



Department of Health
Republic of South Africa

DBS SAMPLE COLLECTION FOR INFANT PCR TEST



SOUTH AFRICANS AND AMERICANS
IN PARTNERSHIP TO FIGHT HIV/AIDS

ark
absolute return for kids





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

< 1 year	Symptomatic WHO stage II, III, IV all infants whose moms have failed pMTCT or	CD4 ≤ 35% or absolute count below 1500
1 – 5 years	Symptomatic (stage III, IV) or	CD4 ≤ 20%
> 5 years	Symptomatic (stage III, IV) or	CD4 <15% or CD4 <200 cells.

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



NDoH p.90, 2nd Edition, 2008

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)

DBS Sample Collection Kit for Infant HIV PCR Tests - CCMT Programme

Dried Blood Spot (DBS) Collection Procedure

1. Label card with patients name and collection date
2. Complete the NHLS - CCMT request form indicating baby's DOB & clinic contact details.
3. Place the request form barcode on the back of the DBS card (top left hand side and **NOT on the front of the card**)
4. Clean the selected puncture site (heel/big toe) & allow to dry
5. Position the puncture-site facing downwards towards the card
6. Puncture the skin to 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 pre-printed circles to fill them with blood (**DONOT** over saturate the card)
8. **DONOT** allow skin contact with filter paper at any point.
9. **DONOT** touch or attempt to smear the blood spots
10. Allow the next drop of blood to form, and allow it to soak onto the adjacent marked circles on the filter paper.
11. If insufficient blood flow occurs, a second puncture may need to be made.
12. Apply gauze or cotton wool to the puncture site after obtaining sufficient blood.
13. Dispose of the lancet into a sharps container.
14. Place the DBS cards in a drying rack and allow to dry for at least three hours (**DO NOT** dry artificially with heat and do not expose to direct sunlight)
15. Pack each DBS card in the enclosed zip-lock plastic bag (1 card per bag with desiccant sachet)
16. Fold the completed NHLS request form in half and insert into the appropriate pocket of the routine NHLS ziplock plastic bag with the patient details Facing outwards



Re-order from sales@lasec.co.za
P04A1670 - DBS Kit - FLA S17079
P04A1690 - DBS Card - FLAS2460052085
P03M0189 - DBS Drying Rack - FLAS537250



+ powder free gloves



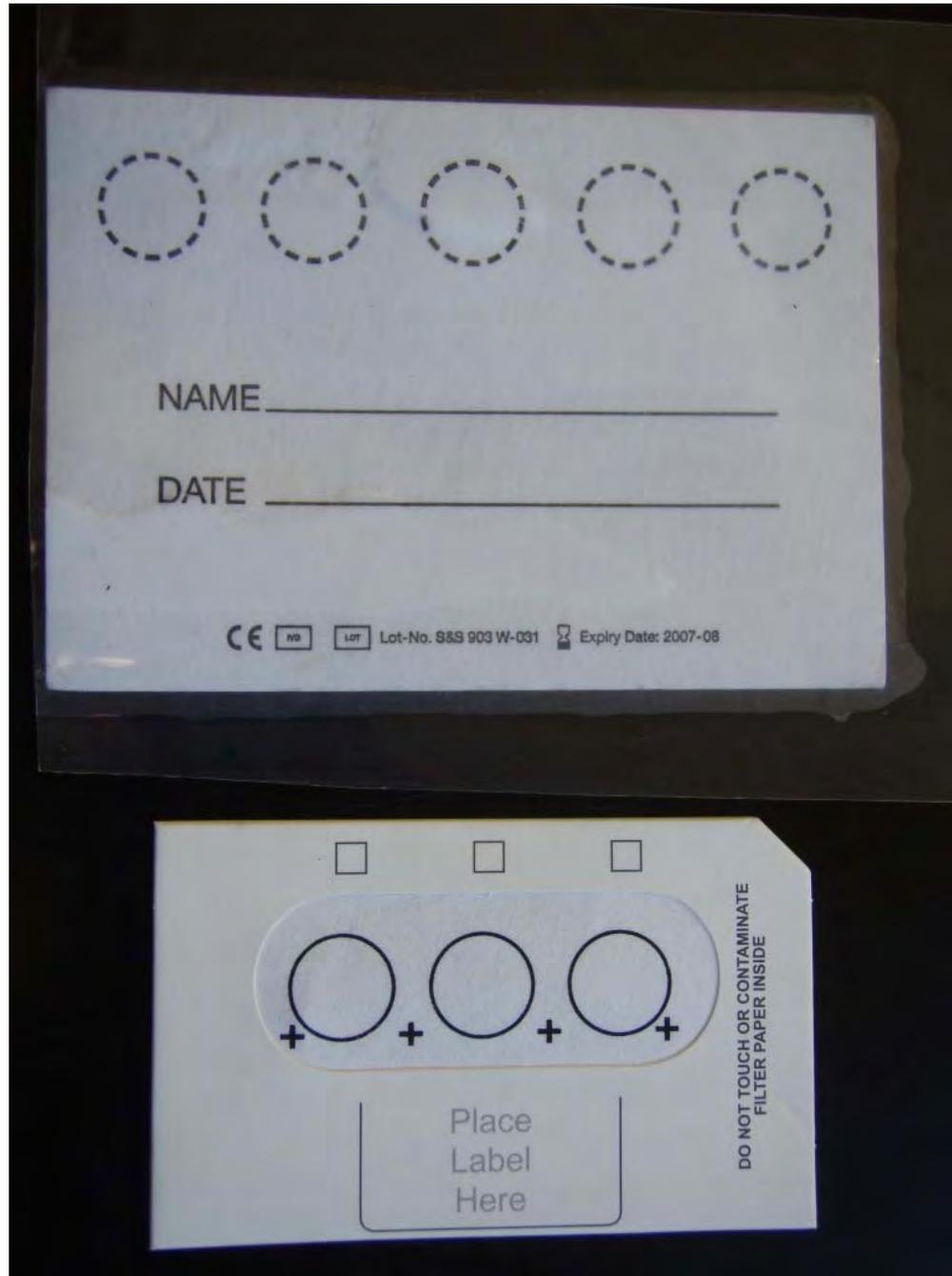
Dried Blood Spot (DBS) Collection Procedure

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

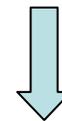




OLD DBS card
5 circles

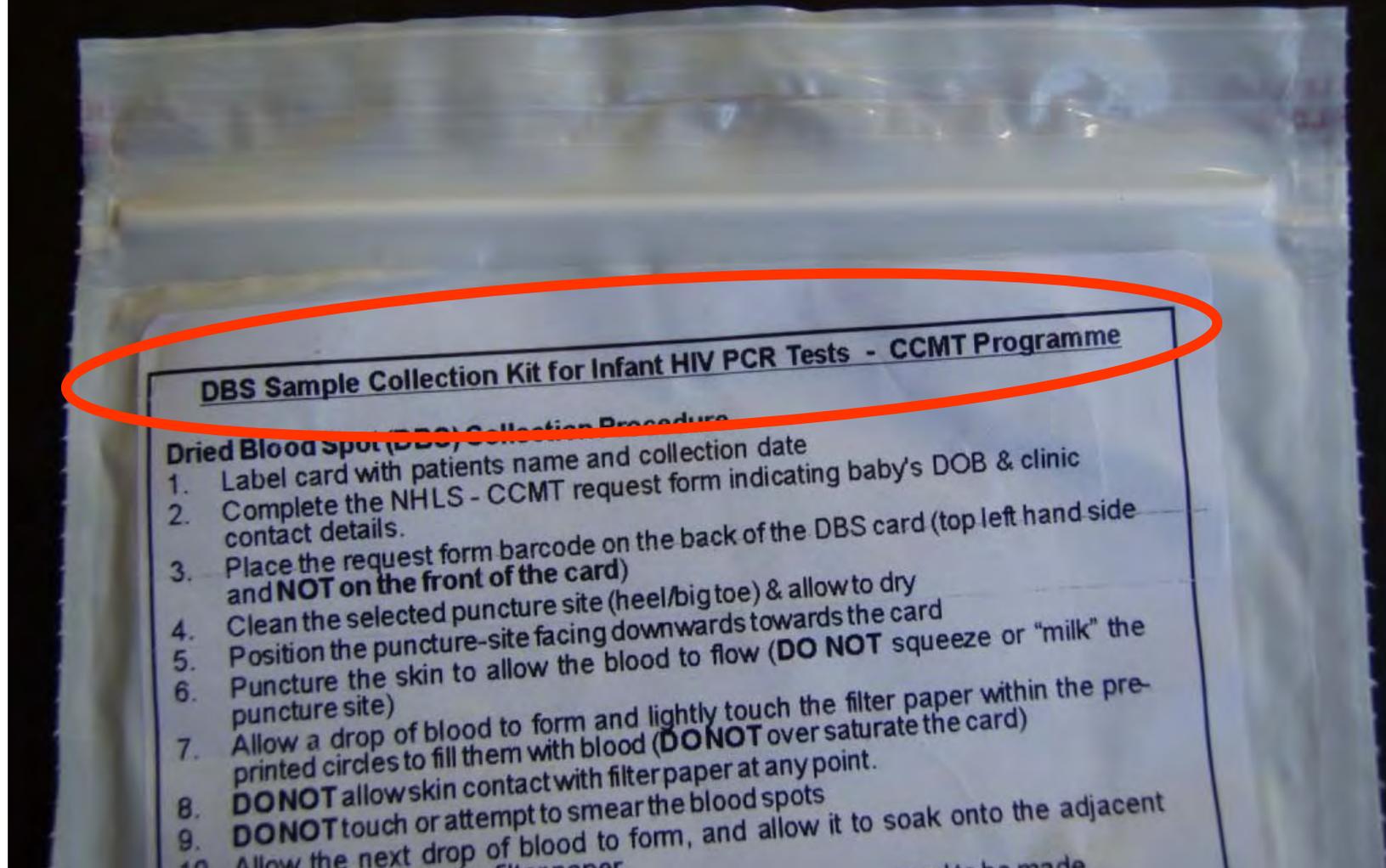
NEW DBS card (smaller
with three spots for blood)

Roche Diagnostics



One is processed and other
two are archived.

Follow the instructions :



CCMT = **C**omprehensive **C**are **M**anagement & **T**reatment for HIV / AIDS



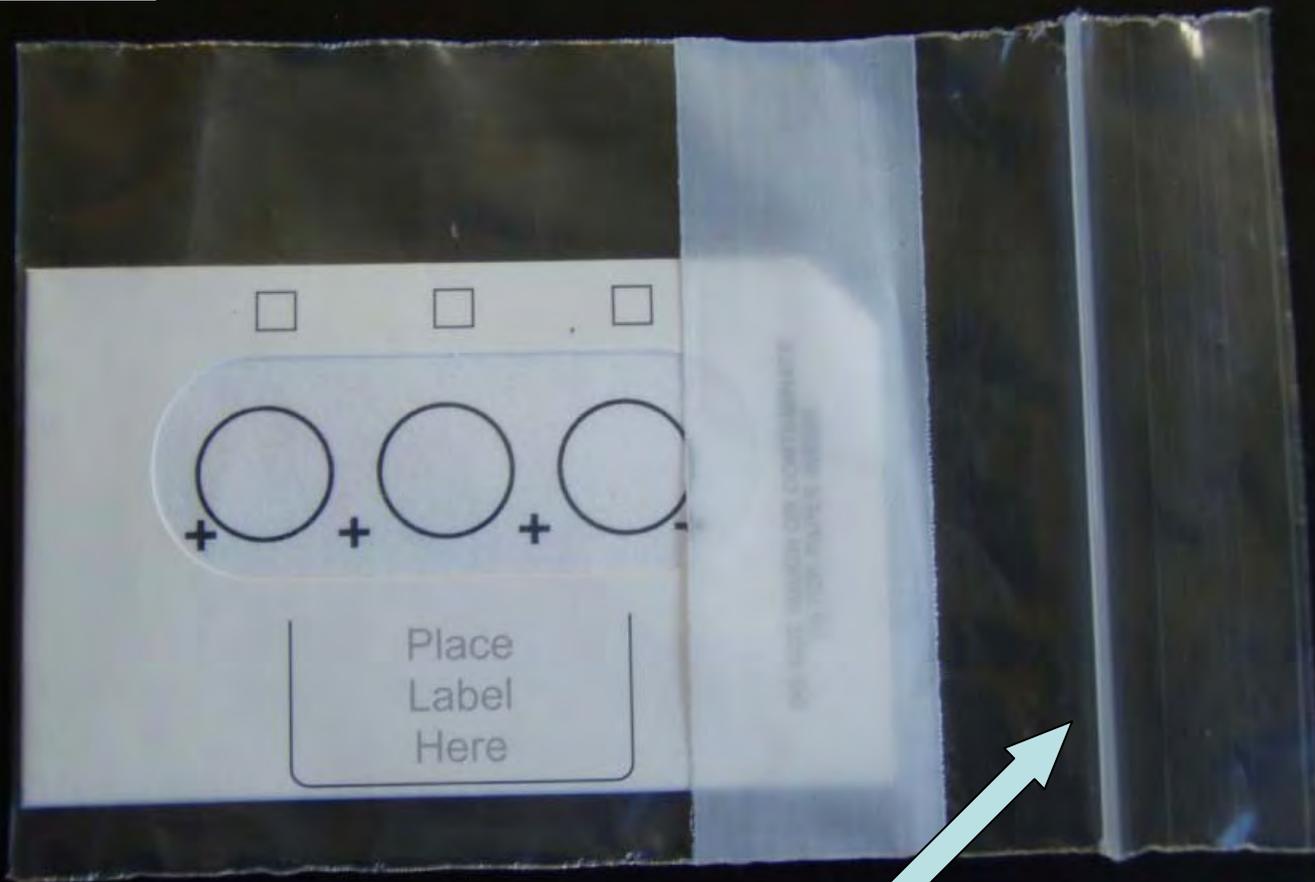
Contents of test kit



Two clear plastic packets:

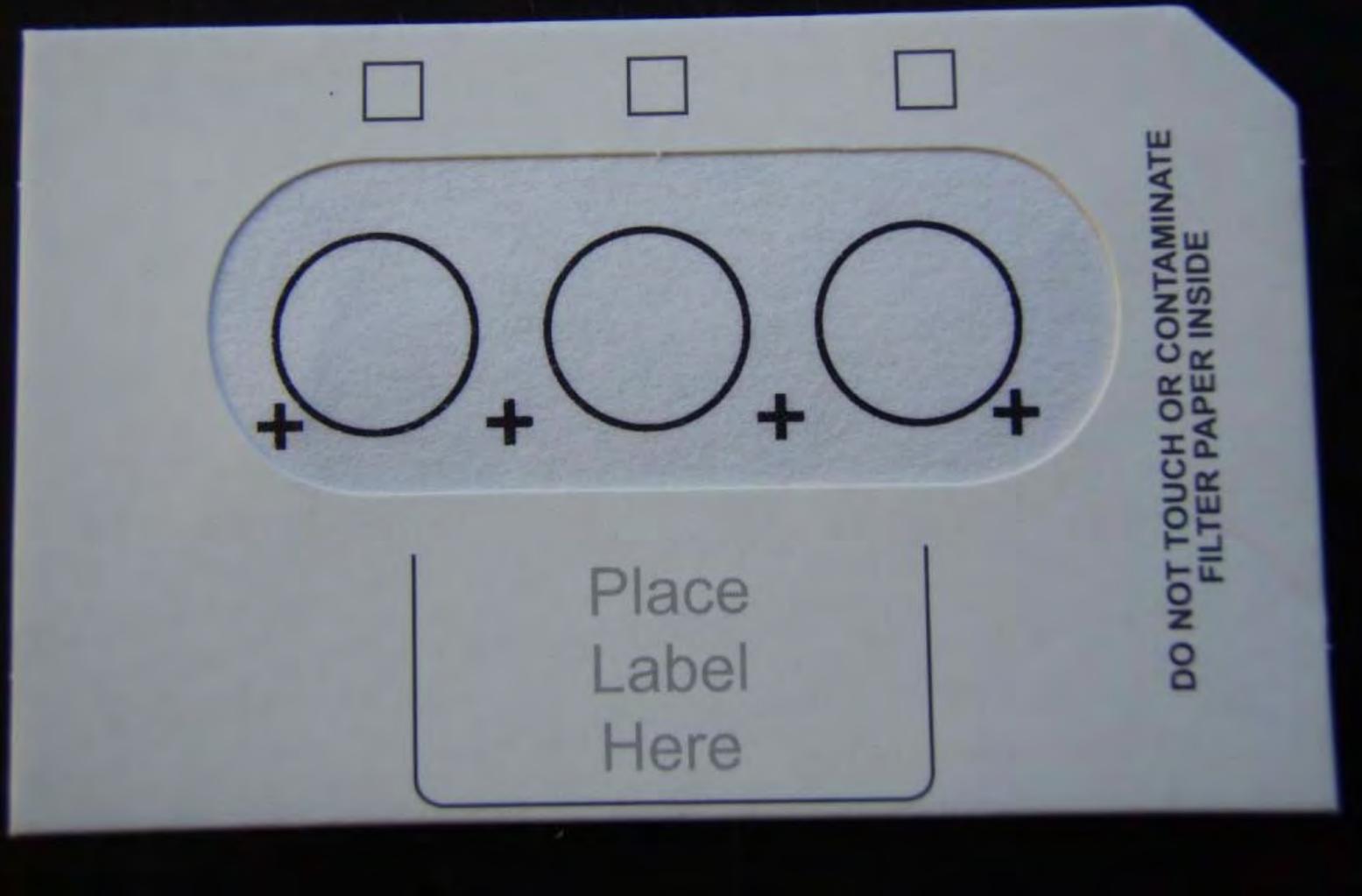
1. Contains a DBS card
(blotting paper for blood)
2. Webcol alcohol swab, small piece of gauze, lancet (to be used only once and disposed)





1.

small ZIP-LOCK plastic bag



Front of card



Munktell TFN  2010-04 **REF** 2.460.052085 **LOT** 07-041



DO NOT TOUCH OR CONTAMINATE
FILTER PAPER INSIDE

Name: _____

Date: _____



Back of card



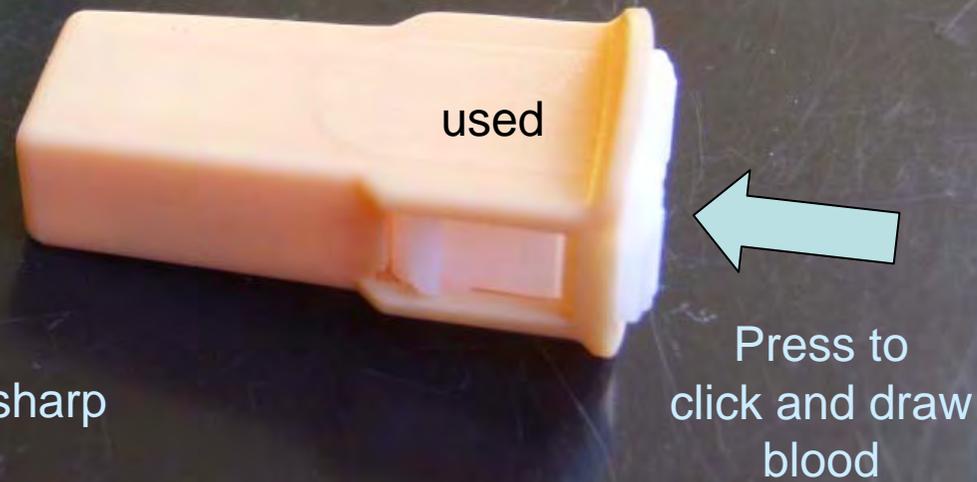
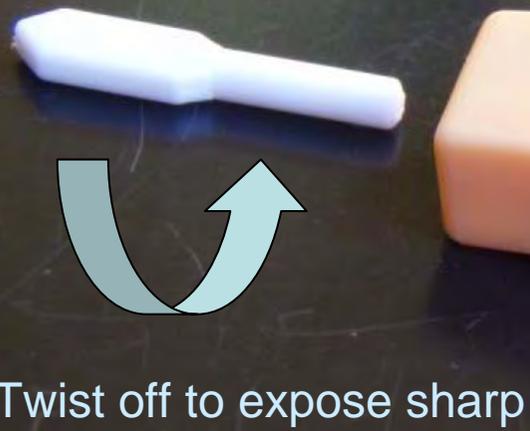
2.



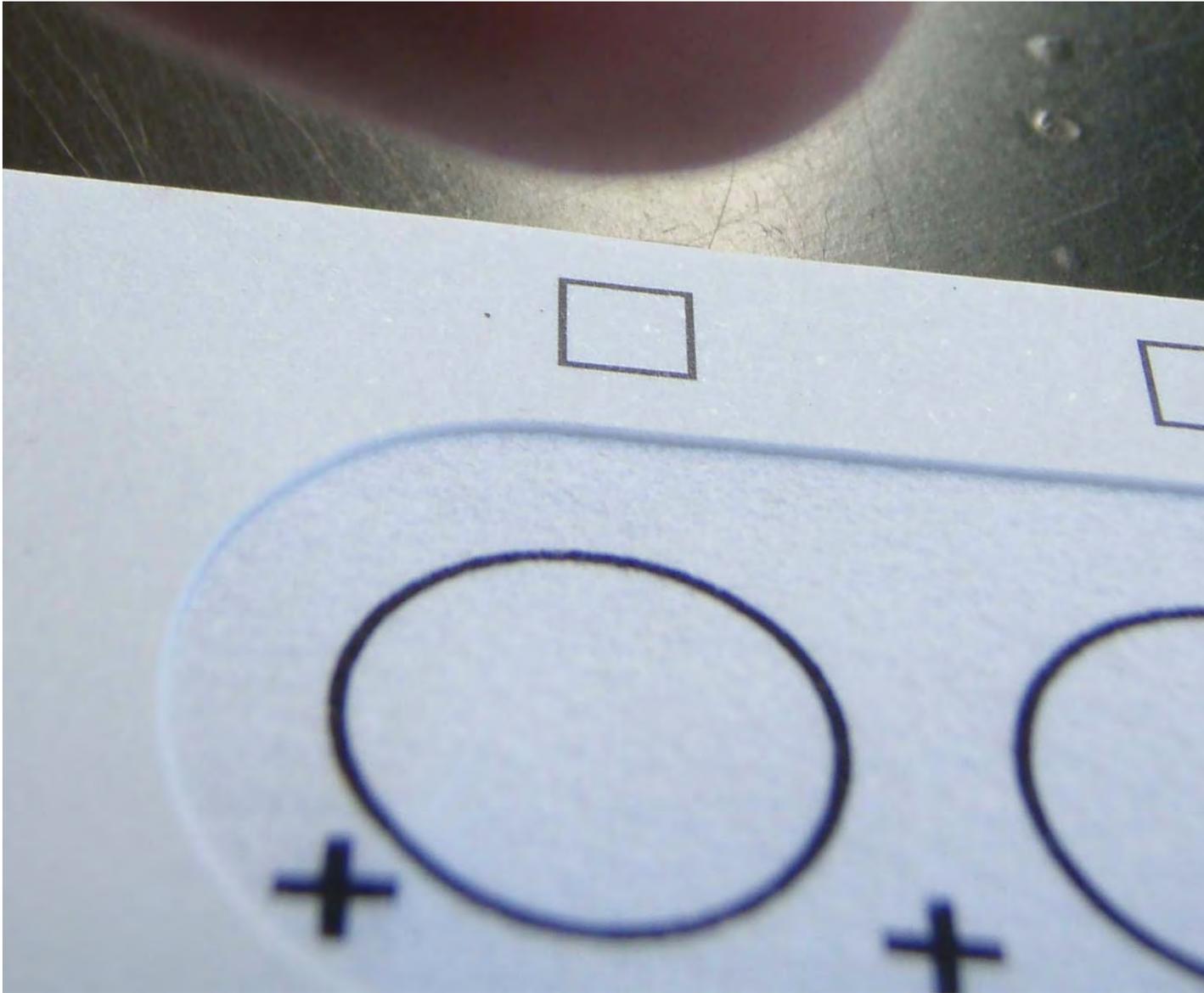
Procedure



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.



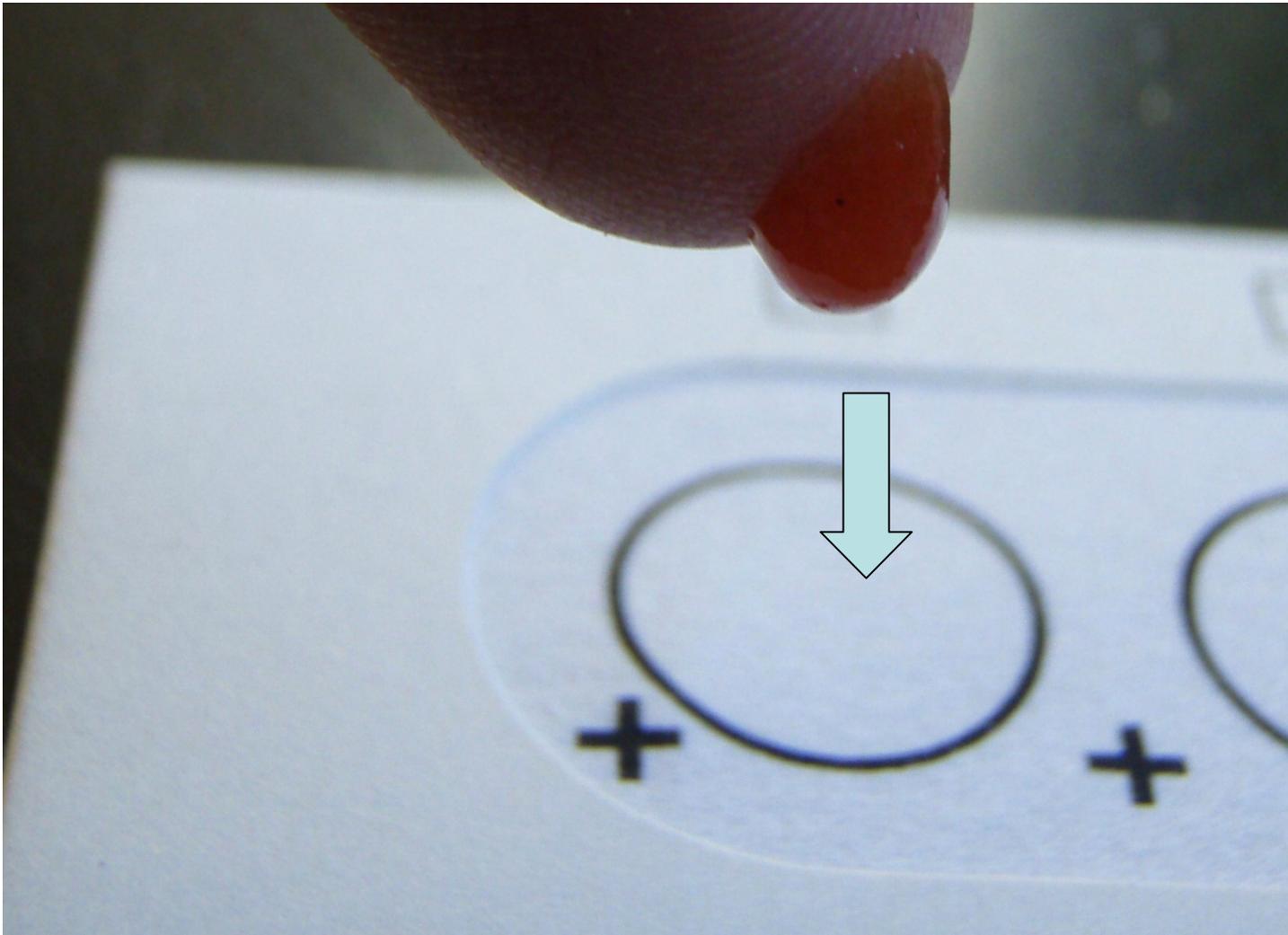
* Dispose of used lancet in a sharps container *



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



NATIONAL HEALTH LABORATORY SERVICE

HOSP. CLINIC WARD ATTACH PATIENT LABEL HERE PLEASE HOSPITAL/CLINIC NUMBER SURNAME FIRST NAME ADDRESS DATE OF BIRTH GENDER ETHNIC GROUP SPECIMEN TYPE DATE TAKEN TIME TAKEN HOSP. CLAS. HEALTH DISTRICT RESP. CODE PROJECT ACCOUNT STAMP <div style="border: 1px solid red; border-radius: 50%; width: 60px; height: 20px; text-align: center; margin: 5px auto;">ZARV 7</div>	HEALTH CARE WORKER NAME SIGNATURE TEL. NO. FAX NO. PRACTICE NO. ADDRESS CITIES TO ADDRESS APPLIES TO PRIVATE PATIENTS ONLY ACCOUNT TO: PRINCIPAL MEMBER MID AS NAME MID AS NO. DEP CODE MEMBER ADDRESS MEMBER TEL. (H) (W) (CDH CODE(S))																				
CLINICAL INFORMATION																					
COMPREHENSIVE CARE, TREATMENT AND MANAGEMENT PROGRAMME SPECIFIC TESTS																					
<table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> CD4 (PLU)</td> <td><input type="checkbox"/> Viral Load</td> <td><input type="checkbox"/> Hepatitis B sAg</td> <td><input type="checkbox"/> Lactate (on ice)</td> <td><input type="checkbox"/> TB Direct (AFB)</td> </tr> <tr> <td><input type="checkbox"/> HIV PCR</td> <td><input type="checkbox"/> FBC & DIFF</td> <td><input type="checkbox"/> ALT</td> <td><input type="checkbox"/> Cryptosporidium</td> <td><input type="checkbox"/> TB Culture</td> </tr> <tr> <td><input type="checkbox"/> HIV DAT (ELISA)</td> <td><input type="checkbox"/> U & E</td> <td><input type="checkbox"/> AET</td> <td><input type="checkbox"/> Isospora belli</td> <td><input type="checkbox"/> TB Seed</td> </tr> <tr> <td><input type="checkbox"/> HIV RAPID</td> <td><input type="checkbox"/> Cholesterol</td> <td><input type="checkbox"/> Triglyceride</td> <td><input type="checkbox"/> Cryptococcus</td> <td><input type="checkbox"/> Pneumocystis (proved)</td> </tr> </table>		<input type="checkbox"/> CD4 (PLU)	<input type="checkbox"/> Viral Load	<input type="checkbox"/> Hepatitis B sAg	<input type="checkbox"/> Lactate (on ice)	<input type="checkbox"/> TB Direct (AFB)	<input type="checkbox"/> HIV PCR	<input type="checkbox"/> FBC & DIFF	<input type="checkbox"/> ALT	<input type="checkbox"/> Cryptosporidium	<input type="checkbox"/> TB Culture	<input type="checkbox"/> HIV DAT (ELISA)	<input type="checkbox"/> U & E	<input type="checkbox"/> AET	<input type="checkbox"/> Isospora belli	<input type="checkbox"/> TB Seed	<input type="checkbox"/> HIV RAPID	<input type="checkbox"/> Cholesterol	<input type="checkbox"/> Triglyceride	<input type="checkbox"/> Cryptococcus	<input type="checkbox"/> Pneumocystis (proved)
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THE FOLLOWING DETAILS MUST BE COMPLETED																					
ID Number: <input type="text"/>	PLEASE NOTE																				
Current HIV Programme Status (Please tick only one): PMTCT <input type="checkbox"/> Patient on PMTCT programme NEW <input type="checkbox"/> Has just enrolled in HIV care, first ever HIV-related blood tests TFI <input type="checkbox"/> Previous CD4 elsewhere, first follow-up here, not yet on ART FU <input type="checkbox"/> Previous CD4 here, testing as part of follow-up care, not yet on ART CARV <input type="checkbox"/> Currently on the antiretrovirals marked alongside Has started ART, but was not on ART at the time of these tests due to: TGM <input type="checkbox"/> Toxicity AG <input type="checkbox"/> Non-Compliance VF <input type="checkbox"/> Virological Failure OTHER <input type="checkbox"/> Other	Please note that this form must be used in compliance with your provincial treatment guidelines and financial protocols. <div style="text-align: center;">AAHE5767A</div> <div style="text-align: center;"> <small>APPLY BAR CODE LABELS TO BOTH NEWLY ACQUIRED</small> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> AAHE5767A </div> <div style="text-align: center;"> AAHE5767A </div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> AAHE5767A </div> <div style="text-align: center;"> AAHE5767A </div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> AAHE5767A </div> <div style="text-align: center;"> AAHE5767A </div> </div>																				
Current treatment <input type="checkbox"/> 3HI <input type="checkbox"/> 3TC <input type="checkbox"/> EFV <input type="checkbox"/> AZT <input type="checkbox"/> ddI <input type="checkbox"/> NVP <input type="checkbox"/> ABC <input type="checkbox"/> KLT <input type="checkbox"/> TDF <input type="checkbox"/> D3V Other ART: <input type="text"/>																					
Additional HIV Programme Status: Patient is about to start ART and these are baseline tests: NA <input type="checkbox"/> Naive EKP <input type="checkbox"/> PMTCT EKP <input type="checkbox"/> Treatment experienced Has this patient been transferred in from another program, e.g. TSC? YES NO Months since first enrolling on ART at this facility (irrespective of stops and restarts) 6 12 18 24 Other:																					

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 be 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, desiccant 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

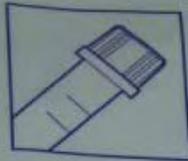
- requires skill and practice
(may require repeat *Lancet* of skin if blood does not flow easily)
- a doctor may be required to assist with formal venesection

Venesection guidelines

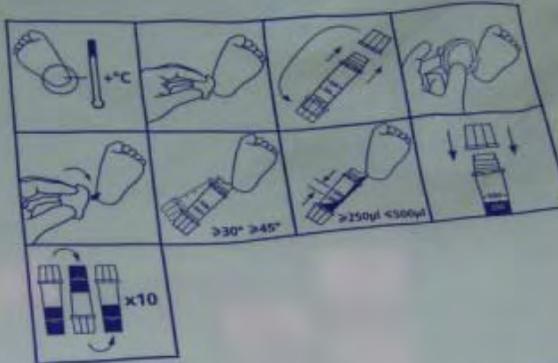
- always follow *three* simple rules for formal venesection:
 - *you* must be comfortable – good light, sit down (to steady your self), lock the door to avoid interruptions
 - the *patient* must be comfortable – explain what you are going to do, lie the patient down, tell them when you are about to prick 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)

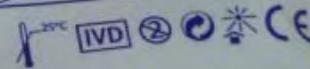
BD Microtainer®
K2E Tubes



REF 365975



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101127 365975 (1.0)



2009-02
7262672

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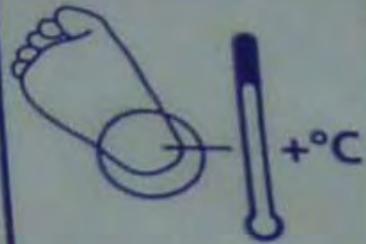


Contains
ANTI-COAGULANT
to prevent blood
from clotting

Microtainer
(pink top)



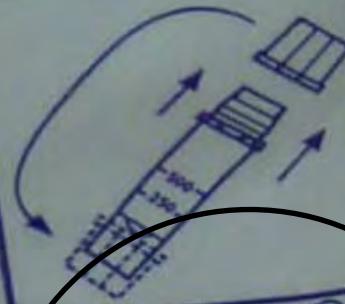
Warm the heel
of foot



Swab clean



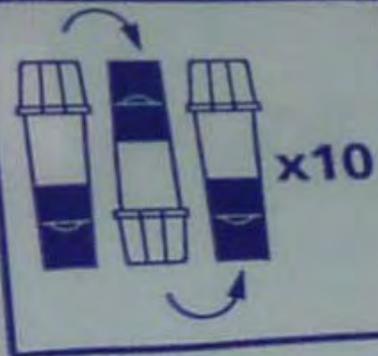
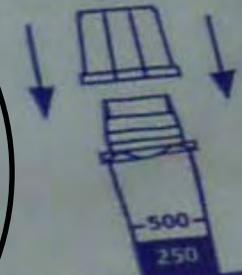
Remove cap



Apply *Lancet*
to infant's heel



Reapply cap



Aggitate tube a few times
to ensure blood collected
mixes well with ANTI-COAGULANT
in tube

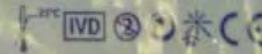
BD Microtainer®
SST™ Tubes



REF 365968



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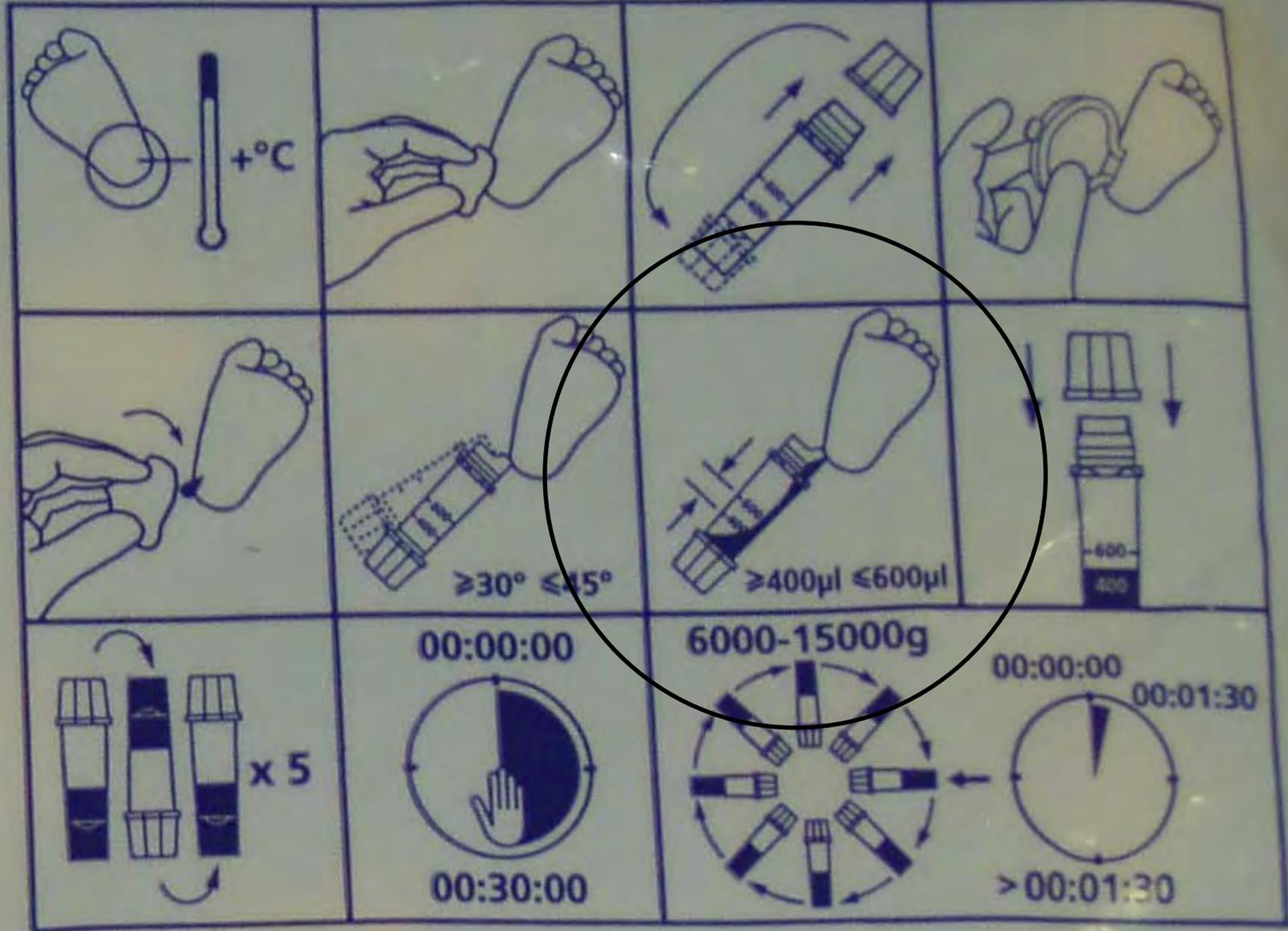
2009-04
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 U.S. Pat. No. 5,288,466, 5,384,096, and 5,443,985









FBC

CD4

VIRAL
LOAD

ALT



Monitoring of children on ART

“Closing the treatment gap and eliminating Paediatric HIV”



ark
absolute return for kids



ark
absolute return for kids



Department of Health
Republic of South Africa



SOUTH AFRICANS AND AMERICANS
IN PARTNERSHIP TO FIGHT HIV/AIDS



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FROM THE AMERICAN PEOPLE