	LOW RISK OF COAGULOPATHY	MEDIUM RISK OF COAGULOPATHY	HIGH RISK OF COAGULOPATHY
Rewarming on Bypass	No TEG	No TEG	TEG - Platelet Mapping Cartridge
Post Bypass	No TEG	TEG - Standard cartridge	TEG - Standard Cartridge Ensure up to date TEG prior to PICU

Paediatric TEG 6 Coagulation Algorithm

Starship Child Health

Risk factors for coagulopathy: Pre operative anaemia, Cyanosis, Pre operative anticoagulants, Aortic surgery, Deep hypothermic arrest, Redo surgery, Age < 1 month, CPB > 2 hours

1 REWARMING TEG

HIGH RISK ONLY

PLATELET MAPPING CARTRIDGE / HEPARIN

HKH R TIME > 9

Possible factor deficiency
(or excessive heparInisation)

- REQUIRE VOLUME → Thaw and hold FFP 20ml/kg
- CAN'T TOLERATE VOLUME → Order and store Prothrombinex 25 u/kg

ACT F MA < 5

Possible fibrinogen deficiency

→ Cryopecipitate
Consider thaw and hold 10ml/kg

ACT F MA NORMAL HKH MA < 52

Possible platelet deficiency/dysfunction

→ Platelets
Coconsider pre-labelling and hold 20ml/kg

2 POST PROTAMINE TEG

STANDARD CARTRIDGE / SODIUM CITRATE

CKH R TIME < CK R TIME

Protamine deficiency

→ Protamine 1mg/kg

CKH R TIME < 9

Factor deficiency

- REQUIRE VOLUME → FFP 10-20ml/kg
- CAN'T TOLERATE VOLUME → Prothombinex 25 u/kg

CFF MA < 15

Fibrinogen deficiency

→ Cryoprecipitate 10 ml/kg
or Fibrinogen concentrate if urgent

CFF NORMAL CRT MA < 52

Platelet deficiency/dysfunction

→ Platelets 10-20 ml/kg

3 ONGOING BLEEDING

STANDARD CARTRIDGE / SODIUM CITRATE

Ensure physiological parameters and coagulation optimized

CONSIDER:

- Redose + Infuse TxA 30mg/kg bolus then Infuse at 10mg/kg/hr
- DDAVP 0.3 mcg/kg if AS, LVAD, uraemia

REFRACTORY BLEEDING

- Prothrombinex 25 u/kg as rescue treatment
- FVIIa 30mcg/kg/dose. Repeat up to 3 doses

Notes

1. Prothombinex request is a standing order if using this algorithm, retum any unused product to blood bank
2. Give Prothombinex at recommended rate of administration 5 ml/min
3. High dose heparinisation can increase the R time, reduce the alpha angle & MA
4. One bottle fibrinogen concentrate = 1 g fibrinogen, standing order if using this algorithm
5. FFP once thawed can be held by blood bank for 5 days and cryoprecIpltate for 4 hours
6. Platelets can be pre-labeled and stored in blood bank ready for immediate release once requested
7. Recommended maximal dose of Prothrombinex per blood volume is 50 u/kg
8. Consider ringing transfusion medicine specialist on call for further coagulation advice

CONSIDER IN HIGH RISK PATIENTS PRE-OPERATIVELY

1. Aprotinin to replace tranexamic acid in high risk group. Avoid if GFR < 50 or exposure in the last 12 months. NB. Aprotinin has an unpredictable effect on the TEG

<50kg	Bolus	4ml/kg	>50kg	Bolus	2 MU
	Prime	4ml/kg		Prime	2MU
	Infuse	1ml/kg/hr		Infuse	0.5MU/hr

2. ANH (acute normovolaemic haemodilution or autologous blood donation) If the patient can tolorate >800 ml blood volume off pre-heparinisation

BLOOD PRODUCT TRANSFUSION CALCULATIONS

FFP

10 ml/kg will increase factor levels by about 15%
The R time will only be prolonged once factor levels are <30%

PROTHROMBINEX (PCCs)

- Contains concentrated factors II, IX, X, variable amounts of VII, anti-thrombin III
- Contains no protein S and C potentially making it prothrombotic
- Contains i92 units heparin therefore do not use In HITs
- 25 u/kg will increase factor levels by about 20%

PLATELETS

10 ml/kg increase platelet count by about 30 x 109L if not being consumed

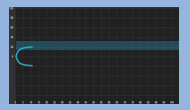
CRYOPRECIPITATE

One unit has 1 .1-1.3g fibrinogen
10 ml/kg will increase fibrinogen level by about 2 g/L if not being consumed

COST PER UNIT/VIAL

Red Cells	$316	Prothomb1nex (500IU)	$321	Platelets	$893
FFP	$232	Cryoprecipitate	$437	Fibrinogen concentrate	$803
				Factor Vlia (2mg)	$2356

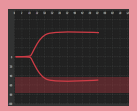
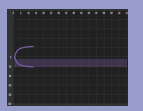
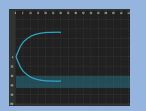
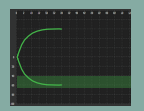
TEG6 DEFICIENCY ASSESSMENT GUIDE

	CLOT RATE	CLOT STRENGTH	CLOT STRENGTH	CLOT STABILITY
Hemostatic Component	Coagulation factors & heparin	Fibrin clot	Platelet & fibrin clot	Fibrinolysis
Test - Parameter	CK / CKH - R	CFF - MA	CRT - MA	CRT - LY30
Normal Tracings Shaded Reference Ranges for illustration only				
Reference Ranges	4.6 - 9.1 min	15 - 32 mm	52 - 70 mm	0.0 - 2.2%
Hypocoaguable	↑ R_{CK}(min)	↓ MA_{CFF}(mm)	↓ MA_{CRT}(mm)	↑ $LY30_{CRT}$(%)
Hypercoaguable	↓ R_{CK}(min)	↑ MA_{CFF}(mm)	↑ MA_{CRT}(mm)	N/A

TEG6 PLATELETMAPPING(PLM) ASSESSMENT GUIDE

The PLM assay specifically determines the MA (Maximum Amplitude, a measure of clot strength) and the reduction in MA due to genetics and/or antiplatelet therapy.
Platelet receptor function is assessed relative to the baseline clot strength (HKH-MA) and fibrin only (ActF-MA) clot strength.

Inhibition is calculated automatically by comparing the MAs of the agonist (AA & ADP) with that of the baseline platelet and fibrin contribution.
The analyzer reports the inhibition of MA as a percentage of reduc-tion in clot strength.

	CLOT STRENGTH BASELINE - PLT & FIB	Clot Strength Fibrin Only	Clot Strength AA Receptor Action	Clot Strength ADP Receptor Action
Test - Parameter	HKH - MA	ActF - MA	AA - MA	ADP - MA
Reagent	Kaolin Heparinase	Activator F	Activator F + AA	Activator F + ADP
Hemostatic Activity	Thrombin overrides the inhibitory effects of receptor specific inhibition. Provides baseline clot strength.	Activator F replaces throm-bin's role in the conversion of fibrinogen to fibrin and FXIIIs role in cross-linking.	Reflects inhibiting effects of TxA2 anti-platelet agents (eg Aspirin)	Reflects inhibiting effects of ADP anti-platelet agents (eg Plavix)
Normal Tracings Shaded Reference Ranges for illustration only				
Reference Ranges	MA 53-68 mm	MA 2-19 mm	MA 51-71 mm	MA 45-69 mm