Pharmacy Policy Update: Management of Heparin Induced Thrombocytopenia (HIT)

Why, How, What, & Who

"Why" behind the "what" of the presented topic?

- HCA Healthcare East Florida's new standardized guidance for the management of patients with suspected or confirmed Heparin Induced Thrombocytopenia (HIT)
- Alignment with EHR documentation and standards of care
- Go-Live 8/31/2026

What feedback and/or decisions are needed?

- Please reach out with questions and feedback.

What actions are you asking the audience to take?

- Audience: Adult and Pediatric Critical Care, Pediatrics, Stepdown, Med/Surg/Tele, ER, Labor and Delivery, Cath Lab/Special Procedures Clinicians
- Attend educator led unit huddles to review policy highlights prior to go live
- Review Management of Heparin Induced Thrombocytopenia (HIT) & the Medication Restriction in Patient Care Areas on Policy Stat

Who is the point of contact?

- Pharmacy Team
- HHCCA East Florida Team (Educator)

HCA Healthcare®

Policy Update: Management of Heparin Induced Thrombocytopenia (HIT) - Effective 8/31/2026

Purpose: HCA Healthcare East Florida's standardized guidance for the management of patients with suspected or confirmed Heparin Induced Thrombocytopenia (HIT)
Scope: Nurses and Physicians
Clinical Care Areas: Adult and Pediatric Critical Care, Pediatrics, Stepdown, Med/Surg/Tele, ER, Labor and Delivery, Cath Lab/Special Procedures

Safety Points:

- Resource: *Management of Heparin Induced Thrombocytopenia Policy & Medication Restrictions in Patient care Areas Policies*
- **Immediately** discontinue heparin products for patients with suspected HIT
- An order for **No Heparin Products** must be placed by the LIP
- Add "Heparin" as a patient allergy. If HIT is ruled out (negative heparin antibodies, please inform pharmacy that heparin allergy has been ruled out)
- **If HIT is suspected, do not wait for HIT testing results prior to starting therapy**
- **aPTT** primary lab value for monitoring treatment effectiveness
- Alternative formulary agents such as ***argatroban, bivalirudin, fondaparinux****, and* ***warfarin*** are not implicated in the immune reaction
- All infusions must be programmed using the IV pump library, verified via the independent double checks by two nurses, and documented in the appropriate electronic medical record screen or on approved downtime forms during EHR downtime.
- **HIT in ECMO:**
  - Bivalirudin infusions for ECMO patients will be titrated according to the ECMO anticoagulation protocol
- **HIT and Impella Devices:**
  - For patients that develop HIT with an Impella, the manufacturer suggests utilizing a D5W with sodium bicarbonate purge solution with a systemic DTI.
  - Purge solution: D5W with sodium bicarbonate 25 mEq/L or 50 mEq/L
  - Systemic anticoagulation: bivalirudin per Adult HIT

Evaluation of Heparin Induced Thrombocytopenia – the 4T scoring system

4 T's	2 points	1 point	No points
Thrombocytopenia	Platelet count fall >50% and nadir ≥ 20	Platelet count fall 30-50% or platelet nadir 10-19K	Platelet count fall <30% or any platelet fall with nadir <10K
Timing of thrombocytopenia following heparin exposure	CLEAR onset on days 5-10 or platelet fall <1 day with prior heparin exposure <30 days	UNCLEAR onset on days 5- 10 OR > 10 days or platelet fall < 1 day with prior heparin exposure 30-100 days	Onset < day 4 without previous exposure to heparin
Thrombosis	Newly confirmed thrombosis, skin necrosis at heparin injection sites, or acute systemic reaction (e.g. anaphylactoid) following heparin administration	Progressive thrombosis, non-necrotizing skin lesions at heparin injection sites, or unconfirmed thrombosis	None
Other causes of thrombocytopenia	none	possible	definite
Risk strata: 0-3 = low, 4-5 = intermediate, 6-8 = high Other possible HIT scoring schemes can be found in Appendix I			

See back for additional guidance

- Reference: Management of Heparin Induced Thrombocytopenia 2026 & *Medication Restrictions in Patient care Areas Policies*

Interventions by 4T score risk stratification

Actions by HIT score risk stratification	
Low risk score = 0-3 97%-99% negative predictive value[2]	Continue UFH or LMWH and continue to monitor platelets
Moderate to high risk score ≥ 4	a. Start a DOAC, fondaparinux, or bivalirudin, based on patient's renal function and acuity b. Discontinue all heparin, low molecular weight heparins, and warfarin products (e.g., flushes, coated catheters, Impella purge solution) c. Document allergy to heparin in patient's medical chart (remove allergy if HIT laboratory testing results are negative) d. Avoid any intramuscular injections e. Order ELISA HIT Antibody assay f. Obtain baseline aPTT/INR, CBC, chem7

UHF-Unfractionated Heparin; DOAC – Direct Oral Anticoagulants; LMWH - Low-Molecular-Weight Heparin

Laboratory evaluation for HIT

- Baseline labs and HIT antibody tests should be ordered and completed prior to the initiation of argatroban or bilvalirudin
- Baseline labs should include aPTT, PT/INR, and CBC
- If prescribing argatroban, order baseline LFTs
- HIT antibody test

Initial drug therapy for HIT

If warfarin has recently been initiated, administer vitamin K 5 mg PO x 1 and hold warfarin until platelet count recovery (to baseline or >150K) to minimize risk of warfarin-induced skin necrosis following HIT

Drug	Dosing	Considerations	Relative contraindications	Monitoring
Fondaparinux	≤ 50 kg: 5 mg SQ qday 50-100 kg: 7.5 mg SQ qday ≥ 100 kg: 10 mg SQ qday	Does not inhibit clot-bound thrombin. Patients with active clots may need to be treated with a direct-acting anticoagulant such as apixaban, rivaroxaban or bivalirudin	CrCl<30 ml/min Concomitant spinal or epidural anesthesia	CBC and CH7 qday initially then periodically
Rivaroxaban	15mg PO BID until platelet recovery; then 20mg PO daily[6]	If confirmed thrombosis, continue 15mg PO BID dosing for 21 days; then 20mg PO daily	CrCl<30 ml/min* Concomitant spinal or epidural anesthesia	CBC and CH7 qday initially then periodically
Apixaban	5 mg PO BID[3]	If confirmed thrombosis, 10mg PO BID for 7 days; then 5mg PO BID	CrCl<30 ml/min* Concomitant spinal or epidural anesthesia	CBC and CH7 qday initially then periodically
Argatroban	typical starting dose: 2 mcg/kg/min Recommended starting dose in patients with heart failure, multi--organ system failure, severe anasarca, or post-cardiac surgery: 0.5 mcg/kg/min	-Primarily metabolized by the liver, patients with hepatic impairment require a significantly reduced initial dose and careful monitoring. - If patient's LFTs are greater than 3xULN, do NOT use Argatroban	If patient has epidural/ intrathecal/spinal procedure, consult with anesthesia prior to starting bivalirudin	aPTT: q 4 hours after initiation, resumption or any dose change See argatroban protocol
Bivalirudin	CrCl >60 ml/min: 0.15 mg/kg/hr CrCl 30-60 ml/min: 0.08 mg/kg/hr CrCl < 30 ml/min: 0.05 mg/kg/hr Intermittent HD: 0.07 mg/kg/hr CRRT: 0.03-0.07 mg/kg/hr SLEDD: 0.09 mg/kg/hr	- Shortest elimination half-life -Partially renally cleared but can be dose adjusted for renal function - Preferred in patients with: • Severe renal impairment • Potential procedures • Significant clot burden	If patient has epidural/ intrathecal/spinal procedure, consult with anesthesia prior to starting bivalirudin	CBC and Chem7 daily initially then periodically APTT q 4 hours after initiation, resumption or any dose change See bivalirudin protocol

Long-term anticoagulation considerations

- Consider a DOAC if long-term anticoagulation is indicated and patient is an appropriate candidate (i.e., organ function, no major DDIs, etc.).
- If DOACs are not an option, fondaparinux or warfarin should be considered for longer-term treatment
    a) Warfarin should not be initiated until platelets recover to patient's baseline or after platelets are >150,000
- In patients being bridged to warfarin, argatroban and bivalirudin may cause a falsely elevated INR (lab effect only).
    a) The effect on INR is small to moderate[8] (INR increase of ~0.4-0.6) and holding bivalirudin infusion to re-measure INR in warfarin patients is ***not*** necessary.
    b) Instead, overlap with warfarin should continue for at least 5 days and an INR of at least 2.5 should be achieved before bivalirudin discontinuation is considered.
- Recommended treatment duration (based on low quality evidence)
    a) Guidelines recommend limiting anticoagulation therapy to no more than 3 months for patients with the sole indication of HIT, with or without thrombosis[6].

Titration of Argatroban

1. Discontinue all sources of heparin (including flushes) and low-molecular weight heparins (Lovenox).
2. If patient has an existing warfarin order and is newly diagnosed with Heparin Induced Thrombocytopenia (HIT), discontinue warfarin and contact prescriber to recommend warfarin reversal with Phytonadione 5 mg IV x1.
3. Add "Heparin" as a patient allergy. If HIT is ruled out (negative heparin antibodies, please inform pharmacy that heparin allergy has been ruled out)
4. Obtain baseline aPTT and INR. IF patient was on heparin, initiate Argatroban when aPTT is less than 90 seconds.
5. Daily CBC while on argatroban
6. Check aPTT 4 hours after start of argatroban and follow protocol for subsequent aPTT monitoring. Adjust dose per protocol.
A. Standard Dosing Nomogram (mcg/kg/min): Patient weight = _____ kg (*use actual weight)*

☐ Argatroban 2 mcg/kg/min

APTT	Action	Repeat aPTT
Less than 58 seconds	Increase rate by 0.5 mcg/kg/min. Rate not to exceed 10 mcg/kg/min	4 hours after each dose change
58 -92 seconds	**No Change**	4 hours after last aPTT, if two consecutive aPTT are within range then repeat aPTT every 6 hours
93- 120 seconds	Hold infusion for 1 hour, then decrease rate by 0.5 mcg/kg/min	4 hours after drip restarted
Greater than 120 seconds	Stop infusion and contact prescriber. Stat aPTT every 4 hours. When aPTT is less than 90 seconds, resume at 50% (or one-half) of the previous rate.	After drip is stopped, repeat aPTT every 4 hours until the aPTT is less than 90 seconds. Obtain aPTT 4 hrs. after drip restarted.

B. Low Dose Nomogram for hepatic dysfunction, CHF, or critically ill: Patient weight = _____ kg (*use actual weight)*

☐ Argatroban 0.5 mcg/kg/min

Less than 58 seconds	Increase rate by 0.1 mcg/kg/min. Rate not to exceed 10 mcg/kg/min	4 hours after each dose change
58 -92 seconds	**No Change**	4 hours after last aPTT, if two consecutive aPTT are within range then repeat aPTT every 6 hours
93- 120 seconds	Hold infusion for 1 hour, then decrease rate by 0.1 mcg/kg/min	4 hours after drip restarted
Greater than 120 seconds	Stop infusion and contact prescriber. Stat aPTT every 4 hours. When aPTT is less than 90 seconds, resume at 50% (or one-half) of the previous rate.	After drip is stopped, repeat aPTT every 4 hours until the aPTT is less than 90 seconds. Obtain aPTT 4 hrs. after drip restarted.

The recommendation is to initiate warfarin at a maximum starting dose of 5mg when the platelet has recovered to at least 100,000 - 150,000. INR levels can be falsely elevated during Argatroban infusion. Below are recommendations for transition to warfarin therapy. A separate physician order will be required for warfarin dosing:

- If argatroban dose less than or equal to 2 mcg/kg/min, discontinue argatroban when INR is above 4 and repeat INR 4 hours after argatroban discontinued. If repeat INR is less than desired range restart argatroban at previous dose and repeat INR in am.
- If argatroban dose is above 2 mcg/kg/min, decrease rate to 2 mcg/kg/min for 4 hours and check INR. If repeat INR is less than desired range restart argatroban at previous dose and repeat process in AM of lowering argatroban dose and rechecking INR

Note: Argatroban half-life = 45 minutes and should be held at least 3 hours before any invasive procedures performed. Coagulation times will return to baseline 4 – 6 hours after stopping infusion

Titration of bivalirudin infusion: CrCl >60 mL/min

Initial Infusion	0.15 mg/kg/hr.	Check aPTT in 4 hours
aPTT (seconds)	**Dose adjustment**	**Next aPTT**
aPTT ≤38	Increase infusion rate by 0.05 mg/kg/hr.	Check aPTT in 4 hours
aPTT 39 to 57	Increase infusion rate by 0.03 mg/kg/hr.	Check aPTT in 4 hours
aPTT 58 to 92	No Rate Change (target range)	Check aPTT in 4 hours to confirm, then daily
aPTT 93 to 110	Decrease infusion rate by 0.03 mg/kg/hr.	Check aPTT in 4 hours
aPTT >110	Hold infusion by 60 minutes. Decrease infusion rate by 0.05 mg/kg/hr.	Check aPTT in 4 hours and call Provider

CrCl 30 - 60 mL/min

Initial Infusion	0.08 mg/kg/hr.	Check aPTT in 4 hours
aPTT (seconds)	**Dose adjustment**	**Next aPTT**
aPTT ≤38	Increase infusion rate by 0.02 mg/kg/hr.	Check aPTT in 4 hours
aPTT 39 to 57	Increase infusion rate by 0.01 mg/kg/hr.	Check aPTT in 4 hours
aPTT 58 to 92	No Rate Change (target range)	Check aPTT in 4 hours to confirm, then daily
aPTT 93 to 110	Decrease infusion rate by 0.01 mg/kg/hr.	Check aPTT in 4 hours
aPTT >110	Hold infusion by 60 minutes. Decrease infusion rate by 0.02 mg/kg/hr.	Check aPTT in 4 hours and call Provider

CrCl <30 mL/min or on dialysis

Initial Infusion	0.05 mg/kg/hr.	Check aPTT in 4 hours
aPTT (seconds)	**Dose adjustment**	**Next aPTT**
aPTT ≤38	Increase infusion rate by 0.02 mg/kg/hr.	Check aPTT in 4 hours
aPTT 39 to 57	Increase infusion rate by 0.01 mg/kg/hr.	Check aPTT in 4 hours
aPTT 58 to 92	No Rate Change (target range)	Check aPTT in 4 hours to confirm, then daily
aPTT 93 to 110	Decrease infusion rate by 0.01 mg/kg/hr.	Check aPTT in 4 hours
aPTT >110	Hold infusion by 60 minutes. Decrease infusion rate by 0.02 mg/kg/hr.	Check aPTT in 4 hours and call Provider

<LOGO>	**Policy Number:**	**PAGE: 1 of 8**
POLICY NAME: Management of Heparin Induced Thrombocytopenia	**DEPARTMENT:** Medication Management	**EFFECTIVE DATE:**
OWNER: Director of Pharmacy	**Review Date:**	**Approval Date:**
APPROVING BODY: Facility Pharmacy & Therapeutics Committee/MEC	**Revision Date:**	**Approval Date:**

SCOPE:

Pharmacy, Nursing and Medical Staff

PURPOSE:

To establish guidelines for the safe and effective management of heparin induced thrombocytopenia (HIT)
This document is intended as a guideline only and should not replace sound clinical judgment

POLICY:

HIT is an immune-mediated reaction triggered by exposure to heparin products that causes a paradox of low platelet counts and increased thrombotic risk. Platelet factor 4, heparin, and IgG form a complex that binds the FC receptor on platelets resulting in platelet activation. HIT occurs when the platelet complexes clump and are removed by the endothelial system, leading to thrombocytopenia and a prothrombotic state, which increases clotting risk.

For management of confirmed or suspected HIT, heparin products should be immediately discontinued. Alternative agents for anticoagulation that are not implicated in the immune reaction and are available on formulary include argatroban, bivalirudin, fondaparinux, and warfarin.

Argatroban is a small molecule, synthetic direct thrombin inhibitor used as an alternative anticoagulant in patients with heparin-induced thrombocytopenia (HIT). It has a relatively short half life of 40-50 minutes and is eliminated by hepatic metabolism and biliary secretion. There are no specific guidelines for dosing in hepatic impairment and therefore argatroban should be avoided in patients with any degree of hepatic impairment.

Bivalirudin, an intravenous direct thrombin inhibitor, used for the management of suspected and confirmed HIT due to its pharmacologic properties including short half-life, and ability for renal dose adjustment.

All argatroban and bivalirudin drips are infused using a programmable IV pump. Independent double checks are required by two nurses, with documentation of such in the medical record, for any IV bolus doses and at the start of every new bag as outlined by the High Risk Medication Policy.

All titrations are to be documented in the electronic medical record. In the event of an EMR Downtime (planned or unplanned), medication administrations are to be documented using the hospital's approved downtime forms/process as outlined in Downtime Policy.

Argatroban and bivalirudin drips restricted to use areas outlined in the Restricted Medications Policy

PROCEDURE

I. Evaluation of HIT

A. Patients should be evaluated via the 4T's scoring system [1]

4 T's	2 points	1 point	No points
Thrombocytopenia	Platelet count fall >50% and nadir ≥ 20	Platelet count fall 30-50% or platelet nadir 10-19K	Platelet count fall <30% or any platelet fall with nadir <10K
Timing of thrombocytopenia following heparin exposure	CLEAR onset on days 5-10 or platelet fall <1 day with prior heparin exposure <30 days	UNCLEAR onset on days 5- 10 OR > 10 days or platelet fall < 1 day with prior heparin exposure 30-100 days	Onset < day 4 without previous exposure to heparin
Thrombosis	Newly confirmed thrombosis, skin necrosis at heparin injection sites, or acute systemic reaction (e.g. anaphylactoid) following heparin administration	Progressive thrombosis, non-necrotizing skin lesions at heparin injection sites, or unconfirmed thrombosis	None
Other causes of thrombocytopenia	none	possible	definite

Risk strata: 0-3 = low, 4-5 = intermediate, 6-8 = high
Other possible HIT scoring schemes can be found in Appendix I

B. Actions by 4T score risk stratification

Actions by HIT score risk stratification	
Low risk score = 0-3 97%-99% negative predictive value[2]	Continue UFH or LMWH and continue to monitor platelets
Moderate to high risk score ≥ 4	a. Start a DOAC, fondaparinux, or bivalirudin, based on patient's renal function and acuity b. Discontinue all heparin, low molecular weight heparins, and warfarin products (e.g., flushes, coated catheters, Impella purge solution) c. Document allergy to heparin in patient's medical chart (remove allergy if HIT laboratory testing results are negative) d. Avoid any intramuscular injections e. Order ELISA HIT Antibody assay f. Obtain baseline aPTT/INR, CBC, chem7

II. Laboratory evaluation of HIT

A. Baseline labs and HIT antibody test should be ordered and completed prior to the initiation of argatroban or bilvalirudin.
B. Baseline labs should include aPTT, PT/INR, and CBC
C. If prescribing argatroban order baseline LFTs
D. HIT antibody test

III. Initial drug therapy for HIT

A. If HIT suspected, do not wait for HIT testing results prior to starting therapy
B. If warfarin has recently been initiated, administer vitamin K 5 mg PO x 1 and hold warfarin until platelet count recovery (to baseline or >150K) to minimize risk of warfarin-induced skin necrosis following HIT
C. "No Heparin Products" order should be entered for patients with suspected HIT

Drug	Dosing	Considerations	Relative contraindications	Monitoring
Fondaparinux	≤ 50 kg: 5 mg SQ qday 50-100 kg: 7.5 mg SQ qday ≥ 100 kg: 10 mg SQ qday	Does not inhibit clot-bound thrombin. Patients with active clots may need to be treated with a direct-acting anticoagulant such as apixaban, rivaroxaban or bivalirudin	CrCl<30 ml/min Concomitant spinal or epidural anesthesia	CBC and CH7 qday initially then periodically
Rivaroxaban	15mg PO BID until platelet recovery; then 20mg PO daily[6]	If confirmed thrombosis, continue 15mg PO BID dosing for 21 days: then 20mg PO daily	CrCl<30 ml/min* Concomitant spinal or epidural anesthesia	CBC and CH7 qday initially then periodically
Apixaban	5 mg PO BID[3]	If confirmed thrombosis, 10mg PO BID for 7 days: then 5mg PO BID	CrCl<30 ml/min* Concomitant spinal or epidural anesthesia	CBC and CH7 qday initially then periodically
Argatroban	Typical starting dose: 2 mcg/kg/min Recommended starting dose in patients with heart failure, multi-organ system failure, severe anasarca, or post-cardiac surgery: 0.5 mcg/kg/min	-Primarily metabolized by the liver, patients with hepatic impairment require a significantly reduced initial dose and careful monitoring. - If patients' LFTs are greater than 3xULN, do NOT use Argatroban	If patient has epidural/ intrathecal/spinal procedure, consult with anesthesia prior to starting bivalirudin	aPTT: q 4 hours after initiation, resumption or any dose change See argatroban protocol
Bivalirudin	CrCl >60 ml/min: 0.15 mg/kg/hr CrCl 30-60 ml/min: 0.08 mg/kg/hr CrCl < 30 ml/min: 0.05 mg/kg/hr Intermittent HD: 0.07 mg/kg/hr CRRT: 0.03-0.07 mg/kg/hr SLEDD: 0.09 mg/kg/hr	- Shortest elimination half-life -Partially renally cleared but can be dose adjusted for renal function - Preferred in patients with: • Severe renal impairment • Potential procedures • Significant clot burden	If patient has epidural/ intrathecal/spinal procedure, consult with anesthesia prior to starting bivalirudin	CBC and Chem7 daily initially then periodically APTT: q 4 hours after initiation, resumption or any dose change See bivalirudin protocol

IV. HIT in ECMO

A. Bivalirudin infusions for ECMO patients will be titrated according to the ECMO anticoagulation protocol.

V. HIT and Impella devices[7]

A. Impella devices typically utilize heparin both in a purge solution to anticoagulate the device as well as systemically to reduce the risk of limb ischemia and catheter-related thrombotic complications.

B. For patients that develop HIT with an Impella, the manufacturer suggests utilizing a D5W with sodium bicarbonate purge solution with a systemic DTI.

   a. Purge solution: D5W with sodium bicarbonate 25 mEq/L or 50 mEq/L

   b. Systemic anticoagulation: bivalirudin per Adult HIT

VI. Long-term anticoagulation

A. Consider a DOAC if long-term anticoagulation is indicated and patient is an appropriate candidate (i.e organ function, no major DDIs, etc).

B. If DOACs are not an option, fondaparinux or warfarin should be considered for longer-term treatment
   a. Warfarin should not be initiated until platelets recover to patient's baseline or after platelets are >150,000

C. In patients being bridged to warfarin, argatroban and bivalirudin may cause a falsely elevated INR (lab effect only).
   a. The effect on INR is small to moderate[8] (INR increase of ~0.4-0.6) and holding bivalirudin infusion to re-measure INR in warfarin patients is ***not*** necessary.
   b. Instead, overlap with warfarin should continue for at least 5 days and an INR of at least 2.5 should be achieved before bivalirudin discontinuation is considered.

D. Recommended treatment duration (based on low quality evidence)
   i. Guidelines recommend limiting anticoagulation therapy to no more than 3 months for patients with the sole indication of HIT, with or without thrombosis[6].

VII. References:

1. Lo GK, Juhl D, Warkentin TE, Sigouin CS, Eichler P, Greinacher A. Evaluation of pretest clinical score (4 T's) for the diagnosis of heparin-induced thrombocytopenia in two clinical settings. *J Thromb Haemost JTH*. 2006;4(4):759-765. doi:10.1111/j.1538-7836.2006.01787.x

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Appendix A: **Titration of Argatroban**

1. Discontinue all sources of heparin (including flushes) and low-molecular weight heparins (Lovenox).

2. If patient has an existing warfarin order and is newly diagnosed with Heparin Induced Thrombocytopenia (HIT), discontinue warfarin and contact prescriber to recommend warfarin reversal with Phytonadione 5 mg IV x1.

3. Add "Heparin" as a patient allergy. If HIT is ruled out (negative heparin antibodies, please inform pharmacy that heparin allergy has been ruled out)

4. Obtain baseline aPTT and INR. IF patient was on heparin, initiate Argatroban when aPTT is less than 90 seconds.

5. Daily CBC while on argatroban

6. Check aPTT 4 hours after start of argatroban and follow protocol for subsequent aPTT monitoring. Adjust dose per protocol.

A. Standard Dosing Nomogram (mcg/kg/min): Patient weight = kg (*use actual weight)*

☐ Argatroban 2 mcg/kg/min

APTT	Action	Repeat aPTT
Less than 58 seconds	Increase rate by 0.5 mcg/kg/min. Rate not to exceed 10 mcg/kg/min	4 hours after each dose change
58 -92 seconds	**No Change**	4 hours after last aPTT, if two consecutive aPTT are within range then repeat aPTT every 6 hours
93- 120 seconds	Hold infusion for 1 hour, then decrease rate by 0.5 mcg/kg/min	4 hours after drip restarted
Greater than 120 seconds	Stop infusion and contact prescriber. Stat aPTT every 4 hours. When aPTT is less than 90 seconds, resume at 50% (or one-half) of the previous rate.	After drip is stopped, repeat aPTT every 4 hours until the aPTT is less than 90 seconds. Obtain aPTT 4 hrs after drip restarted.

B. Low Dose Nomogram for hepatic dysfunction, CHF, or critically ill: Patient weight = kg (*use actual weight)*

☐ Argatroban 0.5 mcg/kg/min

Less than 58 seconds	Increase rate by 0.1 mcg/kg/min. Rate not to exceed 10 mcg/kg/min	4 hours after each dose change
58 -92 seconds	**No Change**	4 hours after last aPTT, if two consecutive aPTT are within range then repeat aPTT every 6 hours
93- 120 seconds	Hold infusion for 1 hour, then decrease rate by 0.1 mcg/kg/min	4 hours after drip restarted
Greater than 120 seconds	Stop infusion and contact prescriber. Stat aPTT every 4 hours. When aPTT is less than 90 seconds, resume at 50% (or one-half) of the previous rate.	After drip is stopped, repeat aPTT every 4 hours until the aPTT is less than 90 seconds. Obtain aPTT 4 hrs after drip restarted.

The recommendation is to initiate warfarin at a maximum starting dose of 5mg when the platelet has recovered to at least 100,000 - 150,000. INR levels can be falsely elevated during Argatroban infusion. Below are recommendations for transition to warfarin therapy. A separate physician order will be required for warfarin dosing:

- If argatroban dose less than or equal to 2 mcg/kg/min, discontinue argatroban when INR is above 4 and repeat INR 4 hours after argatroban discontinued. If repeat INR is less than desired range restart argatroban at previous dose and repeat INR in am.
- If argatroban dose is above 2 mcg/kg/min, decrease rate to 2 mcg/kg/min for 4 hours and check INR. If repeat INR is less than desired range restart argatroban at previous dose and repeat process in AM of lowering argatroban dose and rechecking INR

Note: Argatroban half-life = 45 minutes and should be held at least 3 hours before any invasive procedures performed. Coagulation times will return to baseline 4 – 6 hours after stopping infusion

Physician Signature: Date/Time:

Appendix B. **Titration of bivalirudin infusion:**

CrCl >60 mL/min

Initial Infusion	0.15 mg/kg/hr	Check aPTT in 4 hours
aPTT (seconds)	**Dose adjustment**	**Next aPTT**
aPTT ≤38	Increase infusion rate by 0.05 mg/kg/hr	Check aPTT in 4 hours
aPTT 39 to 57	Increase infusion rate by 0.03 mg/kg/hr	Check aPTT in 4 hours
aPTT 58 to 92	No Rate Change (target range)	Check aPTT in 4 hours to confirm, then daily
aPTT 93 to 110	Decrease infusion rate by 0.03 mg/kg/hr	Check aPTT in 4 hours
aPTT >110	Hold infusion by 60 minutes. Decrease infusion rate by 0.05 mg/kg/hr	Check aPTT in 4 hours and call Provider

CrCl 30 - 60 mL/min

Initial Infusion	0.08 mg/kg/hr	Check aPTT in 4 hours
aPTT (seconds)	**Dose adjustment**	**Next aPTT**
aPTT ≤38	Increase infusion rate by 0.02 mg/kg/hr	Check aPTT in 4 hours
aPTT 39 to 57	Increase infusion rate by 0.01 mg/kg/hr	Check aPTT in 4 hours
aPTT 58 to 92	No Rate Change (target range)	Check aPTT in 4 hours to confirm, then daily
aPTT 93 to 110	Decrease infusion rate by 0.01 mg/kg/hr	Check aPTT in 4 hours
aPTT >110	Hold infusion by 60 minutes. Decrease infusion rate by 0.02 mg/kg/hr	Check aPTT in 4 hours and call Provider

CrCl <30 mL/min or on dialysis

Initial Infusion	0.05 mg/kg/hr	Check aPTT in 4 hours
aPTT (seconds)	**Dose adjustment**	**Next aPTT**
aPTT ≤38	Increase infusion rate by 0.02 mg/kg/hr	Check aPTT in 4 hours
aPTT 39 to 57	Increase infusion rate by 0.01 mg/kg/hr	Check aPTT in 4 hours
aPTT 58 to 92	No Rate Change (target range)	Check aPTT in 4 hours to confirm, then daily
aPTT 93 to 110	Decrease infusion rate by 0.01 mg/kg/hr	Check aPTT in 4 hours
aPTT >110	Hold infusion by 60 minutes. Decrease infusion rate by 0.02 mg/kg/hr	Check aPTT in 4 hours and call Provider