ARISE

African Research And Innovative Initiative For Sickle Cell Education

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# PMTCT BDTH: What can we learn from

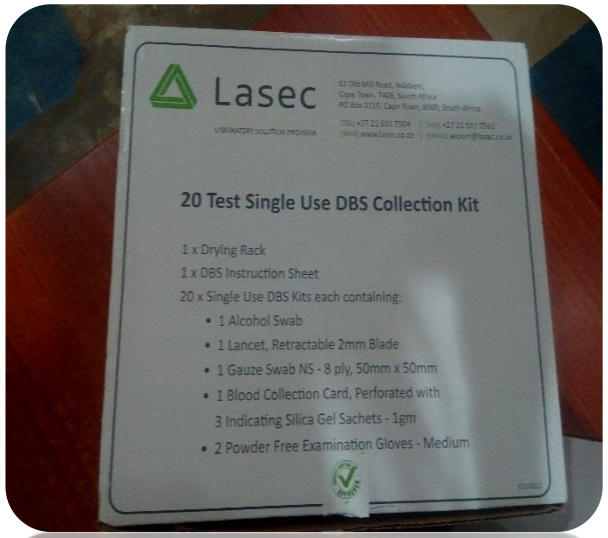
- DBS
- Process and protocol
- Sample transport
- Documentation
- Result to end user
- Patient tracking and lost to follow up
- Registration in to routine clinic
- Follow up
- Transition through youth friendly
- Lessons and challenges

# Dry Blood Spot (DBS)

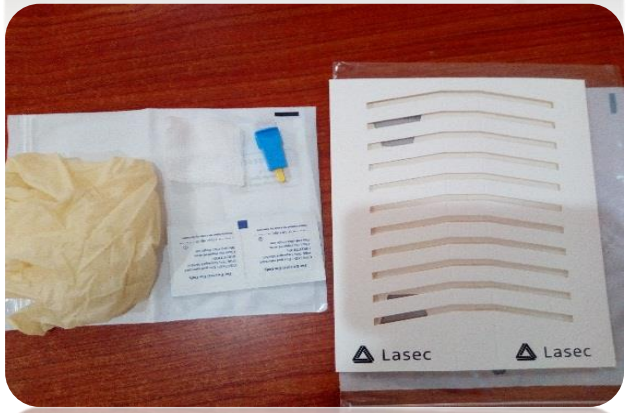
- Dry blood spot testing is a form of biosample where blood samples are blotted and dried on filter paper (Guthrie card).
- DBS can easily be shipped or transported to an analytical laboratory

# Customized DBS Collection Kit for PMTCT program

- It comes in a box containing 20 single use DBS collection kits
- The box contains:
  - ➢1 drying rack
  - ➢1 DBS instruction sheet
  - ➢ 20 single use DBS kits
  - ➢Each kit contains:








- 1 Alcohol swab
- 1 lancet, retractable 2mm blade
- 1 gauze swab NS-8 ply, 50mm x 50mm
- 1 blood collection card() perforated
- With 3 indicating silica gel sachets- 1gm
- 2 powder free examination gloves- medium size

# Why Customize?

Ease of operation and usability

Problems getting in one operation all consumables needed to ensure quality of sample

Ease of transport and storage

Ease of tracking and auditing

Parent preference and acceptance

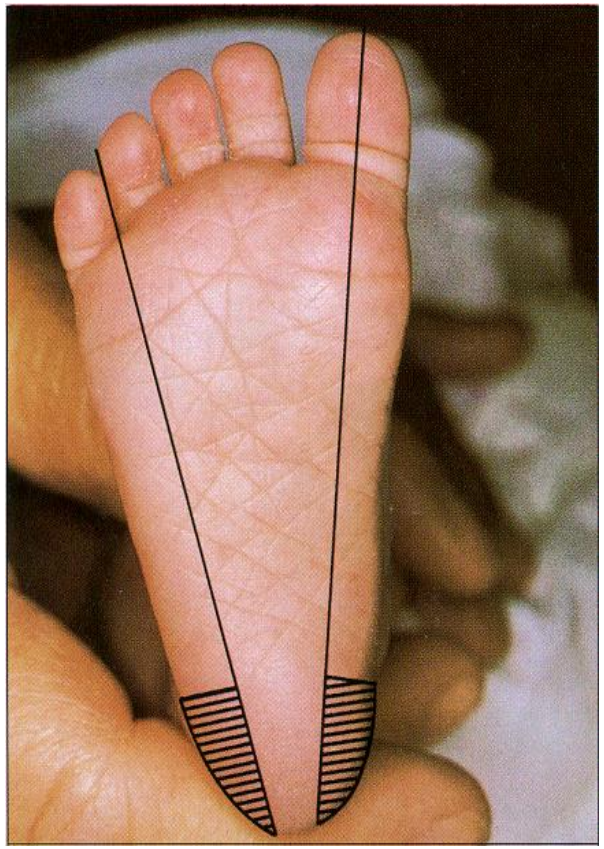
Ease of training and delivery even by non – professional who bridge personnel gaps

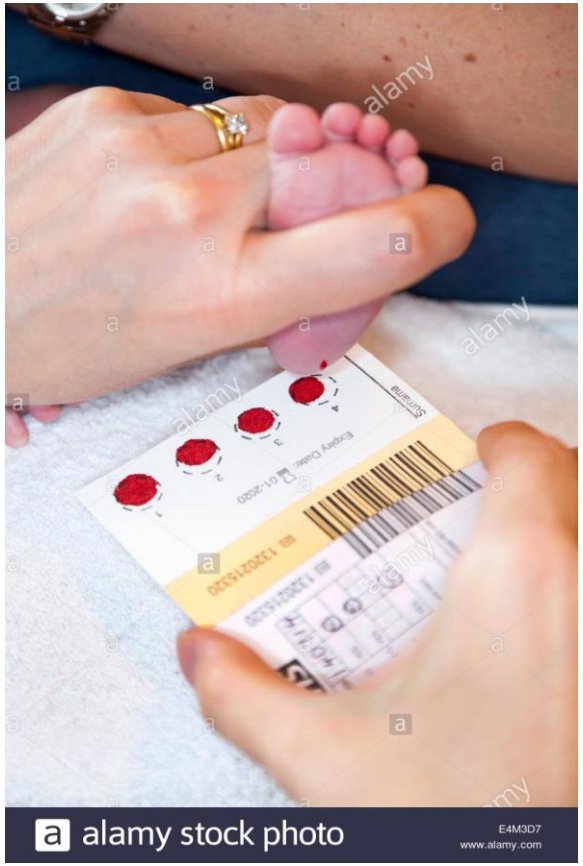
# Sampling

## Method

- Position the foot or hand with puncture site downwards
- While holding the foot correctly  apply and release pressure to allow drop of blood to form
- Allow large drop of blood to collect
- Lightly touch the drop to the DBS card and allow to soak onto the circle
- Repeat same on all circles on the card
- Apply dry gauze or cotton wool to the punctured site after obtaining sufficient blood
- Dispose off the lancet into a  sharp box

## Good for Neonates and Infants





# Laboratory Request/ Report Forms

Forms are in hard copies

**SECTION 1: Contains patient and care giver information**

- Hospital number
- Mother's ANC card number
- Mother/care giver phone number
- Patient's first and surname
- Date of birth
- Age in months and
- Gender

**SECTION 2**

- ***Patient's clinical information which includes:***
  - Date specimen drawn
  - Date specimen sent from facility
  - Date result returned to facility
- ***Reason for PCR (TICK ONE OPTION)***
  - First test for HIV Exposed infant
  - Repeat test after cessation of breastfeeding (at least six (6) weeks after last breast milk)
  - Repeat because of problem with first test

All sections of the request form must be filled

**Other questions**

- Baby received Nevirapin (NVP) at 6 weeks?
- Was infant breast fed?
- Is infant breast feeding?
- Age in months breast feeding stopped
- Cotrimoxazole given to infant?

# Patient Entry Point

- Paediatric Special Treatment Care (STC) record office
- Paediatric out patient department
- Paediatric Medical wards
- Others
  - Immunization clinic
  - Post natal clinic
  - Nutrition clinic
- Patient get to the clinic through any of the points of entry

# Process and Protocol

Time is of essence

Nurse Enquire about mother's HIV status if positive
HAART(for mother)
Nevirapine(for baby)

| | |
|---|---|
| Counsel on DBS and breast feeding | Give appointment for DBS sample taking at 6 weeks – 9 months of age |

After DBS, commence baby on cotrimoxazole same day

| | | |
|---|---|---|
| Nurse or adherence counselor calls parent when result is ready | Positive DBS:<br>Commence ARVs and continue cotrimoxazole<br>Repeat rapid test at 18 month<br>persistent positive continue ARVs and clinic | if negative<br>confirmatory rapid test at 21 months<br>if negative, stop ARV and discharge child from clinic |

At 10 years patient is transferred to youth and adolescent clinic
At 24years patient is transferred to adult Special Treatment Care(STC) clinic to continue care

# Sample Transport…

## Collected DBS samples

- Are air dried on the drying rack for at least 3hours
- Samples are then packed separately in a water proof sealable bag
- 10 of the samples are packed air tight in another water proof sealable bag with 10 silica gel sachet

## Sample Preparation for Transport

- Finally the DBS samples along with the laboratory request/ report form for each patient will be sealed in an envelope
- Samples are transported by a courier service
  - Riders for health (a 3rd party agreement team)
- Before it is sealed the courier staff cross checks the samples and form

## Clinical Audit at Point of Collection

- Record of the patient's ID, number of samples taken and date are written in the dispatch register.
- The courier agent and Nurse write their names and sign on the dispatched register and receipt provided by both.
- Samples are transported every week to the main laboratory at Zaria.
- An hour and half drive from Kaduna
- Turn-around time for DBS result is 2 to 4weeks.

# Sample Transport…

## Sample Tracking

- From week 3 after sample has been taken to the central laboratory
  - Nurse keeps track of the samples with the courier agent
  - Program supervisors (CIHP) are put on notice to track also

## Result delivery

- When results returns to the facility
  - Nurse cross checks from the dispatched register
  - If comfortable signs and take delivery
  - Calls are placed to the parent with appointment date
  - Results are discussed with patent by managing team nurse

# Documentation

- There are basically three (3) registers use for documentation:
  - Early Infant Diagnosis (EID) appointment diary for DBS sample collection
    - Serial number
    - Unique ID(MOTHER)
    - Mother's name
    - Mother's contact address/ phone number
    - Infant's unique ID
    - DOB
    - Date due for DBS
    - Sample collected(Y/N)
  - DBS sample collection and result log/ register
    - Facility name
    - Month
    - Year
    - Serial number
    - Child's name
    - Unique ID

Age: (6-8) weeks, >8 weeks
Sex: Male, Female
Date sample collected
Date sample received
PCR result: NEG / POS and
Remarks

# Result to end user

- If negative, patient's mother or care giver is notified on phone
- If positive,
  - care giver is called on phone and requested to come to the hospital with patient
  - Care giver is counseled and result disclosed
  - Care giver is counseled on ARVs for the child
  - Patient commence ARVs immediately
  - Patient is seen at the clinic after 2weeks of commencing ARVs
  - Viral load is checked every 3months

# Patient tracking and Lost to follow up

- If patient misses first contacts of clinic visits, care giver is called to enquire of reasons for the missed visit
- If patient misses the second visit, adherence counsellor visits patient at home
- When patient resumes follow up:
  - Counsel on adherence to clinic visits and medications
  - Do viral load test
  - Patient is given short appointment(2weeks) for two contacts
  - Appointment is adjusted to 8weeks

# Registration to routine clinic

- From any of the points of entry, file is opened for patient
- Unique ID is given
- Patient is registered and enrolled to clinic
- Patient/caregiver is counseled about HIV/DBS/ARVs and adherence to follow up and medications
- Patient is seen after 2 weeks from initial visit, then 4weeks and subsequently every 8 weeks

# Transition through Youth and Adolescence clinic

- Patients on ARVs are transferred to youth friendly and adolescent clinic from age 10years
- Patient continue ARVs
- Counselling on clinic visits, ARV adherence and reproductive health of patient is done
- Patients status is disclosed to him/her by their parents with the assistance of the adherence counselor
- At 24 year patient is transferred to the adult Special Treatment Care(STC) clinic

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# Learning points

From PMTCT Program

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# PMTCT/NBS

- All can use DBS, refresher training to introduce NBS only needed
  - Capacity already available in most PMTCT linked facilities
- Similarities in timing for DBS
  - PMTCT – at 6 weeks (early infancy) to 9 months
  - NBS – At birth to 9 months?
- Adapt sample preparation and transport
- Close monitoring and supervision needful as seen in PMTCT
  - PMTCT uptake is above 90%
- Establish standard protocols and care plan
  - Documentation
  - Safe record keeping
  - Committed follow up plan
  - Adherence counselling

# Learning points for NBS

- Translate structure from PMTCT to NBS
- Orientation and re-orientation for those trained for PMTCT DBS to transit NBS DBS
- Adapt patient tracking and audit system
- Integrate all trained for DBS under a unit
- Use existing relationship and understanding for sample and result transportation
- Collaborate with union of road transporters to weigh bill collected samples for transport for emergencies

# Learning points for NBS

- Keep stock of consumables to avoid running shot of them
- Close follow up of DBS results
- Intensify patient's adherence to clinic follow up and medication
- Training of more personnel to meet the work load
- Link community mobilizing unit to DBS collection points for ease of patient tracking
- Have a central coordinating point at BDTH and SPIYMH

# Challenges and Lessons

- Lack of DBS kits
- Delay in release of DBS results
- Lack of trained personnel
- Lost to follow up after enrollment
- Poor adherence to clinic visits and medications
- Delay in sending DBS samples from the CIHP office to the main laboratory

# Challenges and Lessons

- Lack of reagent to run the test at the main laboratory
- More work and less personnel to do the test

# Thanks for Listening

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