

Treatment recommendations do NOT cover all clinical scenarios and do not replace the need for clinical judgement.

# Infusion Nomogram for Intravenous Unfractionated Heparin For FLUID RESTRICTED PATIENTS 25,000 units in 50 mL

Patients requiring fluid restrictions (e.g. patient with heart failure or severe renal impairment) may require a more concentrated dilution of unfractionated heparin than the standard dilution used in the WA Anticoagulation Medication Chart -25,000 units in 500 mL of sodium chloride 0.9% (50 units/mL).

Print a copy of the FLUID RESTRICTED nomogram and ATTACH to Anticoagulation Chart over existing page 3 – put a line through the original nomogram on the WA Anticoagulation Medication Chart.

**This nomogram (weight-based guides) is ONLY valid when using an unfractionated heparin concentration of 25,000 units in 50 mL and STANDARD aPTT targets.**

**INITIAL ORDER** : Prescriber should complete order (initial bolus and initial infusion rate) on page 2. See below for recommended dose for Venous Thromboembolism (VTE) or Acute Coronary Syndrome (ACS).

- It is important that a bolus dose of unfractionated heparin is prescribed and administered on initiating an unfractionated heparin infusion to ensure that the therapeutic range is reached within the first 24 hours of therapy.

**MAINTENANCE** : Prescriber to indicate on page 2 of Anticoagulation Chart whether nurse should maintain infusion rate based on nomogram as indicated OR whether the prescriber is to be contacted following each aPTT test.

**IT IS RECOMMENDED FOR SAFETY THAT**

- All bolus doses be drawn up from separate ampoules into a syringe for administration.
- A syringe driver is used to administer the infusion due to the very low infusion rates required.

## Venous Thromboembolism (DVT/PE) Bolus and Initial Rate Requirements

|                   |                     | Weight Based Guide for Initial Dose |                |       |       |       |       |       |       |       |       |       |       |         |
|-------------------|---------------------|-------------------------------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
|                   |                     | Weight                              | ≤ 40 kg        | 45 kg | 50 kg | 55 kg | 60 kg | 65 kg | 70 kg | 75 kg | 80 kg | 85 kg | 90 kg | ≥ 95 kg |
| <b>Bolus Dose</b> | 80 units/kg         | Units                               | 3200           | 3600  | 4000  | 4400  | 4800  | 5200  | 5600  | 6000  | 6400  | 6800  | 7200  | 7200    |
|                   | <b>Initial Rate</b> | 18 units/kg/hour                    | Rate (mL/hour) | 1.4   | 1.6   | 1.8   | 2     | 2.2   | 2.3   | 2.5   | 2.7   | 2.9   | 3.1   | 3.2     |

## Acute Coronary Syndrome Bolus and Initial Rate Requirements

|                   |                     | Weight Based Guide for Initial Dose |                |       |       |       |       |       |       |       |       |       |       |         |
|-------------------|---------------------|-------------------------------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
|                   |                     | Weight                              | ≤ 40 kg        | 45 kg | 50 kg | 55 kg | 60 kg | 65 kg | 70 kg | 75 kg | 80 kg | 85 kg | 90 kg | ≥ 95 kg |
| <b>Bolus Dose</b> | 60 units/kg         | Units                               | 2400           | 2800  | 3000  | 3300  | 3600  | 4000  | 4000  | 4000  | 4000  | 4000  | 4000  | 4000    |
|                   | <b>Initial Rate</b> | 12 units/kg/hour                    | Rate (mL/hour) | 1     | 1.1   | 1.2   | 1.3   | 1.4   | 1.5   | 1.7   | 1.9   | 2     | 2     | 2       |

## Nomogram for modifying rate of administration for Venous Thromboembolism and Acute Coronary Syndrome

|                    |   | Weight Based Rate for Maintenance Dose  |   |       |       |       |       |       |       |       |       |       |       |         |
|--------------------|---|---|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
|                    |   | Weight  | ≤ 40 kg   | 45 kg | 50 kg | 55 kg | 60 kg | 65 kg | 70 kg | 75 kg | 80 kg | 85 kg | 90 kg | ≥ 95 kg |
| <b>MAINTENANCE</b> | <b>MAINTENANCE ORDER</b><br>Use weight column on nomogram and row for aPTT range for unit/kg/hour conversion of unit/kg/hour                            |   |   |       |       |       |       |       |       |       |       |       |       |         |
|                    | <b>aPTT</b>   | <b>Dose Adjustment</b>  | <b>Rate Change (mL/hour)</b> This rate equals recommended change in units/hour for a 50 unit/mL dilution. Remeasure aPTT within 6 hours of each rate change |       |       |       |       |       |       |       |       |       |       |         |
|                    | ≤ Kk  | <b>Bolus dose</b> as per indication (VTE OR ACS listed above)<br>Then <b>increase 3 units/kg/hour</b> | +0.2  | +0.3  | +0.3  | +0.3  | +0.4  | +0.4  | +0.4  | +0.5  | +0.5  | +0.5  | +0.5  | +0.6    |
|                    | LI-Mm   | <b>Increase 2 units/kg/hour</b><br>For VTE consider 40 units/kg bolus dose                            | +0.2  | +0.2  | +0.2  | +0.2  | +0.2  | +0.3  | +0.3  | +0.3  | +0.3  | +0.3  | +0.4  | +0.4    |
|                    | Nn-Pp   | <b>No Change</b>  | Remeasure aPTT within 24 hours (or next morning)  |       |       |       |       |       |       |       |       |       |       |         |
|                    | Qq-Rr   | <b>Reduce 1 unit/kg/hour</b>  | -0.1  | -0.1  | -0.1  | -0.1  | -0.1  | -0.1  | -0.1  | -0.2  | -0.2  | -0.2  | -0.2  | -0.2    |
|                    | Ss-Tt   | <b>Hold for 30 minutes</b><br>Then reduce 2 units/kg/hour   | -0.2  | -0.2  | -0.2  | -0.2  | -0.2  | -0.3  | -0.3  | -0.3  | -0.3  | -0.3  | -0.4  | -0.4    |
| > Zz               | <ul style="list-style-type: none"> <li><b>Contact doctor</b></li> <li><b>Hold for 60 minutes</b></li> <li><b>Then reduce 3 units/kg/hour</b></li> </ul> | -0.2  | -0.3  | -0.3  | -0.3  | -0.4  | -0.4  | -0.4  | -0.5  | -0.5  | -0.5  | -0.5  | -0.6  |         |

Slight variances of aPTT ranges may occur due to changes in laboratory reagents used. Please check with your Pathology Laboratory.

**Please note:** Each hospital is required to check with their Pathology laboratory should determine its own therapeutic target range for heparin against a gold standard test (eg residual anti-Xa activity). Because of this, hospitals should not use a WA Anticoagulation Chart from another hospital as ranges will change from hospital to hospital.