DBS SAMPLE COLLECTION FOR INFANT PCR TEST
Introduction

• enables EARLY detection of HIV status of infant in first few months of life
• always performed at 6 weeks of age or 6 weeks after BF stops
• early diagnosis enables early enrollment of HIV / AIDS care and ARV treatment
• forms part of PMTCT programme
• extension of “care package” involving biological mother and family

Note: WC Province uses whole blood in microtainer ( pink )
Eligibility for Antiretroviral Therapy for SA DoH
Anti-retroviral Rollout in Children

Clinical Criteria
Recurrent (> 2 admissions per year) hospitalisations for HIV complications OR a prolonged hospitalisation for HIV (> 4 weeks)
OR

<table>
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<tr>
<th>Age Group</th>
<th>Symptomatic</th>
<th>CD4 ≤ 35% or absolute count below 1500</th>
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<tr>
<td>&lt; 1 year</td>
<td>WHO stage II, III, IV all infants whose moms have failed pMTCT or</td>
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<td>1 – 5 years</td>
<td>Symptomatic (stage III, IV) or</td>
<td>CD4 ≤ 20%</td>
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<tr>
<td>&gt; 5 years</td>
<td>Symptomatic (stage III, IV) or</td>
<td>CD4 &lt;15% or CD4 &lt;200 cells.</td>
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Social criteria
At least one identifiable caregiver who is able to supervise child or administer medication
Disclosure to another adult living in the same house is encouraged so that there is someone else who can assist with the child’s ART
Treatment of mother/caregiver/other family members

Use of DBS (HIV - DNA)

- approach is relatively safe, easy to implement and use (vs. formal venesection)
- easy to store and transport, automated processing at lab
- low sample volume for infants
- specimens are NOT infectious once dry
- MUST be kept dry at all times (then stable)

Used in SSA – Botswana, Cote d’Ivoire, Kenya, Rwanda, South Africa, Zambia and others.
sachets of desiccant (a drying agent)

+ powder free gloves
**Dried Blood Spot (DBS) Collection Procedure**

1. Label card with patient’s name and collection date.

2. Complete NHLS request form indicating **baby’s date of birth** and **clinic contact details**

3. Place the request form barcode on the back of the DBS card

**NHLS** = National Health Laboratory Services  
**P.C.R.** = polymerase chain reaction  
**DBS** = dried blood spot
OLD DBS card
5 circles

NEW DBS card (smaller with three spots for blood)

Roche Diagnostics

One is processed and other two are archived.
Follow the instructions:

CCMT = Comprehensive Care Management & Treatment for HIV / AIDS
Contents of test kit

Two clear plastic packets:

1. Contains a DBS card
   ( blotting paper for blood )
2. Webcol alcohol swab, small piece of gauze, lancet ( to be used only once and disposed )
1. small ZIP-LOCK plastic bag
Back of card
4. Clean the selected puncture site (heel or big toe) and allow to dry.

5. Position the puncture site facing downwards towards the card.

6. Puncture the skin and allow the blood to flow (do not squeeze or "milk" the puncture site).

7. Allow a drop of blood to form and lightly touch the filter paper - within the circle to fill each with blood. Do not overfill.
Press to click and draw blood

Twist off to expose sharp

* Dispose of used lancet in a sharps container *

* Dispose of used lancet in a sharps container *
Face skin of heel towards the card
HEEL 1 to 4 months (less than 5 kg)
Allow drop of blood to form, and gently put the drop of blood onto the card.
Procedure

8. Allow the next drop to form, and allow it to soak onto the adjacent marked circles
9. If insufficient blood flow, a second puncture may be necessary
10. Apply gauze to skin when sufficient blood obtained
11. Place card in a drying rack for minimum 3 hours
Procedure

12. Pack each card separately in the enclosed zip-lock bag (1 card per bag with dessicant sachet)

13. Fold the completed NHLS request form in half and insert into the routine NHLS zip-lock bag with patient details facing outwards

Remember to tell mother to return for result at next immunisation appointment
Specific NHLS form for CD4’s and VL, PCR
Procedure

- **DO NOT:**
  - over-saturate the card or layer drop
  - allow skin contact with the filter paper
  - touch or attempt to smear the blood spots
  - dry artificially with heat or blow on it!
  - expose to sunlight or heat eg inside a vehicle
Note:

- ensure staff know where to send these specimens
- know when to expect the result BACK
- delays in obtaining results causes problems → results should be back in 4 weeks at the latest
- telephone 2 weeks after samples dispatched to ensure that they are being processed (received / lost / inadequate / spoiled etc)
- any problems need to addressed as soon as possible
HEEL: 1 to 4 months (less than 5 kg)
TOE: 4 to 10 months (5 to 10 kg)
FINGER: more than 10 months (>10 kg)
DVD notes

• a new DBS card is currently in use
• do NOT squeeze to obtain a blood sample
  (lab cannot process serum / clotted blood)
• use powderless gloves or wash gloved hands well, dessicant and humidity indicator
• only one drop of blood per circle
• AGE
  – HEEL infant 1 – 4 months < 5Kg*
  – TOE 4 – 10 months > 5 kg
  – FINGER > 10 months age > 10kg

* technique for any infant phlebotomy
Paediatric venesection

• requires skill and practice
  ( may require repeat *Lancet* of skin if blood does not flow easily )

• a doctor may be required to assist with formal venesection
Venesection guidelines

• always follow three simple rules for formal venesection:
  – you must be comfortable – good light, sit down (to steady your self), lock the door to avoid interruptions
  – the patient must be comfortable – explain what you are going to do, lie the patient down, tell them when you are about to prick them (allay all anxiety)
  – do not rush

Ask the infant’s caregiver or parent to wait aside if you have assistance (can be less traumatic for all concerned)
Microtainer (pink top)

Contains ANTI-COAGULANT to prevent blood from clotting
Warm the heel of foot
Swab clean
Remove cap
Apply Lancet to infant's heel
Reapply cap

Aggitate tube a few times
to ensure blood collected mixes well with ANTI-COAGULANT in tube
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<th>+°C</th>
<th>≥30° ≤45°</th>
<th>6000-15000g</th>
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Monitoring of children on ART
“Closing the treatment gap and eliminating Paediatric HIV”