General Nurse – Integrated Infusion Pumps

Intended Audience: Nurses in Emergency, Inpatient, Oncology, Obstetrics and select Ambulatory areas

Summary: Baxter large volume pumps integrate with Epic to automatically program infusion orders, reducing medication errors, improving documentation accuracy, and saving nurses' time.

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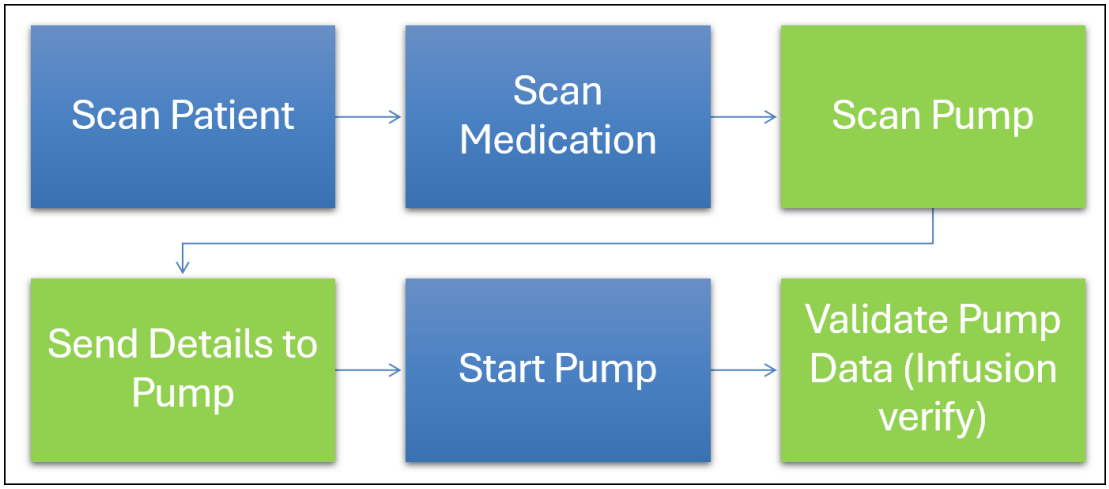
BAXTER WORKFLOW

When you are ready to administer an IV fluid or medication with a pump, you associate the pump to send the patient and order details to the pump, which programs the pump. Then you periodically review and file data from the pump in Epic using Infusion Verify.



Notes on Pump Integration

- Pharmacy must verify the fluid or medication before the infusion can be scanned on the integrated IV pump.
- For the pump to receive order details from Epic, the barcode must be displayed on the pump screen. In most workflows, the barcode icon will automatically appear. If it does not, or if you need to Resend Details, press the barcode button on the pump.
- If the pump barcode does not scan, it can be entered manually by typing the letters and numbers that appear under the barcode into the Pump Information field.

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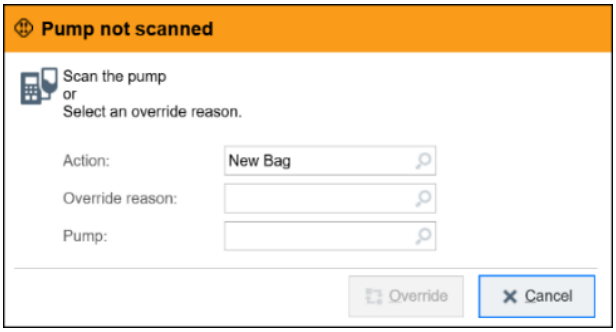
PRIMARY INFUSION

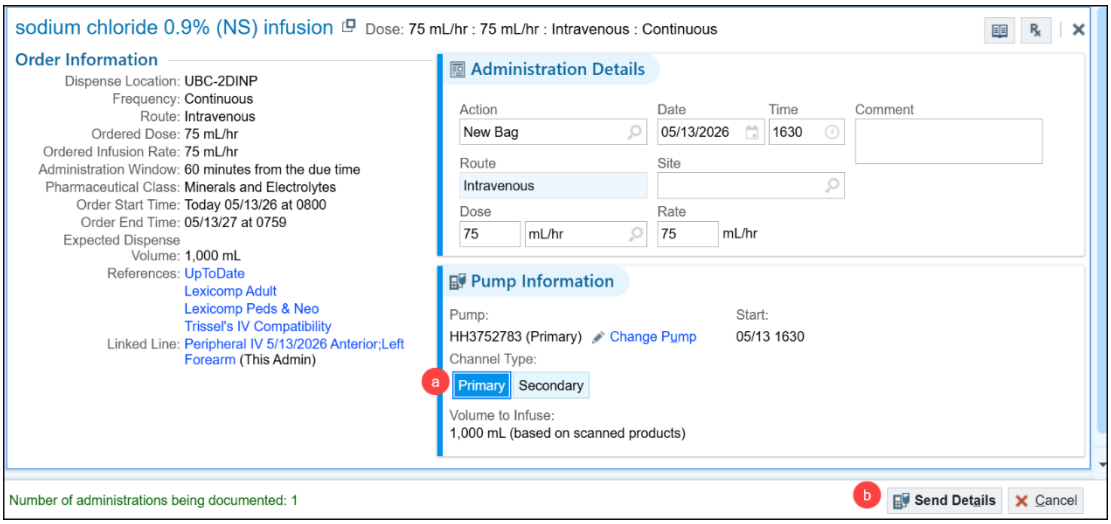
Follow the steps below to begin a primary infusion.

In the MAR or Narrator

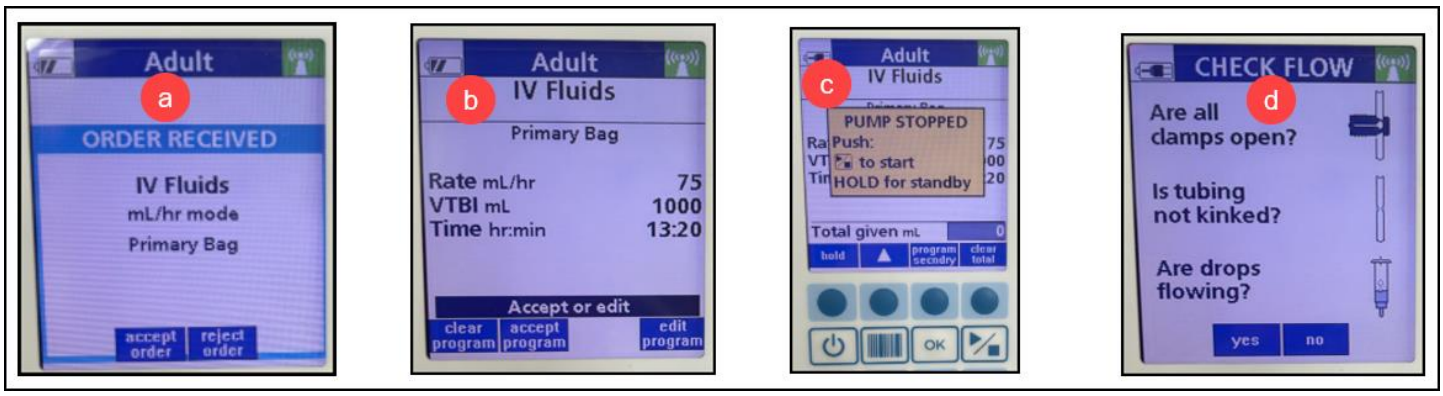
1. Scan the **patient's wristband** and the **medication**
2. There will be a pop up warning – **scan the pump**



3. In the MAR Admin Window
   a. Choose **Primary**
   b. Click Send Details



4. On the pump
   a. Verify the medication detail, then press **accept order**
   b. Verify the rate and VBTI is correct, then press **accept program**
   c. Press the **start button**
   d. The pump will prompt you to check all clamps open, tubing not kinked, and drops are flowing. Press **yes** to start the infusion.



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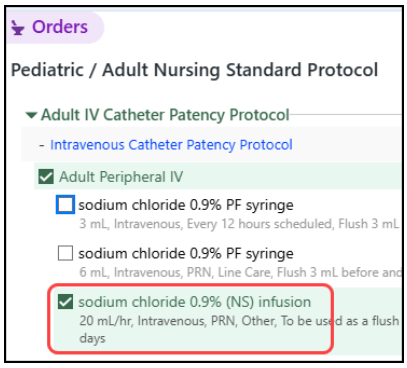
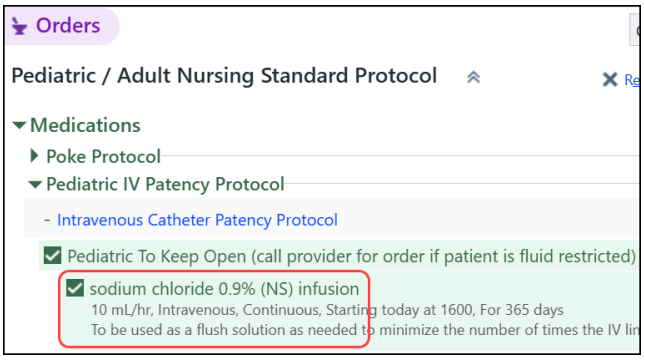
SECONDARY INFUSION

Follow the steps below to begin a secondary infusion. **Note: a primary infusion must already be running**. If there is no primary infusion running, the nurse can place an order for Saline infusion under the IV Catheter Patency Protocol. For more information, please refer to Standard Nursing Protocol

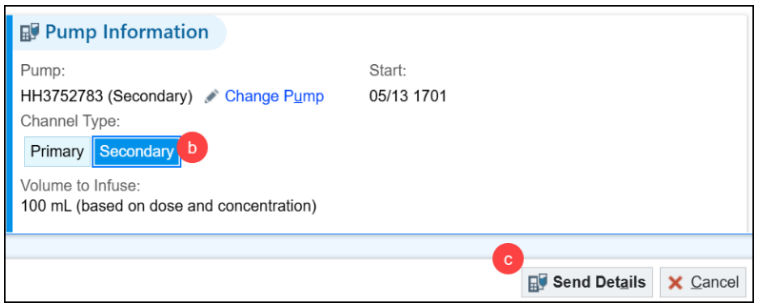




In the MAR or Narrator

1. Scan the **patient's wristband** and the **medication**
2. On the **pump**
   a. **Stop** the Primary Infusion
   b. Press **program pri/sec**
   c. Press **program secondary**.
   d. The pump's barcode will be displayed - **Scan the pump**

3. In the MAR admin window
   a. Select **Secondary**
   b. Click **Send Details**



4. On the **pump**
   a. Confirm and accept the order and program details
   b. Call back: Select Yes or No (see below)

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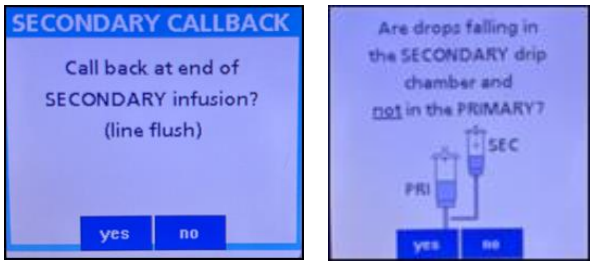
c. The pump will prompt you to check if the Secondary infusion is going, press **yes** to start infusion.



Using Callback for Secondary Infusion

With Baxter you will have the option to be **"called back"** to the pump when the secondary infusion is complete:

- If you click **No**, it will automatically restart the primary infusion.
- If you click **Yes**, the pump will beep after the secondary infusion is complete and you will be prompted to flush the secondary line and to verify the primary infusion details.

INFUSION VERIFY

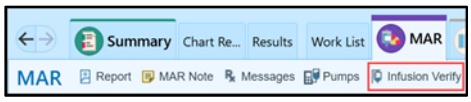
Once a pump is linked, it transmits data to Epic each time you perform an action on the pump and at set intervals for volume tracking. Use Infusion Verify to check, confirm, and record rates, doses, and volumes for every infusion a patient receives.

ⓘ	Make sure to follow your unit's guidelines on how frequently rates and volumes should be recorded. Remember to also do Infusion Verify every time your patient leaves the unit for a procedure, transfers to another department, and at the end of your shift.

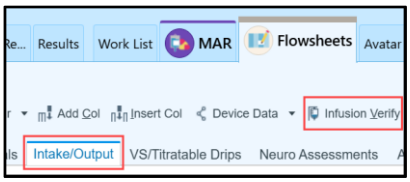
Using Infusion Verify – Inpatient/OB

Infusion Verify can be accessed from the **MAR** and in the **Intake/Output Flowsheet** using the toolbar. You can also open Infusion Verify on each infusion individually by clicking the Infusion Verify icon in any infusion row.

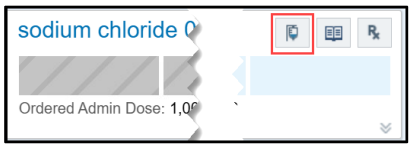
MAR Toolbar



Flowsheets – Intake/Output tab



Individual infusions in the MAR



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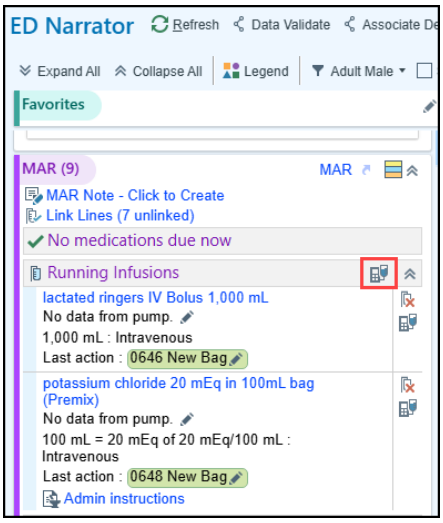
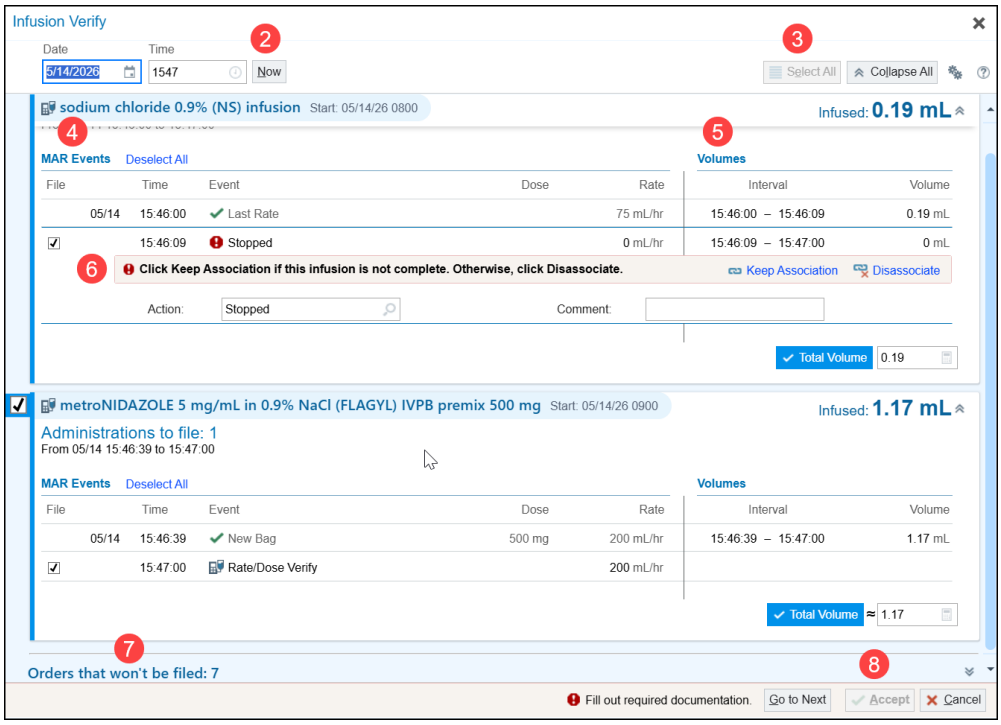
Infusion Verify in the ED Narrator

In the ED, the Infusion Verify can be found in the ED Narrator



1. Go to the left toolbox, then MAR section.
2. In the **Running Infusions** toolbox, click the Infusion Verify icon. This will display all the active infusions in the Infusion Verify window. You can also open Infusion Verify on each infusion individually by clicking the Infusion Verify icon in any infusion row.

Infusion Verify window:



Note: All active infusions appear in Infusion Verify window regardless of whether a pump is associated. For discontinued infusions to stop appearing in Infusion Verify, a **Stopped** action must be documented.

1. Click to open Infusion Verify
2. The **Now** button will refresh Infusion Verify to the current time
3. Click **Select All** to select all the events to be filed to the MAR. You can also clear checkboxes next to administrations you don't want to file (ex: Medication, Event, or Total Volume).
4. In the **MAR Events** column, review that the **Event**, **Dose**, and **Rate** are accurate for each infusion.
5. The **Volumes** column shows a detailed breakdown of volume, making it easy to see how the Total Volume is accumulated. Update the Total Volume if needed.
6. Reconcile any **warnings**.
7. Infusions that cannot be filed appear in a collapsed section at the bottom of the Infusion Verify.

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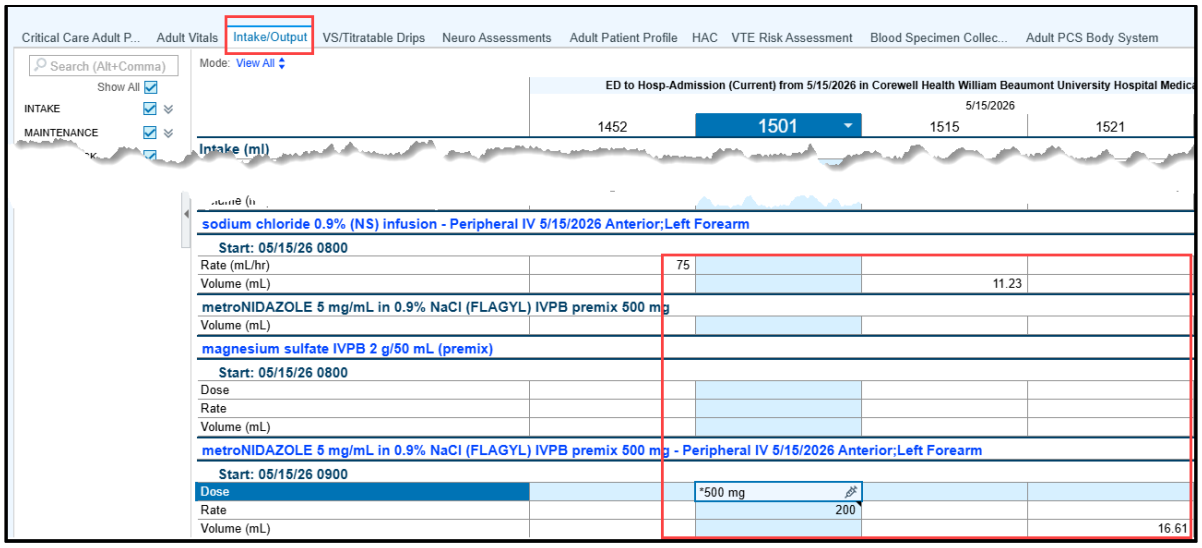
8. Click **Accept** to file the rate, dose, and volume data of the infusions that are selected.
9. When you accept this data, rates and volumes will automatically be pulled into the correct Flowsheet rows and Narrator Event Log.

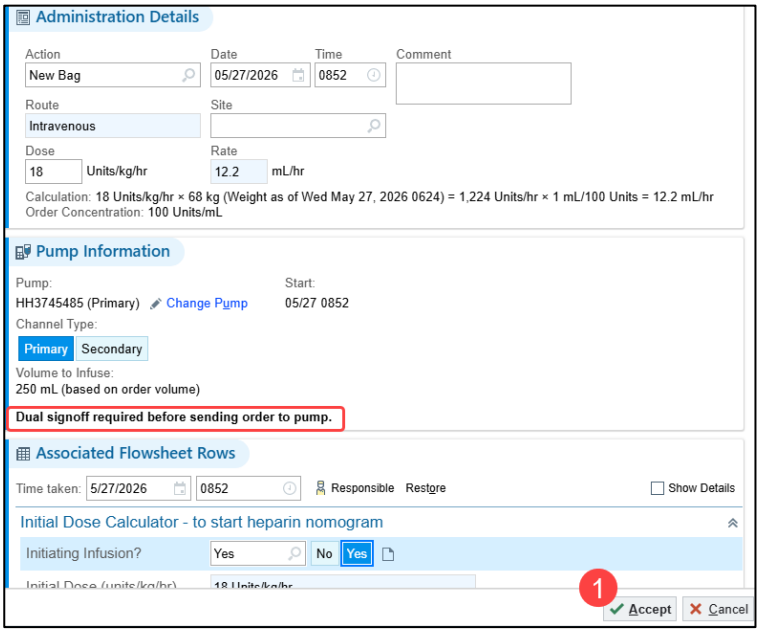


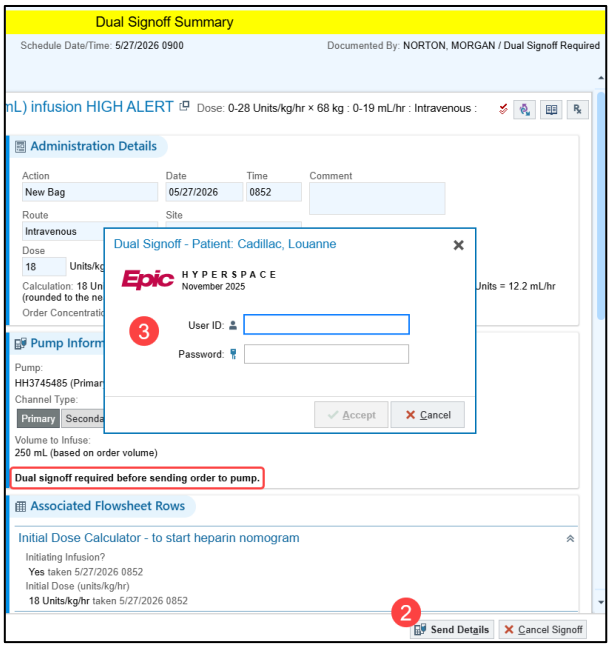
DUAL SIGN MEDICATIONS

Medications that require a dual sign MUST be initiated and adjusted from the MAR and NOT from the pump.

Follow the steps to administer a primary or secondary medication as above and the system will prompt you for a **Dual Sign** to complete sending the order details to the pump.

1. Once the medication administration form is complete and the dual verification is ready to be done, click Accept
2. The dual sign off summary will appear for the second nurse to review the medication administration window. Once the details are confirmed, click Send Details to send the order to the pump.
3. The second nurse will **enter their credentials** to confirm the dual sign.
4. On the pump, both nurses **verify that the medication details are correct** and then start the infusion.





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CHANGE THE RATE/DOSE OF AN INFUSION

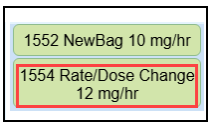
The rate or dose change can be done on the pump or from the MAR. Follow these steps to change the rate of an infusion, including when you need to titrate an infusion.

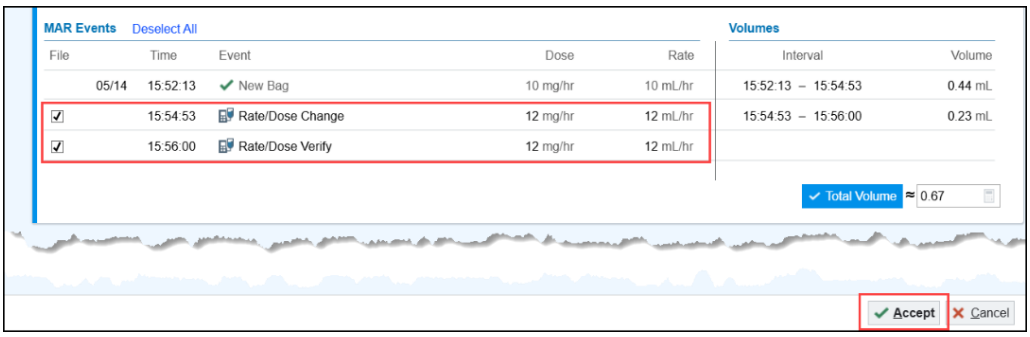
Changing the Rate on the Pump

Manually enter the rate/dose change on the pump. Note: Changing the rate or dose on the pump does not automatically update the infusion row in the MAR activity. The pump data must be verified, before the MAR will be updated.

In Infusion Verify:

1. Notice that the Rate/Dose Change and Rate/Dose Verify appear in the MAR Events.
2. Click **Accept** to file
3. The MAR action will now reflect the Rate/Dose Change





Changing the Rate from the MAR

In the MAR or Narrator

1. Enter a MAR Action of **Rate/Dose Change**
2. Enter the **new Rate or Dose**
3. Press the barcode button on the pump
4. In the Med Admin window, click **Send Details**
5. On the pump, verify that the medication details are correct and then start the infusion

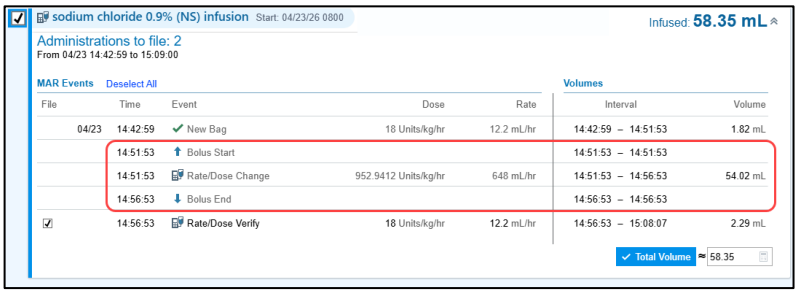
For rate changes from the Medication, the change does not need to be validated in Infusion Verify, it will immediately be reflected on MAR or Narrator.

BOLUS

Bolus from an Existing Bag

To bolus from an existing bag, the <u>same infusion must already be running as the primary infusion</u>. This workflow would also be followed for medications that start with a "loading dose" given from the same infusion bag.

1. Scan the patient and the medication
2. Select a MAR action of **Bolus from infusion**
3. Manually program the bolus on the pump using the Bolus button. Note that the volume and rates from the bolus will be filed to the existing continuous infusion rather than a separate bolus line.



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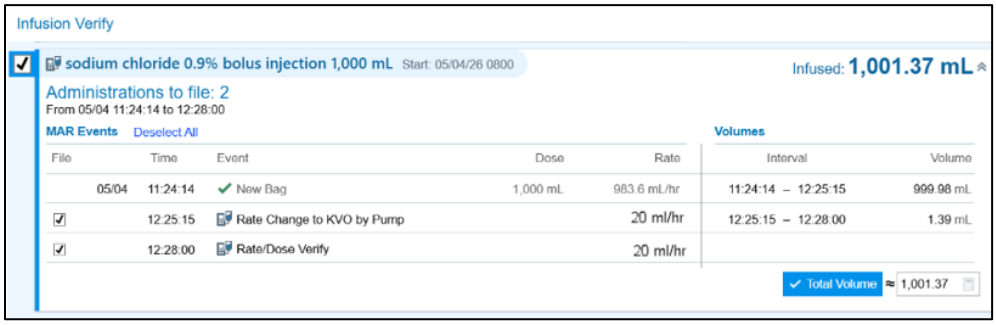
Bolus from a New Bag

Boluses given from a new bag are documented as you would a normal integrated infusion.

1. Scan the patient and the medication
2. Use the MAR Action of **New Bag**
3. Select **Primary** or **Secondary** (depending on how you hang the bag)
4. **Send Details** to the pump
5. On the pump, verify that the medication details are correct and then start the infusion

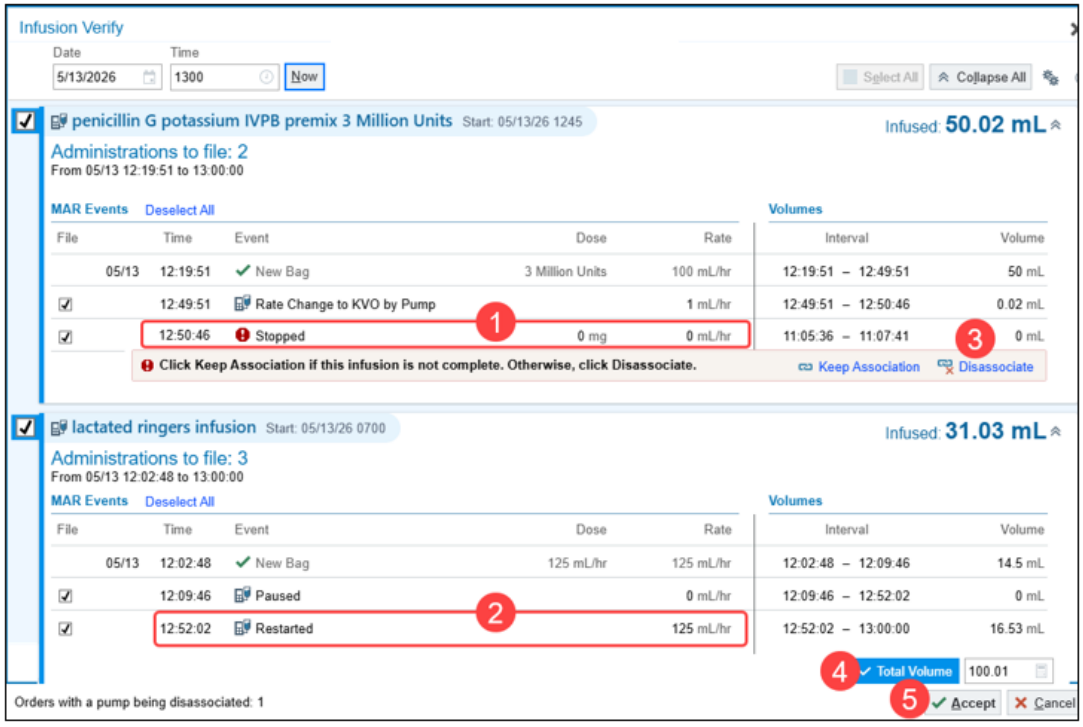
For boluses from a new bag, they will have their own section in Infusion Verify.



STOPPING OR COMPLETING AN INFUSION

Upon completion of the infusion, stop the infusion on the pump.

1. Open **Infusion Verify**
2. Verify that the Event is **Stopped** and the Rate is **0 mL/hr**
   a. For Secondary infusion, verify that the primary infusion rate is correct and the Event is **Restarted**.
3. Click **Keep Association** to keep the pump linked for the next administration or **Disassociate** if the infusion is complete.
4. Verify that the **Total Volume** is correct. Adjust it if necessary.
5. Click **Accept** to file the data.



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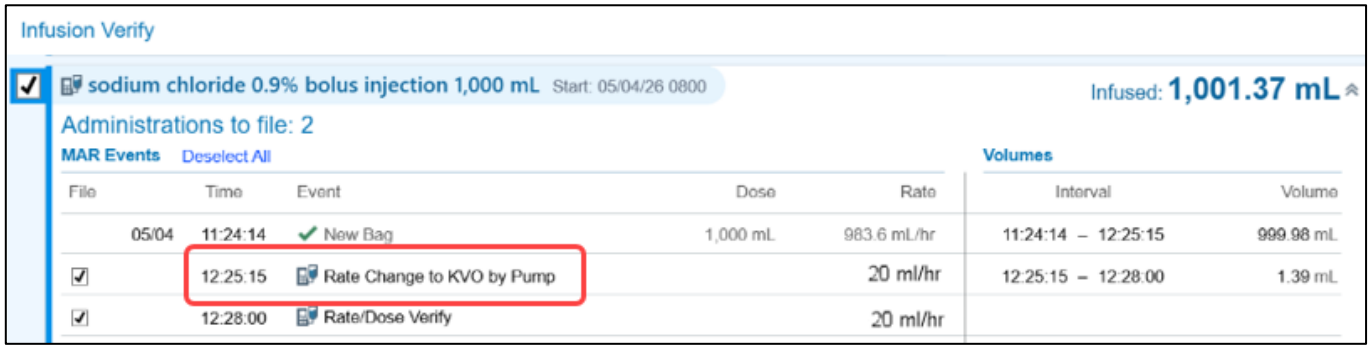
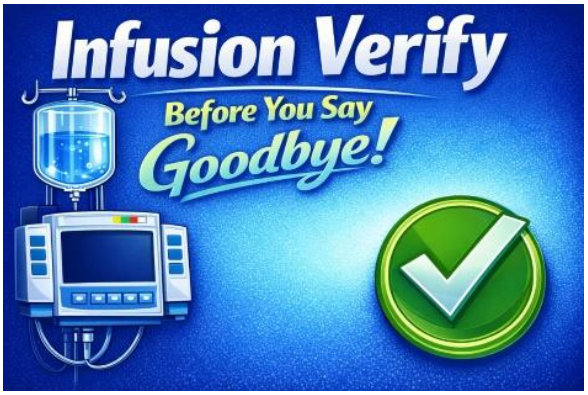
KVO BY PUMP

Once the infusion infuses the VTBI, the pump will go to a **KVO mode** until turned off, or a new bag/medication is started. This will not put an MAR action on the infusion row, but it will reflect in Infusion Verify.



PATIENT MOVEMENT

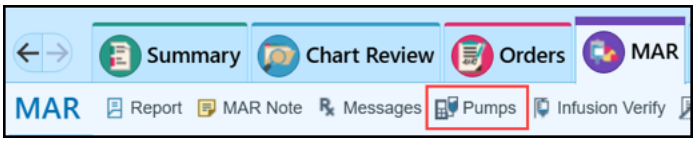
To ensure all MAR actions and volume data are captured when a patient leaves the floor, Infusion Verify must be completed before the patient leaves the unit.



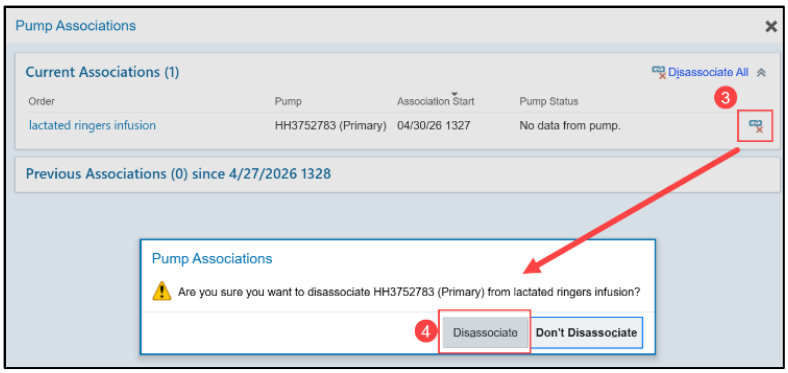
Additionally, if the patient leaves the unit to go to an out-of-scope procedural area, the pump needs to be disassociated from Epic. Out of scope departments include Surgery (Pre/Intra/Post/PACU), IR, Cath Lab, Endoscopy, and Peds Sedation. However, if the RN is staying with the patient for the duration of the procedure in an out-of-scope department, the pump does not have to be dissociated.

Disassociate the Pump - Inpatient

1. Complete Infusion Verify
2. Click **Pumps** found in the MAR toolbar



3. Any pumps associated will display here. Click disassociate icon to disassociate the pump. If there are more than one pump or IV meds, click **Disassociate All**
4. In the pop up window, click **Disassociate**
5. Click **Close**. <u>The pump will continue to run even when the pump has been disassociated in Epic</u>



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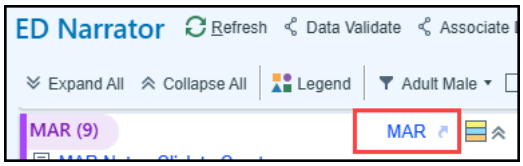
Disassociate the Pump – Emergency (Narrator)

1. In the ED Narrator, click on the **MAR Hyperlink** to open the MAR activity tab
2. Follow steps 1-5 above

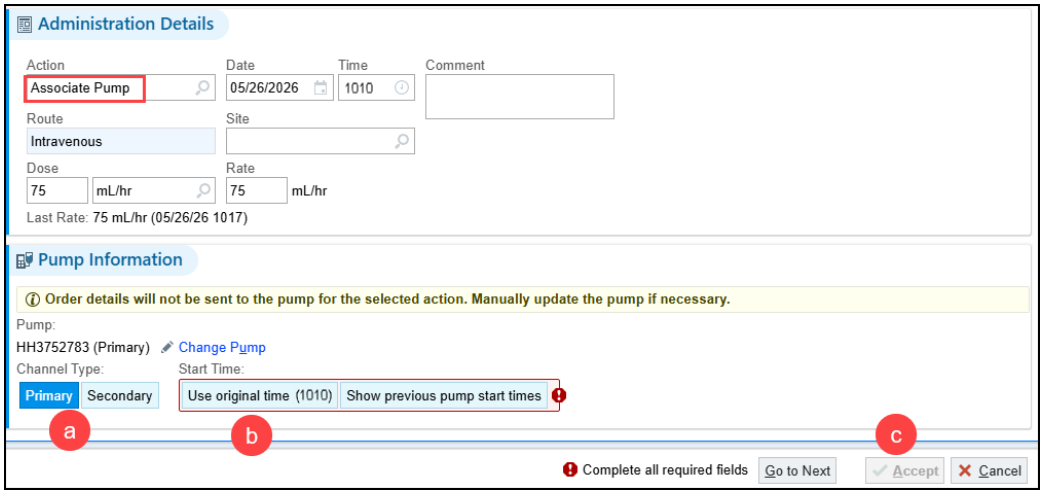


Note: If a patient is admitted to an inpatient unit and the pump stays with them, there's no need to disassociate it before admission. The pumps remain linked to the patient throughout the admission process.

ASSOCIATE A PUMP AFTER A START

When the pump has been disassociated, associate the infusion orders with a pump as soon as possible.

1. Scan the patient and the medication that you need to associate with the pump
2. Select a MAR Action: **Associate Pump**
3. Press the barcode button on the pump
4. Scan the pump
5. On the MAR
   a. Choose Primary or Secondary
   b. Select **Use original time** for Start Time
   c. Click **Accept**
6. Adjust the VTBI (Volume to be Infused) on the pump when necessary



Note: If the patient has multiple IV fluids or medications, they must be scanned and associated individually.

Infusion Verify example that includes Pump Disassociation and Associate Pump.

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ASSOCIATE A PUMP AFTER AN EMERGENCY

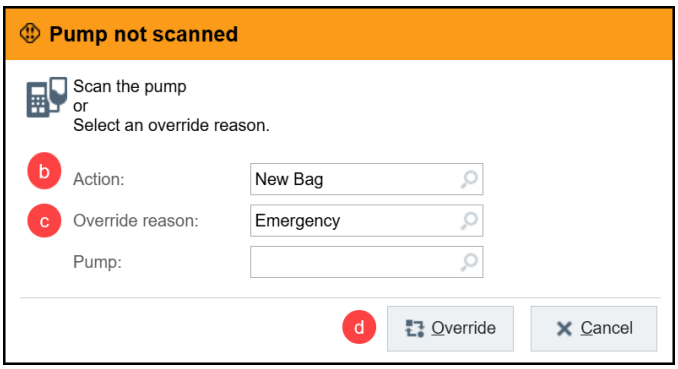
> In an emergency, pump integration may be bypassed to allow for the most rapid and flexible response to the patient's condition, especially when immediate intervention is needed. In these situations, back association of the patient and medication to the pump would be necessary once the patient's condition stabilizes

After a new infusion bag has been manually programmed on the pump during an emergency, follow the steps below when you are ready to associate the pump to the patient in Epic.

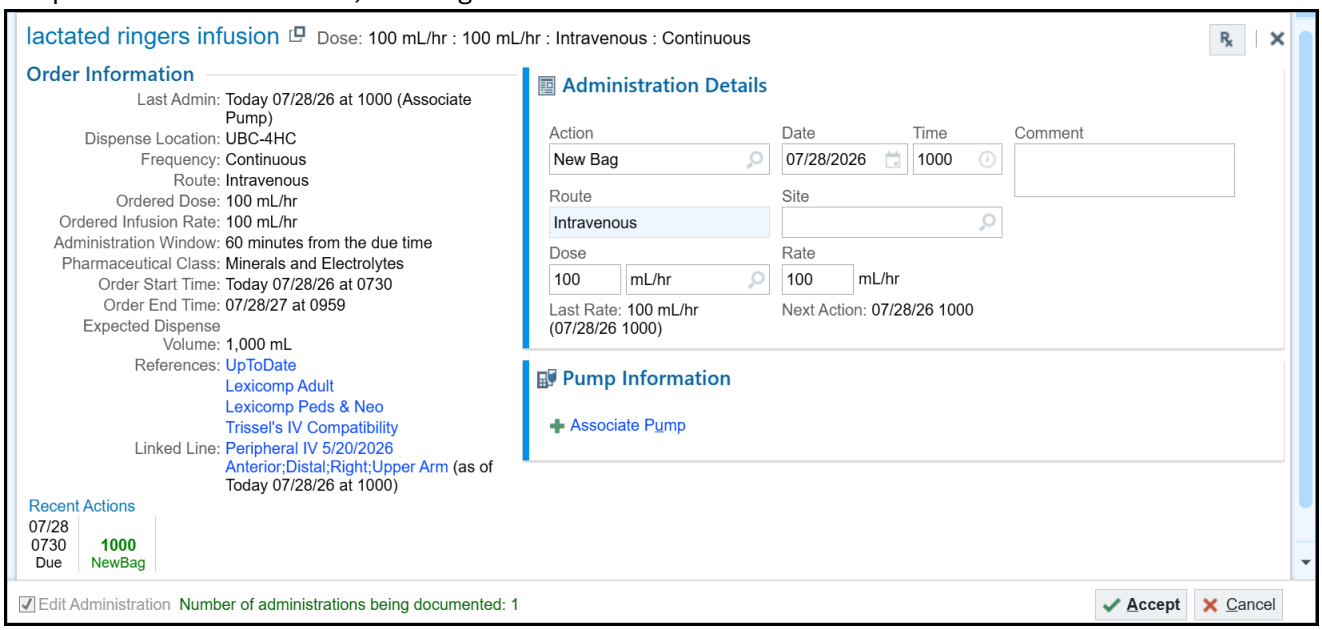
1. Document the infusion

The infusion must be documented before it can be associated with the pump. It cannot be associated with the pump at the time of documenting a New Bag as this will prompt Epic to send programming to the pump and since it is already running, it is not needed and will error.

a. **Scan** the patient and the medication, selecting the **Due time** if there is one
b. Leave the MAR action of **New Bag**
c. Override reason for Pump not scanned screen enter **Emergency**
d. Click **Override**



e. Complete the administration, entering the time the infusion was started as the admin time



2. Associate the Pump

Once the infusion is documented in Epic, that order needs to be associated with the pump.

a. **Scan** the medication
b. On the **Pump not scanned** window, select a MAR action of: **Associate pump**
c. On the Pump, press the **barcode button**
d. Scan the **pump**
e. On the MAR, choose **Primary or Secondary**

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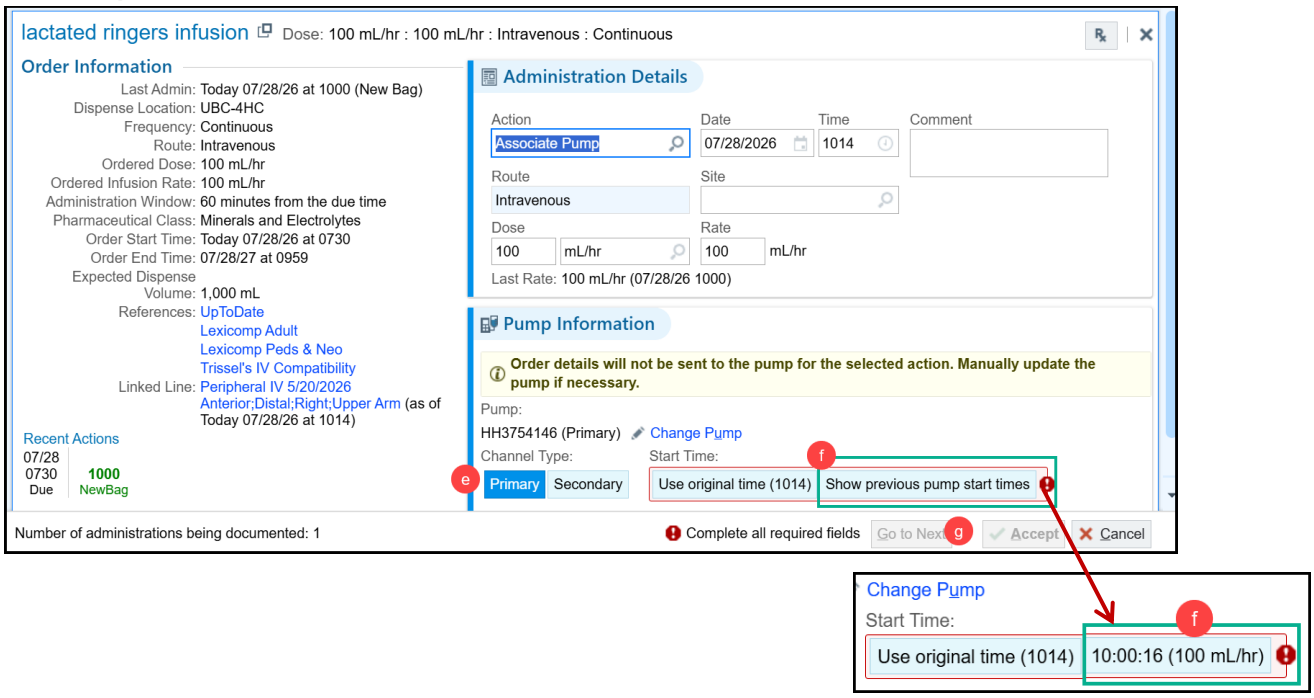
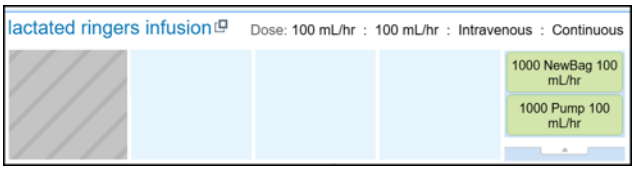
f. Select **Show previous pump start times**, then choose the correct infusion start time. Epic will pull in all infusion data from the pump beginning at that selected time.

g. Click **Accept**



This is what the MAR would like after documenting the infusion start time and associating the pump.



Once the pump is associated, it will start sending all the infusion data back to Epic. Open Infusion Verify to review the infusion volume and accept the data.

ROVER MEDICATION ADMINISTRATION

You can also use the Rover app to send details to the pump

1. Scan the patient and the IV infusion
2. Tap the cart icon to review and sign the Rover med admins
3. Tap to accept the administration
4. In the Scan the pump screen, tap Scan Barcode and scan the pump barcode

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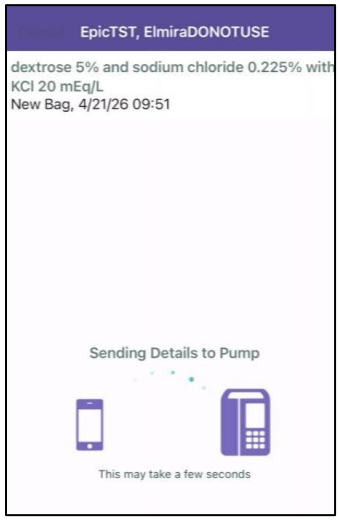
5. Select Primary or Secondary
6. Tap Now on Association Start
7. Wait a moment until the pump and Epic synchronize
8. Accept program and start the pump



EPIC MAR CALCULATORS AND PUMP INTEGRATION

Medications with MAR Calculators, like heparin, require careful steps to maintain integration during any necessary titrations.

Follow the chart below for the steps to titrate a heparin infusion – for the entire heparin careflow see

- the General Nurse – Adult Heparin guide or
- the Inpatient Nurse - Pediatric Heparin guide

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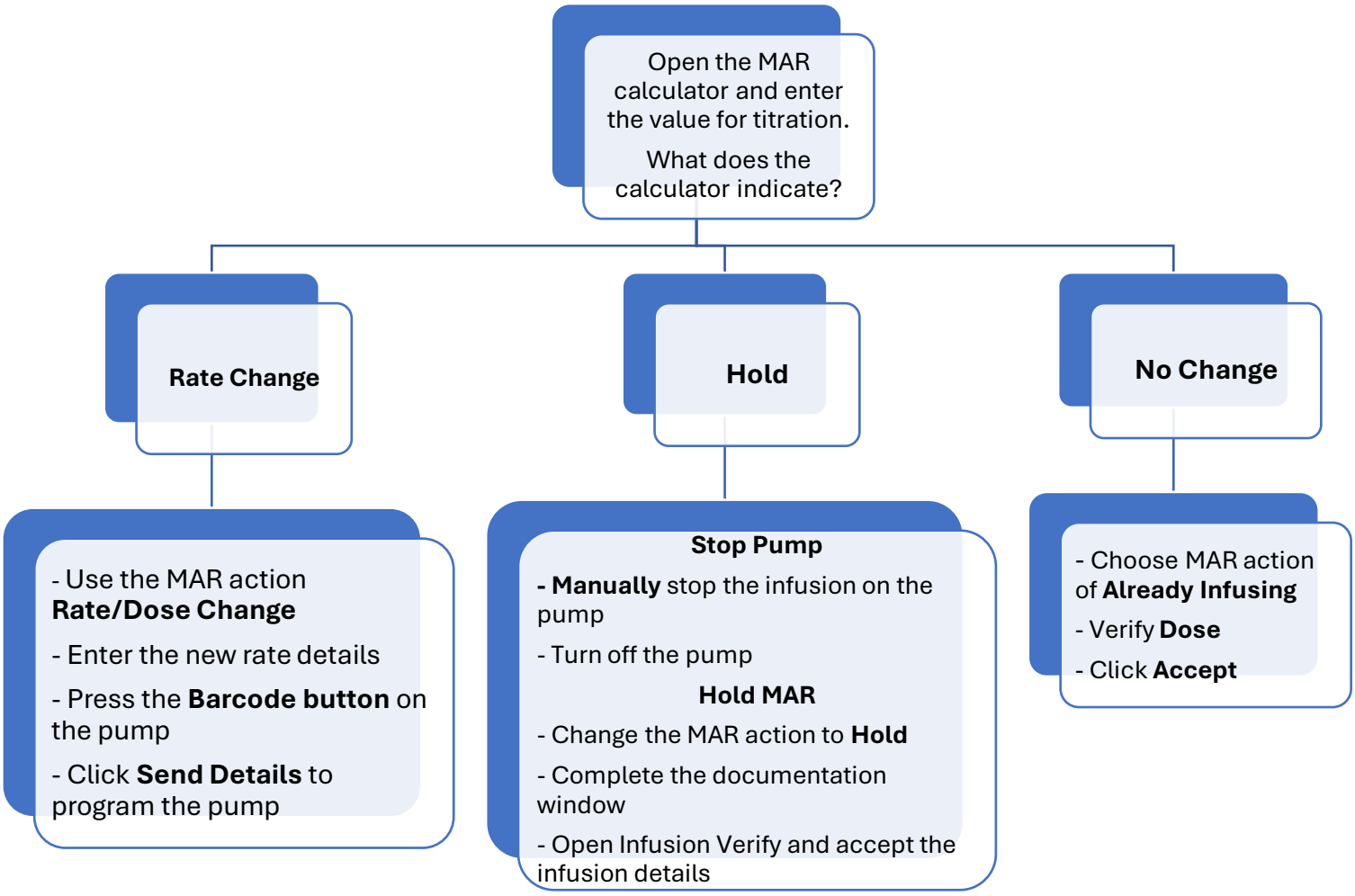
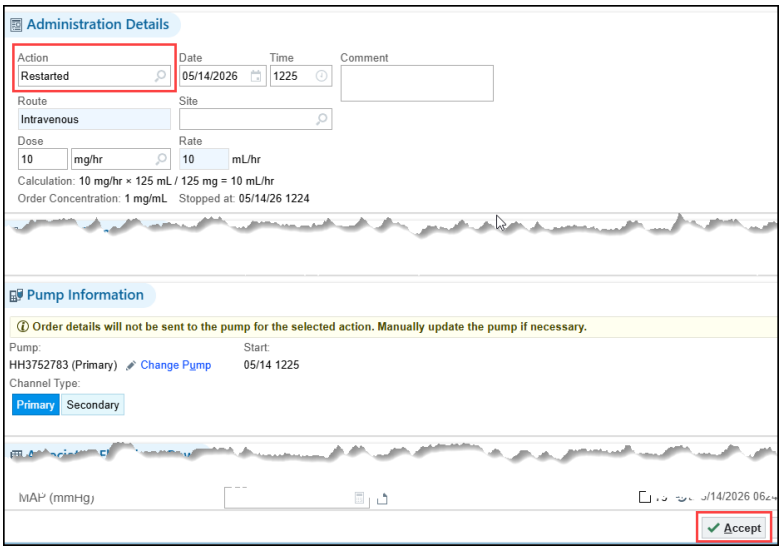


Restarting the Pump after Hold

When restarting an infusion after a hold, you need to choose between two MAR Actions. The appropriate action depends on whether you're resuming the infusion at the same rate as before or at a different rate. Ask yourself: Is the restart rate identical to the previous rate? Use these steps to accurately restart the heparin infusion with an integrated pump.

Restarting at the Previous Rate

1. MAR Action: **Restarted**
2. Confirm the previous Dose and Rate, then click **Accept**
3. Turn the pump back on and restart the infusion



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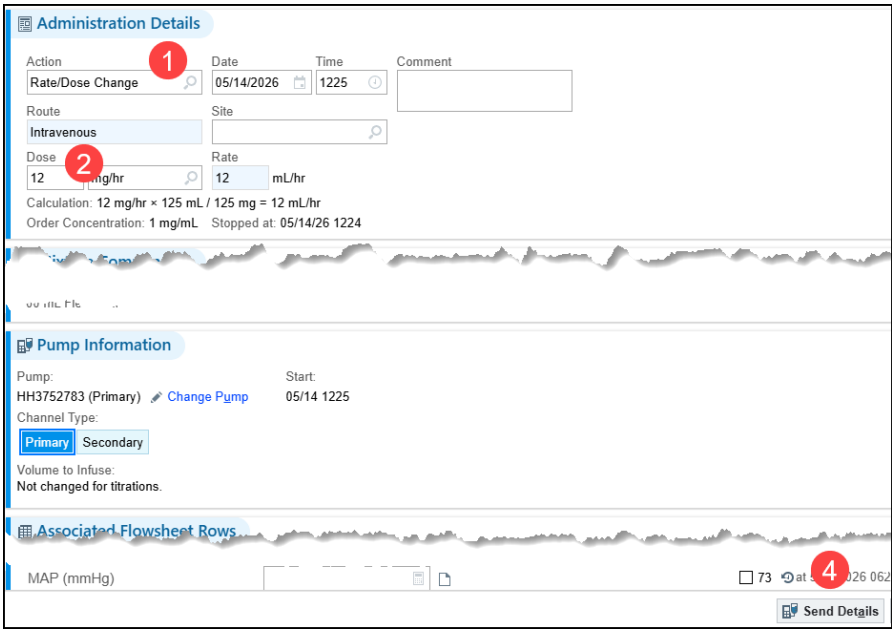
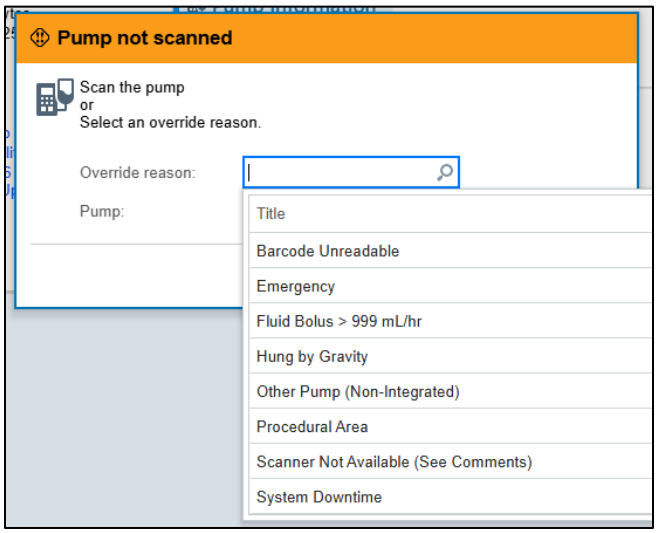
Restarting at a Different Rate

1. MAR Action: **Rate/Dose Change**
2. Enter the new **Dose**
3. Turn the pump back on and press the barcode button
4. Click **Send Details** to program the pump
5. Confirm pump information and press start



OUT OF SCOPE OVERRIDE REASONS

If there is a reason that pump integration cannot happen, such as the medication is to be given using a non-integrated pump, select the appropriate Override reason (in this example - **Other Pump (Non-Integrated)**) then click **Override**.



Correctly documenting the reason why pump integration was bypassed helps leadership understand and address barriers as they are monitoring compliance data.

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TROUBLESHOOTING

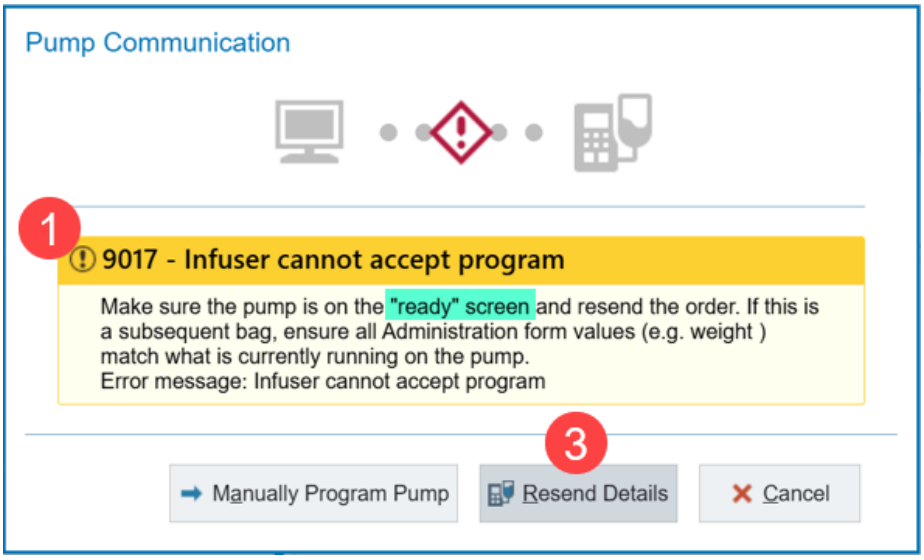
When an error occurs and an OPA message pops up, read the details carefully for the resolution options. Many errors can be resolved by prepping the pump and clicking Resend Details.

The pump can always be programed manually.

Pump Communication

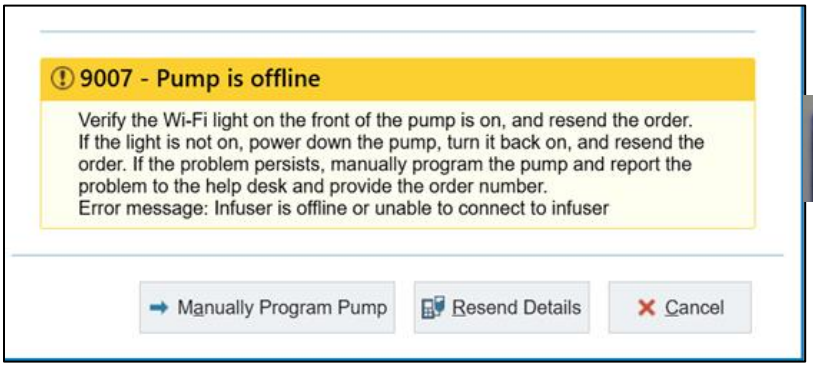
If Epic cannot communicate with the pump, a warning message will appear. While the exact issue can vary, the steps for resolution are similar.

1. Read the error message help text
2. To prep the pump, press the barcode button on the pump
3. Click Resend Details (or Try Again)



Pump is Offline

If you see the Pump is offline error message, ensure the network status on the pump is connected. Follow the help text to reconnect the pump to the Wi-Fi and once it is, click Resend Details.



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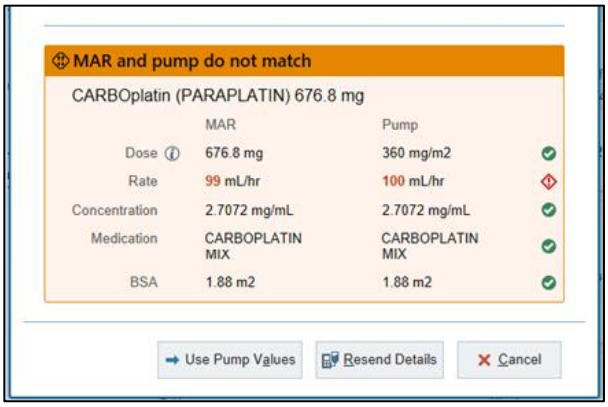
MAR and Pump Mismatch

If the values on the pump and the order in the MAR in Epic do not match, an OPA will appear.



If the values on the pump are correct

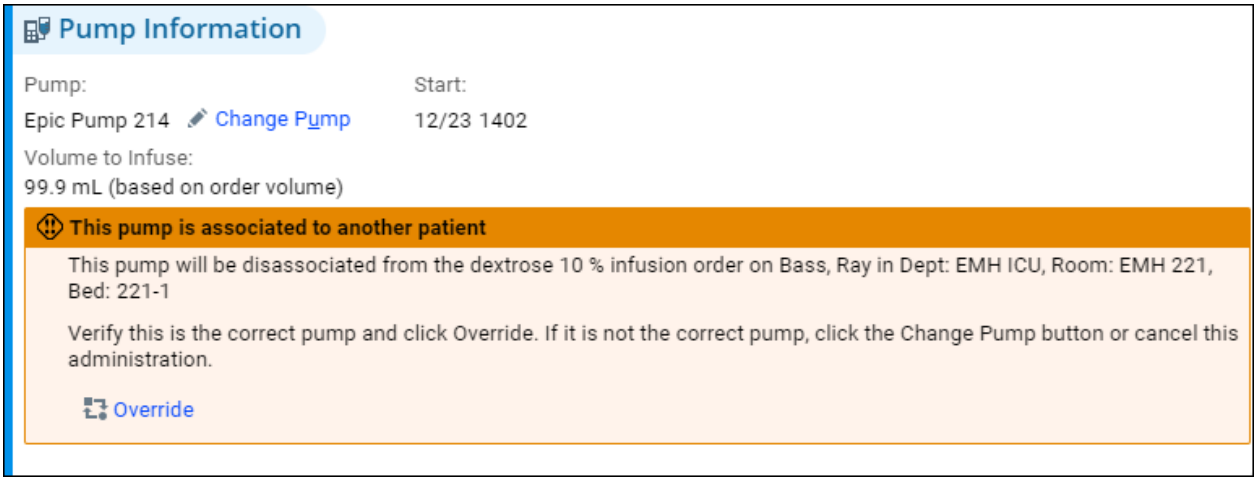
- Click Use Pump Values
- The administration appears on the MAR with the pump values, and the pump is associated.

If the values on the MAR are correct

- Stop the pump, clear the pump program, and click Resend Details.

Patient/Order Conflict Warning

If the pump is still associated with another patient or order a warning will appear prompting you to disassociate the pump from the previous patient or order.



1. **Verify the pump details** – press the barcode button on the pump to view the pump ID (it is below the barcode)
2. If it is the **correct pump, click Override**
3. If it is the **incorrect pump, click Change Pump** and rescan the pump barcode

Additional Resources

- Baxter Super User Sharepoint site
- General Nurse – Integrated Infusion FAQs
- General Nurse – Integrated Infusion Pumps Critical Go Live Steps
- Reporting - Integrated Infusion Pump Reports
- General Nurse – MAR Guide

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