



## GUIDELINE

# Blood Tests: Ordering

Scope (Staff):	Nursing and Medical Staff
Scope (Area):	NICU KEHM, NICU PCH, NETS WA

### Child Safe Organisation Statement of Commitment

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

This document should be read in conjunction with this [disclaimer](#)

## Aim

To provide a guide for clinicians ordering blood tests. To ensure a balance of clinical useful information for ongoing management and care.

## Risk

Over sampling can cause unnecessary pain, trauma, and iatrogenic anaemia for the neonate.

## Background

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 the baby's clinical condition.

In the past practice has generally erred on the side of oversampling to assure results are available for the medical 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

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.



## Ordering Blood Tests

- 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. See [Test Frequency Guide](#).
- New admissions after the round to have the forms for the following day completed by the admitting team.
- Always try and coordinate sampling as each bloodletting wastes blood.
- 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&Es 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&Es 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.
- For babies' nil by mouth, blood glucose monitoring should be attended 8 hourly. Once stable, routine blood glucose is at the discretion of the treating Neonatologist.
- 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 or ETCO<sub>2</sub> 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
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. Blood gas levels could co-relate or assist with need for SBR				
Bone Bloods: LFT, PO4, Ca, Vitamin D *Consider PTH if increasing Alk Phos despite normal Ca & PO4				At 1 month if EBM/PDHM then monthly thereafter	
MONITORING WHEN ON TPN					
Blood Gas	Daily in the first week, and clinically indicated thereafter				
U&E, Creatinine, Phosphate & Calcium	On days 3, 7 after commencing PN and then weekly while continuing PN				
Bone Bloods – Ca, PO4, LFT and Vitamin D *Consider PTH if increasing Alk Phos despite normal Ca & PO4	Day 28. Consideration should be given to performing bone bloods earlier, in cases of prolonged TPN use.				
Prolonged TPN	Fortnightly liver function tests				
Central Venous Catheter	Consider twice weekly CRP for catheter-related sepsis.				

\*Chinoy A, et al. Arch Dis Child Fetal Neonatal Ed 2019;**104**:F560–F566.

This document can be made available in alternative formats on request.

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