1. The Provider Orders a Heparin Infusion:

- <u>Make sure you understand why your patient is going to be on a heparin infusion</u>. There are many different reasons why a patient could be on a heparin infusion. The most common are: ACS/MI, DVT/PE, Stroke, and for vascular procedures. Usually, each of these have their own, unique heparin infusion protocol.
 - ✓ This means the starting dose for the ACS/MI protocol may be different from the Stroke protocol, and so on and so forth...

2. Getting Ready to Start the Heparin infusion:

- <u>Alert your charge nurse that you will be starting a heparin infusion</u>. It is important for your charge nurse to know when a heparin infusion is being started as this is a high-risk medication.
- <u>Send off a baseline CBC and PTT level</u>. It is important to get a baseline so we can monitor the patient for bleeding.
- <u>Gather your supplies to start the infusion</u>. This will include: a pump, IV tubing, access that is verified to be patent, the heparin order pulled up in Meditech for reference, and a second RN to verify proper setup and initiation.

3. Setting up the pump:

- After selecting heparin on the pump, you will then have to select why your patient is on heparin.
 - There are 4 possible protocols to choose from: ACS (heart attack), DVT/PE, Stroke, and Fixed Rate. You should only choose the Fixed Rate option if the provider wants the patient to be on a heparin drip that is not titrated. For example, they order Heparin at 500 units/hr with an order to not titrate the drip. This protocol is mainly used for vascular patients.
 - ✓ <u>The Fixed Rate protocol is the only protocol that is in units/hr</u>. All other protocols are weight based- units/kg/hr.
 - ✓ If you are unsure about which protocol to select for your patient, please call the provider to clarify.
 - ✓ Notice in the second screen below how the protocol you select will be displayed in the upper left hand corner of the titration screen on the pump.



- It is very important that if you are the one setting up the heparin drip on the pump that you ensure the weight entered into the pump matches the weight listed on the heparin order to avoid programming errors.
 - ✓ Do not update the weight in the pump each day with daily weights. The weight in the pump will stay the same unless pharmacy tells you otherwise.
 - ✓ For obese patients, we usually go off of an ideal body weight to avoid a heparin overdose.

4. Initial Heparin Bolus:

- <u>Verify with the provider if they would like for you to give an initial bolus of heparin before</u> <u>starting the infusion</u>.
 - ✓ Many neuro providers do not want you to give an initial bolus of heparin.
 - ✓ Make sure another RN is in the room with you when you give the initial bolus of heparin as they will need to verify it is correct and sign off on it in Meditech.

5. Starting the Heparin Infusion:

- Verify the starting rate in Meditech with a second RN.
 - ✓ Make sure another RN is in the room with you when you start the heparin infusion, as they will need to verify it is correct and sign off on it in Meditech.

6. Drawing the PTT and Titrating the Heparin Infusion:

- Draw a PTT level 6 hours after starting the infusion.
 - ✓ Best practice is to draw a PTT from a straight stick or from an arterial line.
 - ✓ Drawing a PTT from an IV access point can lead to inaccurate results.
 - ✓ <u>It is not acceptable to draw a PTT from the IV access point that heparin is infusing from</u>. Some nurses think that you can stop the heparin drip for 5-15 minutes and then draw the PTT and that will avoid contamination. Stopping a heparin infusion that is ordered is not advised. The patient needs that heparin infusion. Therefore, stopping the heparin infusion to obtain a PTT level is not advised.
- Make sure to check the lab results section within one hour of sending the PTT level to ensure timely titration, if needed.
 - ✓ It is expected that you will need to frequently increase the heparin infusion upon initiating a heparin infusion to get the patient into the goal PTT range.
- <u>Make sure you are looking at the right PTT result.</u> There may be several past PTT results listed in the results section. Ensure that you are looking at the PTT result for the level that you drew.
- Look at your heparin titration orders to see if you need to titrate the heparin infusion.
 - ✓ Make sure to have another RN verify that you are titrating the heparin infusion based off the correct PTT level in Meditech before you titrate the heparin infusion.
- Look at your heparin titration orders to see if you need to administer a PRN heparin bolus.
 - Please verify with the provider if they would like for you to given PRN heparin boluses.
 Many neuro providers do not want them administered.
- If you titrated the heparin infusion, you will need to draw a repeat PTT in 6 hours from the time you changed the heparin infusion rate.
- You can start checking PTT levels daily when you have 2 consecutive PTT levels within the goal <u>PTT range.</u>

7. Documentation:

- You will only document on the eMAR when you start a new heparin bag or if you are giving an initial or PRN heparin bolus.
 - ✓ All other heparin documentation will be done in the Drip Titration flowsheet.



- When starting the heparin drip, document in the eMAR and then document "Start" in the Drip Titration flowsheet.
- You will document "Titrate" in the Drip Titration flowsheet:
 - \checkmark At the beginning of your shift to verify the rate, unless it is on hold.
 - ✓ With any rate change
 - ✓ Any time you hold the heparin drip
 - ✓ If you have a therapeutic PTT level, (meaning you would not change the rate). We would still like for you to document "Titrate" and then chart the unchanged rate in the IV drip actual parameter value box. Then, chart "no change" in the free text box. This way we know you have acknowledged the PTT level.



 <u>Be sure to document your conversations about critical PTTs with the provider in the</u> <u>Manage/Contact/Refer/Notify intervention. Ensure you state they are on a heparin drip and the</u> <u>protocol has been followed</u>.

Heparin Infusion Checklist

Starting a Heparin Infusion:

- ✓ Verify with provider if they want heparin boluses- initial and/or PRN heparin boluses
- ✓ Tell the charge nurse you are starting a heparin infusion
- ✓ Send off a baseline CBC and PTT level
- ✓ Get your supplies: IV pump, IV tubing, verify access, have orders pulled up, grab 2nd RN to verify
- \checkmark Verify the patient weight that is listed on the heparin order with pharmacy
- ✓ Set up pump by choosing correct protocol: ACS, DVT/PE, Stroke, or Fixed Rate
- ✓ If ordered, administer an initial heparin bolus according to the eMAR
- ✓ Start heparin infusion per eMAR orders
 - Have 2nd RN at bedside to verify initiation and administration of initial heparin bolus
- ✓ Prepare to draw PTT level 6 hours after initiation of heparin infusion

Managing an Existing Heparin Infusion:

- ✓ Verify all settings and when the next PTT level needs to be drawn with the off-going RN at the beginning of shift
- ✓ Ensure a CBC level is being checked daily to monitor for bleeding
- ✓ Draw the next PTT level according to best practice standards
- ✓ Check for the PTT result within 60 minutes of sending the lab
 - $\circ~$ Make sure you are looking at the correct PTT level
- ✓ Look at your heparin titration orders to see if you need to titrate the heparin infusion
- Look at your heparin titration orders to see if you need to administer a PRN heparin bolus
 - \circ Verify with the provider if they would like for you to give PRN heparin boluses
- ✓ If you titrated the heparin infusion, you will need to draw a repeat PTT in 6 hours from the time you changed the heparin infusion rate
- Document critical PTT levels in the Manage/Contact/Refer/Notify intervention in Meditech
- ✓ You can start checking PTT levels daily when you have 2 consecutive PTT levels within the goal PTT range
- Monitor for signs of bleeding: bruising, blood in urine, distended abdomen, change in pulses, cool extremities, change in vital signs, confusion, ect.

IV Heparin Drip Titration Frequently Asked Questions FAQs

1. What do we do if we receive an admission with a Heparin drip already infusing without documentation or an order?

Answer:

- 1. Notify your attending provider to obtain orders for the medication protocol order set.
- 2. Draw a STAT PTT on patient arrival if they have not had one previously drawn.
- 3. Continue the Heparin Drip protocol as ordered. (redraw PTT as ordered for titrations)

NOTE: when you place the HEPARIN WEIGHT-BASED INFUSION order set, the heparin protocol, STAT PTT, and PTT Q6H X 3 orders are all reflexed. You can uncheck what is not required.

	Edit
	+ HEPARIN WEIGHT-BASED INFUSION Save
-	+ Nursing (2/2) 1 reminder
\checkmark	+ Heparin Protocol 02/08 N
\checkmark	+ Monitor for Bleeding 02/08 N
	*****UTE Core Neasures - DO NOT UNCHECK LABS*****
-	+ Laboratory (5/5) 1 генinder
	Baseline PT, aPTT, CBC (Before starting Heparin)
\checkmark	+ PROTHROMBIN TIME STAT_02/08 N
\checkmark	+ PTT STAT 02/08 N
\checkmark	+ CBC W/AUTO DIFFERENTIAL STAT 02/08 N
\checkmark	+ PTT 02/09 0706 Q6H X 3
\checkmark	+ CBC N/AUTO DIFFERENTIAL 02/09 AM Q6H X 3
+	+ Medication Management (1/1)
+	+ Medication: High Intensity(VTE/PE) (0/3) 2 reminders
+	+ Medication: Low Intensitu(ACS/Stroke) (8/3) 2 reminders

2. The provider has ordered Serial PTTs to be drawn, but the timing does not line up with what is needed for the protocol.

Answer:

- 1. It would be best to request the provider to not place these serial orders when the Heparin drip is ordered. Instead, request heparin protocol and an initial STAT PTT only. Then the RN can order the subsequent labs as needed PER PROTOCOL.
- 2. If there are conflicts with provider placed orders, and the timing requirement PER PROTOCOL, you should "cancel" the provider timed orders, and place the appropriate timed orders PER PROTOCOL.

NOTE: when you place the HEPARIN WEIGHT-BASED INFUSION order set, the heparin protocol, STAT PTT, and PTT Q6H X 3 orders are all reflexed. You can uncheck what is not required.

+ HEPARIN WEIGHT-BASED INFUSION - + Nursing (2/2) 1 reminder Ordering Provider Image: Constraint of the state of t	
□ + Monitor for Bleeding 02/08 N Order Source	
<u>******UTE Core Heasures - DO NOT UNCHECK LABS*****</u>	
<u>- + Laboratory (5/5) 1 геніnder</u>	
Baseline PT, aPTT, CBC (Before starting Heparin) MIS Source Dictionary Lookup	
✓ + PROTHROMBIN TIME STA¥02/08 N Select	
☑ + PTT STAT 02/08 N	
C + CBC W/AUTO DIFFERENTIAL STAT 02/08 N Mnemonic Name	
☑ + PTT 02/09 0706 Q6H X 3	
+ CBC W/AUTO DIFFERENTIAL 02/09 AN Q6H X 3 2 P Protocol	
+ Medication Management (1/1) 3 T Telephone & Read Back	
+ Medication: High Intensity(VTE/PE) (0/3) 2 reminders 4 V Verbal &Read Back	
+ Medication: Low Intensity(ACS/Stroke) (0/3) 2 reminders 5 W Written	
E Modiostioni Revenhagio nick Neuro (0/1) 6 2 Dept Process/Proc	

3. Do I need to do a shift handoff for the Heparin Infusion? Where is this done? Answer:

- 1. Yes, you must complete a handoff of the infusion between nurses.
- 2. This is performed in the "titration" documentation intervention. Document a titration intervention with the rate that the infusion is at, and in "actual parameter" location, document "Nursing Handoff", then both RNs will have to cosign the handoff.

🛛 🛛 🕅 🕅 🖉	rip 1 status	;:						
1 Start	1 Start Pharmacy Order Information - Rx Number: 01696845							
2 Titra	2 Titrate Alane: propofoL							
3 Disco	3 Discontinue Generic Name: (propofol)							
4 Resta	art	Dose: 1000	MG in 100	ML at TI	TRATE ASDIR			
Last 4 Cl	linical Data	Entries (F	or Today)					
Date Time	ie RASS	CPOT	Pulse	Resp	Blood Press	MAP	ICP	
04/17 0445	15		64	14	103/75	85	_	
04/17 0500	10		69	14	111/76	89		
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KH22						Inclinent ILP	•	
IV drip 1:	Hepari	n		IV drip i	status: 7			
IV arip 2	nepun		_	IV or IP 2	2 status:			
IV drip 3				IV drip :	status:			
IV drip 4				IV drip 4	a status:			
IV drip 5				IV drip 5	5 status:			
IV drip 6:	i:			IV drip 6	5 status:			
IV drip 7:	' :			IV drip i	7 status:		_	
						0	Next Page)	

- 4. I need to titrate my Heparin Drip, but I can't because the infusion was never "started". Answer:
 - 1. You **must** document a "start" time when this is recognized. In the "start" documentation, under "actual parameter" type Infusion received from previous shift at (rate of infusion).
 - 2. Once this is done, then you can document your "titration" as required.

🔍 IV dr	rip <mark>Mstatu</mark>	s:					
1 Star	t 🗸 🗌	Macy Ore	der Inform	ation - R	x Number: 0169	6845	
2 Titra	ate 🔪 👘	Trade Name:	propofoL				
3 Disco	3 Discontinue Generic Name: (propofoL)						
4 Resta	4 Restart Dose: 1000 MG in 100 ML at TITRATE ASDIR						
Last 4 Cl	ast 4 Clinical Data Entries (For Today)						
Date Time	e RASS	CPOT	Pulse	Resp	Blood Press	Map	ICP
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04/17 0500	9		69	14	111/76	89	
04/17 0515	5		66	14	111/77	89	
04/17 0530	3		63	14	107/75	87	
RASS	•		CPOT:			hcument_ICP:	
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IV drip 2	нераг	in		IV drip 2	status: 📃		
IV drip 3				IV drip 3	status:		
IV drip 4	:			IV drip 4	status:		
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IV drip 6	:			IV drip 6	status:		
IV drip 7	:		_	IV drip 7	status:		
						(1)	lext Page) 🗌

- 4. Once you select the "Titrate" option, you will have a new screen, and you MUST complete the form in its **entirety**. This will include:
 - a. IV drip 1: This should be auto populated so you will not have to fill it in
 - b. IV drip Concentration: This should be auto populated so you will not have to fill it in
 - c. IV Drip 1 New Dosage:
 - d. IV drip 1 dose units:
 - e. IV drip 1 dosage in ml/hr:

IV drip 1 concentration: Enter free text.Pharmacy Order Information - Rx Number: 01696045 Trade Name: propofol. Generic Name: (propofol.) Dose: 1000 MG in 100 ML at TITRATE ASDIR									
Last 4 Clinical Date Time RASS 04/17 0445 04/17 0500 04/17 0515 04/17 0530	Data Entries (F	or loday) Pulse 64 69 66 66 63	Resp 14 14 14 14 14	Blood Press 103/75 111/76 111/77 107/75	MAP 85 89 89 89 87				
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- 5. On the second page, you will also have to complete this form in its **entirety**:
 - a. IV drip 1 titrate parameter: This should be auto populated so you will not have to fill it in
 - b. IV drip 1 parameter Value: This is what the ordered parameter is (I.E Rass -2 to 2)
 - c. IV drip 1 actual parameter value: This is what you assessed the value to be (I.E Rass -1)
 - i. If you are titrating to a BP, it would be wise to have a documented BP charted at the same time as the titration.
 - d. IV drip cosign: (will only be required on double verification drugs: insulin/Heparin)
 - e. IV drip 1 password: (will only be required on double verification drugs: insulin/Heparin)

🔃 IV drip 1 titrate p	parameter:	[or free	text 1			
1 Arrhythmia	5	Cardiac	index	9	Pain score	
2 Bispectral index	6	Heart ra	te	√10	RASS	
3 Blood glucose	7	Labs		11	Train of four	
4 Blood pressure	8	Mean arte	erial pre	ssure 12	Urine output	
Last 4 Clinical Data Ent	tries (For	Today)				
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04/17 0445		64	14	103/75	85	
04/17 0500		69	14	111/76	89	
04/17 0515		66	14	111/77	89	
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Page)					Che	ext Page)

🕒 Medical City Healthcare

Committed to the care and improvement of human life

Heparin Infusion Education for INP Nurses

Goal: Ensure safe, appropriate administration of Heparin bolus/drip and align pump programming



IV drip Titrations

Drip Titration:

1. Under process interventions



2. Select "IV drip Titration"



3. Go to "status" on the medication that you are going to titrate and select "Titrate" to begin the new drip dose.

🗽 IV drip 1 stat	us:								
1 StartPhaemacu_Ocder_Information = Rx Number: 01696845									
2 Titrate ropofoL									
3 Discontinuee: (propofol)									
4 Restart 🛛 🔪 Dose: 1000 MG in 100 ML at TITRATE ASDIR									
Last 4 Clinical Data Entries (For Today)									
Date Time RASS	CPOT	Pulse	Resp	Blood Press	MAP	ICP			
04/17 0445		64	14	103/75	85				
04/17 0500		69	14	111/76	89				
04/17 0515		66	14	111/77	89				
04/17 0530		63	14	107/75	87 🖌				
RASS: →		CPOT:	ĺ.	[DOCUME LTC	•0•			
IV drip 1: propofoL		I	IV drip 1 status:→						
IV drip 2: FENTANYL	CITRATE/NS/PF	I	IV drip 2 status:						
IV drip 3:		I	IV drip 3 status:						
IV drip 4:		I	IV drip 4 status:						
IV drip 5:	IV drip 5:				IV drip 5 status:				
IV drip 6:		I	IV drip 6 status:						
IV drip 7:		I	IV drip 7 status:						
						(Next Page)			

IV drip Titrations

NOTE: if you are titrating to zero, with the idea that you may have to go back up on the drip; then TITRATE TO ZERO, do not DISCONTINUE THE DRIP. Discontinuing the drip means you are stopping the drip and must obtain a new order to restart it. Otherwise, you must titrate to zero before you discontinue.



3. Go to "status" on the medication that you are going to titrate and select "DISCONTINUE" to begin the new drip dose.



- 4. Once you select the "DISCONTINUE" option, you will have a new screen, and you MUST complete the form in its **entirety**. This will include:
 - a. IV drip 1: This should be auto populated so you will not have to fill it in
 - b. IV drip Concentration: This should be auto populated so you will not have to fill it in
 - c. IV Drip 1 New Dosage: This will be "0"
 - d. IV drip 1 dose units:
 - e. IV drip 1 dosage in ml/hr:

IV drip 1 concentration: Enter free text.Pharmacy Order Information - Rx Number: 01696845 Trade Name: propofol. Generic Name: (propofol.) Dose: 1000 MG in 100 ML at TITRATE ASDIR									
Last 4 Clinical Date Time RASS 04/17 0445 04/17 0500 04/17 0515 04/17 0530	Data Entries (For CPOT	Today) Pulse 64 69 66 63	Resp 14 14 14 14 14	Blood Press 103/75 111/76 111/77 107/75	MAP 85 89 89 89 87				
 IV drip 1: propofoL IV drip 1 concentration:>1000 MG/100 ML Click box to display PHA admin criteria ->									
IV drip 1 new dosage: IV drip 1 dose units: IV drip 1 dosage in m1/hr: (Next									

- 5. On the second page, you will also have to complete this form in its entirety:
 - a. IV drip 1 titrate parameter: This should be auto populated so you will not have to fill it in
 - b. IV drip 1 parameter Value: This is what the ordered parameter is (I.E Rass -2 to 2)

- c. IV drip 1 actual parameter value: This is what you assessed the value to be (I.E Rass -1)
 - i. If you are titrating to a BP, it would be wise to have a documented BP charted at the same time as the titration.
- a. IV drip cosign: (will only be required on double verification drugs: insulin/Heparin)
- b. IV drip 1 password: (will only be required on double verification drugs: insulin/Heparin)

OK	IV drip 1 titrate	parameter:	Cor free	text 1			
1	Arrhythmia	5	Cardiac	index	9	Pain score	
2	Bispectral index	6	Heart ra	te	√10	Rass	
3	Blood glucose	7	Labs		11	Train of fou	Jr
4	Blood pressure	8	Mean arte	erial pr	ressure 12	Urine output	t
Last	4 Clinical Data Er	ntries (For	Today)	-		-	
Date	Time RASS	CPOT	Pulse	Resp	Blood Press	Map	ICP
04/1	7 0445		64	14	103/75	85	
04/1	7 0500		69	14	111/76	89	
04/1	7 0515		66	14	111/77	89	
04/1	7 0530		63	14	107/75	87	
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