

Medication Administration – Heparin Infusion

Heparin Infusion administration involves:

- Administer the initial heparin IV bolus
- Begin a new heparin infusion or begin a new bag
- Administer a subsequent heparin IV bolus
- Change the rate of heparin infusion
- Document infusion volume

Heparin infusion is ordered through one of the **Heparin Infusion PowerPlans** (Low Target, Standard, and CRRT Heparin Infusion).

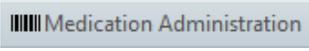
The following demonstration uses an example of **Heparin Infusion Standard PowerPlan** with an initial heparin bolus of 4000 unit for dosing weight 50 kg. The subsequent heparin IV bolus is also ordered.

Heparin Infusion Standard (Module) (Initiated)			
Last updated on: 21-Mar-2018 14:03 PDT by: TestUser, Nurse			
Continuous Infusions Continuous IV Medications			
If patient on epidural infusion, contact Acute Pain Service (APS) / Perioperative Pain Service (POPS) / ... Discontinue previous heparin, low molecular weight heparin, rivaroxaban, dabigatran, apixaban, fonda Discontinue intramuscular injections. If possible, avoid non-steroidal anti-inflammatory drugs (NSAIDs)			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Communication Order	Mar-2018 14:02 PDT, No IM
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Initial Heparin IV Bolus	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Initiate heparin IV bolus direct, then start initial heparin IV infusion	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	heparin (heparin bolus)	Ordere d 4,000 unit, IV, once, drug form If patient on epidural infusion,
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Subsequent Heparin IV Bolus	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	heparin (heparin bolus)	Ordere d 5,000 unit, IV, as directed, PRN PRN Reason: Subsequent IV bc
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Heparin IV Infusion	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	For patient weight 26 to 35.9 kq: For patient weight 36 to 45.9 kq: For patient weight 46 to 55.9 kq:	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	heparin additive 25,000 unit + dextrose 5% premix 500 mL	Ordere d titrate, IV, 900 unit/h starting r Initial dosing infusion rate bas

Administer the Initial Heparin IV Bolus

The Initial Heparin IV Bolus is a **one-time** order and will be, if ordered, administered at the **start** of heparin infusion.

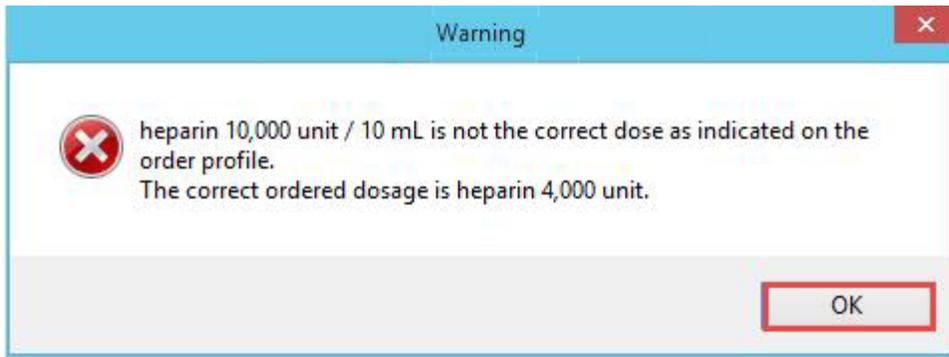
1. Review the initial **heparin IV bolus** order on the **MAR**. Hover over the order to view more details.

2. Click the **Medication Administration Wizard (MAW)**  in the toolbar. Scan the patient's wristband as prompted.

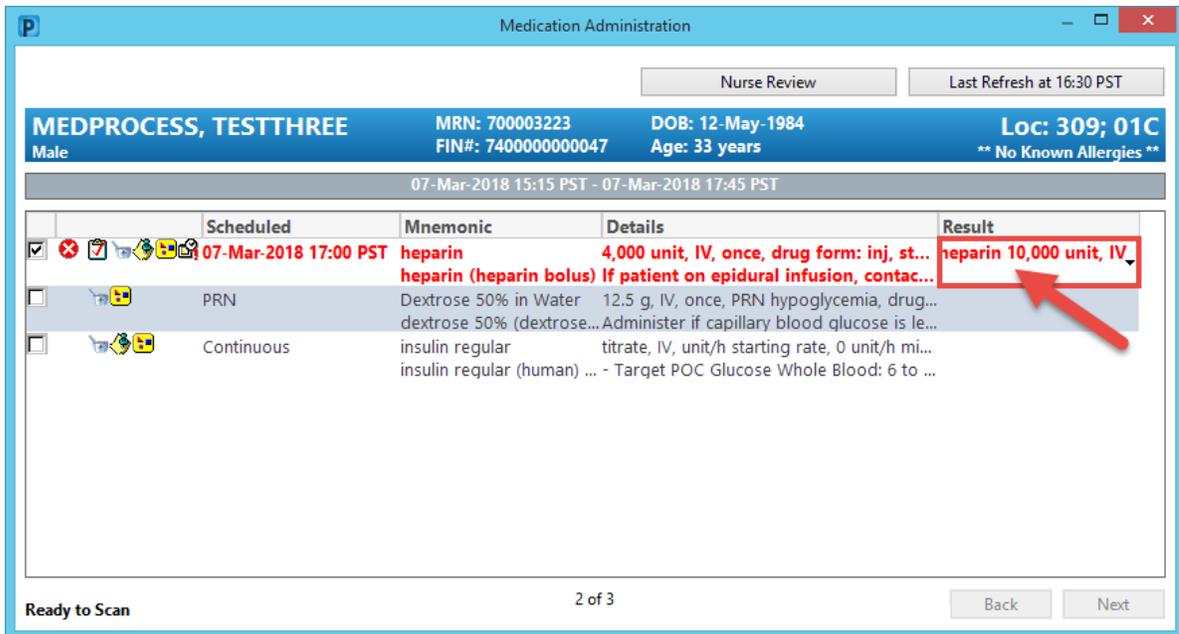
3. Scan the barcode for **heparin 10,000 unit/10 ml inj** . Select the **one-time heparin bolus** for the initial heparin IV bolus.

4. Click **OK** to continue.

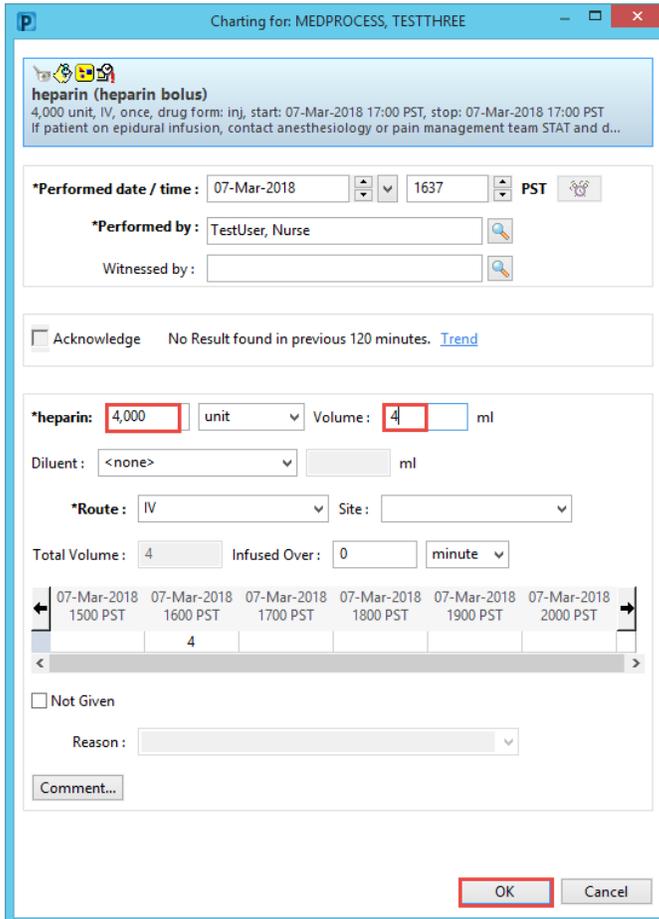
5. Click **OK** to acknowledge the warning message.



6. Click into the **Result** cell to open the medication charting window.



- Modify the correct **dose** and **volume** in the charting window for the heparin bolus. Then click **OK**.



Charting for: MEDPROCESS, TESTTHREE

heparin (heparin bolus)
4,000 unit, IV, once, drug form: inj, start: 07-Mar-2018 17:00 PST, stop: 07-Mar-2018 17:00 PST
If patient on epidural infusion, contact anesthesiology or pain management team STAT and d...

*Performed date / time: 07-Mar-2018 1637 PST

*Performed by: TestUser, Nurse

Witnessed by:

Acknowledge No Result found in previous 120 minutes. [Trend](#)

*heparin: 4,000 unit Volume: 4 ml

Diluent: <none> ml

*Route: IV Site:

Total Volume: 4 Infused Over: 0 minute

07-Mar-2018 1500 PST	07-Mar-2018 1600 PST	07-Mar-2018 1700 PST	07-Mar-2018 1800 PST	07-Mar-2018 1900 PST	07-Mar-2018 2000 PST
	4				

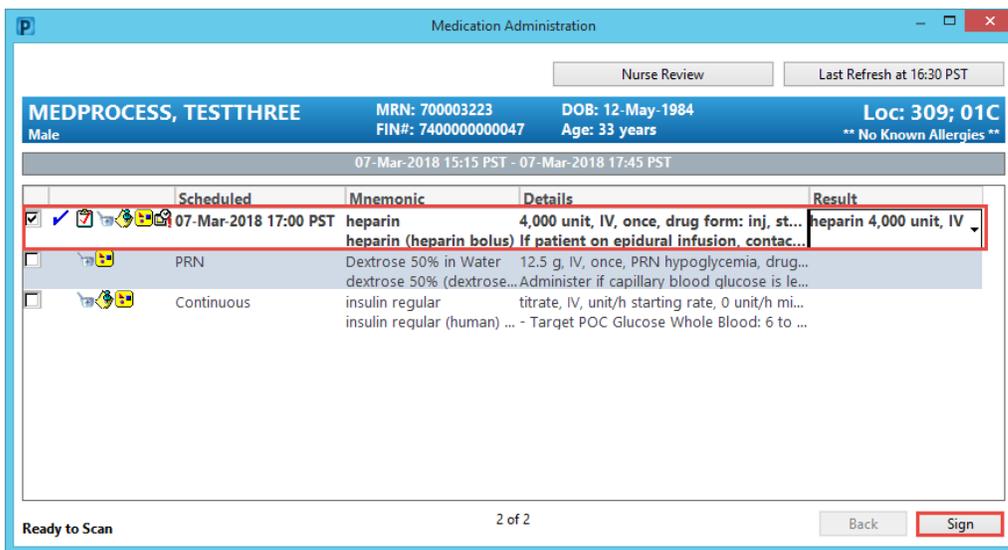
Not Given

Reason:

Comment...

OK Cancel

- Review, administer the blous, then click **Sign**.



Medication Administration

Nurse Review Last Refresh at 16:30 PST

MEDPROCESS, TESTTHREE MRN: 700003223 DOB: 12-May-1984 Loc: 309; 01C
Male FIN#: 7400000000047 Age: 33 years ** No Known Allergies **

07-Mar-2018 15:15 PST - 07-Mar-2018 17:45 PST

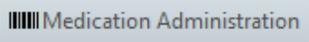
Scheduled	Mnemonic	Details	Result
<input checked="" type="checkbox"/> 07-Mar-2018 17:00 PST	heparin	4,000 unit, IV, once, drug form: inj, st...	heparin 4,000 unit, IV
<input type="checkbox"/> PRN	Dextrose 50% in Water	12.5 g, IV, once, PRN hypoglycemia, drug...	
<input type="checkbox"/> Continuous	insulin regular	titrate, IV, unit/h starting rate, 0 unit/h mi...	
	insulin regular (human) ...	- Target POC Glucose Whole Blood: 6 to ...	

Ready to Scan 2 of 2 Back **Sign**

Begin a New Heparin Infusion or Begin a New Bag

1. Review the **heparin infusion order** on the **MAR**. Hover over the order to view more information including the heparin therapy nomogram.

The screenshot shows a software interface for medication administration. On the left is a 'Time View' sidebar with checkboxes for 'Scheduled', 'Unscheduled', 'PRN', 'Continuous Infusions', 'Future', 'Discontinued Scheduled', 'Discontinued Unscheduled', 'Discontinued PRN', and 'Discontinued Continuous Infusions'. The main area displays a 'Scheduled' order for 'heparin (heparin bolus)'. A tooltip is open over the order, showing details: 'heparin additive 25,000 unit dextrose 5% premix 500 mL', 'titrate, IV, 900 unit/h starting rate, 0 unit/h minimum rate, 2000 unit/h maximum rate, titrate instructions: Titrate as per Nomogram, start: 05-Mar-2018 14:59 PST, bag volume (mL): 500'. Below this, it states 'Initial dosing infusion rate based on weight 46 to 55.9 kg: Starting Rate: 900 unit/h'. A red box highlights the text 'PTT-Adjusted Heparin Therapy Nomogram: STANDARD'. Further down, it provides instructions for PTT goals and adjustments.

2. Click the Medication Administration Wizard (MAW)  in the toolbar.

3. Scan the patient's **wristband** as prompted.

The screenshot shows the 'Medication Administration Wizard' window. At the top, it displays patient information: 'MEDPROCESS, TESTSEVEN', MRN: 700005299, DOB: 21-Jul-1997, Loc: 317; 02B, Female, FIN#: 0074000000039, Age: 20 years, and Allergies. Below this, a table shows the medication order: 'Continuous heparin' with details 'titrate, IV, 900 unit/h starting rate, 0 unit/h minimum rate, 2000 unit/h maximum rate, titrate instructions: Titrate as per Nomogram, start: 05-Mar-2018 14:59 PST, bag volume (mL): 500'. A red box highlights the 'Continuous' status and the medication name. At the bottom, there are buttons for 'Ready to Scan', 'Back', and 'Sign'.

4. Scan the barcode for the pre-mixed heparin 25, 000 unit/500 ml D5W bag .
5. Click into the **Result** cell to open the medication charting window.



NOTE: The **Result** cell will be required (highlighted as yellow) when starting a new infusion.

Medication Administration window showing patient information for MEDPROCESS, TESTSEVEN. The table below has a highlighted 'Result' cell.

Scheduled	Mnemonic	Details	Result
<input checked="" type="checkbox"/> Continuous	heparin	titrate, IV, 900 unit/h starting rate, 0 u...	500 mL, <Rate>, <Site>
	heparin additive 25,00...	Initial dosing infusion rate based on ...	

6. Fill in the correct data in the **medication charting window** and then click **OK**.

Ensure to document in the **Heparin Dose** field. The rate will be automatically calculated once the dose has been entered.

Charting for MEDPROCESS, TESTSEVEN window. Fields are filled as follows:

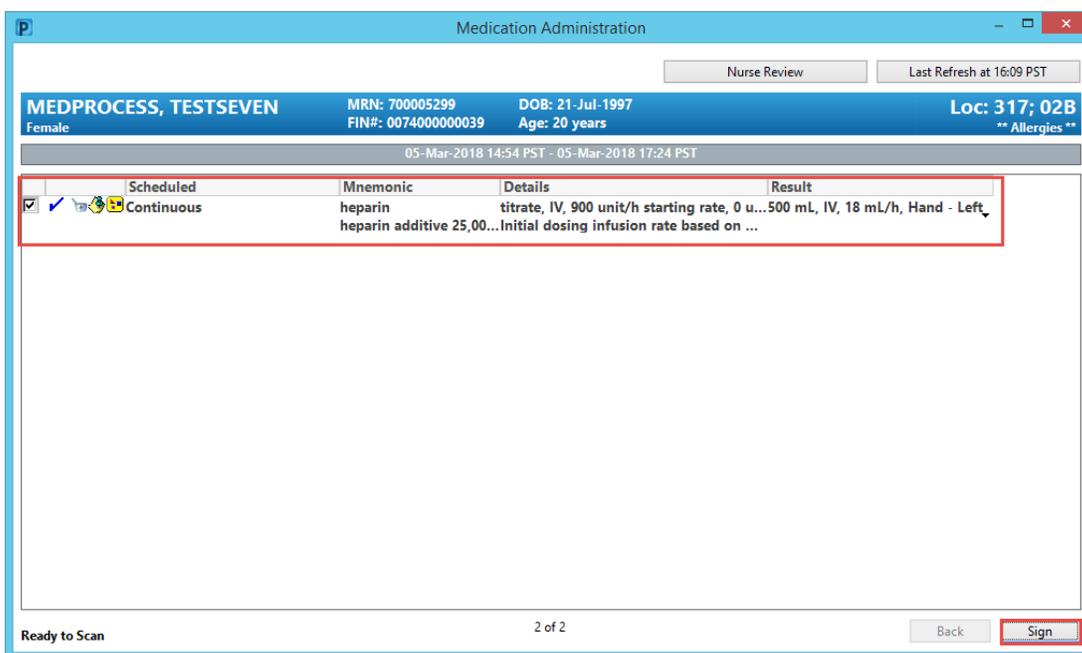
- Medication: heparin additive 25,000 unit + dextrose 5% premix 500 mL
- Instructions: titrate, IV, 900 unit/h starting rate, 0 unit/h minimum rate, 2000 unit/h maximum rate, titrate instructions: Titrate as per Nomogram, start: 05-Mar-2018 14:59 PST, bag volume (mL): 500
- Initial dosing infusion rate based on weight 46 to 55.9 kg: Starting Rate: 900 unit/h PTT-Adjusted Heparin Therapy No...
- Yes/No: Yes No heparin additive 25,000 unit/25 mL
- Yes/No: Yes No dextrose 5% premix 500 mL
- *Performed date / time: 05-Mar-2018 1609 PST
- *Performed by: TestUser, Nurse
- Witnessed by: (empty)
- *Bag #: 1
- *Site: Hand - Left
- *Volume (mL): 500
- *Rate (mL/h): 18
- *heparin Dose: 900 unit/h
- Buttons: Begin Bag, OK, Cancel



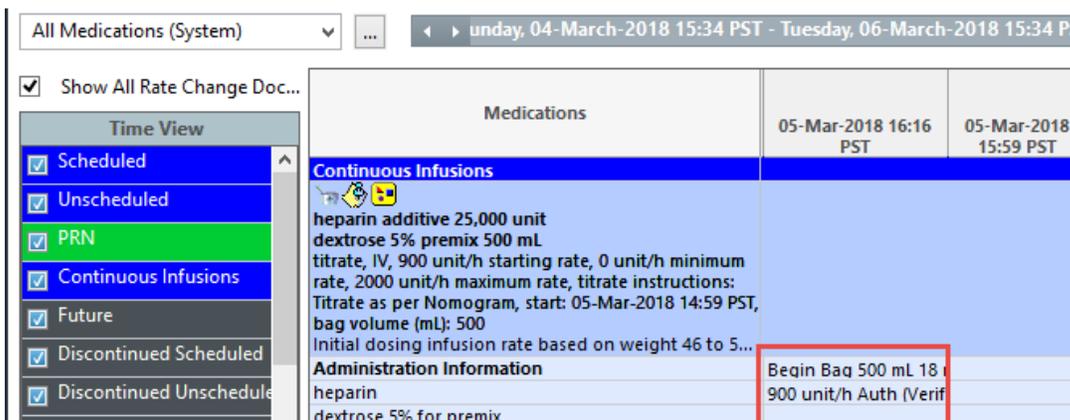
NOTES:

- Since a new infusion is being started, the “**Bag #**” field is automatically numbered as 1.
- Also it says “**Begin Bag**” in the bottom right hand corner – this cannot be changed as it is the first time the medication is being administered.
- The system will automatically increase the value of the “**Bag #**” field by one for the subsequent bag.

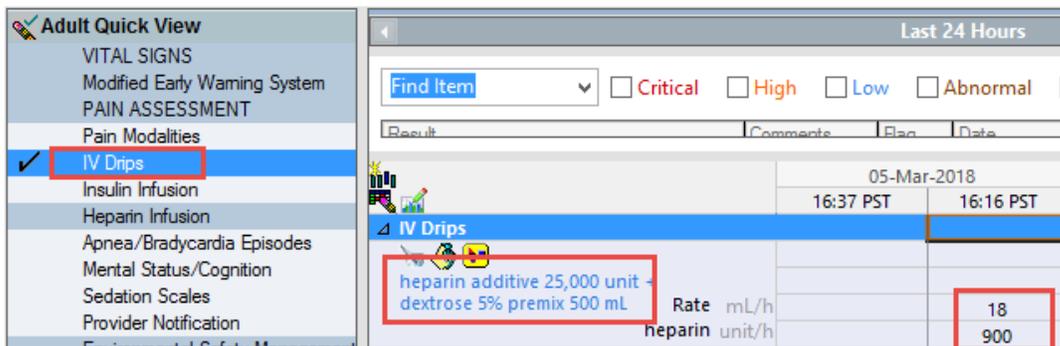
7. Review, start the infusion or hang up the bag, then click **Sign**.



The **heparin infusion** has been successfully started. The charted **Begin Bag** information displays on the MAR.



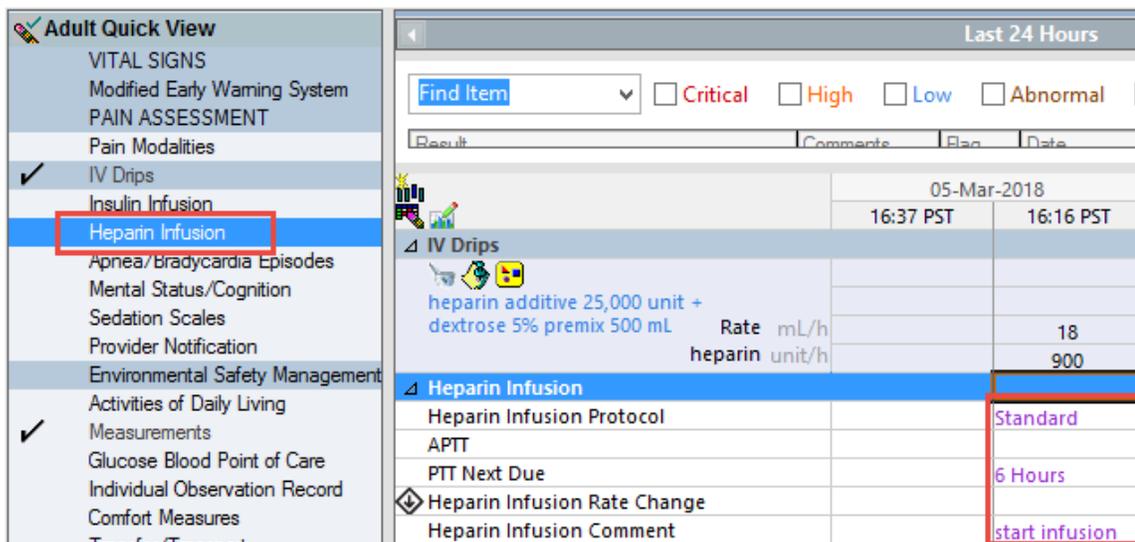
8. Navigate to the **Interactive I&O View**. The heparin infusion displays in the **IV Drips** section.



9. Click on the Heparin **Infusion** section to chart additional documentation as required by policy/protocol.



NOTE: APTT is not chartable; its value will automatically populate from Lab.



10. Click **Sign** ✓ (green check mark) and refresh screen

Administer a Subsequent Heparin IV Bolus

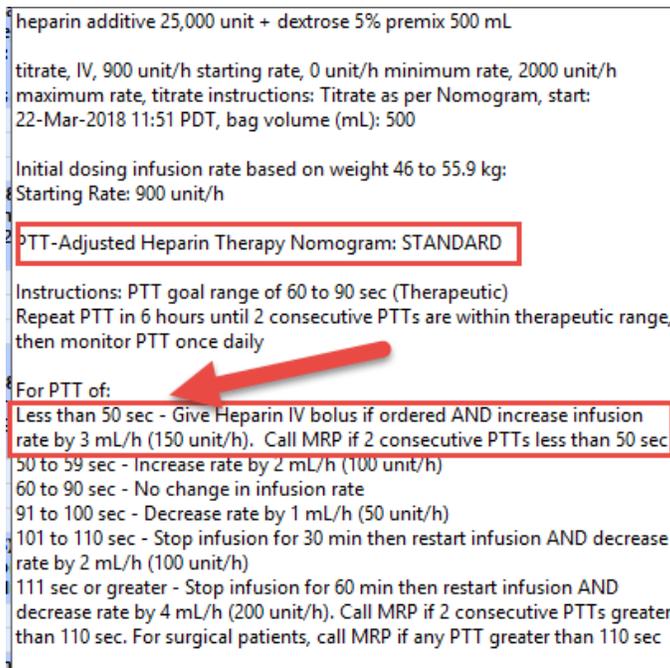
A **subsequent heparin IV bolus** is a **PRN** order with **PRN Reason: Subsequent IV bolus for PTT Less than 50 sec**. If ordered, it will be given during the infusion base on the nomogram after a new APTT is obtained.

The following steps use an example that the nurse has obtained a new APTT of “45 sec” after 6 hours of initiating the heparin infusion:

1. Navigate to **MAR**; review the **heparin infusion order** to view the heparin therapy nomogram.

According to the **heparin nomogram**, for a new APTT of 45, a subsequent heparin IV bolus of 5000 unit and an increase of infusion rate by 150 unit/h are required.

Please refer to the section **Change the Rate of Heparin Infusion** for the rate change.



heparin additive 25,000 unit + dextrose 5% premix 500 mL

titrate, IV, 900 unit/h starting rate, 0 unit/h minimum rate, 2000 unit/h maximum rate, titrate instructions: Titrate as per Nomogram, start: 22-Mar-2018 11:51 PDT, bag volume (mL): 500

Initial dosing infusion rate based on weight 46 to 55.9 kg:
Starting Rate: 900 unit/h

PTT-Adjusted Heparin Therapy Nomogram: STANDARD

Instructions: PTT goal range of 60 to 90 sec (Therapeutic)
Repeat PTT in 6 hours until 2 consecutive PTTs are within therapeutic range, then monitor PTT once daily

For PTT of:

Less than 50 sec - Give Heparin IV bolus if ordered AND increase infusion rate by 3 mL/h (150 unit/h). Call MRP if 2 consecutive PTTs less than 50 sec
50 to 59 sec - Increase rate by 2 mL/h (100 unit/h)
60 to 90 sec - No change in infusion rate
91 to 100 sec - Decrease rate by 1 mL/h (50 unit/h)
101 to 110 sec - Stop infusion for 30 min then restart infusion AND decrease rate by 2 mL/h (100 unit/h)
111 sec or greater - Stop infusion for 60 min then restart infusion AND decrease rate by 4 mL/h (200 unit/h). Call MRP if 2 consecutive PTTs greater than 110 sec. For surgical patients, call MRP if any PTT greater than 110 sec

2. Review and ensure **subsequent heparin IV bolus** is ordered and displays in the **PRN** section of the **MAR**.



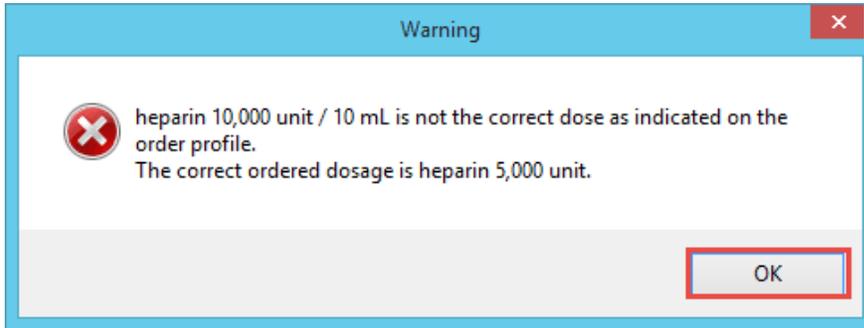
WARNING: If no subsequent heparin IV bolus is ordered for the patient, **DO NOT GIVE** any subsequent heparin IV bolus.

3. Click the **Medication Administration Wizard (MAW)**  in the toolbar. Scan the patient's wristband as prompted.

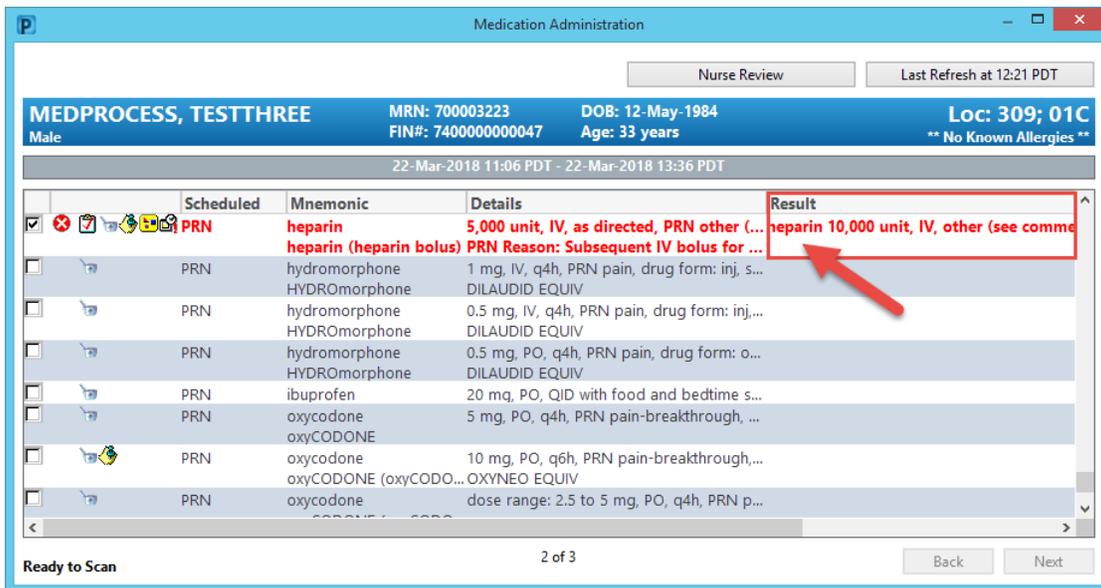
4. Scan the barcode for **heparin 10,000 unit/10 ml inj** . Select the one-time heparin bolus.

5. Click **OK** to continue.

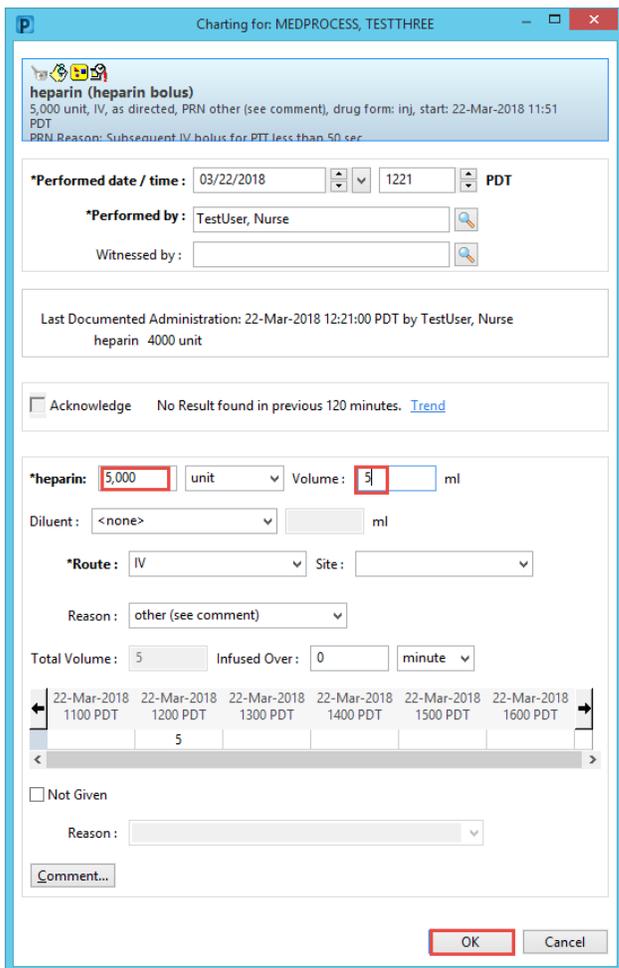
Click **OK** to acknowledge the warning message.



6. Click into the **Result** cell to open the medication charting window.



7. Modify the correct **dose** and **volume** in the charting window for the bolus. Click **OK**.



Charting for: MEDPROCESS, TESTTHREE

heparin (heparin bolus)
5,000 unit, IV, as directed, PRN other (see comment), drug form: inj, start: 22-Mar-2018 11:51 PDT
PRN Reason: Subsequent IV bolus for PTT less than 50 sec

*Performed date / time: 03/22/2018 1221 PDT
*Performed by: TestUser, Nurse
Witnessed by:

Last Documented Administration: 22-Mar-2018 12:21:00 PDT by TestUser, Nurse
heparin 4000 unit

Acknowledge No Result found in previous 120 minutes. [Trend](#)

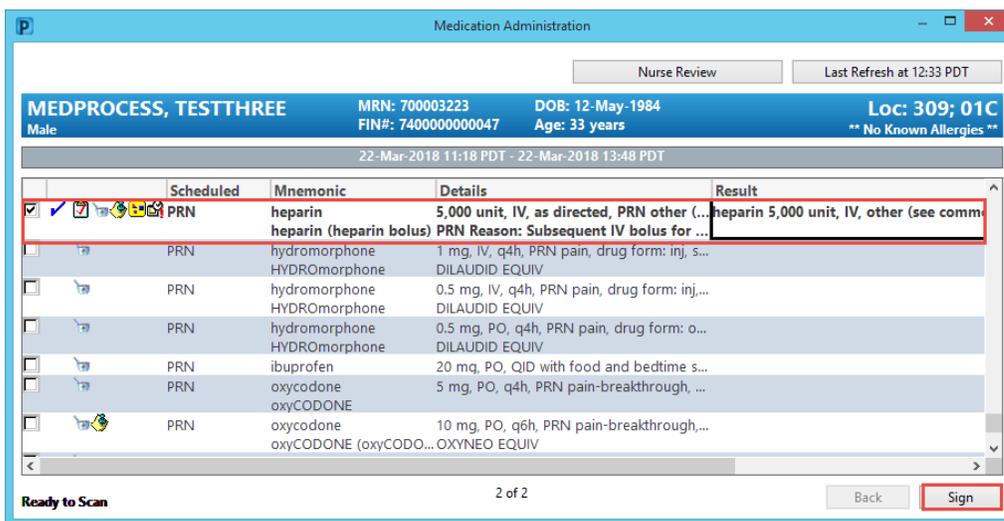
*heparin: 5,000 unit Volume: 5 ml
Diluent: <none> ml
*Route: IV Site:
Reason: other (see comment)
Total Volume: 5 Infused Over: 0 minute

22-Mar-2018 1100 PDT	22-Mar-2018 1200 PDT	22-Mar-2018 1300 PDT	22-Mar-2018 1400 PDT	22-Mar-2018 1500 PDT	22-Mar-2018 1600 PDT
	5				

Not Given
Reason:
Comment...

OK Cancel

8. Review, administer the bolus, then click **Sign**.



Medication Administration

Nurse Review Last Refresh at 12:33 PDT

MEDPROCESS, TESTTHREE MRN: 700003223 DOB: 12-May-1984 Loc: 309; 01C
Male FIN#: 7400000000047 Age: 33 years ** No Known Allergies **

22-Mar-2018 11:18 PDT - 22-Mar-2018 13:48 PDT

	Scheduled	Mnemonic	Details	Result
<input checked="" type="checkbox"/>	PRN	heparin heparin (heparin bolus)	5,000 unit, IV, as directed, PRN other (...) PRN Reason: Subsequent IV bolus for ...	heparin 5,000 unit, IV, other (see comm
<input type="checkbox"/>	PRN	hydromorphone HYDRomorphone	1 mg, IV, q4h, PRN pain, drug form: inj, s... DILAUDID EQUIV	
<input type="checkbox"/>	PRN	hydromorphone HYDRomorphone	0.5 mg, IV, q4h, PRN pain, drug form: inj,...	
<input type="checkbox"/>	PRN	hydromorphone HYDRomorphone	0.5 mg, PO, q4h, PRN pain, drug form: o...	
<input type="checkbox"/>	PRN	ibuprofen	20 mg, PO, QID with food and bedtime s...	
<input type="checkbox"/>	PRN	oxycodone oxyCODONE	5 mg, PO, q4h, PRN pain-breakthrough, ...	
<input type="checkbox"/>	PRN	oxycodone oxyCODONE (oxyCODO... OXYNEO EQUIV	10 mg, PO, q6h, PRN pain-breakthrough,...	

Ready to Scan 2 of 2 Back **Sign**

Change the Rate of Heparin Infusion

Heparin infusion rate change is documented in the **IV Drips** and **Heparin Infusion** sections. When a new APTT is obtained, the nurse checks the heparin nomogram in the heparin order and decides if adjustments are required.

As mentioned in the above section (Administer a Subsequent Heparin IV Bolus), an **increase of infusion rate by 150 unit/h (3 ml/h)** is needed for the patient.

To document the rate change:

1. Navigate to the **IV Drips** section in the **Adult Quick View** band from the **Interactive I&O View** button in the menu.
2. Double-click on the box next to the dose of the heparin infusion. Enter a new value.



NOTE: Enter an infusion rate of “0” for holding heparin infusion.

3. Click on the **Heparin Infusion** section to chart additional documentation as required by policy/protocol.

4. Click **green check mark** ✓ to sign and **refresh** screen.

Document Infusion Volume

Infusion intake volume is documented in the **Intake and Output** band.

1. Navigate to **Intake And Output** band of **Interactive View and I&O**.
2. Locate the **heparin infusion** in the **Continuous Infusions** section.
3. Double-click into the cell under the appropriate time column and the volume will **auto populate** (in purple text). The volume can be manually changed if it is incorrect.



REMEMBER: Clinicians need to return to **Intake and Output** throughout the shift to continue documenting intake volumes as long as the infusion is still running. This step is imperative for documenting accurate intake and output!

<ul style="list-style-type: none"> Adult Quick View Adult Systems Assessment Adult Lines - Devices Adult Education Blood Product Administration Intake And Output Intake Continuous Infusions Medications Chest Tubes Enteral GI Tube 	Today's Intake: 35.2 mL Output: 0 mL Balance: 35.2 mL Yest			
	05-Mar-2018			
		19:00 - 19:59 PST	18:00 - 18:59 PST	Day Shift Total
	Intake Total			35.2
Continuous Infusions			31.2	
heparin additive 25,000 unit + dextrose 5% premi...		18.65	31.2	
Medications			4	
heparin	mL		4	
GI Tube				

4. Click **green check mark** to sign and **refresh** screen.



NOTE: Infusion volume can still be documented even after the infusion order is discontinued. The infusion dithers out in **Intake and Output** after being discontinued. To document volume, click on the appropriate cells and manually enter volume values for the infusion.