Compared to Adults, Children (<15) are at **Disproportionate Risk** of HIV Infection & AIDS-related Death

<table>
<thead>
<tr>
<th>OUTCOME MEASURE (2014)</th>
<th>TOTAL</th>
<th>ADULTS</th>
<th>CHILDREN (&lt;15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLHIV</td>
<td>Number</td>
<td>36.9M</td>
<td>34.3M</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>93%</td>
<td>7%</td>
</tr>
<tr>
<td>New HIV infections</td>
<td>Number</td>
<td>2.0M</td>
<td>1.8M</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>90%</td>
<td>11%</td>
</tr>
<tr>
<td>AIDS-related deaths</td>
<td>Number</td>
<td>1.2M</td>
<td>1.0M</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>83%</td>
<td>13%</td>
</tr>
</tbody>
</table>

*Sum of estimates for children and for adults do not add to total estimates because of rounding.

**Though children make up only 7% of PLHIV, they account for 11% of new HIV infections and 13% of AIDS-related deaths.**

Source: UNAIDS Estimate, 2015
Number of new pediatric HIV infections, 2009-2014

Achieved to date (6 years):
~160,000 fewer new pediatric HIV infections annually

Remaining gap to virtual elimination of MTCT:
~ 140,000 annual new pediatric HIV infections

Source: UNAIDS Estimate, 21 Countries, 2015
% Change in New Pediatric HIV Infections (2000-2014)

Source: UNAIDS, 2015
Children are almost one-third less likely to be put on treatment than are adults.

Source: UNAIDS Estimate, 2015
Of 2.6 Million Children with HIV Globally, 2.3 Million (88%) in Sub-Saharan Africa (2014)

Source: UNAIDS Estimate, 2015

Top Seven Countries

<table>
<thead>
<tr>
<th>Country</th>
<th># of infected children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nigeria</td>
<td>380,000</td>
</tr>
<tr>
<td>South Africa</td>
<td>340,000</td>
</tr>
<tr>
<td>Mozambique</td>
<td>160,000</td>
</tr>
<tr>
<td>Kenya</td>
<td>160,000</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>150,000</td>
</tr>
<tr>
<td>Uganda</td>
<td>150,000</td>
</tr>
<tr>
<td>Tanzania</td>
<td>140,000</td>
</tr>
</tbody>
</table>

Source: UNAIDS Estimate, 2015
Pediatric Treatment: Percent of children <15 years living with HIV on ART by country, 2014

Global pediatric ART coverage: 32%

Source: UNAIDS Estimate, 21 Countries, 2015

21 African Global Plan Countries
Gaps in the first two “90s” for children

Increasing entry points for testing including birth testing could close the testing gap to achieve the first 90

POC assays and SMS printers could close the treatment gap by reducing LTFU between testing and treatment and achieve the second 90

JIAS 2015 Essajee et al.
Partnering to save children
PEPFAR & Children’s Investment Fund Foundation (CIFF)

Accelerating Children’s HIV/AIDS Treatment (ACT)

- $200M partnership
- Announced August 2014
- Doubling the number of children on life saving ART
- FY 2017 Target: 600,000 on treatment
- Interim FY 2016 Target: 500,000 on treatment
- **Countries**: Cameroon, DRC, Kenya, Lesotho, Malawi, Mozambique, Tanzania, Zambia, Zimbabwe
Targeted Approach to Dramatically Increase Pediatric Treatment Coverage

Objectives
- Provide ART to an additional 300,000 children living with HIV
- Increase # of adolescents (15-19) on ART by the end of 2016

Strategic Principles

- Pillar 1: Policy for pediatric HIV services
- Pillar 2: Community engagement
- Pillar 3: HIV case identification
- Pillar 4: Linkage to HIV care and treatment services
- Pillar 5: HIV treatment initiation, monitoring, adherence and retention
- Pillar 6: Strategic information for pediatric HIV services
- Pillar 7: Domestic resource commitments for pediatric HIV services
Identification of HIV-infected children

- Optimize Early Infant Diagnosis
- Active case finding of children
  - Family-centered and index patient approaches to HIV testing
  - Provider-initiated testing and counseling in high yield settings (inpatient, TB, malnutrition)
- Aim for universal testing of children receiving OVC services
- Targeted community testing

Early infant diagnosis services in Kenya

- 6 EID laboratories
- >5,000 PMTCT sites
ACT Year 1: Robust Testing

- The number of children (<15 yrs old) tested for HIV has more than doubled during the first year of ACT compared to the previous year.

![Bar chart showing HTC_TST for Children <15](# receiving HTC)

- Near doubling of the number of children and adolescents tested (<20):
  - 3.5 million (FY14) -> 6.9 million (FY15)
Number of children tested increases with age but positivity rates (among those tested) highest in infants and older adolescents.
Pillar 3: Identification of HIV-infected children

- Positivity rates ranging from <1% to >10%
  - Inpatient wards
    - DRC: 1%. Kenya: 0.63% -1.5%. Malawi: 1-2%
  - Outpatient departments
    - DRC: 3%; Kenya: 0.42%- 0.67%
  - Malnutrition services
    - DRC: 7%. Malawi: 11%.
  - Under-5 (well child)
    - Lesotho: 0.9%
  - OVC
    - Kenya: 1.5% (community-based testing) to 4.5% (HCW referral).
    - Mozambique: HH testing ranged from 0.7% (Zambezia) to 6.14% (Gaza.) Focus: school absence, malnutrition, skin problems
Pillar 3: Identification of HIV-infected children

Family based Testing

- **HIV testing for children with parent(s) attending an HIV/ART clinic or with parent or HH member with HIV**
  - DRC – facility based family testing: 12%
  - Malawi – children of adult ART patients: 4.61%
    - Higher in younger children: <5yo 7.14% vs ≥5yo 4%
    - Different by district: Dedza 1.7% vs Ntcheu 7.84%
  - Kenya – children of adult index clients: 1.48%
    - 0-9 yo: 1.63%
    - 10-14 yo: 0.91%
    - 15-19 yo: 2.20%
  - Tanzania
    - 2.15% in one group of 11 sites
    - 5.42% in a group of 4 other sites.
What is the right testing “target”?

<table>
<thead>
<tr>
<th>ACT COUNTRY</th>
<th>CLHIV (UNAIDS)</th>
<th>PED HIV prev. (%)</th>
<th>Adult (15+) HIV prev</th>
<th>Ratio of Child:Adult Prevalence</th>
<th># ALHIV for each CLHIV</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAMEROON</td>
<td>58000</td>
<td>0.57</td>
<td>4.42</td>
<td>0.13</td>
<td>8</td>
</tr>
<tr>
<td>DRC</td>
<td>59000</td>
<td>0.17</td>
<td>0.86</td>
<td>0.20</td>
<td>5</td>
</tr>
<tr>
<td>KENYA</td>
<td>160000</td>
<td>0.84</td>
<td>4.47</td>
<td>0.19</td>
<td>5</td>
</tr>
<tr>
<td>LESOTHO</td>
<td>19000</td>
<td>2.99</td>
<td>22.88</td>
<td>0.13</td>
<td>8</td>
</tr>
<tr>
<td>MALAWI</td>
<td>130000</td>
<td>1.55</td>
<td>9.72</td>
<td>0.16</td>
<td>6</td>
</tr>
<tr>
<td>MOZAMBIQUE</td>
<td>160000</td>
<td>1.40</td>
<td>10.08</td>
<td>0.14</td>
<td>7</td>
</tr>
<tr>
<td>TANZANIA</td>
<td>140000</td>
<td>0.62</td>
<td>4.93</td>
<td>0.13</td>
<td>8</td>
</tr>
<tr>
<td>ZAMBIA</td>
<td>100000</td>
<td>1.44</td>
<td>12.32</td>
<td>0.12</td>
<td>9</td>
</tr>
<tr>
<td>ZIMBABWE</td>
<td>150000</td>
<td>2.78</td>
<td>15.84</td>
<td>0.18</td>
<td>6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>976,000</td>
<td>0.82</td>
<td>5.52</td>
<td>0.15</td>
<td>7</td>
</tr>
</tbody>
</table>

- How to identify large numbers of children when % low?

Based on UNAIDS 2015 data
By the end of the first year of ACT:
- About 498,000 children & adolescents (0-19) on ART in ACT countries
- More than 56,000 children (<15) started on ART in 1st year (APR15)
- 55% faster rise in children (<15) on ART compared to pre-ACT
## ACT: Year 1 Treatment Progress

<table>
<thead>
<tr>
<th>Country</th>
<th>On ART by Sept, 2015 (End of ACT Year 1)</th>
<th>Progress towards ACT targets (Target: ≥75%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;15</td>
<td>15-19</td>
</tr>
<tr>
<td>Cameroon</td>
<td>6,663</td>
<td>12,172</td>
</tr>
<tr>
<td>Dem Rep of Congo</td>
<td>2,989</td>
<td>1,447</td>
</tr>
<tr>
<td>Kenya</td>
<td>78,409</td>
<td>29,391</td>
</tr>
<tr>
<td>Lesotho</td>
<td>7,644</td>
<td>3,336</td>
</tr>
<tr>
<td>Malawi</td>
<td>47,791</td>
<td>21,220</td>
</tr>
<tr>
<td>Mozambique</td>
<td>51,493</td>
<td>11,031</td>
</tr>
<tr>
<td>Tanzania</td>
<td>42,277</td>
<td>19,136</td>
</tr>
<tr>
<td>Zambia</td>
<td>47,051</td>
<td>79,783</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>20,581</td>
<td>14,922</td>
</tr>
<tr>
<td>All ACT Countries</td>
<td>304,898</td>
<td>192,438</td>
</tr>
</tbody>
</table>
Retention in Care: Children

- 17,712 children (<15 yrs old) in Kenya, Moz., Rwanda, Tanz. (McNairy JAIDS 2013)
  - Started ART 2005-2011
  - LTFU at 12 mos: 16% overall but 30% (highest) for <1 yo
  - LTFU at 18 mos: 22% overall but 39% (highest) for < 1 yo

- Retention at 12 mos was 80% overall and 61% for < 1yr old
- Retention at 24 mos was 72% overall and 51% for < 1 yr old
**Case Study: Pediatric ART Retention (<15yo)**

- **On ART at beginning of year**: 3,521
  - 3075 Made it to APR 2015
    - 446 Did not make it to APR 2015
      - 285 Aged out
      - 1 Died
      - 155 TO
      - 5 Opted Out
    - 1,170 New on ART Oct-Sept. 2015
      - 868 Made it to APR 2015
        - 302 Did not make it to APR 2015
          - 26 Aged out
          - 48 Died
          - 223 TO
          - 5 Opted Out
  - 4,199 On ART July-Sept. 2015

  **90% retention overall**
  - 74% for new ART
  - 87% already on ART
  - *6% in-transfers

  Of all those lost from ART program,
  - 51% transferred
  - 42% aged out
  - 7% died
  - 1% stopped ART

  Of those starting year on ART who were lost from ART program,
  - 35% transferred
  - 64% aged out
  - 0.2% died
  - 1% stopped ART

  63% of deaths among those new on ART were in 0-5 yr olds (31% < 1 yr)
Viral Suppression Rate in Children Retained on ART

Kenya (N=461) 69.0%
Tanzania (N=399) 61.2%
Mozambique (N=682) 64.4%

Viral suppression (VS) is defined as viral load <1000 copies/ml

RED: VL≥1000 copies/mL
## HIVDR Prevalence Among Children Failing Treatment

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>VF (n)</th>
<th>Genotyped (n)</th>
<th>HIVDR (n)</th>
<th>HIVDR %</th>
<th>95% C.I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenya</td>
<td>461</td>
<td>143</td>
<td>136</td>
<td>121</td>
<td>89.0%</td>
<td>76.7%-95.2%</td>
</tr>
<tr>
<td>Tanzania</td>
<td>399</td>
<td>155</td>
<td>141</td>
<td>122</td>
<td>86.5%</td>
<td>78.4%-91.9%</td>
</tr>
<tr>
<td>Mozambique</td>
<td>682</td>
<td>243</td>
<td>232</td>
<td>222</td>
<td>95.7%</td>
<td>92.3%-97.6%</td>
</tr>
</tbody>
</table>

**Conclusion:** Most children failed treatment due to HIVDR
ACT: Improving Pediatric & Adolescent HIV Care Performance

• EID task force
  – Systems for specimen delivery/results tracking
  – Synergistic efforts with VL and TB diagnostics (Xpert)
• Improving strategies for testing in OPD
• Prioritization of children/adolescents with viral load scale-up
• Prioritization of children/adolescents in countries adopting Test & Start
• Service delivery models for those stable on ART
  – School-aged children likely to benefit from longer intervals between visits & ARV pick-ups
  – Adolescents?
• HIV impact assessments (HIAs) and Demographic and Health Surveys (DHS) will help refine prevalence estimates and 90-90-90 progress in children and adolescents
• PEPFAR Pediatric-Adolescent Technical Working Group working with Nigeria (non-ACT) technical team to advance EID and pediatric ART progress
ACT – Year 2

• 1st 90: Build on progress in identifying children and adolescents with HIV infection
• 2nd 90: Continue acceleration of rise in number of children/adolescents on ART
  – Boost as countries move to Test and Start
• 3rd: 90: Enhance focus on ensuring retention and virologic suppression
• On track to reach goal of 600,000 children and adolescents on ART in ACT countries by the end of 2016