The Nexus Between 90/90/90 and Epidemic Control

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IAS
July 2018
What is the Global Goal for HIV?

The HIV/AIDS SDG Goal: Control the HIV Pandemic by 2030 90/90/90 by 2020 and 95/95/95 by 2030

The global strategy to achieve these objectives: FAST TRACK STRATEGY

PEPFAR’s role is to support the above in the most effective and efficient manner possible to ensure the above can be sustained
The 90/90/90 has provided a framework for us to monitor and evaluate our program implementation and triangulate to impact at the community level.

Using 90/90/90 we have defined the key gaps by age, gender and risk so we can address the gaps and improve the program.
Epidemics evolve and our job is to understand that and adjust our programs appropriately. Changing the course of the pandemic in the time of urbanization and twice as many 15-24 year olds in SSA entering the age of sexual debut
Youth Wave in Zambia

At the beginning of the Epidemic

- **Zambia - 1990**
  - Male Young Men Population: 781,000
  - Male Young Men PLHIV: 38,000
  - Female Young Women Population: 772,000
  - Female Young Women PLHIV: 66,000

- **Zambia - 2016**
  - Male Young Men Population: 1.6 million
  - Male Young Men PLHIV: 48,000
  - Female Young Women Population: 1.6 million
  - Female Young Women PLHIV: 77,000

Where are we in progress to epidemic control: triangulating program and PHIA data
What Is “Epidemic Control”? And How Do We Define Success?

- PEPFAR defines epidemic control in standard epidemiologic terms, i.e., the point at which the annual number of new infections falls below the total number of deaths of HIV positive patients*

- We support UNAIDS’ 90-90-90 targets (i.e., 90% of PLHIV to be diagnosed, 90% of those diagnosed to be covered on ART, and 90% of those on ART to be virally suppressed) \(0.9 \times 0.9 \times 0.9 = 73\%\) of all PLHIV virally suppressed is a sound alternative way to assess progress towards epidemic control.*

* Though it should be noted that “dying our way into epidemic control” will not be accepted
Zimbabwe

- New HIV infections
- Total deaths to HIV Population
What have we learned?

Dramatic impact is possible if:

The core policies are adopted quickly and continuously evolving based on program needs and gaps

AND we are in constant communication with community and implementing partners to make rapid improvements
Rollout of PHIA Surveys

Source: ICAP, Feb 2018
Achieving Epidemic Control
Progress toward 90/90/90 in Adults

Source: Population-Based HIV Impact Assessments (PHIA) IMPACT Studies, 2016, 2017
Substantial declines in HIV infections in young people and parents surviving in just 5 years

![Graph showing HIV prevalence by age group over two periods: SHIMS 1 (2011) and SHIM 2 (2016-17). The graph displays a decrease in HIV prevalence across all age groups from 2011 to 2016-17.](image-url)
Population VLS more than Doubled Among Adults 18-49 years

- Denominator is all PLHIV ages 18-49 y, irrespective of awareness of HIV status or ART status, with viral load results
HIV Incidence Decreased by 44% Among Adults 18-49 years

- Male:
  - SHIMS 1 (2011): 1.8%
  - SHIMS 2 (2016-17): 0.9%

- Female:
  - SHIMS 1 (2011): 3.2%
  - SHIMS 2 (2016-17): 2.0%

- Total:
  - SHIMS 1 (2011): 2.5%
  - SHIMS 2 (2016-17): 1.4%

Decrease by 44%  

\[ P = 0.012 \]
Dramatic increase in viral load suppression 2015 vs 2017 (Namibia)

- Zambezi 2015 (SISTER): 53% aware of HIV+, 64% on ART, 43% with VLS of HIV+ on ART
- Zambezi 2017 (Prelim. NAMPHIA): 74% aware of HIV+, 71% on ART, 68% with VLS of HIV+ on ART

Total VLS of HIV+ on ART increased from 43% in 2015 to 73% in 2017.
We have achieved substantial declines in the absolute number of new infections and incidence rates with only one gender virally suppressed and <50% of young men or women knowing their status.
KEY GAP: Prevention and treatment Services for Young Men AND Adolescent Girls & Young Women

DREAMS
Risk avoidance and reduction
Sexual violence prevention, PrEP
Finding young men and ensuring diagnosis and treatment

Girls and Young Women

9-24 yo

Uninfected Young Men

15-30 yo

VMMC
Condoms
PrEP

25-35 yo

Well HIV + Young Men

Girls and Young Women

Uninfected Young Men

VMMC
Condoms
PrEP

Well HIV + Young Men
Progress to 90/90/90 in 15 to 24 year olds

Note: Results based on self-report of HIV awareness and ART status (plus ARV testing in Malawi and Zambia), and on viral load testing.
Viral load suppression at the community level

**Aged 15-64 (59)**
- Swaziland: 68%
- Lesotho: 61%
- Zimbabwe: 55%
- Malawi: 59%
- Zambia: 51%
- Uganda: 48%
- Tanzania: 42%

**Aged 15-24**
- Swaziland: 42%
- Lesotho: 42%
- Zimbabwe: 34%
- Malawi: 34%
- Zambia: 26%
- Uganda: 26%
- Tanzania: 28%
Using granular data – PHIA and programmatic data: we have identified the key gaps in the diagnosis of well children and young adults, and reaching key populations and together we are tailoring our response to address the gaps.

Across every age and gender the gap is the first 90 and it is the gateway to effective prevention and treatment services.

Among key populations the gap is variable in some cases by risk where linking to services maybe the largest gap.
Progress and KEY GAPS Towards Epidemic Control:

*Pooled data from Lesotho, Malawi, Namibia, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe from PHIA projects.
Rwanda National gaps still remain, especially in Kigali and Southern province.
### Uneven Progress in Treatment Coverage, Spectrum 2016 Projection

#### ART Coverage

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Coverage (%)</th>
<th>Unmet Need</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>38%</td>
<td>55,949</td>
</tr>
<tr>
<td>25y+</td>
<td>47%</td>
<td>94,245</td>
</tr>
<tr>
<td>Women</td>
<td>59%</td>
<td>186,737</td>
</tr>
<tr>
<td>25y+</td>
<td>82%</td>
<td>126,087</td>
</tr>
</tbody>
</table>

**Legend**

- **Green**: ≥90%
- **Yellow**: 81-89%
- **Orange**: 71-79%
- **Red**: <70%
ART Gap – Program Data and 2018 PLHIV PHIA Estimates

Age and sex

<table>
<thead>
<tr>
<th>Age Group</th>
<th>On ART APR 2017 Proportion (%)</th>
<th>Tx Gap (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-14</td>
<td>646</td>
<td>64</td>
</tr>
<tr>
<td>15-19</td>
<td>506</td>
<td>499</td>
</tr>
<tr>
<td>20-24</td>
<td>2,096</td>
<td>3,195</td>
</tr>
<tr>
<td>25-29</td>
<td>1,293</td>
<td>6,248</td>
</tr>
<tr>
<td>30-34</td>
<td>2,211</td>
<td>3,167</td>
</tr>
<tr>
<td>35-39</td>
<td>3,616</td>
<td>7,344</td>
</tr>
<tr>
<td>40-44</td>
<td>6,284</td>
<td>7,005</td>
</tr>
<tr>
<td>45-49</td>
<td>11,457</td>
<td>19,869</td>
</tr>
<tr>
<td>50+</td>
<td>17,432</td>
<td>25,214</td>
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</tbody>
</table>

Male  Female  Male  Female  Male  Female  Male  Female  Male  Female  Male  Female  Male  Female  Male  Female  Male  Female

0-14  15-19  20-24  25-29  30-34  35-39  40-44  45-49  50+

% PLHIV
Gap to 90-9—90 and 95-95-95 by Age and Sex: Focus Must be on Men and Youth
Highest-Burden Districts

Distribution of coverage gap

<table>
<thead>
<tr>
<th>% PLHIV on ART</th>
<th>gp City of Johannesburg Metropolitan Municipality</th>
<th>gp City of Tshwane Metropolitan Municipality</th>
<th>gp Ekurhuleni Metropolitan Municipality</th>
<th>kz eThekwini Metropolitan Municipality</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>M</td>
<td>M</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>10%</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>F</td>
</tr>
<tr>
<td>20%</td>
<td></td>
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<td>F</td>
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<tr>
<td>30%</td>
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<td>40%</td>
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<td>50%</td>
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<tr>
<td>60%</td>
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<tr>
<td>70%</td>
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<tr>
<td>80%</td>
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<tbody>
<tr>
<td>M</td>
<td>F</td>
<td>F</td>
<td>M</td>
<td>F</td>
</tr>
<tr>
<td>15-24</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25+</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>gp City of Johannesburg Metropolitan Municipality</td>
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<td>kz eThekwini Metropolitan Municipality</td>
<td></td>
</tr>
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Mozambique: Gap to ART Coverage Targets: 90-90-90 and 95-95-95

Data source: Spectrum v5.63, FY17 TX_CURR; program results are imputed for sites missing age bands (non-EPTS sites)
Mozambique

New HIV infections

Total deaths to HIV Population
Ukraine National Cascade
excluding non-government controlled areas in est. PLHIV

- Est. no. PLHIV: 202,328
- Know their HIV+ status = Registered in care, Oct 1, 2017: 139,394 (69%)
- In ART program, Nov 1, 2017: 86,038
- Undetectable VL (<1,000): 44,746 with UVL / 49,497 tested in 2016: 77,434 (90%)
Ukraine: Estimated undiagnosed PLHIV PWID and MSM

Estimated number of undiagnosed HIV-positive PWID-PLHIV

- Dnipropetrovsk oblast: 8000
- Donetsk oblast: 7000
- Odessa oblast: 6000
- Chernihiv oblast: 5000
- Kyiv City: 4000
- Mykolaiv oblast: 3000
- Cherkasy oblast: 2000
- Kherson oblast: 1000
- Poltava oblast: 500
- Zaporizhia oblast: 0

Estimated number of undiagnosed HIV-positive MSM-PLHIV

- Donetsk oblast: 3500
- Kyiv City: 3000
- Odessa oblast: 2500
- Cherkasy oblast: 2000
- Kyiv oblast: 1500
- Zaporizhia oblast: 1000
- Mykolaiv oblast: 500
- Kirovograd oblast: 200
- Poltava oblast: 100
- Chernihiv oblast: 50

- Estimated number of undiagnosed HIV-positive PWID-PLHIV
- Estimated number of undiagnosed HIV-positive MSM-PLHIV
Evolving our programs rapidly using the best science and new tools and evaluating why something is not working
KEY GAP: Prevention and treatment Services for Young Men AND Adolescent Girls & Young Women

DREAMS
- Risk avoidance and reduction
- Sexual violence prevention, PrEP
- Finding young men and ensuring diagnosis and treatment

Girls and Young Women

VMMC

Well HIV + Young Men

15-30 yo
- PrEP
- Condoms

25-35 yo
- HIV

9-24 yo

Uninfected Young Men
FIRST 90

Missing: men under 35, women under 25, well children, infants, and MSM

In the last 4 years we have tested nearly 300M people,

Evolving and optimizing testing strategies
In the Five Acceleration Districts, FY17 Q2-Q4 Yield Dropped Across All Age and Sex Groups

Decreases in yield are highest among the populations we need to reach most.
In Tanzania, ICAP collected data on symptoms and HIV risk on ALL people tested in community setting (December/January)

<table>
<thead>
<tr>
<th></th>
<th>Tested</th>
<th>Positive</th>
<th>% yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV Risk* only</td>
<td>13775</td>
<td>466</td>
<td>3.4%</td>
</tr>
<tr>
<td>Symptoms only</td>
<td>229</td>
<td>35</td>
<td>15.3%</td>
</tr>
<tr>
<td>Symptoms AND risk</td>
<td>182</td>
<td>30</td>
<td>16.5%</td>
</tr>
<tr>
<td>NO symptoms OR risk</td>
<td>12745</td>
<td>32</td>
<td>0.25%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>26,931</td>
<td>563</td>
<td>2.1%</td>
</tr>
</tbody>
</table>
Namibia: Index Testing Led to Increased HIV Case Finding Among Young Men (15-24 yrs)

HTS_POS Trends Among 15-24 year old young men, FY15-17

- 55% increase
- Linear (20-24 yrs)

<table>
<thead>
<tr>
<th></th>
<th>FY15</th>
<th>FY16</th>
<th>FY17</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19 yrs</td>
<td>100</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>20-24 yrs</td>
<td>400</td>
<td>500</td>
<td>700</td>
</tr>
</tbody>
</table>

PEPFAR
U.S. President's Emergency Plan for AIDS Relief
Botswana: I-TECH - Case ID during Standard, After-hours and weekend HTS (32 facilities FY18 Q1-Q2)

Males 25+ comprised 59% of cases identified during weekends, compared to 35% and 39% during standard- and after-hours, respectively. Yield was highest for weekend testing (9.1%), followed by afterhours testing (8.5%) and standard hours testing (4.9%).
Utilizing new testing options – SELF-Testing (HIVST)

- Routinely offer HIVST for partners declining testing
- Integration of HIVST in all testing modalities
- Prioritize men, youth, and workplace distribution for HIVST distribution
- HIVST for key and priority populations
Adjust the intensity of support & testing modalities to reach 95-95-95 by district & by sub-population.
SECOND 90:

same day linkage –

initiating the

asymptomatic on Tx
Namibia: FY17 Tx_New; Time from HIV Diagnosis to ART Initiation, FY17 Q1 –Q4

Cumulative (%) Started on ART

- Day 0:
  - FY17 Q1: 13%
  - FY17 Q2: 47%
- 7 Days:
  - FY17 Q1: 52%
  - FY17 Q2: 61%
  - FY17 Q3: 60%
  - FY17 Q4: 63%
- 30 days:
  - FY17 Q1: 68%
  - FY17 Q2: 78%
  - FY17 Q3: 82%
  - FY17 Q4: 81%
- 90 Days:
  - FY17 Q1: 89%
  - FY17 Q2: 83%
  - FY17 Q3: 89%
  - FY17 Q4: 90%
  - Overall: 93%
Rwanda

<table>
<thead>
<tr>
<th>Category</th>
<th>CD4 &lt;200</th>
<th>CD4 201-350</th>
<th>CD4 351-500</th>
<th>CD4 500+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (n=651)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males (n=263)</td>
<td>7</td>
<td>3</td>
<td>9</td>
<td>9%</td>
</tr>
<tr>
<td>Females (n=388)</td>
<td>3%</td>
<td>9%</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>All &lt;15 (n=55)</td>
<td></td>
<td>0</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>Age 15-24 (n=67)</td>
<td>1%</td>
<td>1%</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Age 25-40 (n=181)</td>
<td>4%</td>
<td>2%</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>Age 40+ (n=348)</td>
<td>2%</td>
<td>4%</td>
<td>28</td>
<td></td>
</tr>
</tbody>
</table>

- CD4 <200: Blue
- CD4 201-350: Orange
- CD4 351-500: Gray
- CD4 500+: Yellow
Why are Special Services Needed for Men?

• Men access ART at later stages of immune suppression
• Men experience higher mortality rates once initiated on ART
  • Men accounted for 41% of PLHIV in SSA and 53% of AIDS-related deaths in 2016
• Lower viral suppression among men compared to women is consistent across all age groups (PHIA 2011-2016)*
• However, if men can get on ART and stabilize, they stay in care and on ART at similar rates as women

* PHIA analysis were based on Malawi, Swaziland, Zambia and Zimbabwe: MER data from PEPFAR; Data from UNAIDS 207 Report: Blind Spot: Reaching out to boys and men. 
Creation of Male Friendly Corners

- Lesotho has the 2nd highest prevalence of HIV worldwide
- 25.6% of adult population (15-49) is living with HIV
- HIV-related disease #1 cause of death
- Adult incidence high
  - 52 new infections occur daily
- Men believed to drive HIV epidemic among AGYW
- Men have poor health seeking behaviour
- Those who seek care do so very late
Closing the Gaps: 8 Pilot Men Friendly corners (June-Dec 2017)

- Total Patients Seen: 22,381
- Total Known: 13,922
- Eligible for testing: 8,459
- Total Tested: 8,244
- Tested Positive: 1,170
- ART Initiation: 1,382
- Declined Test: 215

- 97% of known patients are eligible for testing
- 14.2% of tested patients tested positive
- 118% of tested patients initiated ART
Women and TLD – who is empowered and who are we empowering for decision making?
THIRD 90
Sites targeted for intervention to improve viral suppression

9% of PEPFAR sites reported 100% TX_PVLS and 77% of PEPFAR sites reported TX_PVLS at ≥ 90%

Represents 44 sites. These sites will be targeted for improved viral suppression outcomes.
Challenges in viral suppression among children <15

27% of PEPFAR sites reported 100% TX_PVLS among ped's but 59% reported TX_PVLS at < 90%

Represents 108 sites. These sites will be targeted for improved viral suppression outcomes.
Challenges in viral suppression among young people 15-24 yrs

28% of PEPFAR sites reported 100% TX_PVLS among 15-24 year olds but 72% 15-24 were receiving care at sites with reported TX_PVLS at < 90%

Represents 104 sites. These sites will be targeted for improved viral suppression outcomes.
More than 25% of our program dollars are in prevention and we remain the largest investment in HIV prevention.

The first 90 is also key for prevention.
Preventing infections in young men

15.2M voluntary medical male circumcision

Largest single-year increase (3.5M) in PEPFAR’s history
15.2 Million PEPFAR-Supported VMMCs

Cumulative Number of PEPFAR-Supported Voluntary Medical Male Circumcisions by Country, 2009-2017

- Zimbabwe
- Zambia
- Uganda
- Tanzania
- Swaziland
- South Africa
- Rwanda
- Namibia
- Mozambique
- Malawi
- Lesotho
- Kenya
- Ethiopia
- Botswana

PEPFAR MER FY17Q4 data
Preventing new infections in young women
Greater than 25-40% reduction in new HIV diagnoses among young women in nearly two-thirds (65%) of DREAMS-supported districts since 2015. 14 districts that had a decline of greater than 40%. Importantly, new diagnoses declined in nearly all DREAMS intervention districts.
DREAMS Programming Impact
Group by percent of districts in each country with a greater than 25% decline

100% of Districts

80% of Districts

<50% of Districts

Mozambique, Malawi, Uganda, Zimbabwe, Tanzania, Swaziland, Kenya, Lesotho, RSA, Zambia

Determined, Resilient, Empowered, AIDS-Free, Mentored, Safe
At 38% of total FY2018 PREP_NEW targets at the end of Q2

*Targets for Cote d'Ivoire and Mozambique removed because of data error, countries did not set targets for FY2018.
Thank You!
We are poised to make the impossible possible.