HIV Epidemic Transition: Overview of Existing and Proposed Metrics

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Background

- Zero new infections, Zero AIDS-related deaths, Zero discrimination

- Ending the AIDS epidemic as a public health threat by 2030:
  - Sustainable Development Goals
  - 2016 High Level Meeting Political Declaration
Background

• October 2017 Glion meeting: “Making the end of AIDS real: consensus building around what we mean by “epidemic control”

• March 2018 MTAG meeting on measurement of policy, stigma and discrimination
HIV epidemic transition markers
Metrics for epidemic transition

- **Existing: Incidence rate per 1,000 uninfected (SDG indicator)**
- **Existing: AIDS-related mortality rate per 1,000 population**
- % reduction in new infections from 2010 baseline (HLM target)
  - \( \frac{(\text{new infections}_{2017} - \text{new infections}_{2010})}{\text{new infections}_{2010}} \)
- % reduction in AIDS deaths from 2010 baseline (HLM target)
  - \( \frac{(\text{AIDS deaths}_{2017} - \text{AIDS deaths}_{2010})}{\text{AIDS deaths}_{2010}} \)
- **Ratio of Incidence to Prevalence (IPR)**
  - New infections / people living with HIV
- **Ratio of Incidence to Mortality (IMR)**
  - New infections / total deaths to HIV population
Epidemiological metrics for HIV transition, globally, 1990–2020

**New HIV infections per 1000 population, 1990–2016**

- 2010–2016: 1/1000
- Target: 1/10,000

**Percent reduction in new HIV infections, 2010–2016**

- 2020 Target

**AIDS-related deaths per 1000 population, 1990–2016**

- 2010–2016: 1/1000
- Target: 1/10,000

**Percent reduction in AIDS-related deaths, 2010–2016**

- 2020 Target

**Incidence : Prevalence Ratio 1990–2016**

- 1990–2016 Target: 3/100

**Incidence : Mortality Ratio 1990–2016**

- Target
New HIV infections per 1000 uninfected population, by region, 2010–2016

- **EASTERN AND SOUTHERN AFRICA**
- **WESTERN AND CENTRAL AFRICA**
- **ASIA AND THE PACIFIC**
- **MIDDLE EAST AND NORTH AFRICA**
- **EASTERN EUROPE AND CENTRAL ASIA**
- **LATIN AMERICA**
- **CARIBBEAN**
- **WESTERN AND CENTRAL EUROPE AND NORTH AMERICA**
Percent reduction in new HIV infections, by region, 2010–2016
Incidence Prevalence Ratio (IPR), by region, 2005–2016
Definition: The ratio of new HIV infections to number of people living with HIV

Benchmark: 0.03

Strengths: Identifies an epidemiological relevant shift in the epidemic

Limitations: This metric cannot be disaggregated by sex, age or key population as the metric reflects an entire epidemic including transmission across population groups

Interpretation: The level of incidence that needs to be achieved to result in a shrinking epidemic over time. When this ratio is maintained below 0.03 the epidemic will decline.

The benchmark was chosen based on models that suggest that the average life expectancy for a person living with HIV is 33 years. This is closely linked to the basic epidemiological concept of incidence = prevalence / duration. The mean life expectancy of a PLHIV of 33 years is based on an average of all PLHIV
Incidence Mortality (IMR), by region, 2005–2016
IMR interpretation

Definition: The ratio of new HIV infections to the total number of deaths among the HIV population

Benchmark: 1

Strengths: Identifies a point at which HIV related health care costs will diminish

Limitations: Requires to be interpreted together with a measure of low mortality among people living with HIV or high ART coverage (otherwise IMR<1 could be attained in the presence of high mortality)

Interpretation: When this value is less than one, the size of the population living with HIV decreases, lowering costs of antiretroviral therapy and services
Measures of HIV-related policy, stigma and discrimination
Measures of HIV-related stigma and discrimination

- Participants at the Glion meeting called for impact-level measures of epidemic transition to be packaged with:
  - improved measures of HIV-related stigma and discrimination; and,
  - a “policy cascade” that measures whether an enabling legal and policy environment is in place for efforts to eliminate of stigma and discrimination

- In follow up, the UNAIDS Monitoring Technical Advisory Group (MTAG) convened a task team on 5-6 March to make recommendations on summary measures on stigma, discrimination and an enabling policy environment for effective AIDS responses
March 2018 MTAG meeting

• Many measures already exist, and more data will be generated in the coming years
• There are also data gaps, which are important to show
• Summary measures can build on existing frameworks and summary measures developed for other areas
• Civil society participation is critical. As many were unable to attend the task team meeting, it was agreed to proceed on two tracks:
  – Short-term: develop an interim indicator set to be used by UNAIDS for 2018 reporting
  – Longer-term: Further develop a framework to monitor progress, linked to the development of the Global Compact to End All forms of HIV related Stigma and Discrimination
### Interim indicator framework

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<th>Drivers and facilitators of HIV-related discrimination</th>
<th>Manifestations and outcomes of HIV-related discrimination</th>
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<td>Discriminatory attitudes</td>
<td>Violence</td>
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<td>Discriminatory laws and policies</td>
<td>Stigma and discrimination experienced in healthcare</td>
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Interim indicator set to track policy, stigma and discrimination

- Discriminatory laws and policies:
  - Criminalization
  - Parental consent to access SRH services
  - Spousal consent to access SRH services
  - Mandatory testing

- Discriminatory attitudes towards people living with HIV
- Discrimination experienced by people living with HIV in healthcare settings
- Prevalence of recent intimate partner violence
- Avoidance of healthcare by key populations due to stigma and discrimination
Conclusion
Summary

• New metrics can give additional impetus, by showing progress towards ending the AIDS epidemic

• Important to show both progress in epidemiology (reducing new infections and deaths) and in reducing stigma and discrimination
Next steps

- Reflect metrics in narrative, statements and reports (including 2018 Global report)

- Use metrics in next cycle of target-setting, resource needs and impact estimation

- Improve measurement of incidence and mortality, including for key populations: better and more data are needed to inform estimates of new infections and mortality

- Improve and roll out measurement of policy, stigma and discrimination: instruments for several indicators have only recently been developed/updated; develop trends over time