Concurrent advanced HIV disease and viral load suppression in a high-burden setting: Findings from the 2015–6 ZIMPHIA survey

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Acronyms and explanation of percentages

- ART: antiretroviral therapy
- VLS: viral load suppression
- AD: advanced disease
- WHO: World Health Organization
- PLHIV: people living with HIV

Please note that all percentages reflect sample weighting, rather than the raw sample numbers.
Primary Objectives

• To estimate **national-level annual HIV incidence** among adults aged 15 to 64 years.
• To estimate **provincial-level prevalence of VLS** among HIV-positive persons aged 15 to 64 years.

Secondary Objectives

• Assess CD4+ T-cell (CD4) count distribution, presence of ARVs, and transmitted drug resistance among people living with HIV aged 0 to 64 years.
• Describe the socioeconomic and behavioral risk factors associated with HIV infection

ZIMPHIA overview:
Advanced HIV disease

For adults, adolescents, and children ≥ five years, advanced HIV disease is defined as a CD4 cell count <200 cells/mm³ or a WHO clinical stage 3 or 4 event at presentation for care.
Annual incidence of HIV among persons aged 15 to 64 years in Zimbabwe was 0.47% 
  - 0.33% among males and 0.60% among females 
  - Approximately 33,000 new cases of HIV annually among persons aged 15 to 64 years

Prevalence of HIV among persons aged 15 to 64 years in Zimbabwe was 14.1% 
  - 12.0% among males and 16.0% among females 
  - Approximately 1.2 million persons aged 15 to 64 years living with HIV

Prevalence of VLS among HIV-positive persons aged 15 to 64 years in Zimbabwe regardless of ART status was 59.6% 
  - 53.6% for males and 63.7% for females
PLHIV with CD4 and VL results

- 3,466

PLHIV with AD

- 542

PLHIV with AD + VLS

- 167
Data visualization (1): Advanced disease and gender

% PLHIV with AD
PLHIV, n= 3,466

AD, 17%
Non-AD, 83%

AD: Gender breakdown
Advanced Disease, n= 542:

men 60%
women 40%
Characteristics of PLHIV with advanced disease: crude (cOR) and adjusted (aOR) odds ratios

Bivariate Analysis, n = 542

- Gender (ref: female)
  - Male cOR 2.61 [2.07–3.29]
- ART duration (ref: >2 yrs)
  - <6mos cOR 1.87 [1.50–2.34]
  - 6-24mos cOR 1.38 [1.01–1.87]
- VL status (ref: <1000/mL)
  - Viremia cOR 4.45 [3.49–5.67]

Multivariable Regression (sex, age, VLS, ART duration, CD4 history, religion), n = 542

- Gender
  - Male aOR 2.26 [1.73–2.94]
- ART duration
  - <6mos aOR 0.54 [0.34–0.87]
  - 6-24mos aOR 1.47 [1.06–2.05]
- VL status
  - Viremia aOR 7.74 [5.41–11.09]

**30% of PLHIV with advanced disease were noted to have viral load suppression: weighted extrapolation = 62,000 individuals**
Data visualization (2): Advanced disease and viral suppression

% AD patients with VLS

Advanced Disease, n= 542:

- AD+VLS 30%
- AD-VLS 70%

% VLS patients with AD

Virally Suppressed, n= 2,189

- VLS+AD 91%
- VLS-AD 9%

- AD+VLS
- AD-VLS

- VLS+AD
- VLS-AD
Characteristics of PLHIV with AD+VLS

• Multivariable analysis (sex, age, ART duration, religion)
  • Male aOR 2.45 [1.61–3.72]
  • Age 35-49 aOR 2.46 [1.03–5.91]
  • Age 50+ aOR 4.82 [2.02–11.46]
  • ART duration <6mos 0.46 [0.29–0.76]
  • ART duration 6-24mos 2.07 [1.35–3.17]
Conclusions

• As of 2015-16, a significant proportion (17%) of Zimbabwean PLHIV were suffering from AD
  • 35% of patients with AD self-report an ART duration of >2 years

• Through VL monitoring alone, 30.1% of AD patients may be missed for AD support, given their VLS
  • 8.7% of patients with VLS also have AD

• Without CD4 monitoring, potential for significant delays in appropriately differentiated care
  • Risk of inappropriate categorization as “stable”
Considerations for policy and practice

1. **CD4 monitoring**
   Particularly for high-risk sub-populations like men

2. **Strengthen clinical staging**

3. **Strengthen and accelerate Test/Treat**
   Particularly for high-risk sub-populations like men
   Poor baseline CD4 => poor immunologic recovery

4. **Differentiated Service Delivery to reduce morbidity/mortality**
   WHO AD package: Cryptococcal screening and prophylaxis, LF-LAM screening for TB, timely ART/CTX initiation, intensified adherence support, prioritization for TPT
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References

THANK YOU!!!!