Downtime - Documenting Heparin Infusion on paper charts (AD284.2) during EMR downtime

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Quick Reference Guide

For full details on Heparin prescribing in adults, see Prompt Guideline: *Unfractionated Heparin (UFH) for Infusion in Adults greater than 16 Years*.

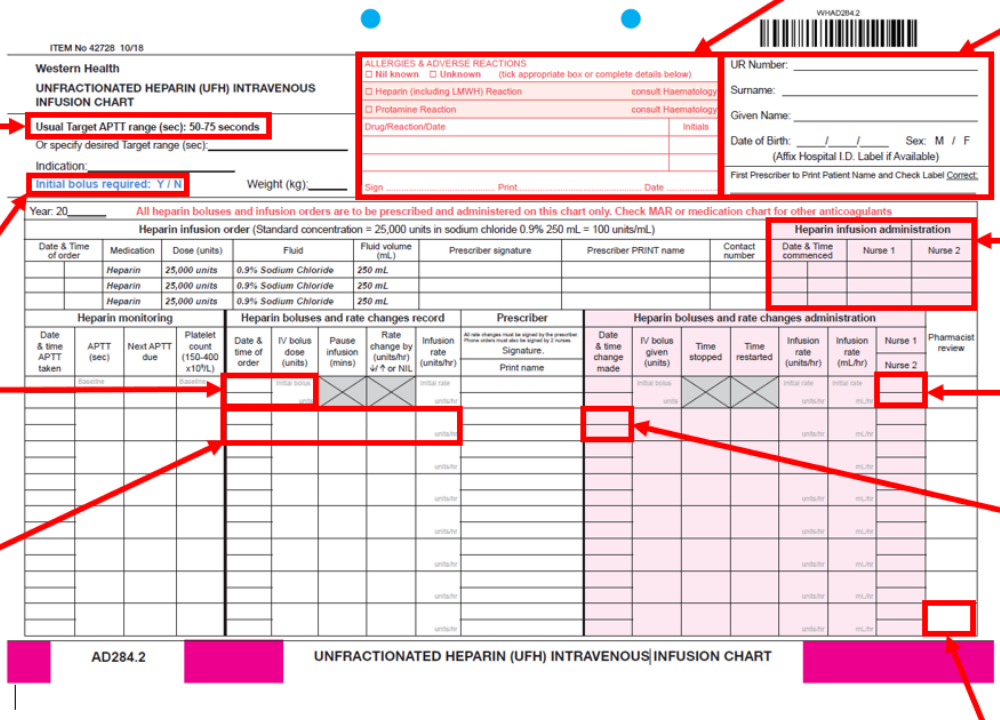
Page 1: Prescribing

HEPARIN INTRAVENOUS INFUSION CHART

TARGET APTT RANGE – Standard:
- Usual APTT target range: 50-75 seconds (unless otherwise specified by medical team).
- If target APTT is different from usual range, the medical officer will need to hand write the new target and initial with the date.

BOLUS DOSE:
- Medical officer to circle 'Y' or 'N' to indicate if initial bolus is required.
- If required, document the bolus dose in the first row under 'Heparin boluses and rate changes record".

INFUSION ORDER:
- Must be written by a medical officer. Order needs to include date and time, print of name and signature of prescribing doctor.
- THE INFUSION RATE MUST BE WRITTEN IN UNITS PER HOUR.


ITEM No 42728 10/18

Western Health

UNFRACTIONATED HEPARIN (UFH) INTRAVENOUS INFUSION CHART

Usual Target APTT range (sec): 50-75 seconds

Or specify desired Target range (sec):

Indication:

Initial bolus required: Y / N

Weight (kg):

ALLERGIES & ADVERSE REACTIONS

☐ Nil known ☐ Unknown (tick appropriate box or complete details below)

☐ Heparin (including LMWH) Reaction consult Haematology

☐ Protamine Reaction consult Haematology

Drug/Reaction/Date Initials

Sign Print Date

UR Number:

Surname:

Given Name:

Date of Birth: ____/____/____ Sex: M / F

(Affix Hospital I.D. Label if Available)

First Prescriber to Print Patient Name and Check Label Correct:

Year: 20____ All heparin boluses and infusion orders are to be prescribed and administered on this chart only. Check MAR or medication chart for other anticoagulants

Heparin infusion order (Standard concentration = 25,000 units in sodium chloride 0.9% 250 mL = 100 units/mL)

Date & Time of order	Medication	Dose (units)	Fluid	Fluid volume (mL)	Prescriber signature	Prescriber PRINT name	Contact number
	Heparin	25,000 units	0.9% Sodium Chloride	250 mL			
	Heparin	25,000 units	0.9% Sodium Chloride	250 mL			
	Heparin	25,000 units	0.9% Sodium Chloride	250 mL			

Heparin infusion administration

Date & Time commenced	Nurse 1	Nurse 2

Heparin monitoring				Heparin boluses and rate changes record					Prescriber		Heparin boluses and rate changes administration						
Date & time APTT taken	APTT (sec)	Next APTT due	Platelet count (150-400 x10⁹/L)	Date & time of order	IV bolus dose (units)	Pause infusion (mins)	Rate change by (units/hr) ↓/↑ or NIL	Infusion rate (units/hr)	Signature.	Print name	Date & time change made	IV bolus given (units)	Time stopped	Time restarted	Infusion rate (units/hr)	Infusion rate (mL/hr)	Nurse 1 / Nurse 2	Pharmacist review
	Baseline		Baseline		Initial bolus units			Initial rate units/hr				Initial bolus units			Initial rate units/hr	Initial rate mL/hr		

AD284.2 UNFRACTIONATED HEPARIN (UFH) INTRAVENOUS INFUSION CHART

ALLERGIES AND ADVERSE REACTIONS:
- Any allergies to Heparins or known history of HITs must be documented and reported to Haematology prior to commencement of the infusion.

PATIENT IDENTIFICATION:
- Patient identification label must be applied and signed by the medical officer as correct patient.

INFUSION ADMINISTRATION:
- TWO nurses must administer according to the IV administration process and sign the chart together.

INITIAL COMMENCEMENT OF INFUSION
- TWO nurses must check if a bolus is required and administer the bolus – sign post administration here.

CHANGES IN ADMINISTRATION
- When an adjustment is required – TWO nurses must check and annotate together:
  - Date and time of change
  - Time infusion stopped and time infusion restarted
  - Rate adjustment of infusion

PHARMACY COLUMN
- The clinical pharmacist will check the prescribed order and infusion pump, then initial to confirm the order has been reviewed.

References:
Western Health Procedure, (2014). Drug Prescription, Supply, Storage and Administration, downloaded May 5th 2016.
Western Health Procedure, (2014). Adult Venous Thromboembolism Prevention, downloaded May 5th 2016.
Western Health Procedure, (2018). Heparin for Infusion in Adults greater than 16 years, download January 19th 2018.
Developed by C Bethell (Site Education Manager, Sunshine and Sunbury Day Hospital & Staff Development Coordinator (Western Health)

➢ Telephone orders can be taken by TWO nurses, if a change is required to the infusion – this is to be completed in accordance with current telephone ordering process (as per OP-PS1.2.6) except **medical officer prescribing over the telephone must come to the unit and sign this order off prior to the end of their shift**

➢ **Two pathology slips must be written by the medical officer initiating heparin infusion**

Page 2: Reference and guidelines

BOLUS ADMINISTRATION:
- Weight based dosing – a weight must be recorded to ensure correct bolus is prescribed.

REVERSAL AGENT:
- Instructions for administration of protamine.
- Please note the last APTT and time of sample for the medical team.

TARGET APTT:
- Suggested APTT target range: 50-75 seconds
- Adjustments are to be prescribed according to APTT result.
- TWO nurses must check the prescribed order to ensure the dose matches this table and then administer the medication together at the bedside.

Caution: Please check and review VTE risk assessment in EMR and MAR for other anticoagulants and antiplatelet agents before heparin infusion is prescribed.

For further information refer to guideline 'OG-PS1.3.6 Unfractionated Heparin (UFH) for Infusion in Adults greater than 16 years' on the intranet.

1. Check for contraindications. Ask specifically if a patient has a history of heparin-induced thrombocytopenia (HITS). If history of HITS, DO NOT ADMINISTER HEPARIN – contact Haematology
2. Document patient details on chart. Ensure that baseline APTT, PT/INR & FBE have been taken. Start heparin infusion as prescribed: do not wait for the results. When results become available, document them on the chart. Seek HMO review if baseline results are abnormal.
3. Does patient need an initial loading dose? N.B. *NOT required for acute ischaemic stroke patients, patients switching from warfarin and other anticoagulant therapy or post-operative patients.*
4. Use table below as a guide to order baseline prescription on chart:

Heparin Initial Loading		Heparin Infusion rate using patient weight (for target APTT 50-75 secs)		
No loading for acute ischaemic stroke, when ceasing warfarin, other anticoagulants or post-operatively		Use 25,000 units Heparin in 250mL (=100units/mL) sodium chloride 0.9% premix bags		
Weight (kg)	Units	Weight (kg)	Rate (units/hour)	Rate (mL/hour – rounded volume)
≤ 39	3,500	35-39	530	5.3
40-49	4,000	40-44	600	6
		45-49	680	6.8
50-59	4,500	50-54	750	7.5
		55-59	830	8.3
60-69	5,500	60-64	900	9
		65-69	980	9.8
70-79	6,500	70-74	1,050	10.5
		75-79	1,130	11.3
80-89	7,000	80-84	1,200	12
		85-89	1,280	12.8
90-99	7,500	90-94	1,350	13.5
		95-99	1,430	14.3
≥ 100	10,000	≥ 100	1,500	15

5. *Use heparin 5,000 units in 5mL ampoules* for initial loading and subsequent boluses when required.

6. Perform APTT 4 to 6 hours after initiation of heparin infusion
7. When APTT results are available, adjust as below:

APTT (sec)	Bolus (units)	Rate Change (units /hour)	Dose Change (mL/hour) using 25,000 units Heparin in 250mL Sodium Chloride 0.9%	Next APTT
< 40	0* or 80 units/kg (up to a max of 10,000 units)	Increase by 150 units/hour	Increase by 1.5mL/hour	4 hours
40-49	0* or 40 units/kg (up to a max of 5,000 units)	Increase by 100 units/hour	Increase by 1mL/hr	4 hours
TARGET 50-75	0	No change	0	Next am
	(Note: If reduced target range check with unit)			
76-85	0	Decrease by 50 units/hour	Decrease by 0.5mL/hour	Next am
86-110	0	Pause 30 minutes then Decrease by 100 units/hour	Decrease by 1mL/hr	4 hours
111-130	0	**Pause infusion for 30 minutes, then decrease rate by 1.5mL (150 units) per hour.** ORDER an URGENT APTT. Notify HMO of result and new infusion rate. CLARIFY time for next APTT.		
> 130	0	**Pause infusion for 60 minutes. Immediately CONSULT HMO for patient management advice.** CONSULT Haematology unit for additional advice if needed.		

* NO BOLUS = 0 units for patients with acute ischaemic stroke, ceasing warfarin, other anticoagulants or post-operative

8. If a prescriber is unavailable to order rate changes immediately, TWO nurses may take a telephone order, document and sign for the rate change, and make the rate change, according to the table. The prescriber MUST SIGN the order before the end of their shift.

Reversal of heparin using protamine
1. Cease heparin infusion.
2. Urgently consult the Laboratory Haematology Registrar or Consultant.
3. Ensure resuscitation equipment is available. Adverse effects of protamine include: anaphylaxis (especially prior exposure or patients with allergy to fish), shock, acute hypotension
4. Protamine sulphate dose: give undiluted by slow intravenous injection over at least 10 minutes with a *maximum single dose of 50mg (=5mL)*
   - If < 15 minutes since heparin infusion ceased give 1mg (=0.1mL) protamine per 100 units heparin given in the last hour
   - If 15-60 minutes since heparin infusion ceased give 0.5mg (=0.05mL) protamine per 100 units heparin given in the last hour
5. Repeat APTT 5-15 minutes after administering protamine. Consult with Haematology regarding further testing.

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Important – CHECK CHART INSTRUCTIONS

- Check if the patient requires a bolus dose
- Check the patient weight to ensure the prescription on page one is appropriate

Important – BOLUS DOSES

Bolus doses should **NOT** be prescribed for:
- Ischaemic stroke patients
- Patients ceasing warfarin
- Post-operative patients