hr 11.25 mEq/hr 15 mEq/hr 18.75 mEq/hr

Rate: 75 mL/hr

Route: intravenous

Frequency: Continuous

Starting: 3/10/2025 Today Tomorrow

At: 1745

Starting: Today 1745 Ending: Until Discontinued

sodium bicarbonate in D5W 150 mEq/1,000 mL infusion : Continuous : intravenous : 1730 Due

Admin Instructions:
For Alaris, select "Guardrails Drugs" then "Sodium Bicarb- INF" and then select "Diluted"

Dispense Location: JAX CENTRAL PHARMACY

Epic Updates: Order Panel (Continued)

- **Concentrated Infusion:**
 - Dose buttons in mEq/hr
 - Rate visible in mL/hr as double check
 - Clear admin instructions and order instructions as to Concentrated entry
 - Face-up dose and rate on the MAR
 - **Note to consider sodium monitoring and lab values face up when available**

sodium bicarbonate infusion ✓ Acc

sodium bicarbonate 150 mEq/1000 mL DILUTED infusion

sodium bicarbonate 150 mEq/150 mL CONCENTRATED infusion +/- sodium level

NOTE: Concentrated sodium is associated with concentrated sodium bicarbonate infusion. May consider sodium monitoring.

Sodium
Every 6 hours for 48 hours, Blood, Blood, Venous

Order Instructions: CONCENTRATED infusion

Reference Links: [Guidelines](#)

Dose: mEq/hr 3.8 mEq/hr 7.5 mEq/hr 11.3 mEq/hr

Rate: mL/hr ⓘ

Route: intravenous ⓘ intravenous

Frequency: Once Continuous

Starting: ⓘ Today Tomorrow For: ⓘ Hours Days

At: ⓘ

Starting: Today 1745 Ending: Until Discontinued

Admin Instructions: [For Alaris, select "Guardrails Drugs" then Sodium Bicarb- INF" and then select "Concentrated"](#)

sodium bicarbonate 150 mEq 150 mL (1 mEq/mL) infusion ☐ Dose: 3.8 mEq/hr : 3.8 mL/hr :
intravenous : Continuous : ⓘ

1745 Due

Admin Instructions:
For Alaris, select "Guardrails Drugs" then Sodium Bicarb- INF" and then select "Concentrated"

Dispense Location: JAX CENTRAL PHARMACY
Click to see more details ∨

Epic Updates: Order Sets

- Previously contained **diluted** sodium bicarbonate before shortage
- Currently concentrated sodium bicarbonate infusion
- Update:
 - Change back to diluted infusion with previous fluid type:
 - D5W
 - Sterile Water (SW)
 - 0.45%NaCl
 - Orders will now have:
 - mEq/hr doses
 - mL/hr rates visible
 - MAR Alaris Admin Instructions

sodium bicarbonate infusion

sodium bicarbonate 75 mEq in sodium chloride 0.45 % 1,000 mL (0.075 mEq/mL) infusion Accept Cancel

Order Instructions: DILUTED infusion

Reference Links: [Guidelines](#)

Dose: 5.625 mEq/hr 3.75 mEq/hr **5.625 mEq/hr** 7.5 mEq/hr 9.375 mEq/hr

Rate: 75 mL/hr ⓘ

Route: intravenous ⓘ **intravenous**

Frequency: Continuous ⓘ **Continuous**

Starting: 3/28/2025 ⓘ **Today** Tomorrow For: Hours **Days**

At: 1130 ⓘ

Starting: Today 1130 Ending: Until Discontinued

Medications

sodium bicarbonate 0.075 mEq/mL
Calc. dose: 75 mEq ⓘ

Base

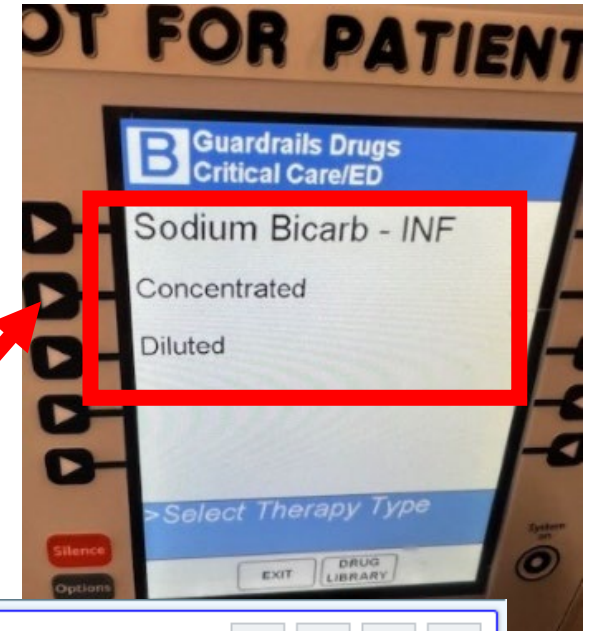
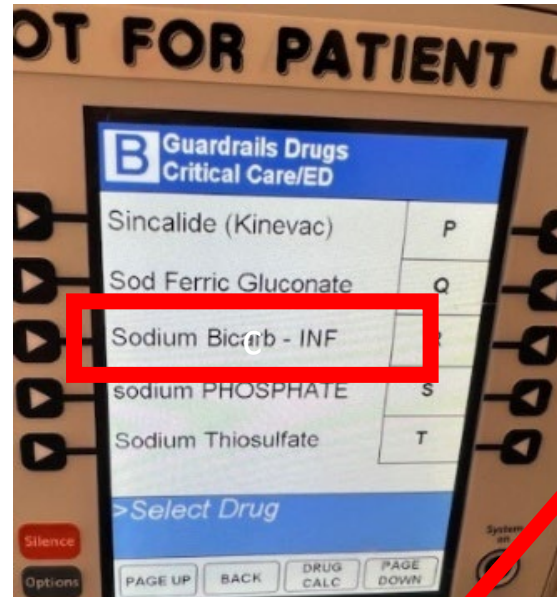
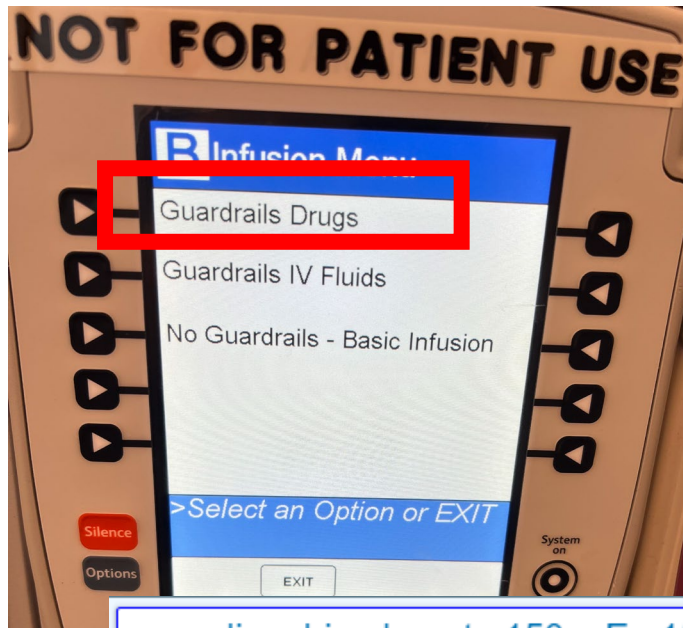
sodium chloride 0.45 % 925 mL **925 mL**

Admin Instructions: [For Alaris, select "Guardrails Drugs" then Sodium Bicarb- INF" and then select "Diluted"](#)

Alaris Updates

- Sodium Bicarb infusion will now be listed under Guardrails IV Drugs
- Each entry will have its own guardrails and admin instructions

Updated
Alaris &
MAR
Entry



sodium bicarbonate 150 mEq 150 mL (1 mEq/mL) infusion Dose: 3.8 mEq/hr : 3.8 mL/hr :

intravenous : Continuous :

1745 Due

Admin Instructions:
For Alaris, select "Guardrails Drugs" then Sodium Bicarb- INF" and then select "Concentrated"

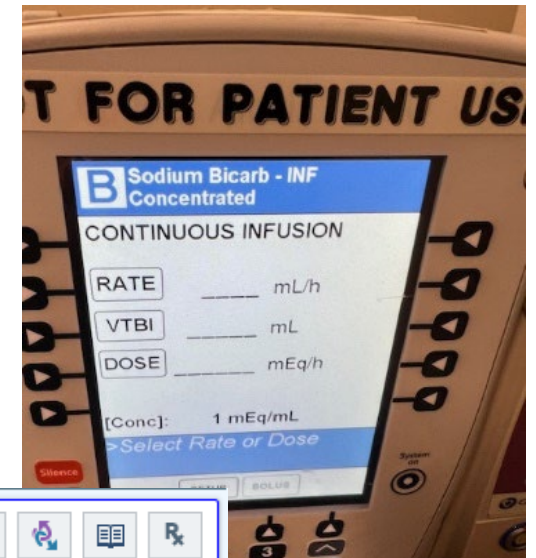
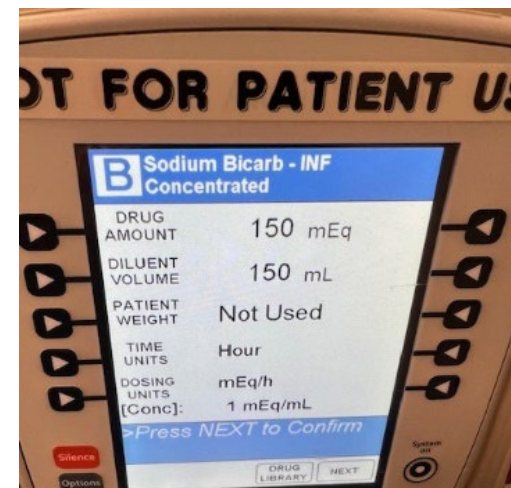
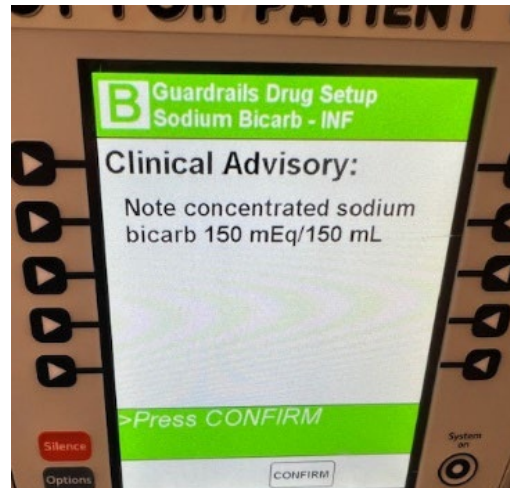
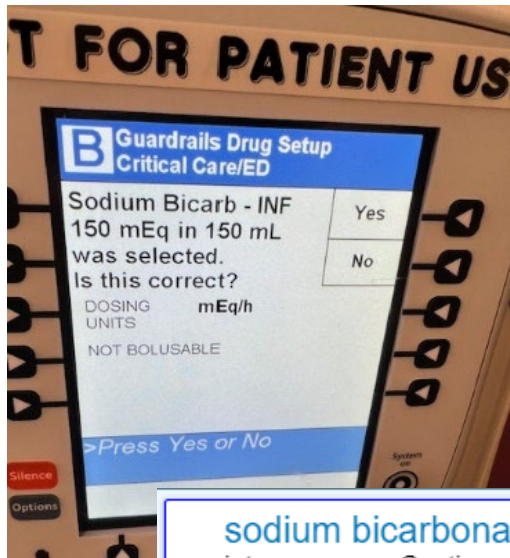
Dispense Location: JAX CENTRAL PHARMACY
[Click to see more details](#)





Alaris Updates (Continued)


- “Concentrated” Therapy Type







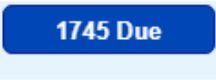
- One entry (i.e., 150 mEq/150 mL bag, 1 mEq/mL)
- Clinical Advisory will pop-up to confirm concentrated entry needed
- All information clearly listed on MAR for ease of programming

**Updated
Alaris & MAR
Entry**




sodium bicarbonate 150 mEq 150 mL (1 mEq/mL) infusion ⓘ Dose: 3.8 mEq/hr : 3.8 mL/hr :    

intravenous : Continuous : 

Admin Instructions:
For Alaris, select "Guardrails Drugs" then Sodium Bicarb- INF" and then select "Concentrated"

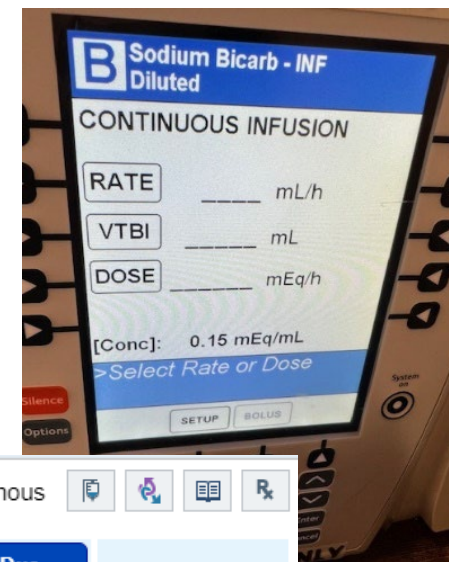
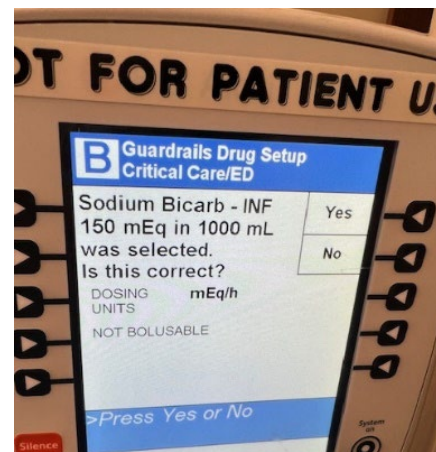
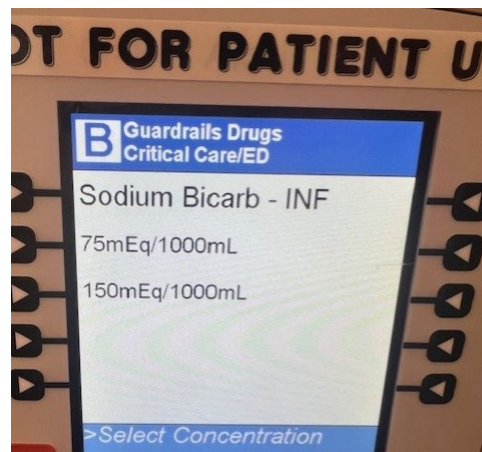
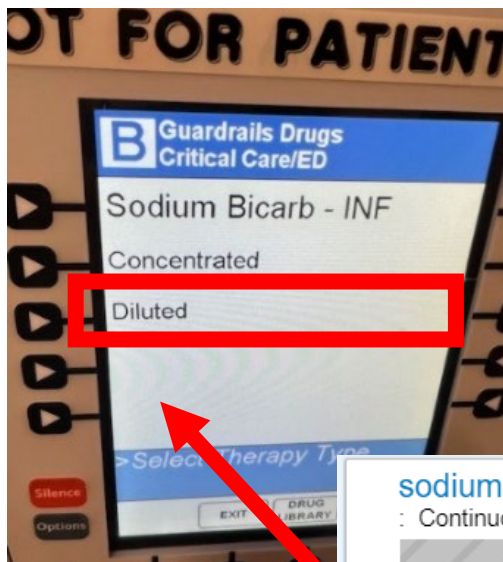
Dispense Location: JAX CENTRAL PHARMACY
[Click to see more details](#) 

Alaris Updates (Continued)

- “Diluted” Therapy Type

- Two entries available with appropriate guardrails:
 - 75 mEq/1000 mL (0.075 mEq/mL)
 - 150 mEq/1000 mL (0.15 mEq/mL)
- No wildcards
- All information clearly listed on MAR for ease of programming

**Updated
Alaris & MAR
Entry**

A screenshot of a Medication Administration Record (MAR) entry. The entry is for 'sodium bicarbonate in D5W 150 mEq/1,000 mL infusion'. The dose is listed as '11.25 mEq/hr : 75 mL/hr : intravenous'. The entry is due at '1730'. The 'Admin Instructions' field contains the text: 'For Alaris, select "Guardrails Drugs" then "Sodium Bicarb - INF" and then select "Diluted"'. The 'Dispense Location' is 'JAX CENTRAL PHARMACY'.

sodium bicarbonate in D5W 150 mEq/1,000 mL infusion □ Dose: 11.25 mEq/hr : 75 mL/hr : intravenous

: Continuous : □

Admin Instructions:
For Alaris, select "Guardrails Drugs" then "Sodium Bicarb - INF" and then select "Diluted"

Dispense Location: JAX CENTRAL PHARMACY

Summary

- **The Why:** Updates are to improve clarity, safety, and accuracy with both infusion types
- **Benefits of the Updates:**
 - Epic dose buttons will be in mEq/hr with mL/hr visible to align with references/literature
 - Standardizes fluids and concentrations
 - Alaris Drug entry with two therapy types allows for safer, specific guardrails
 - Concentrated infusion matches ASHP Standardize for Safety recommendation
- **System Go-Live on Tuesday, April 8th, for adult patients for Epic and Alaris updates**
 - RN will need to power cycle the pump to see new Alaris entries
 - Pharmacists will work with nursing to update any orders over to mEq/hr
- Hot sheet disseminated via System Nurse Managers to units
- Education slides shared with impacted provider teams