



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

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**HIV LEARNING NETWORK**  
The CQUIN Project for Differentiated Service Delivery

# 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.

# ZIMPHIA overview: data collection Oct 2015-Aug 2016

## 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

# Advanced HIV Disease: WHO criteria

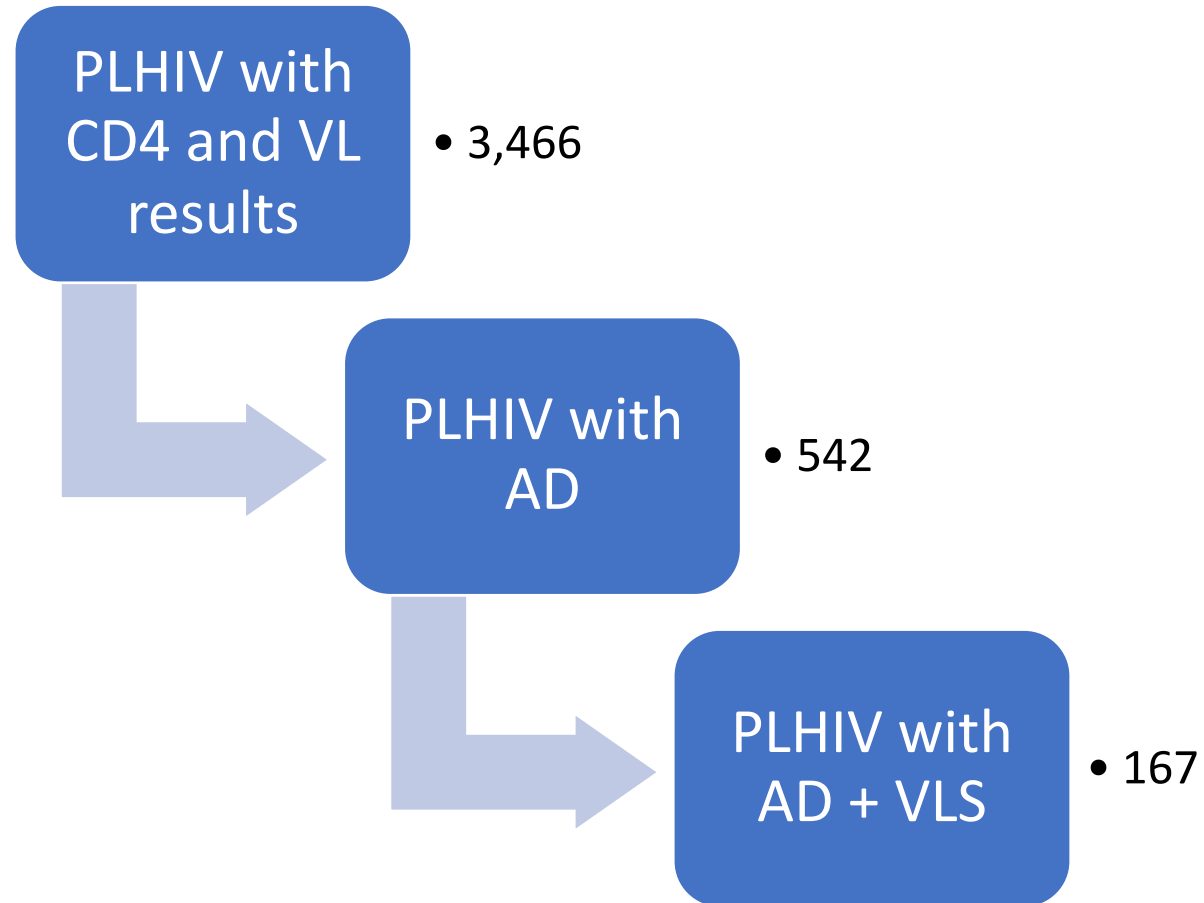
## **Advanced HIV disease**

For adults, adolescents, and children  $\geq$  five years, advanced HIV disease is defined as a CD4 cell count  $<200$  cells/mm<sup>3</sup> or a WHO clinical stage 3 or 4 event at presentation for care.

# ZIMPHIA: summary findings

- 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*

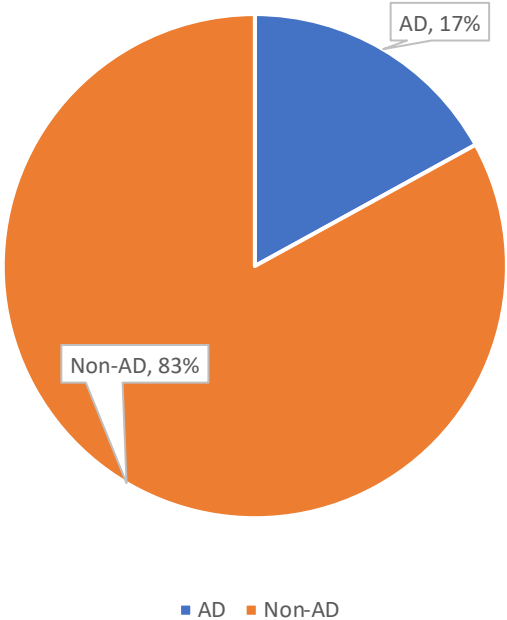
# Analysis flowchart



# Data visualization (1): Advanced disease and gender

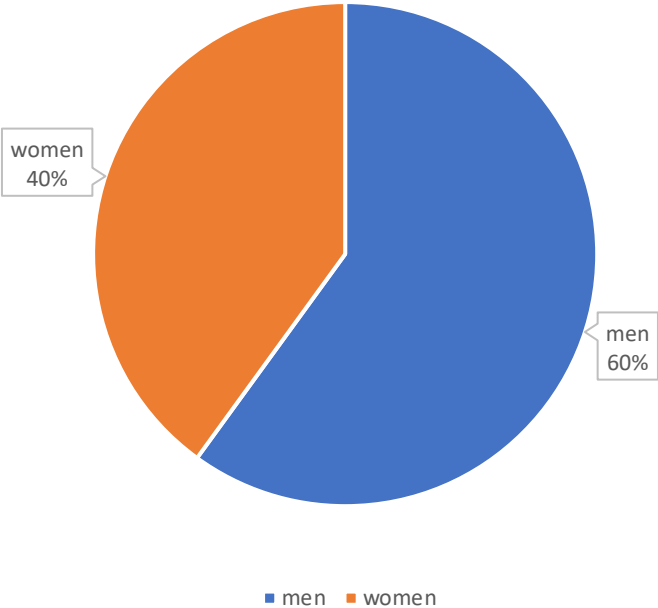
## % PLHIV with AD

PLHIV, n= 3,466



## AD: Gender breakdown

Advanced Disease, n= 542:



# 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]

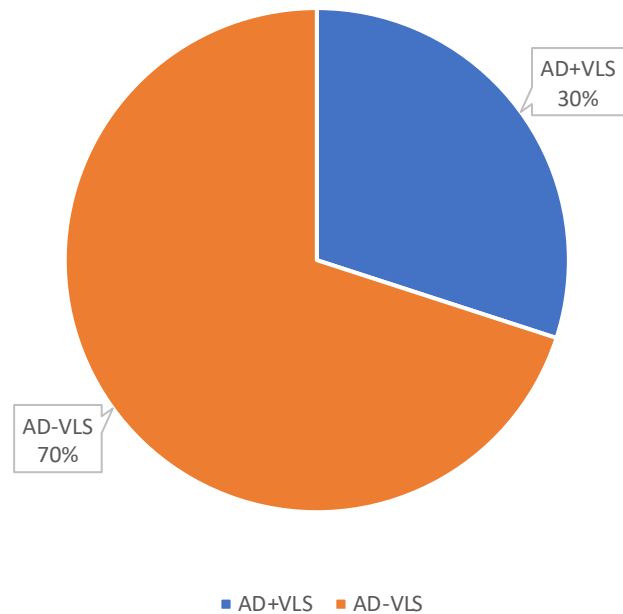
***\*\*30% of PLHIV with advanced disease were noted to have viral load suppression:  
weighted extrapolation = 62,000 individuals\*\****



# Data visualization (2): Advanced disease and viral suppression

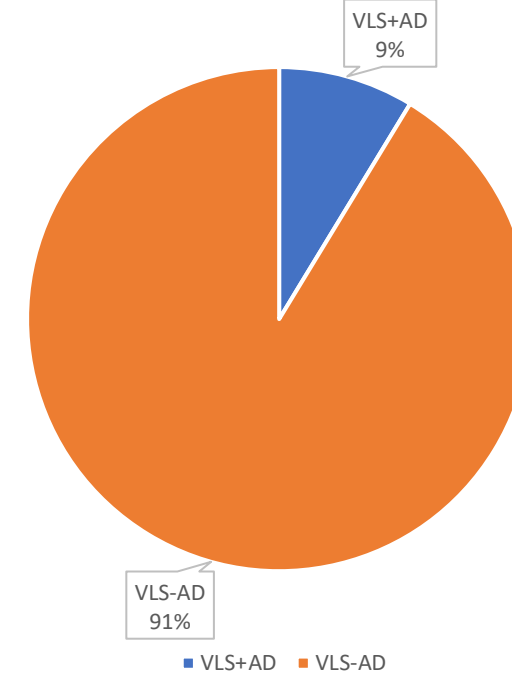
## % AD patients with VLS

Advanced Disease, n= 542:



## % VLS patients with AD

Virally Suppressed, n= 2,189



# 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]

Ref: age 15–24

Ref: ART  
duration >2 yrs

# 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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## **Disclaimer:**

The findings and conclusions in this publication are those of the authors and do not necessarily represent the official position of the funding agencies or any organization represented.

# References

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- 4) <https://www.who.int/hiv/pub/guidelines/advanced-HIV-disease/en/>

# THANK YOU!!!!

