Clinical Practice Guideline
Guideline coverage includes NICU KEMH, NICU PMH and NETS WA

Blood Tests: Ordering

This document should be read in conjunction with the Disclaimer

There needs to be a balance between clinically useful information that can be obtained from blood testing against pain for the neonate and iatrogenic anaemia from multiple sampling and consequent risks of blood transfusion. The decision to order a blood test on a baby should be made on an individual basis having regard to that particular baby's clinical condition.

In the past practice has generally erred on the side of oversampling to assure results are available for a round. Current recommendations are a reversal of this process so that if doubt exists a decision about ordering a test can be considered on the round. Remember the test can always be ordered later but the blood can never be put back.

Key Points

- Where possible decisions for the following day's blood tests should be decided on the ward round, forms completed including date for tests to be done and left at the baby's cot side.
- New admissions after the round to have the forms for the following day completed by the admitting team.
- Any baby whose clinical condition changes and warrants blood sampling before the morning round should have forms completed appropriately. Always ask a more senior member of staff if you are uncertain whether the baby needs a blood test.
- Electrolytes and bicarbonate obtained from the blood gas machine are accurate if the sample is of good quality. The accuracy of the result from the formal lab or the gas machine is heavily dependent on the quality of the sample.
- A haemolysed sample will give an inaccurate result from the formal lab or the gas machine. A good quality sample measured within a few minutes of sampling from the gas machine will generally give more accurate results for bicarbonate, potassium and glucose than those produced 30-60 minutes later in the laboratory.
    - If Urea and Creatinine (U&E) are required they can be ordered alone from the main lab (0.2 mL). Formal U&E's should only be sent to the main lab if the gas machine samples seem aberrant or you do not have a gas machine sample available.

  - Formal U&E's require 0.2 mL on top of the 0.2 mL that gave the gas machine sample.
- Blood glucose should be tested with the blood gas machine.
- Plasma osmolality requires 0.1 mL of blood and may not give you more information than you can get from the sodium, glucose and urea.
- Antibiotic levels - monitor as per drug manual protocols.
- Use TCM monitoring wherever possible to minimise the number of blood gases taken.

Frequency of Commonly Ordered Tests

This is a guide only

Test	On Admission		Physiologically unstable	Stable <32 weeks/1250g or ongoing resp support	Older neonate feeding and growing
	Level 3	Level 2			
Haematology					
FBC	Yes	If indicated	7-10 days *monitor on blood gas **formal if transfusion considered	10-14 days	10-14 days
FBC for platelets	Yes	If indicated	Individualise		
Group and DAT	Yes				
Group and hold	< 28 weeks / 1000g				
Biochemistry					
Blood gas	Individualise		Individualise	Every 2-3 days	Weekly
Glucose	Yes	Yes	Individualise	With gas	With gas
Na (monitor on blood gas)	8-12 of age		Daily	With gas	With gas
Urea / Creatinine			Alternate days if on TPN		
Bilirubin	< 28 weeks / 1000 grams daily for first few days then as indicated. Other neonates if jaundiced.				
Bone Bloods LFT,PO4,Ca, Vitamin D				At 1 month if EBM/PDHM then monthly thereafter	

Monitoring when on TPN

Na, K, Cl, HCO2	Daily in the first week, then alternate days
Glucose	Daily in the first week, then alternate days
Urea	Daily to twice weekly
Plasma TG	Aiming at 150-250mh/dl (2.8mmol/l) optional and when lipaemic serum noted
LFT's	Fortnightly
Bone Bloods	Monthly (LFT,PO4, Ca, Vitamin D)
CRP	If CVL insitu, twice weekly

*GP DAT (Coombs) check at delivery on RH negative mothers and on all babies requiring phototherapy.

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