

Target Audience: All Providers

Effective Date: September 14, 2021

Location(s): Dearborn Farmington Hills Grosse Pointe Royal Oak
 Taylor Trenton Troy Wayne Lenox-OPC Canton-OPC

Module: EpicCare Inpatient

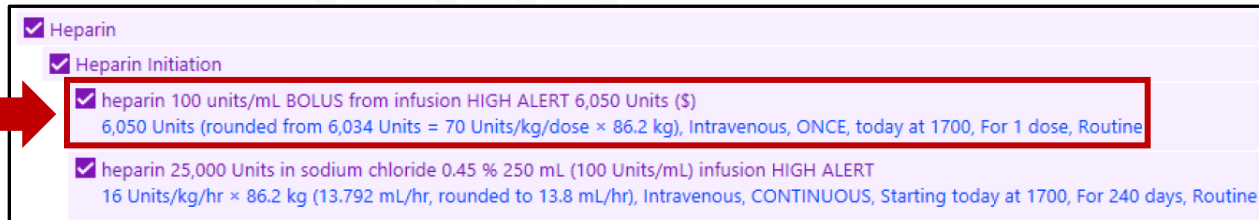
Overview: Heparin Standardization Project- Provider Education

How it Works:

Heparin protocols and management have varied across sites.

- Standardization of Heparin protocols, therapeutic ranges, orders, and management will contribute to patient safety for the use of this anticoagulant.
- This change standardizes adult protocols and pediatric guidelines to be weight based across all sites.
- Indications/Treatment Types
 - ACS or Low Intensity: Options with or without Initial and Adjusted Boluses
 - Atrial Fibrillation or Valves
 - VTE or Acute Thrombosis: Options with or without Initial and Adjustment Boluses
 - Impella® [Left-Sided] Anticoagulation
 - Pediatrics

Note: No bolus protocols eliminate both INITIAL and ADJUSTMENT bolus. If heparin is to be initiated WITHOUT an INITIAL bolus, but subsequent boluses are desired, order the regular protocol and uncheck the initial heparin bolus (shown below).



Heparin
 Heparin Initiation
 heparin 100 units/mL BOLUS from infusion HIGH ALERT 6,050 Units (\$)
 6,050 Units (rounded from 6,034 Units = 70 Units/kg/dose × 86.2 kg), Intravenous, ONCE, today at 1700, For 1 dose, Routine
 heparin 25,000 Units in sodium chloride 0.45 % 250 mL (100 Units/mL) infusion HIGH ALERT
 16 Units/kg/hr × 86.2 kg (13.792 mL/hr, rounded to 13.8 mL/hr), Intravenous, CONTINUOUS, Starting today at 1700, For 240 days, Routine



- When ordering a heparin infusion, the infusion order defaults to the recorded weight and should not be modified for the duration of Heparin therapy unless there is a clinically significant reason to do so (ex: initial weight estimate was significantly different than measured weight).
- Providers may continue to use fixed-dose Heparin treatment (in units/hr or units/kg/hr) when applicable. The fixed dose build will need to be utilized when “off-protocol” dosing is desired, since the existing protocols do not accommodate targeting aPTT ranges outside of the Beaumont Health therapeutic range.

Note: Any saved order sets that contain Heparin order panels, be aware you may get an alert that the order set has changed, and the provider will need to respond and make appropriate changes.



Heparin oneChart Improvements

- Workflow based on Dearborn, Taylor, Trenton, and Wayne sites' model - Heparin adjustment orders and modification are accomplished using Order Panels.
- Decision support added to default appropriate adjustment orders based on aPTT result and current medication order.

FMH, GRP, RYO, TRY Current vs. New Heparin Infusion Protocol/Workflow

Current FMH, GRP, RYO, TRY		New FMH, GRP, RYO, TRY
Current Names -ACS -Cardiac Indications (Non-ACS) -VTE	 Update based upon new protocol	New Protocol Names -ACS or Low Intensity -Atrial Fibrillation or Valves -VTE or Acute Thrombosis -Impella[Left-Sided] Anticoagulation
Infusion in units/hour		Infusion in units/kg/hour
Infusion dose ordered as a range		Infusion ordered as a discrete rate until modified
Nurse adjusts infusion rate on the pump and in the MAR		Nursing modifies Epic order using Heparin Adjustment Nomogram Panel, Pharmacist verifies order, and pump settings are adjusted.

FMH, GRP, RYO, TRY Current vs. New Heparin Infusion Protocol/Workflow

Current FMH, GRP, RYO, TRY		New FMH, GRP, RYO, TRY
Timed aPTT every 8 hours x 3 following initiation, then during sweep times	 Update based upon new protocol	Next aPTT scheduled in 6 hours from infusion change, as a one-time order
Decrease aPTT to once daily after 2 consecutive therapeutic aPTTs		After 2 consecutive therapeutic aPTTs, order one-time aPTT for Following Morning , review results to determine next aPTT
Bolus from infusion for all sites except FMH		Bolus from infusion for all 4 sites

DBN, TLR, TRT, WYN

Current vs. New Heparin Infusion Protocol/Workflow

Current DBN, TLR, TRT, WYN		New DBN, TLR, TRT, WYN
Two current protocols - ACS - Adult standard nomogram (DVT/PE/AF)	 Update based upon new protocol	New protocol names - ACS or Low Intensity - Atrial Fibrillation or Valves - VTE - Impella [Left-Sided] Anticoagulation
One therapeutic range for all indications		Two therapeutic ranges; one for ACS and Impella and another for other indications
Manual selection of adjustment nomogram panel in <i>oneChart</i>		Automatic selection of adjustment nomogram panel in <i>oneChart</i>
Heparin concentration is 50 units/mL		Heparin concentration is 100 units/mL
Bolus from Vial		Bolus from infusion once Alaris pumps are implemented

Heparin Initiation Panel Example

Order Sets

Heparin for Venous Thromboembolism or Acute Thrombosis

Last Results for Heparin related labs
No results found for: APTT, PT, INR, HGB, PLT

- Protocol - Heparin Infusion

Initiate and Maintain Heparin per Protocol
Routine, Continuous, Starting today at 1608, Until Specified

Review aPTT in 6 Hours
Routine, Once, today at 2308, For 1 occurrence

Heparin

Heparin Initiation

heparin 100 units/mL BOLUS from infusion HIGH ALERT 6,050 Units (\$)
6,050 Units (rounded from 6,034 Units = 70 Units/kg/dose × 86.2 kg), Intravenous, ONCE, today at 1700, For 1 dose, Routine

heparin 25,000 Units in sodium chloride 0.45 % 250 mL (100 Units/mL) infusion HIGH ALERT
16 Units/kg/hr × 86.2 kg (13.792 mL/hr, rounded to 13.8 mL/hr), Intravenous, CONTINUOUS, Starting today at 1700, For 240 days, Routine

Prottime International Normalized Ratio (INR) - Baseline if Suspicion of Coagulopathy (\$\$)
LAB ONCE

CBC - Baseline, Daily X 3, Then Every Other Day While on Heparin

Complete Blood Count (CBC) (\$\$)
LAB ONCE, today at 1608, For 1 occurrence
Blood, Blood, Venous

And
Complete Blood Count (CBC) (\$\$)
LAB EVERY MORNING, First occurrence tomorrow at 0600, Last occurrence on Sat 8/21 at 0600, For 3 occurrences
Blood, Blood, Venous

And
Complete Blood Count (CBC) (\$\$)
EVERY OTHER DAY, First occurrence on Mon 8/23 at 0600, Last occurrence on Wed 8/25 at 0600, For 2 occurrences
Blood, Blood, Venous

aPTT - Baseline and in 6 Hours from initiation or adjustment of heparin drip

aPTT (\$\$\$)
LAB ONCE, today at 1608, For 1 occurrence
Blood, Blood, Venous

And
aPTT (\$\$\$)
LAB TIMED ONCE, today at 2208, For 1 occurrence
Blood, Blood, Venous