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Sandton Convention Centre
Johannesburg

Our Issues, Our Drugs, Our Patients

www.sahivsoc.org
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The positive birth PCR test

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15 April 2016
A positive PCR test in a baby is the beginning of a long road!
PMTCT guideline change: 1 June 2015

• HIV testing protocol for all HIV-exposed infants:
  – Birth PCR to all exposed infants
  – 10w PCR to all infants who tested negative at birth
  – 18w PCR to all infants on extended 12w NVP
  – PCR 6w post cessation of BF
  – Rapid HIV test at 18m
  – Symptomatic HIV testing
Why did we move to birth PCR testing?

CHANGING EPIDEMIC
RELIABILITY OF TESTS
SYSTEM WEAKNESSES
HIGH RISK INFANTS
EARLY ART
Birth PCR testing: Practical implementation

• Identification of HIV-exposed newborns
  – Safety nets to ensure that no babies are missed (24h/7d/365d)
• Consent
• Doing the test
  – New cadre of staff doing the testing
• Needs
  – Consumables, job aides
  – Facility registration numbers
• Integration into already existing onsite MCWH services
• Recordkeeping
  – NB: Tracing information
Results checking & recording

• Responsibility of result checking
  – Delivery facility: Checking of results & tracing information
  – PHC facility: Infant follow-up
  – DCST: Receive and send out weekly name-based results

• Practical helps to obtain results:
  – Computer look-up
  – Patient phone Nrs on lab request forms
  – SMS printers
  – Hotline

• Recording of result
  – RTHB
  – Patient records
  – Registers
  – DHIS indicators
## Birth Register

**Department:** Health

**Facility Name:** [Redacted]

**Register Period (Date):**

From: 02/03/2016  
Until: [Redacted]

### Total Deliveries

<table>
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<tr>
<th>Date</th>
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<td>05</td>
</tr>
<tr>
<td>09</td>
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</table>

### Total Admissions

- **Overall:** [Redacted]
1. Connecting Scanner to Printer
   - Connect USB cord from scanner to the USB Port of Printer.
   - SMS Printer will print a "Scanner Connected" message.
   - The SMS Printer is now ready for use.

2. Scanning and Querying Results
   - Press the # key. "Scan Barcode" message will be printed.
   - Scan barcode from NHLS Request Book.
   - A successful scan will result in "REQUESTING ID" Message followed by the ID.

3. Available Results
   - CDARV (CD4)
   - HIV VIRAL LOAD
   - HIV DNA PCR
   - TB SMEAR
   - GENEXPERT (TB)

4. Reprinting Messages
   - Press "*" then "1" to reprint 10 most recent messages.
   - Press "*" then "2" to reprint the 11th-20th oldest messages.
   - Press "*" then "3" to reprint all messages stored on printer.
   - Press "*" then "5" to print status.
RESULTS HOTLINE

0860 RESULT 737858

This line is dedicated to providing results nationally for HIV Viral Load, HIV DNA PCR and CD4 to Doctors and Medical Practitioners, improving efficiency in implementing ARV Treatment to HIV infected people. This service is currently available to members of Health Professionals Council of the South Africa and the South African Nursing Council. The hotline is available during office hours from 8am to 5pm Monday to Friday.

Register to use the RESULT HOTLINE
Follow this simple Step-by-step registration process

Dial the HOTLINE number 0860 RESULT (737858)
Follow the voice prompts and select option 1 to register to use the hotline
A hotline registration form will be sent to you by fax or e-mail.
Complete the form and return it by fax or e-mail to the hotline to complete your registration process.
Once you are registered, you will be contacted with your unique number. This number is a security measure to ensure that the results are provided to an authorized user.

To use the hotline dial 0860 RESULT (737858)

Select option 2 to access laboratory results.
☐ You will be asked for your HPCSA or SANC number by the operator.
☐ You will be asked for your Unique Number.
☐ Please quote the CCMT ARV request form tracking number (bar coded) and confirm that the result requested is for the correct patient.

Should the results not be available when you call, you will be provided with a query reference number which must be used when you follow up at a later date to obtain the result.

Once you have a Reference number
Select option 3 to follow up on a reference number
Should the requested results not be available, a query reference number will be provided to you.
A hotline operator will call you within 48 hours of receiving the laboratory results.

Registering for this service from the NHLS will assist in improving efficiency, providing improved patient care and streamlining clinic processes. Call now and register to access results for HIV Viral Load, HIV DNA PCR and CD4.
## Closing the loop: Weekly PCR results

<table>
<thead>
<tr>
<th>Sub District</th>
<th>Facility</th>
<th>Ward</th>
<th>Folder No</th>
<th>Patient Surname</th>
<th>Patient Name</th>
<th>Patient DOB</th>
<th>Patient Address</th>
<th>Patient Tel No</th>
<th>Patient Age</th>
<th>Taken Date</th>
<th>Reviewed Date</th>
<th>Episode No</th>
<th>Unique Patient ID</th>
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Minimizing missed opportunities in access to care

– Tracing: How to find the infected babies?
  • Linking of WBOTs
  • Babies from difficult psycho-social backgrounds?

– Retention in care:
  • Counselling
  • Information: If mothers understand the process they are more compliant with follow-up
  • Issues: Language, finances, travelling, support structure, fear...
Unique RTHB identifier
Keeping track of what is happening: DHIS

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<tr>
<td>69 Targeted birth PCR test</td>
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<td>71 Infant 1st PCR test around 6 weeks</td>
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<td>72 Infant 1st PCR test positive around 6 weeks</td>
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<table>
<thead>
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<th>Sub-district</th>
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<th>2015</th>
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<td>gp Tswane 2 Health sub-District</td>
<td>gp Jubilee Hospital</td>
<td>31 Delivery in facility total</td>
<td>425</td>
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<td>34 Live birth to HIV positive woman</td>
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<td>gp Temba CHC</td>
<td>gp Temba CHC</td>
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City of Tshwane Metro District for the Month of Mar 2016

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<th>&lt;6mo</th>
<th>&lt;6mo Total</th>
<th>&gt;18mo</th>
<th>&gt;18mo Total</th>
<th>Total</th>
<th>Total Pos</th>
<th>Total MO</th>
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<td>Kasihe Health Centre Clinic</td>
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<td>3</td>
<td>25</td>
<td>0</td>
<td>10</td>
<td>1</td>
<td>10</td>
<td>1</td>
<td>79</td>
<td>2</td>
</tr>
</tbody>
</table>

Tshwane March 2016:

- Total: 2343 (70+)
- <7d: 1006 (16+)
- 7d-2m: 132 (7+)
- 2-6m: 653 (24+)
- 6-18m: 386 (18+)
- >18m: 166 (5+)
Fast-tracking PCR+ babies into care

• Neonatal ART initiated: Doctor-initiated
  – Initially at large ART sites
  – Capacity building at all hospitals / ART sites
• Premature infants
• Clear referral pathways a pre-requisite
• Guidelines on down-referrals need to be in place
Avoiding HIV misdiagnosis

- Urgency in ART initiation in infancy life-saving;
- Meticulous checking of HIV+ status is vital before starting life-long ART

MTCT ↓

PPV of single HIV DNA PCR ↓

PPV: 98.6%

PPV: 62.5%

PPV in test specificity further ↓ PPV
When Birth PCR is POSITIVE:

- Confirmatory HIV DNA PCR
- Refer infant to nearest centre for neonatal ART
  - If no referral site, contact specialist telephonically for advice
- Investigate gaps in PMTCT cascade
- Avoid creating sense of maternal guilt
  - Some do everything correctly but still their infant is positive
  - Some encounter significant barriers (access to care/adherence)
  - Full support with rapid ART initiation
Counselling: Positive HIV PCR

• Clearly communicate result to mother/caregiver
• Provide emotional support
• Emphasise importance of early ART
• Encourage continuation of breastfeeding (≥ 2 years)
• Develop a treatment and adherence plan
• Link to health worker who will initiate ART
• Provide a follow-up appointment date
• Counselling should be provided repeatedly
Neonatal ART: Step-wise Approach

- Actively trace infant with positive PCR & link to care
- Baseline clinical assessment, baseline bloods & genotype if mother 2\textsuperscript{nd}/3\textsuperscript{rd} line
- Initiate ART on the same day
- Week 1 review: Bloods, treatment, counselling, weigh & adjust doses
- Week 2 review: treatment, counselling, weigh & adjust doses
- Week 4 review: treatment, counselling, bloods, start CPT, weigh & adjust doses
- Monthly review: treatment, support, weigh & adjust doses
- Month 6: check Viral Load
Protocol for initiation of ART in HIV-infected neonates ≥2.5kg at birth

1. Refer to documents below where numbered in the protocol:
   1. Managing Indeterminate HIV PCR test results guideline
   2. Counselling model
   3. Dosage chart if <28 days of age
   4. SA NDOH dosing chart

2. Birth HIV PCR test
   - Indeterminate result: Refer to separate guideline

3. Positive Birth HIV PCR test
   - Actively trace and link to care
   - If neonate weighs < 2.5kg or unwell/TB/syphilis: Discuss with regional level centre

4. Baseline Assessment for neonate ≥2.5 kg
   - Clinical review
   - Bloods: confirmatory HIV PCR, CD4 count/%, FBC/diff, ALT
   - (Genotype if mother is failing 2nd/3rd line ART)

5. Ensure mother is on antiretroviral therapy (ART); Advice on breastfeeding

6. Start ART on same day
   - (if oral feeding is established)
   - AZT (4mg/kg/dose BD)
   - 3TC (2mg/kg/dose BD)
   - NVP (6mg/kg/dose BD)
Neonatal Management:
Steps 4 - 8

- **Review at 1 week of treatment:**
  - Clinical review & counselling
  - Check blood results

- **Review at 2 weeks of treatment:**
  - Clinical review & counselling

- **Review at 1 month of treatment:**
  - Clinical review & counselling
  - Bloods: FBC / diff, cholesterol + triglycerides
  - Start co-trimoxazole prophylaxis
  - Adjust medication
    - If ≥ 3kg:
      - Switch NVP to LPV/r (Kaletra) and AZT to ABC
      - Dose ABC, 3TC, LPV/r as per SA NDOH dosing chart
    - If still < 3kg:
      - Switch NVP to LPV/r (Kaletra): 1ml BD
      - Dose AZT 12mg/kg/dose BD, 3TC 4mg/kg/dose BD

- **Indeterminate / negative confirmatory PCR:** Refer to separate guideline

- **If still < 3kg:**
  - Assess failure to thrive; discuss with a paediatrician if questions / concerns

- **Review monthly until 6 months of treatment:**
  - Adjust medication using dosing chart
  - Month 6: Do VL
Why is the Regimen Different for Neonates?

- Neonates, who are <28 days old and weigh >2.5kg, to be initiated on AZT, 3TC, NVP
- LPV/r (Kaletra®) not safe <14d of age/ <42w gestation
- ABC can only be given once >3kg
- For premature babies (<35w gestation) or babies weighing <2.5kg the options are even more limited
  - Premature/LBW babies with a positive birth HIV PCR require urgent ART initiation & management by a specialist
# Neonatal ART Dosage Chart

Only if <28 days AND >2.5kg

<table>
<thead>
<tr>
<th>Weight (kg)</th>
<th>Lamivudine (3TC)</th>
<th>Zidovudine (AZT)</th>
<th>Nevirapine (NVP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dose in ml</td>
<td>Dose in mg</td>
<td>Dose in ml</td>
</tr>
<tr>
<td>≥2.5-&lt;3.0</td>
<td>0.6 ml BD</td>
<td>6 mg BD</td>
<td>1.2 ml BD</td>
</tr>
<tr>
<td>≥3.0-&lt;3.5</td>
<td>0.7 ml BD</td>
<td>7 mg BD</td>
<td>1.4 ml BD</td>
</tr>
<tr>
<td>≥3.5-&lt;4.0</td>
<td>0.8 ml BD</td>
<td>8 mg BD</td>
<td>1.6 ml BD</td>
</tr>
<tr>
<td>≥4.0-&lt;4.5</td>
<td>0.9 ml BD</td>
<td>9 mg BD</td>
<td>1.8 ml BD</td>
</tr>
<tr>
<td>≥4.5-&lt;5.5</td>
<td>1.0 ml BD</td>
<td>10 mg BD</td>
<td>2.0 ml BD</td>
</tr>
<tr>
<td>≥5.5-&lt;6.5</td>
<td>1.2 ml BD</td>
<td>12 mg BD</td>
<td>2.4 ml BD</td>
</tr>
</tbody>
</table>
# ART Dosage Chart

**if > 4 weeks and > 3 kg**

## ANTIRETROVIRAL DRUG DOSING CHART FOR CHILDREN 2013

Compiled by the Child and Adolescent Committee of the SA HIV Clinicians Society in collaboration with the Department of Health

<table>
<thead>
<tr>
<th>Target Dose</th>
<th>Abacavir (ABC)</th>
<th>Lamivudine (3TC)</th>
<th>Efavirenz (EFV)</th>
<th>Lopinavir/ritonavir (LPV/r)</th>
<th>Ritonavir boosting (RPV)</th>
<th>Stanvirone (3TC)</th>
<th>Didanosine (ddI)</th>
<th>Nelfinavir (NVP)</th>
<th>Zidovudine (AZT)</th>
<th>Available Formulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-5.9 kg</td>
<td>2 ml bd</td>
<td>2 ml bd</td>
<td>Avoid using</td>
<td>1 ml bd</td>
<td>1 ml bd</td>
<td>0.75 mg/300 mg</td>
<td>1 mg/300 mg</td>
<td>100/240 mg/ml</td>
<td>100/240 mg/ml</td>
<td>[Summaries of tablet forms]</td>
</tr>
<tr>
<td>6.0-8.9 kg</td>
<td>3 ml bd</td>
<td>3 ml bd</td>
<td>1 ml bd</td>
<td>1.5 ml bd</td>
<td>1.5 ml bd</td>
<td>2 ml bd</td>
<td>2 ml bd</td>
<td>150 mg/300 mg</td>
<td>150 mg/300 mg</td>
<td>[Summaries of tablet forms]</td>
</tr>
<tr>
<td>9.0-11.9 kg</td>
<td>4 ml bd</td>
<td>4 ml bd</td>
<td>2 ml bd</td>
<td>2 ml bd</td>
<td>2 ml bd</td>
<td>3 ml bd</td>
<td>3 ml bd</td>
<td>200 mg/300 mg</td>
<td>200 mg/300 mg</td>
<td>[Summaries of tablet forms]</td>
</tr>
<tr>
<td>&gt; 12.0 kg</td>
<td>5 ml bd</td>
<td>5 ml bd</td>
<td>3 ml bd</td>
<td>3 ml bd</td>
<td>3 ml bd</td>
<td>3 ml bd</td>
<td>3 ml bd</td>
<td>250 mg/300 mg</td>
<td>250 mg/300 mg</td>
<td>[Summaries of tablet forms]</td>
</tr>
</tbody>
</table>

Currently available tablet formulations of abacavir (except 60 mg), efavirenz, LPV/r and AZT must be swallowed whole and NOT chewed, divided or crushed.

Consult with a clinician experienced in paediatric ARV prescribing for neonates (<28 days of age) and infants weighing <3 kg.

---

**Weight (kg)**

<table>
<thead>
<tr>
<th>2.0-4.9</th>
<th>5.0-9.9</th>
<th>10.0-12.9</th>
<th>14.0-29.9</th>
<th>&gt;30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cetrirunavir Dose</td>
<td>2.5 ml od</td>
<td>5 ml od</td>
<td>5 ml od</td>
<td>10 ml or 1 tab od</td>
</tr>
<tr>
<td>Multivitamin Dose</td>
<td>2.5 ml od</td>
<td>2.5 ml od</td>
<td>5 ml od</td>
<td>5 ml od</td>
</tr>
</tbody>
</table>
Supporting Correct Dosage at Home

• Emphasise TWICE DAILY treatment (unlike maternal FDC)
• Supply 3 separate syringes & mark correct dosage
• Colour code bottles and syringes
• Demonstrate to caregiver how to correctly administer ART
• Observe caregiver give ART
• Explain to caregiver that doses will be reviewed at every visit and will change as baby gains weight
Conclusions

• Birth PCR testing gives us the opportunity to start ART early
• Tracing of infants is absolutely crucial
• Small numbers of infants due to PMTCT success, but their management is more complex
Thank you!