ART stock-outs

Francois Venter
Wits Reproductive Health & HIV Institute
? Take CD4 count to 500
Some recent SA data in summary

- 1.9m on ART with additional 500 000/yr
- >90% of pregnant women tested for HIV
- >80% of HIV patients screened for TB and >80% of TB patients tested for HIV
- >400m male condoms and >6m female condoms distributed – scale to 1b male and 12m female
- 619 000 MMCs done since 2010 with 1m estimated to want one
- Vertical transmission down to 2.7% at 6 weeks\textsuperscript{9}
Treatment "2.0" Strategy: Optimizing Treatment and Promoting Efficiency Gains

- Drug/Regimen Optimization
- Use of PoC and Simplified Lab Diagnostics
- Enhance Diagnosis, Taskshifting, Descentralization & Service Integration
- Facilitate Community Support
- Promote Price/Cost Reduction
Balance of Evidence, Feasibility and Cost-Benefit Analysis Favors Earlier Initiation of ART

**Delayed ART**
- ↓ Drug toxicity
- ↓ Resistance
- ↓ Upfront costs
- Preservation of Tx options

**Earlier ART**
- ↑ Clinical benefits (HIV- and non-HIV related)
- ↓ HIV and TB transmission
- ↑ Potency, durability, tolerability
- ↑ Treatment sequencing options
- ↑ Medium & long cost savings

2013 WHO consolidated Guidelines
# Evolution of WHO ART Guidelines in Adults

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>When to start</strong></td>
<td>CD4 ≤200</td>
<td>CD4 ≤ 200</td>
<td>CD4 ≤ 200</td>
<td>CD4 ≤ 350</td>
<td>CD4 ≤ 500</td>
</tr>
<tr>
<td><strong>1st Line</strong></td>
<td>8 options - AZT preferred</td>
<td>4 options - AZT preferred</td>
<td>8 options - AZT or TDF preferred - d4T dose reduction</td>
<td>6 options &amp; FDCs - AZT or TDF preferred - d4T phase out</td>
<td>2 options &amp; FDCs - TDF and EFV preferred across all populations</td>
</tr>
<tr>
<td><strong>3rd Line</strong></td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>DRV/r, RAL, ETV</td>
<td>DRV/r, RAL, ETV</td>
</tr>
<tr>
<td><strong>Viral Load Testing</strong></td>
<td>No</td>
<td>No (Desirable)</td>
<td>Yes (Tertiary centers)</td>
<td>Yes (Phase in approach)</td>
<td>Yes (preferred for monitoring, use of PoC, DBS)</td>
</tr>
</tbody>
</table>

**Earlier initiation**

**Simpler treatment**

**Less toxic, more robust regimens**

**Better monitoring**
Main first-line regimens among adults in Group A countries (December 2011)

N=3,687,179

Group A = all countries except Americas (64 countries)

Evolution in the APIs use in adults, 2006 - 2012

- d4T in 1st line
- AZT in 1st line
- TDF in 1st line

% of treated patients

2006 2007 2009 2010 2011 2012

N= 12 countries

HIV/AIDS Department
Main first-line regimens among children in Group A countries (December 2011)

N=245,645

Group A = all countries except Americas (64 countries)
Effect of ART coverage on rate of new HIV infections in a rural South African population (Tanser, CROI, 2012)

For every 10% increase in coverage there is a 17% decrease in individual risk.
Country-wide

- Reported in every province
Retention in Care: A glimpse

Based on systematic review from Sub-Saharan Africa

Rosen, PLoS Med 2011; Fox, TMIH 2010
Psycho-social factors
Related to knowledge, beliefs and motivations within a given social context (herbal medicine, lack of disclosure, stigma)

Structural factors
Underlying economic conditions of daily life (accessibility of care, transportation, work responsibilities, food insecurity)

Health care delivery factors
Quality of care at the point of contact with the patients (waiting time, conflict with staff, coordination of care, stigma); service inaccessibility (distance from home)
Who’s to blame?

• API
• Manufacturer
• Provincial depot
• Local clinic/Hospital
# Treatment 2.0: Innovations to support further scale up

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Drugs</strong></td>
<td>• Promote access to TDF/XTC/EFV as FDC</td>
<td>• Define role of integrase inhibitors and DRV/r</td>
<td>• Novel formulations (pro-dugs, new FDCs, long acting drugs, nanomedicines)</td>
</tr>
<tr>
<td></td>
<td>• Improve access to 2&lt;sup&gt;nd&lt;/sup&gt; line (more heat stable bPI options)</td>
<td>• LPV/r FDC for paeds</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Paediatric drug optimization</td>
<td>• Access to adults and paed formulations of DRV/r</td>
<td></td>
</tr>
<tr>
<td><strong>Diagnostics</strong></td>
<td>• Viral load phase in</td>
<td>• CD4 phase out (monitoring)</td>
<td>• Multi-disease molecular diagnostics (HIV/HCV/TB)</td>
</tr>
<tr>
<td></td>
<td>• PoC CD4</td>
<td>• Immediate paed diagnosis and treatment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• EID expansion</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Service delivery / community</strong></td>
<td>• Better define community ART models</td>
<td>• Evaluate impact of community ART models</td>
<td>• Models of long-term ART management</td>
</tr>
<tr>
<td></td>
<td>• Integration (esp MCH)</td>
<td>• Define models for ‘active case finding’</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Task shifting/decentralization</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


What does this do?

• Undermines adherence
• Possible resistance (definite if inappropriate drugs used), problem if switch virologically failing patients
• Possible seroconversion-like syndromes, more CVS events (SMART)
• Progression to AIDS if long enough, delayed immune reconstitution
What can we do?

• Report, report, report, complain
• http://www.sahivsoc.org/
Tenofovir

- Do everything in your power NOT to switch hep B patients
- d4T 30mg bd or AZT 300 mg bd in interim
- Anticipate side effects (esp AZT in short term)
- In naive patients – d4T/AZT – do NOT delay
d4T

- TDF – ideally with VL/creat clearance first
- Do NOT change back, if possible
- AZT, ABC is also a fallback
ABC

- Prioritise d4T/AZT side effect-affected patients
- TDF, AZT, d4T all options – depends why they are on ABC
- Syrup tastes bad, very bulky – also, affects paeds patients downstream
NNRTIs

• Use Alluvia – watch side effects
Other classes?

• PI? Very little you can do, if on second line
Consider private prescriptions