

Innovative Interventions for Sustainable HIV/AIDS Epidemic Control in Zambia in a Quest to end the Pandemic in Africa by 2030

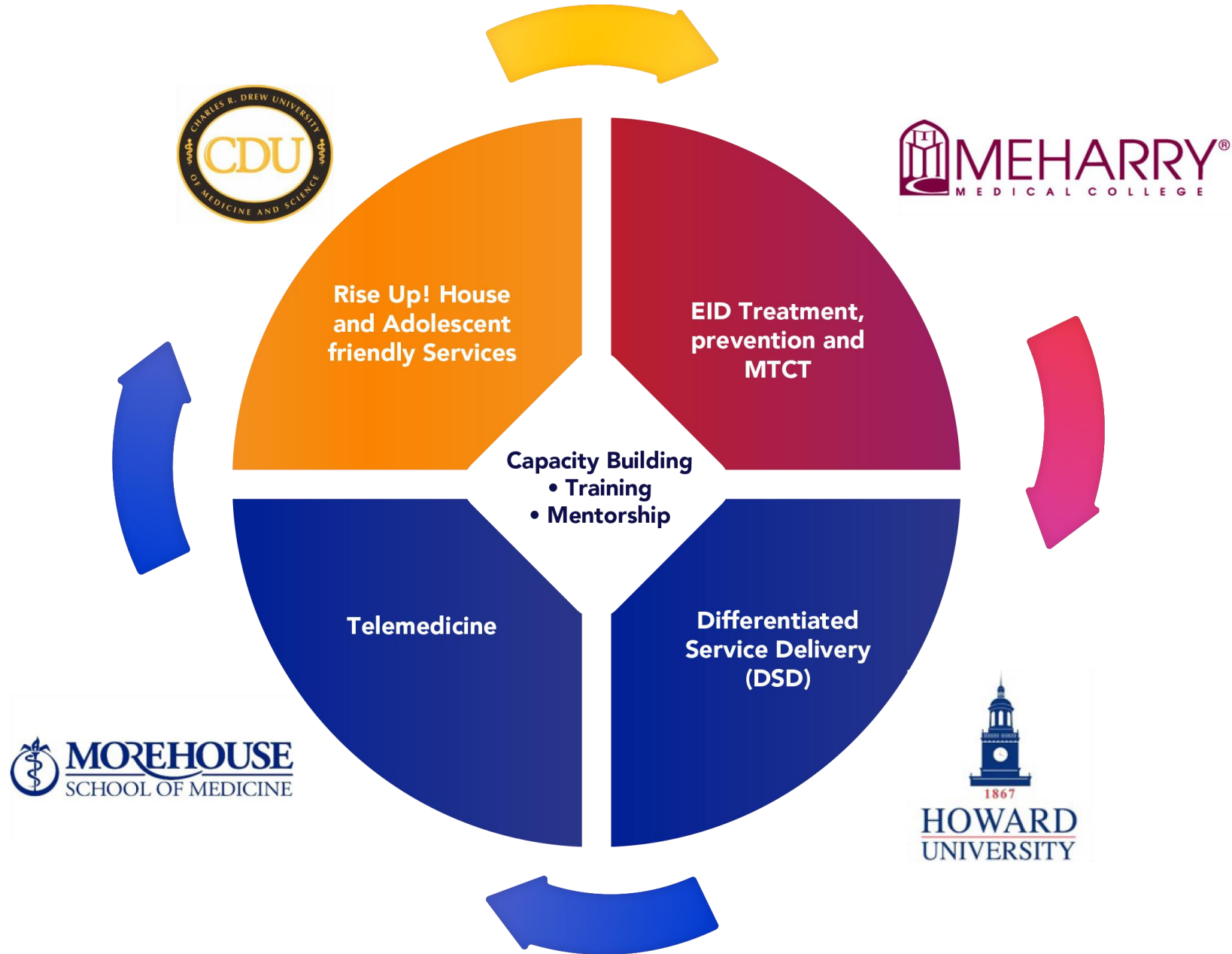
UCLA HIV Grand Rounds

Dr Henry Fomundam-HU Regional Director

18th March 2025



HBCU Global Health Consortium



Outline

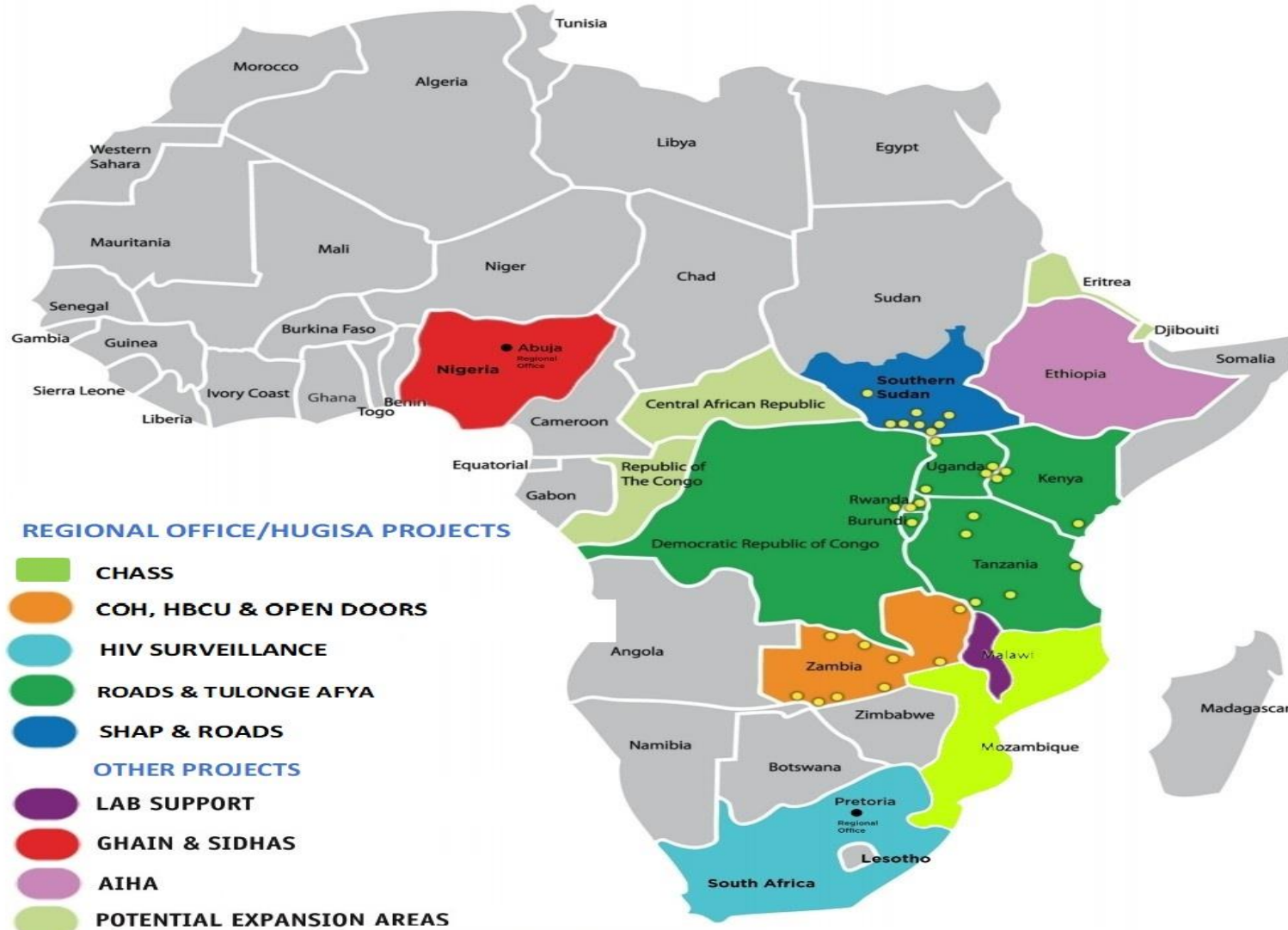
- Overview of HIV/AIDS in Africa/Zambia
- Challenges of HIV/AIDS Funding to maintain Epidemic Control
- Importance of Epidemic Control in ending HIV/AIDS by 2030
- HU DSD-Plus contributing to Epidemic control in Zambia
- Conclusion

Africa/ Zambia Overview-HIV/AIDS

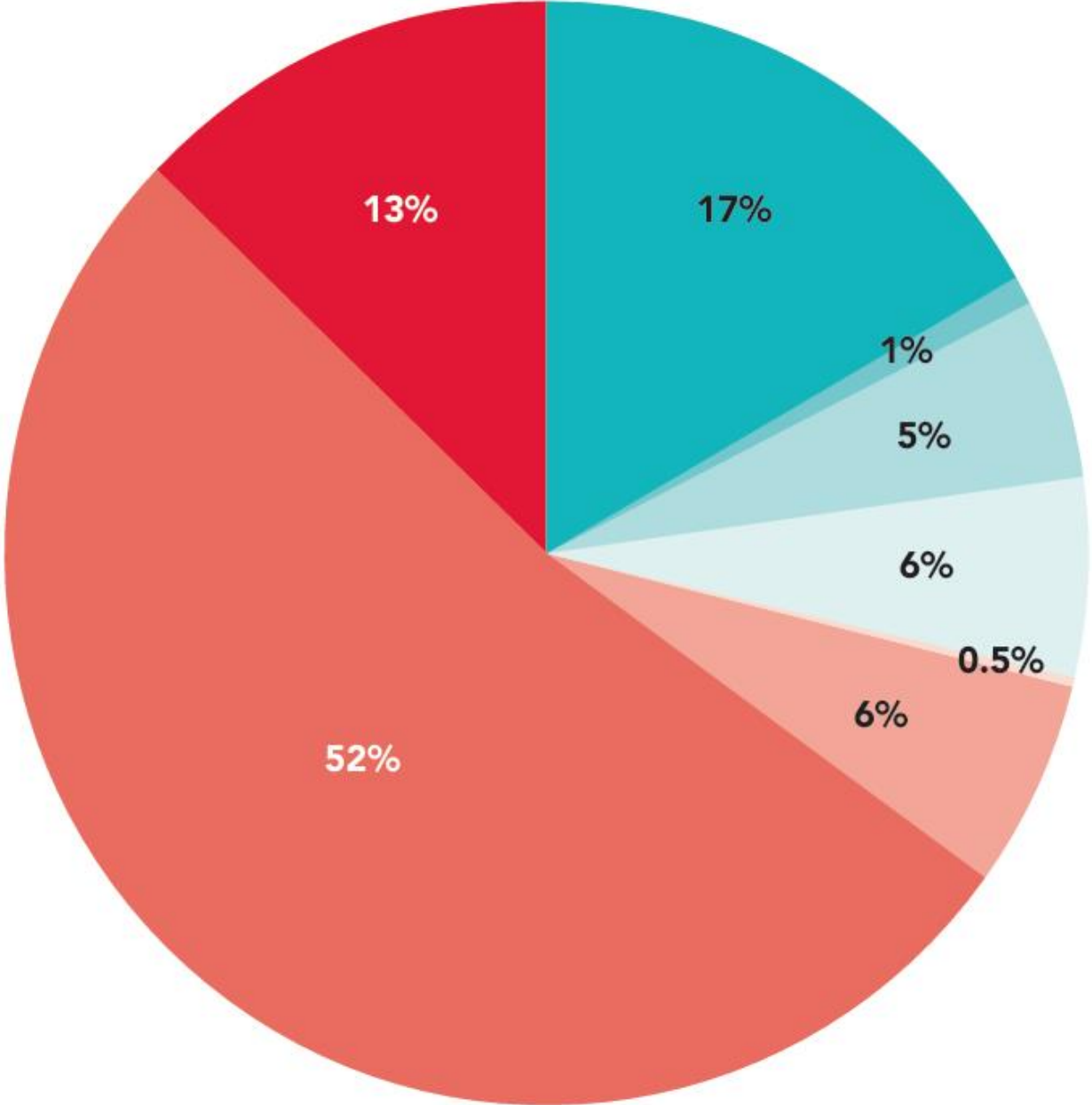


HOWARD UNIVERSITY

HIV AND AIDS PROGRAMS IN AFRICA



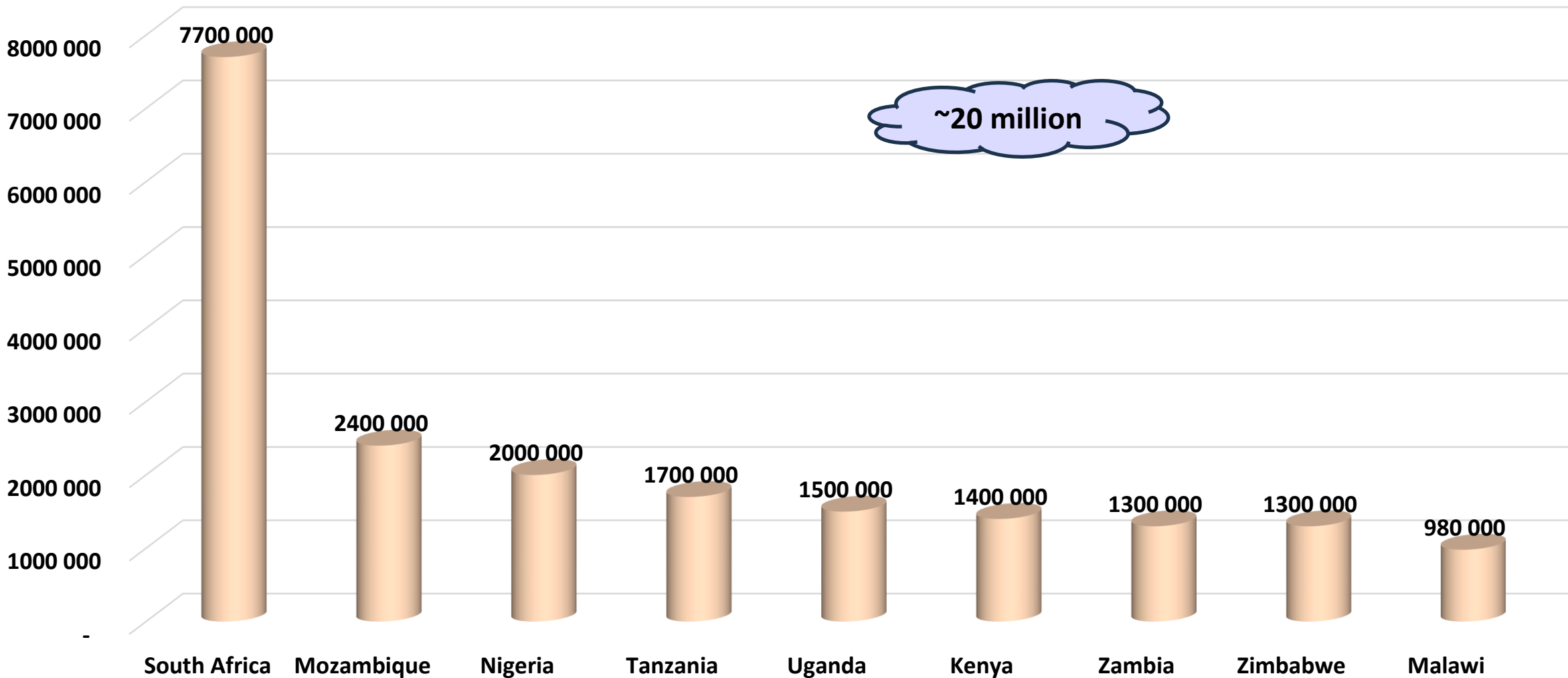
Number of people living with HIV by region, UNAIDS 2023



- Asia and the Pacific
6.7 million
- Caribbean
340 000
- Eastern Europe and central Asia
2.1 million
- Latin America
2.3 million
- Middle East and North Africa
210 000
- Western and central Europe and North America
2.3 million
- Eastern and southern Africa
20.8 million
- Western and central Africa
5.1 million

~ 40 million
26M - Africa

Nine Countries with the highest number of PLHIV in sub-Saharan Region, UNAIDS 2023



Comparison of HIV Statistics Zambia VS. USA-2023

| HIV Statistics 2023 | Zambia - (MoH) | USA - (CDC) |
|-----------------------------------|----------------|-------------|
| Population Size | 21 000 000 | 333 000 000 |
| People with HIV | 1 342 000 | 1 200 000 |
| New HIV infections | 33 000 | 31 800 |
| AIDS-related deaths | 19 000 | 19 300 |
| PLHIV who know their HIV status | 98% | 87% |
| PLHIV on antiretroviral treatment | 98% | 75% |
| PLHIV virally suppressed | 91% | 65% |

Questions to Ponder??

GDP for health, per capita expenditure for health, infrastructure, HR expertise in the US are astronomically more than Zambia.

- Why are the new HIV infections about the same?
- Percentage of PLHIV who know their status is higher in Zambia than in the USA?
- Why is the % of PLHIV on treatment lower in the US than Zambia?
- **Most importantly**, the % of viral load suppression is lower in the US than Zambia??

Global and African Roadmap to Ending HIV/AIDS as a Public Health Threat by 2030



UN Global Support to End HIV/AIDS

- **Sustainable Development Goals (SDGs): SDG 3:** Ensure healthy lives and promote well-being for all at all ages
 - **End the Epidemics of HIV, TB, malaria and NTD and combat hepatitis, waterborne and other communicable diseases.**
- **UNAIDS 95-95-95 targets**
 - Ensure 95% of people living with HIV know their status.
 - Ensure 95% of those diagnosed receive antiretroviral therapy.
 - Ensure 95% of those on treatment achieve viral suppression.

AU Support: “AU's Catalytic Framework to End AIDS, TB, and Eliminate Malaria in Africa by 2030”

- Creation of an **African AIDS Watch Index** for tracking progress.
- Operationalisation of **The African Medicine Agency (AMA)** to ensure drug quality and accessibility.
- Strengthening **the Africa CDC** for disease control and prevention.
- **Health and Well-being:** Ensure healthy and productive lives for all.
- **Universal Access to Healthcare:** Ensuring HIV services are included in broader health coverage for accessibility and affordability.
- **Abuja Declaration on Health:** Increase domestic funding for health to 15% of the National Budget
- **Gender Equality and Empowerment:** HIV/AIDS disproportionately affects women and girls in Africa. So, the need to address gender-based vulnerabilities
- **Youth Engagement:** Young people are disproportionately affected by HIV/AIDS and key to ending the epidemic.



| UNAIDS 95-95-95 | | | | SOURCE |
|------------------------|---------------|---------------|------|-----------------------|
| 1st 95 | 2nd 95 | 3rd 95 | | |
| Zambia | 98 | 98 | 97 | DATIM and COP23Y2 TST |
| Eswatini | 94 | 97 | 96 | AFRO.WHO.INT. 2020 |
| Botswana | 95.1 | 98 | 97.9 | BAIS V. 2021 |
| Rwanda | 95 | 95 | 95 | UNAIDS.ORG, 2023, |
| Tanzania | 98 | 95 | 95 | UNAIDS.ORG, 2023, |
| Zimbabwe | 95 | 95 | 95 | UNAIDS.ORG, 2023, |

Epidemic Control & Sustainability : A Dynamic Process that can be Influenced by Several Factors:

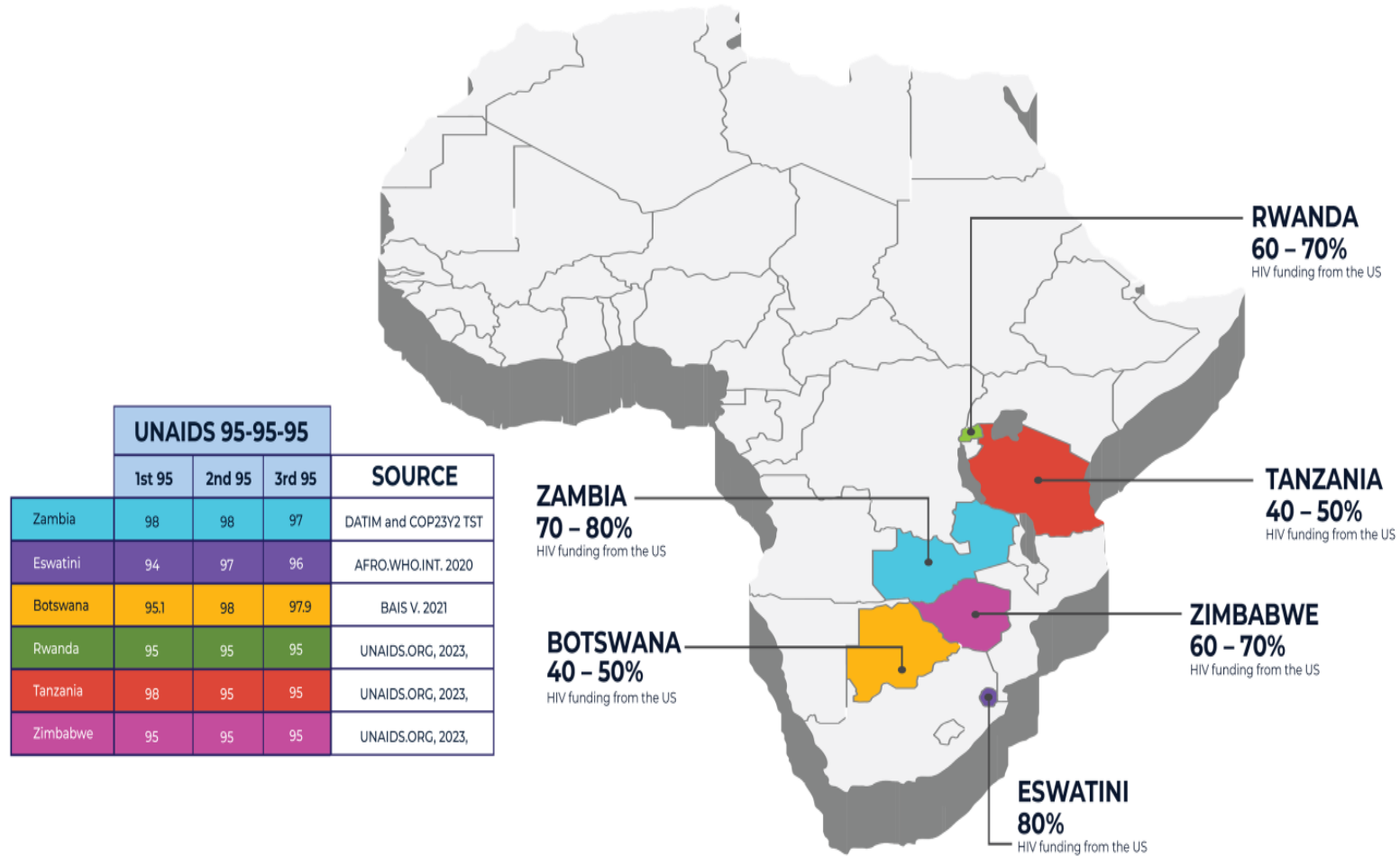
- Human & financial resources
- Country stability (conflicts and wars)
- Infrastructure
- Consistent and reliable supply chain.
- Government will
- Development/Support Partner sustainable engagement

Challenges of HIV/AIDS

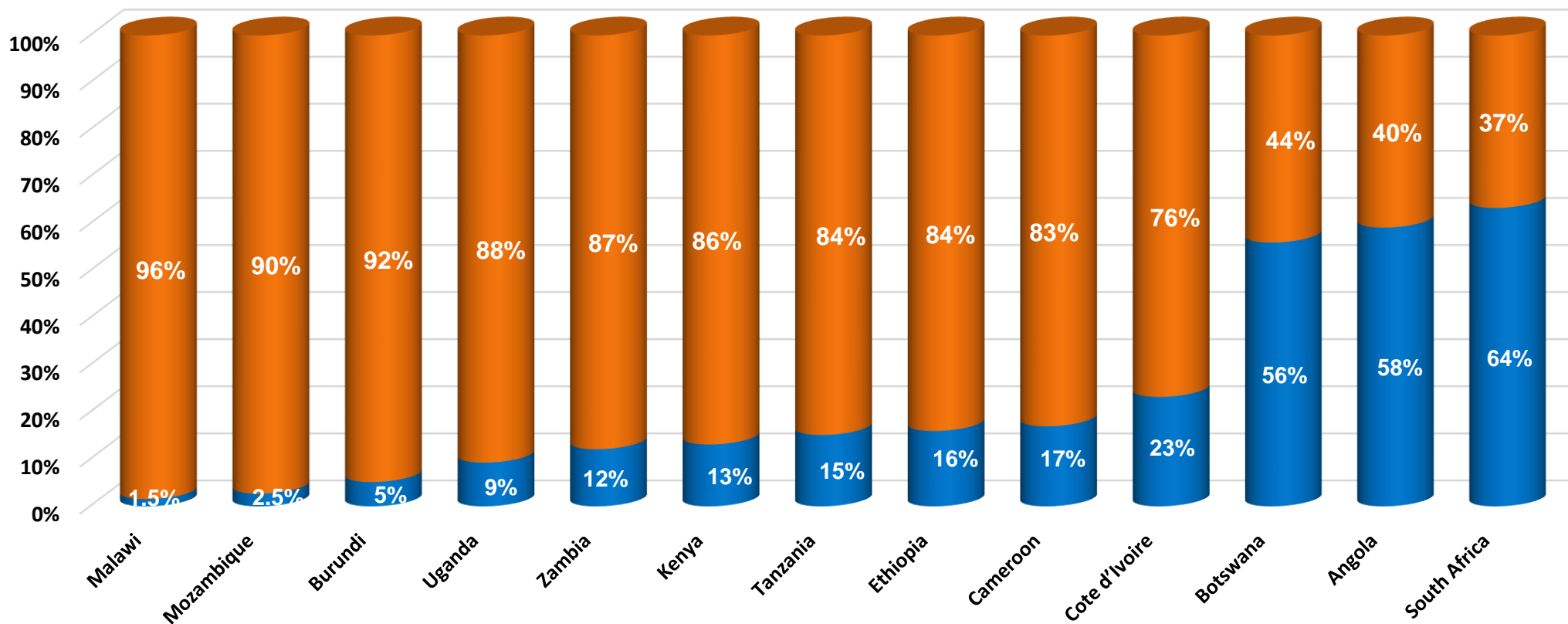
Funding to Maintain Epidemic Control



Achieving UNAIDS 95-95-95 Targets and the Proportion of U.S. Funding Contribution



Contributions to HIV Funding in African Countries by Funder (%), 2020



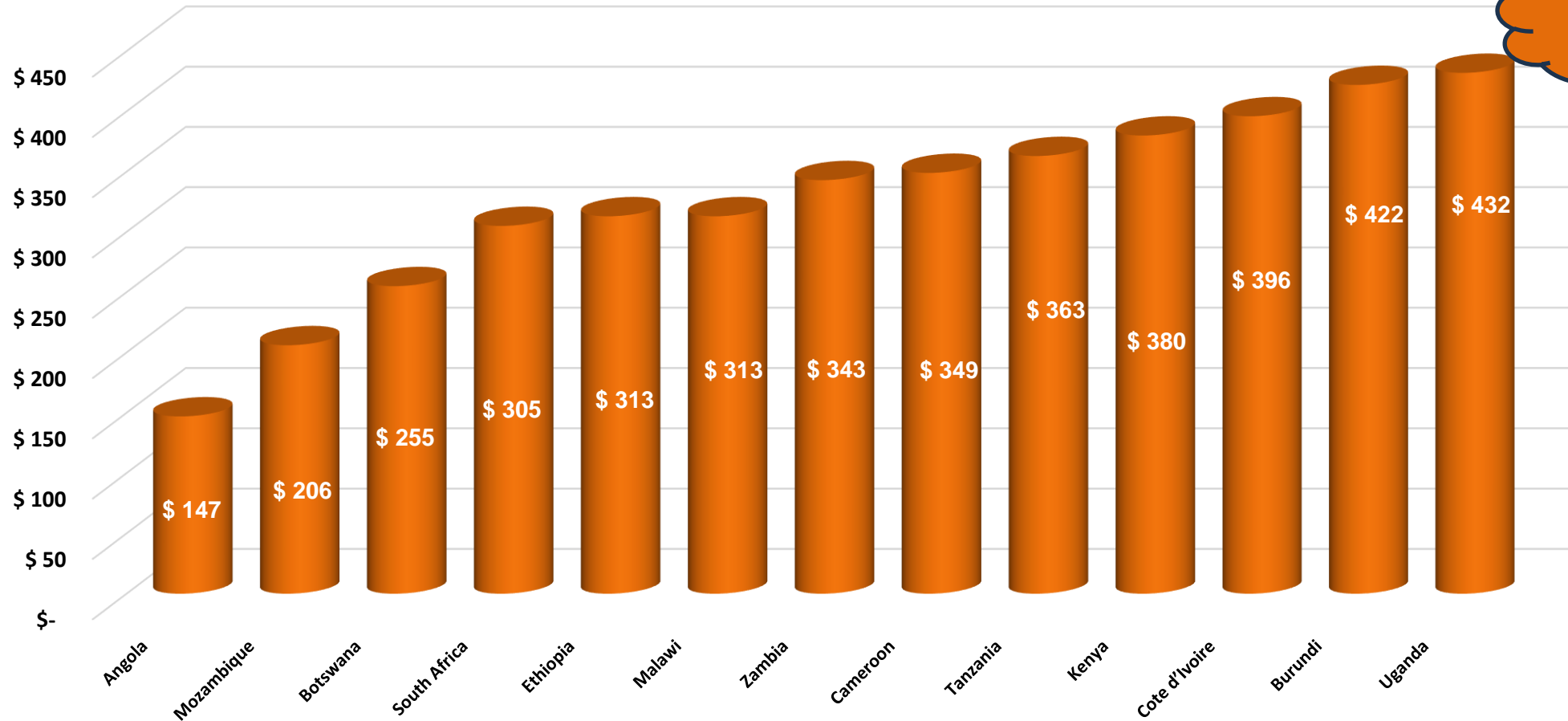
Donors: PEPFAR, Global Fund and Other Sources

■ Domestic Funding ■ Donor Funding

- South Africa (64%), Angola (58%) and Botswana (56%) contributed more than 50% of the funding for their HIV program
- **Malawi (96%), Burundi (92%) and Mozambique (90%) are the countries with the highest dependency on donor fund**

Global Health Policy K. Moss, A. Rouw, and J. Kates 2022

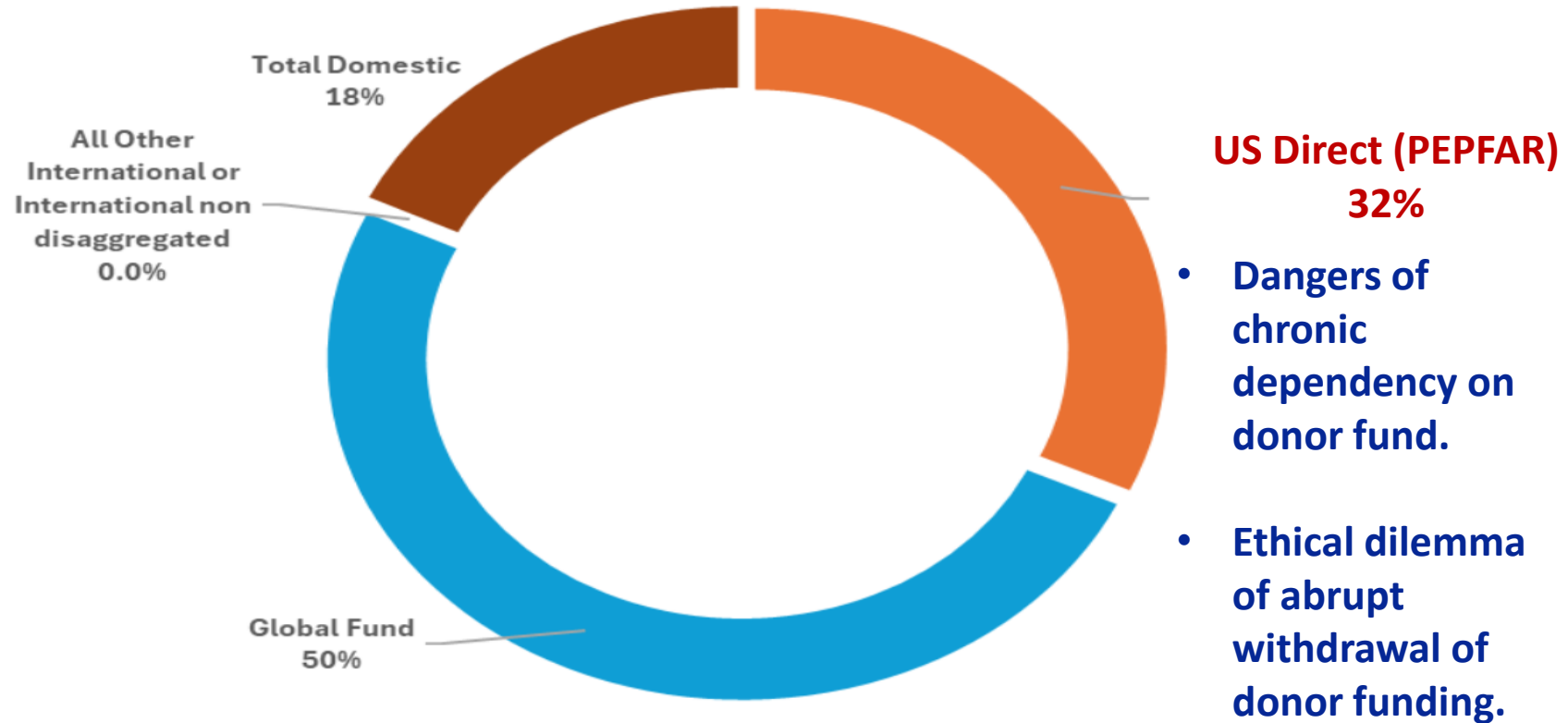
Average HIV Funding Per Person Living with HIV, 2020



The USA spends **273 times** more money than Angola and **93 times** more than Uganda on persons living with HIV

[Global Health Policy :K. Moss, A. Rouw, and J. Kates 2022](#)

Estimated financing landscape for Antiretroviral medicines and other HIV medicines in 33 low-and-middle income countries (UNAIDS 2025)



Impact of the USA Foreign AID Freeze on HU Current Projects Countries

Health Workers

- **Financial hardships**, health workers deployed far from their homes had to find transport to relocate. Others couldn't afford to relocate because they had already used the January salary on rentals.
- **Psychological Trauma**, some health workers were traumatised because they didn't have time to prepare, which may affect their performance.
- **Increased workload**, the MoH health workers workload increased because the NGOs workforce stopped working.

Project equipment

- Difficult to manage and ensure safety of project equipment in distant areas.
- No hand-overs of project equipment.



Impact of the USA Foreign Aid Freeze in Malawi's Health Service Delivery

Some facilities stopped providing:

- HIV Testing Services, ART and Viral load monitoring services
- Some Non-communicable diseases (hypertension, Diabetis)
- Community health services (maternal and child health services)
- Digital Health-Clients' health information was inaccessible in some MoH facilities.
- Long queues of clients to access services, since the NGOs health workforce stopped working.
- Financial burden to access services increased, clients had to travel to other communities/ facilities to access services

Impact of the USA Aid Freeze on the DSD-Plus in Zambia

- **Collapse of the proactive appointment system**, leading to delays and facility congestion.
- **Prolonged waiting time and reduced capacity to manage patient demand** due to inadequate staffing for service provision.
- **Inconsistent documentation and updating of registers and SmartCare**, causing a backlog of cases and hindering effective patient tracking and management.
- **Disruptions in patient flow**, resulting in delays in care delivery and reduced operational efficiency.
- **Significant reduction or complete halt of retention activities**, such as reminders and follow-up calls, leading to interruptions in treatment (IIT) and potential negative outcomes for patient health.

Epidemic Control & Transition for Sustainability

(Goal for each African Country)

Epidemic Control Status for PEPFAR Countries

Measurement of Incidence to mortality ratio (IMR) and 73% viral load suppression (VLS)

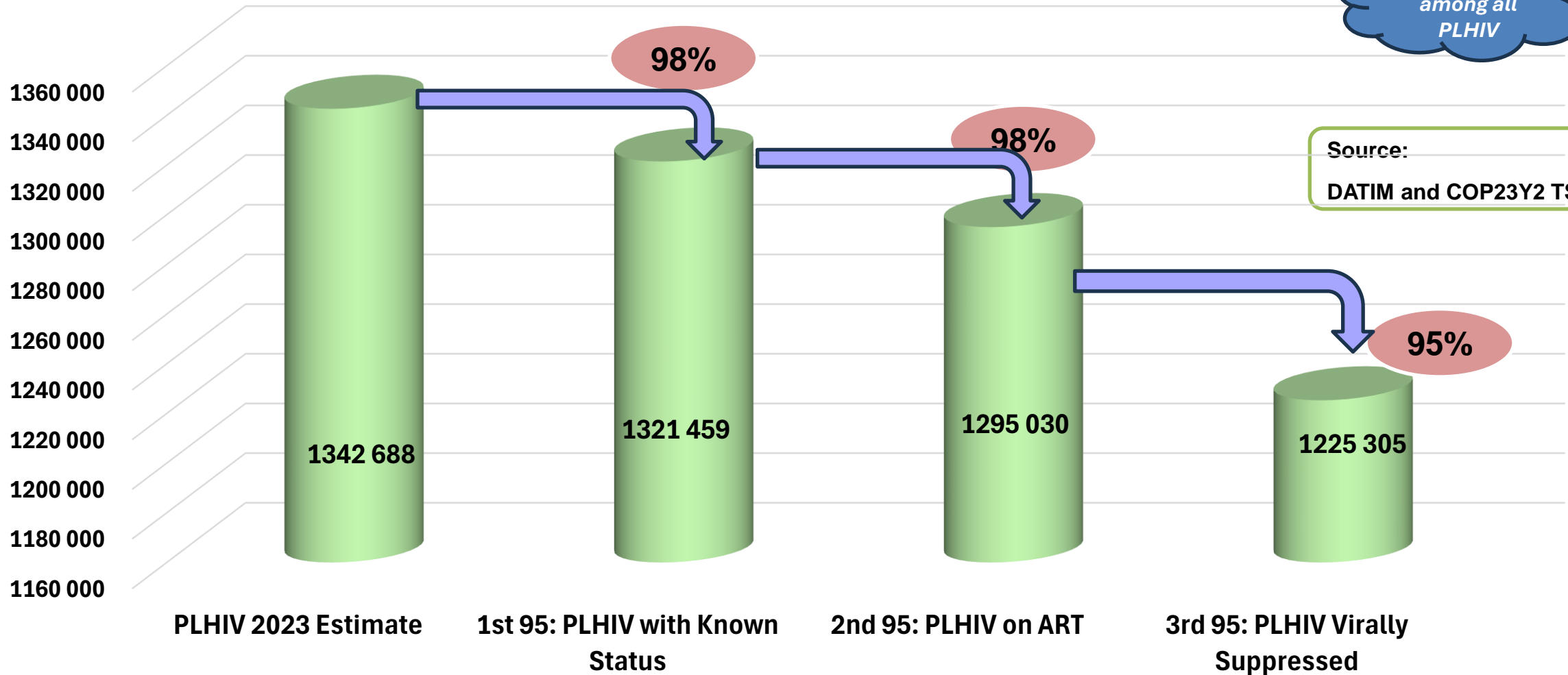
- **At Epidemic Control** – new infections and deaths are low and declining, and the global target for people virally suppressed has been reached
- **Near Epidemic Control** – new infections and deaths are low and declining, but the global target for people virally suppressed has not yet been reached
- **Not Near Epidemic Control** – new infections and deaths are not declining, and in some cases increasing, and the global target for people virally suppressed has not yet been reached
- **Transition for Sustainability to Maintain Epidemic Control** – Is the integration of the health intervention by an implementing partner to ensure sustainability in a health system beyond the funding cycle

UNAIDS 95-95-95 targets

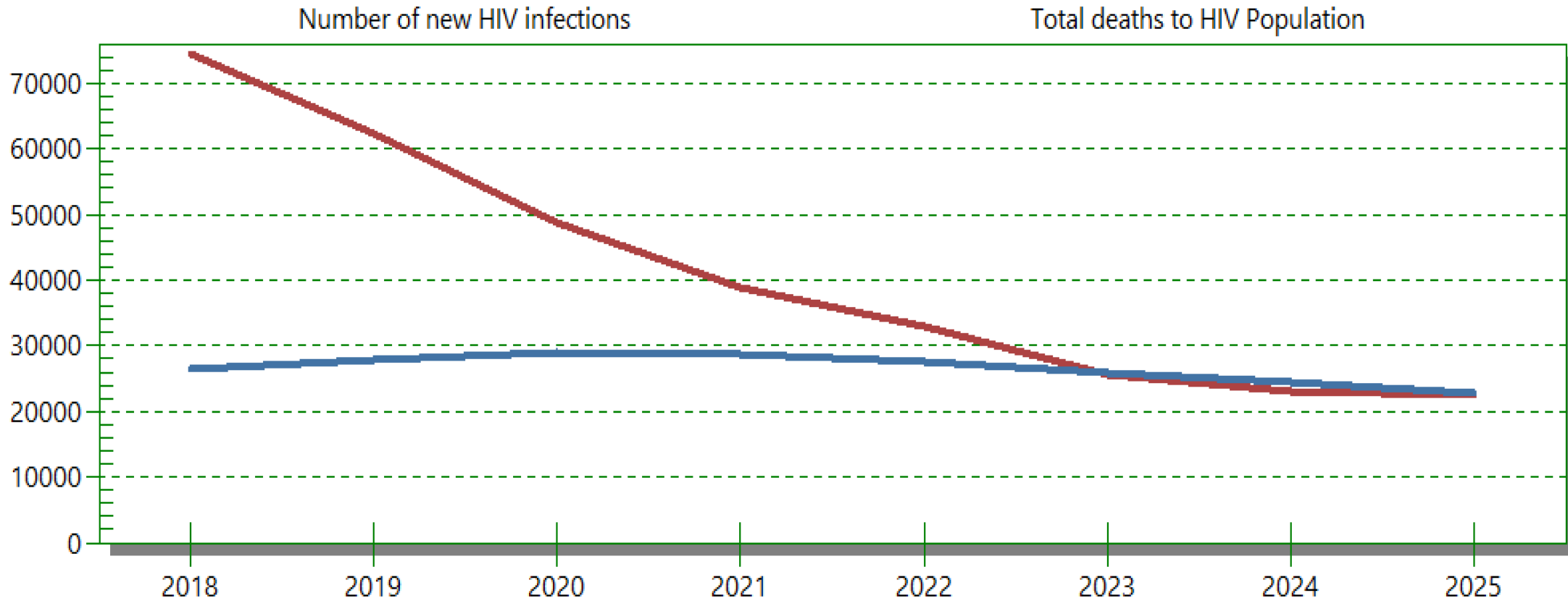
- 95% of all people living with HIV know their HIV status
- 95% of all people diagnosed with HIV receive sustained antiretroviral therapy, and
- 95% of all people receiving antiretroviral therapy have viral suppression

Zambia achieved the UNAIDS 95-95-95 targets in 2023

91% VL suppression among all PLHIV



Status of the Epidemic Curve (UNAIDS 2024 *Estimate: Spectrum*)



| | | | | | | | | |
|--------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|
| Number of new HIV infections | 74555.49 | 62203.05 | 48783.01 | 38730.13 | 33032.77 | 25659.84 | 23058.84 | 22568.78 |
| Total deaths to HIV Population | 26342.49 | 27933.43 | 29008.08 | 28772.04 | 27702.53 | 25856.67 | 24513.49 | 22669.09 |

Sustainability Readiness Score Vs Epidemic Control

| | Countries | Sustainability Score | Epidemic Control Status |
|--|--------------|----------------------|-------------------------|
| | Zambia* | 5 | At Epidemic Control |
| | Botswana | 9 | At Epidemic Control |
| | Malawi | 7 | At Epidemic Control |
| | Namibia | 8 | At Epidemic Control |
| | Ethiopia | 1 | At Epidemic Control |
| | Zimbabwe | 3 | At Epidemic Control |
| | Nigeria | 3 | At Epidemic Control |
| | Uganda | 5 | Not At Epidemic Control |
| | South Africa | 10 | Not At Epidemic Control |

Sustainability Indicators: (Commitment to HIV treatment, Basic Health System strengthening, Economic commitment, commitment to health care) *Not indicative of Epidemic Control*

- Have achieved at least 50% of the sustainability indicators and are at epidemic control*
- Countries that have not achieved at least 50% of the sustainability indicators, but are at epidemic control*
- Countries that are not yet at epidemic control, but have higher sustainability score **eg South Africa***

Programmatic Priorities in Achieving the Epidemic Control

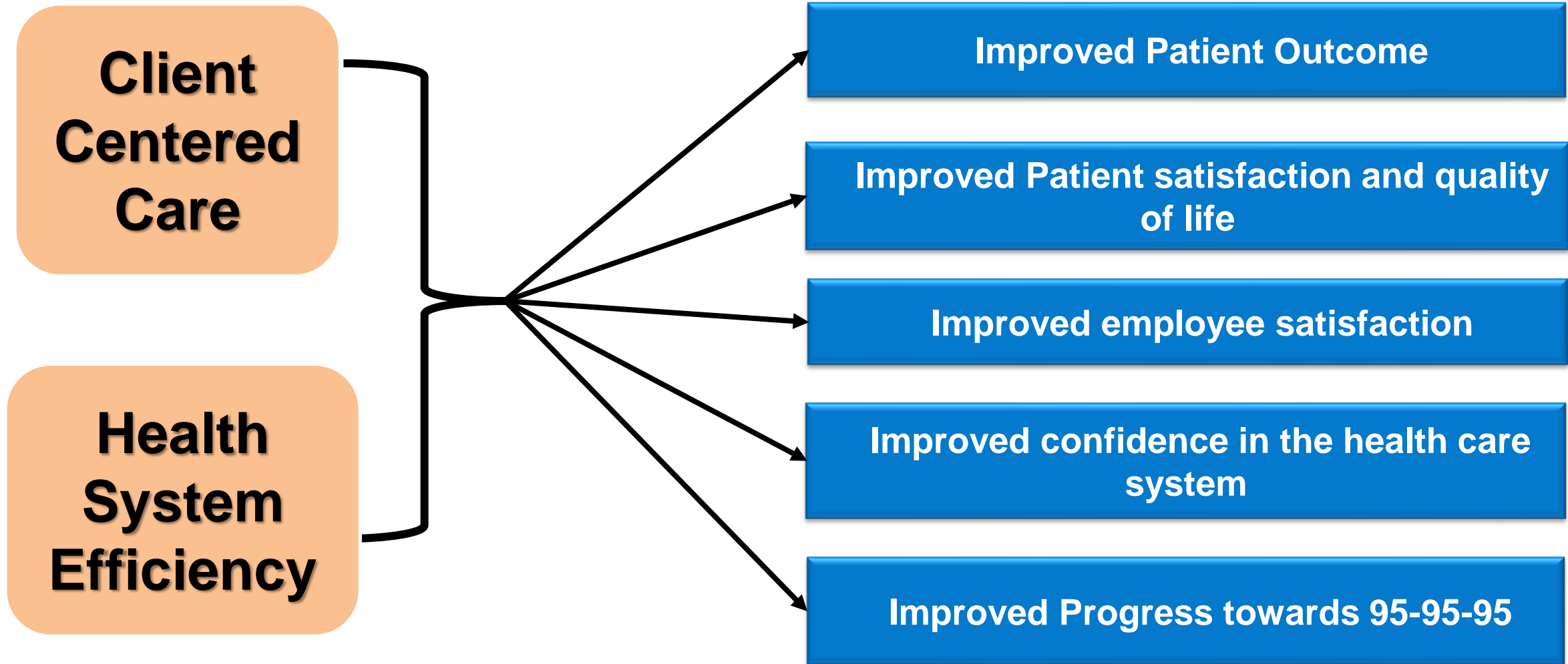
- **Scale up of index testing & linkage** to care including same-day linkage
- **Integrating PrEP with Early ART Initiation**
- **Nurse-led models of HIV care (Task Shifting)**
- **Development of long-acting CAB** plus a broadly neutralizing antibody (bNAb) for maintenance of viral suppression
- **Strengthening Community Engagement** - 6% of global AIDS resources to be allocated to social enablers e.g., advocacy, community and political mobilization, community monitoring, and human rights programming.
- **Intensified efforts to find** and test men of all ages and scale services for men.
- **Continued investment in the AYP** projects for girls/ boys and young women/ men
- **Removal** of formal and informal user fees
- **Improved** financial & human resources
- **Apply Differentiated Service Delivery/ care**

HU Contributions to Epidemic Control in Zambia

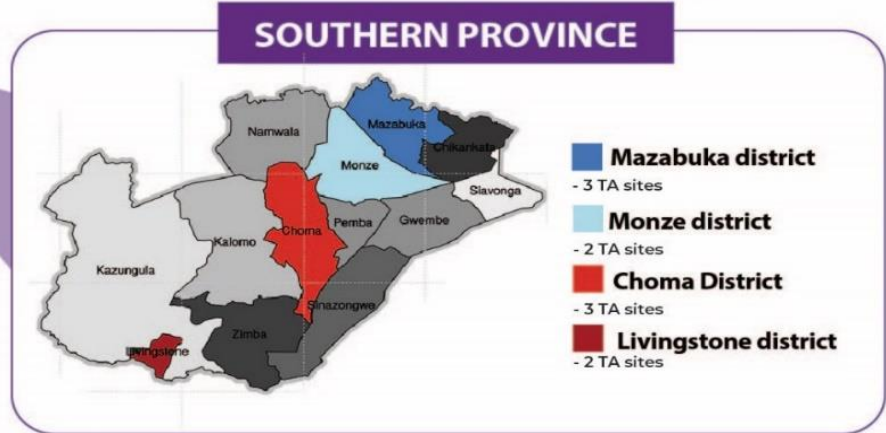
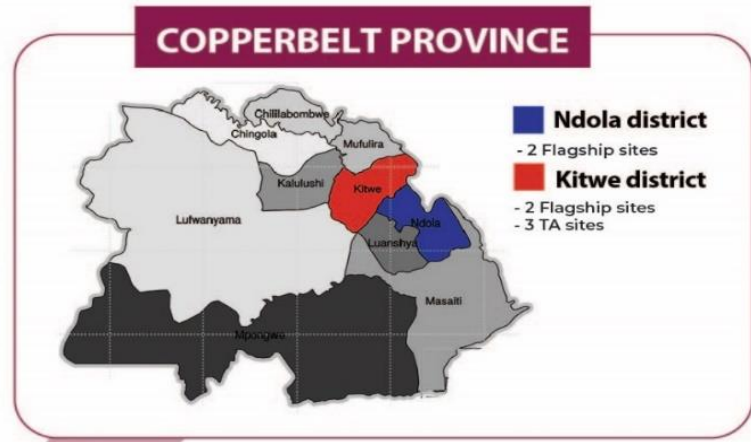
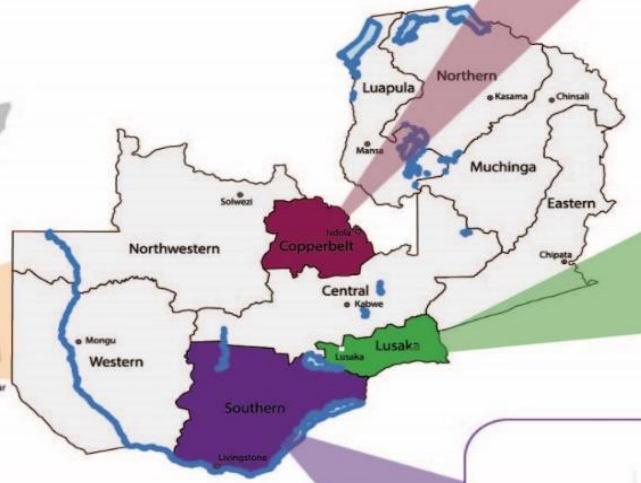
Differentiated Service Delivery (DSD)

DSD is a **recipient of care-centered approach** that simplifies and adapts HIV services across the cascade to reflect the preferences and expectations of various groups of people living with HIV (PLHIV) while **reducing unnecessary burdens on the health system.**

Core Principles of the HU *DSD-Plus* Model



DSD-Plus coverage in Zambia



Baseline: Areas of Improvement Identified by Joint Assessment Team in 2017

- No functional **referral systems** and policies
- Delayed **laboratory processes** and lengthy waiting time for results
- Inadequate **data** capturing, storage and utilization
- **Severe congestion** in waiting areas and **prolonged waiting time**
- **Low Linkage** to and **retention** in ART care (**High lost to follow-up**)
- Low compliance with **viral load testing** and **suppression**
- Frequent **stock outs** of ARVs and other commodities
- No documentation and reporting of **adverse drug reactions**
- Severe **shortages of Health Care Workers**
- Limited **training and mentorship** opportunities to improve quality of care

DSD-Plus Program Objectives

- 1. Reduce congestion and waiting time** to access HIV treatment and care services (*Proactive appointment system, multi-month dispensing of ARVs and a one-stop-shop fast-track DSD clinic*).
- 2. Improve adherence to ART regimen** (*enhanced adherence counseling, tracing of clients who miss scheduled appointments and community ART dispensing*).
- 3. Improve treatment continuity (Retention)**
- 4. Improve VL coverage and VL suppression rate**
- 5. Improve identification/management of ADRs and advanced management of complicated HIV cases.**
- 6. Improve linkage to ART care** by conducting index tracing and safe and ethical testing, and discordant couple's tracing and testing.
- 7. Build capacity of clinical staff** on the implementation of DSD-*plus*, pharmacovigilance, and on the management of complicated ART clients.

HU ART *DSD-Plus* Contribution to 95-95-95

Prevention & Testing

95
0

- TPT
- HIV education and Counselling
- Condom distribution
- Refer at risk clients for PrEP evaluation

Diagnosis & Linkage

95
1st

- Index testing
- Post counselling referrals
- Confirmatory testing for discordant couples

Treatment & COT

95
2nd

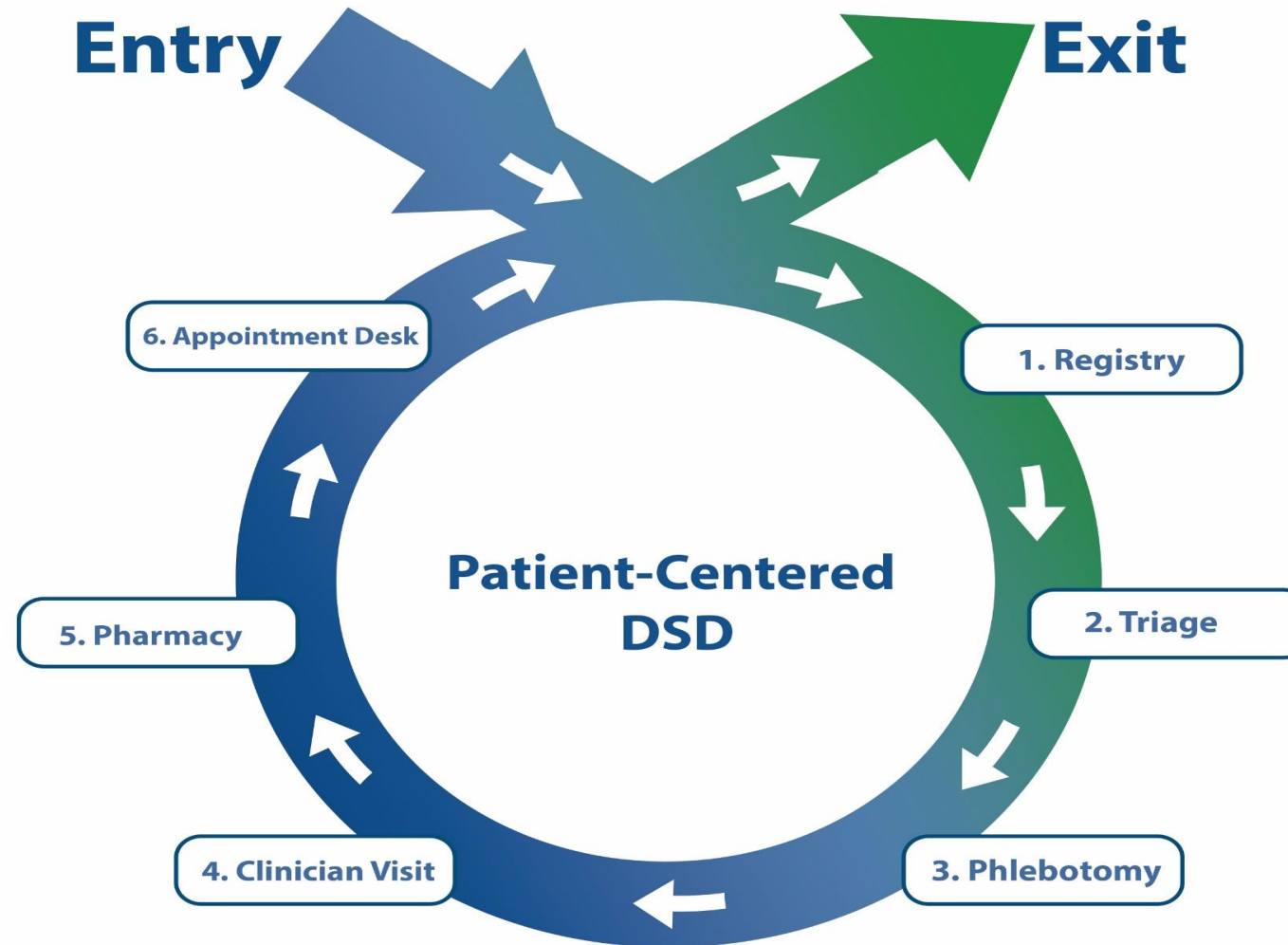
- Reduced congestion and waiting time
- Prevention of Interruption in Treatment (IIT).
- Extended hours for ART services
- Improved same day ART initiation
- Referral for ART initiation

Adherence & VL Suppression

95
3rd

- Improved adherence counseling
- Improved pharmacovigilance to increase ART adherence
- Support VL testing and documentation
- Same day follow-up for missed appointments

DSD-Plus Patient Flow at the Hospitals



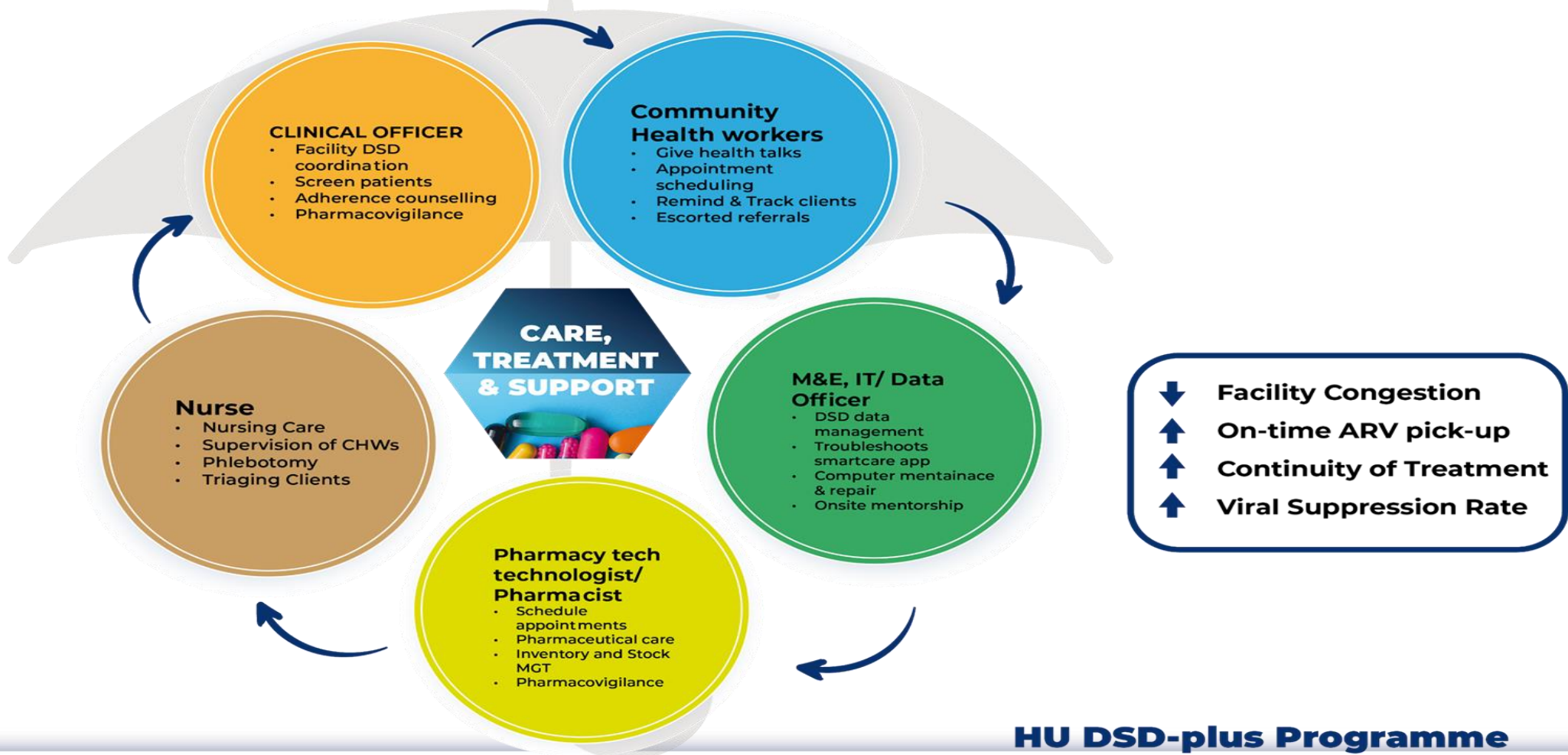
Consolidated DSD-*plus* Service Points



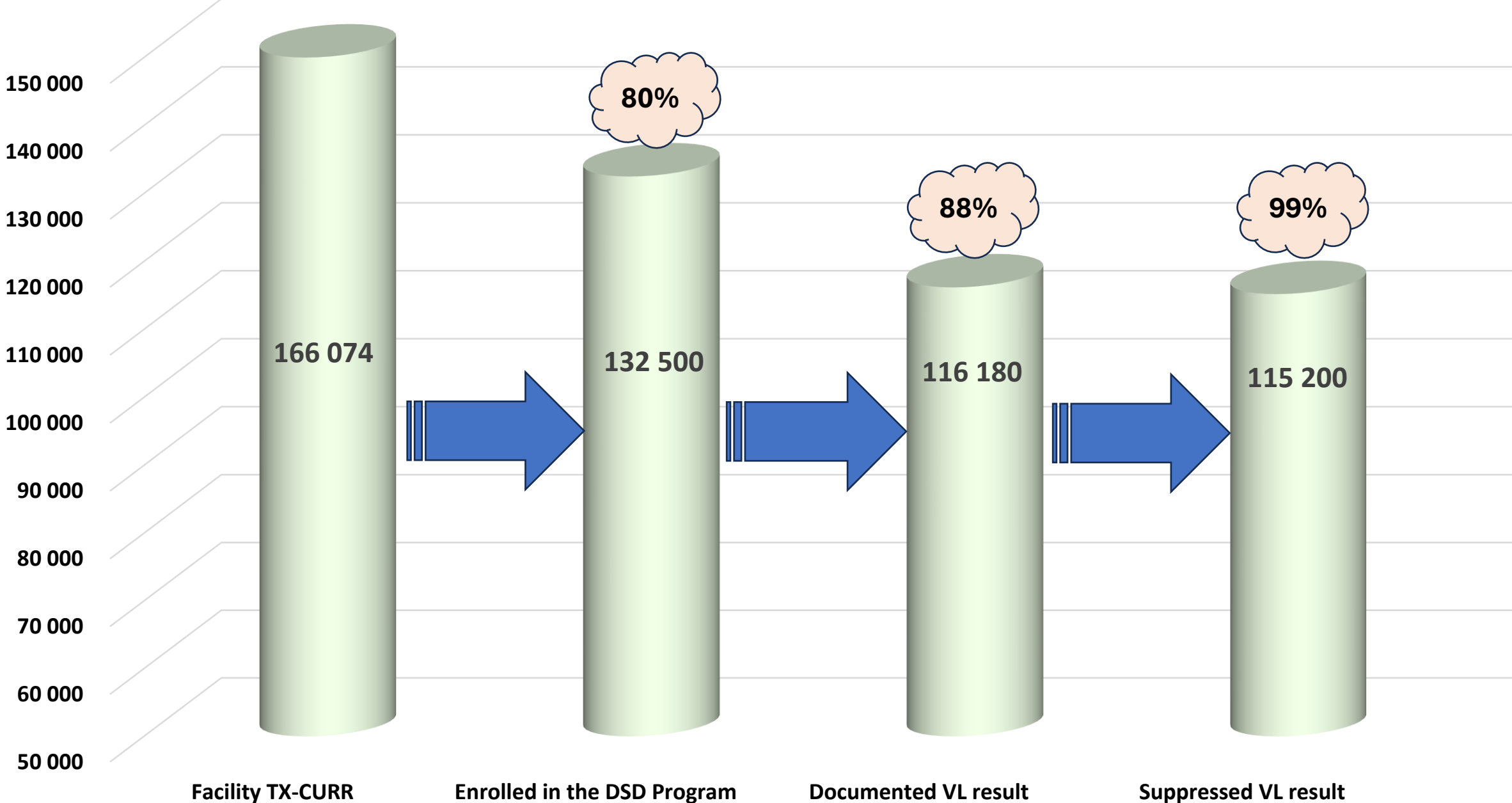
Key:  Old Patient Flow

 New Patient Flow (HU DSD-*plus*)

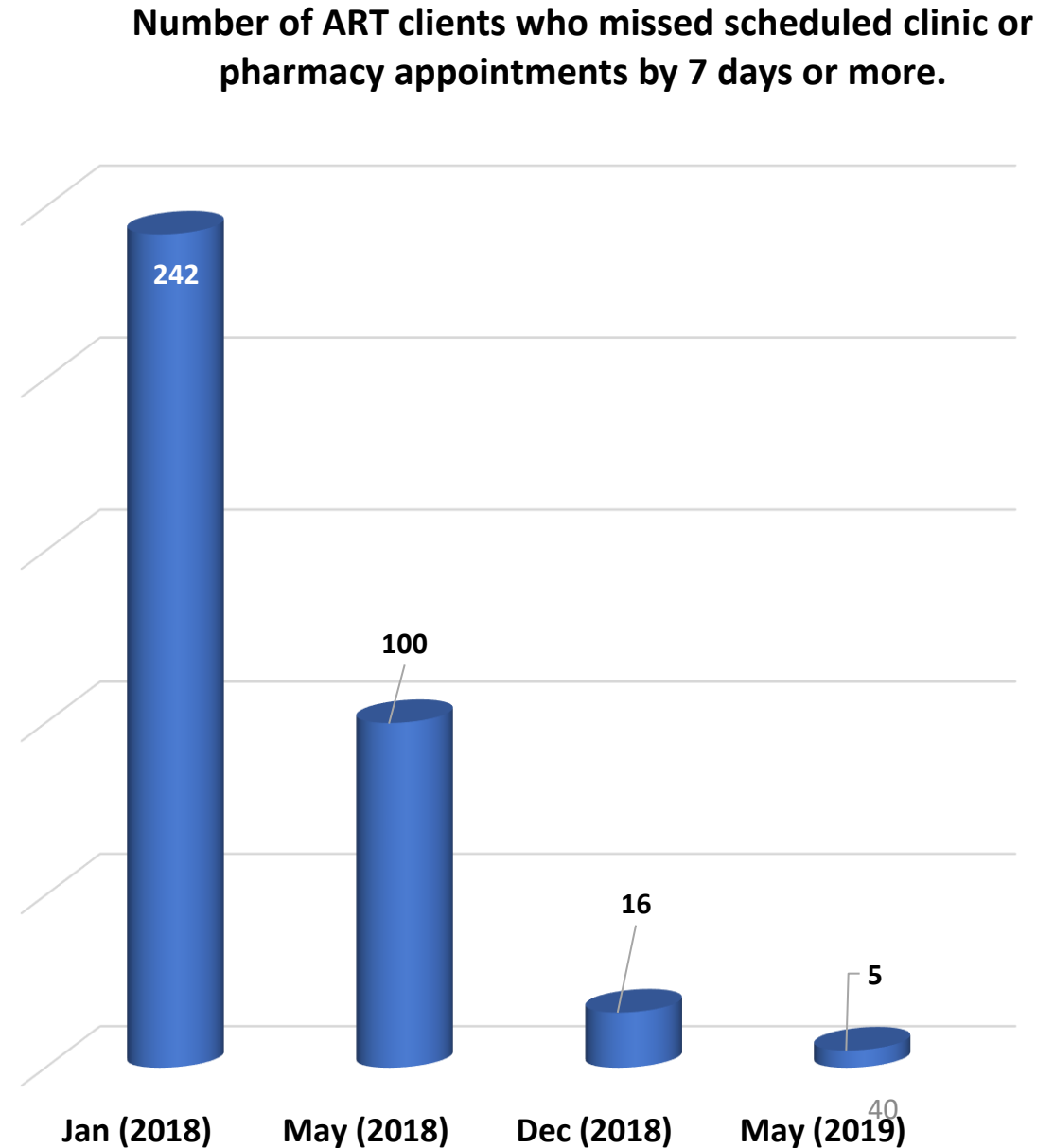
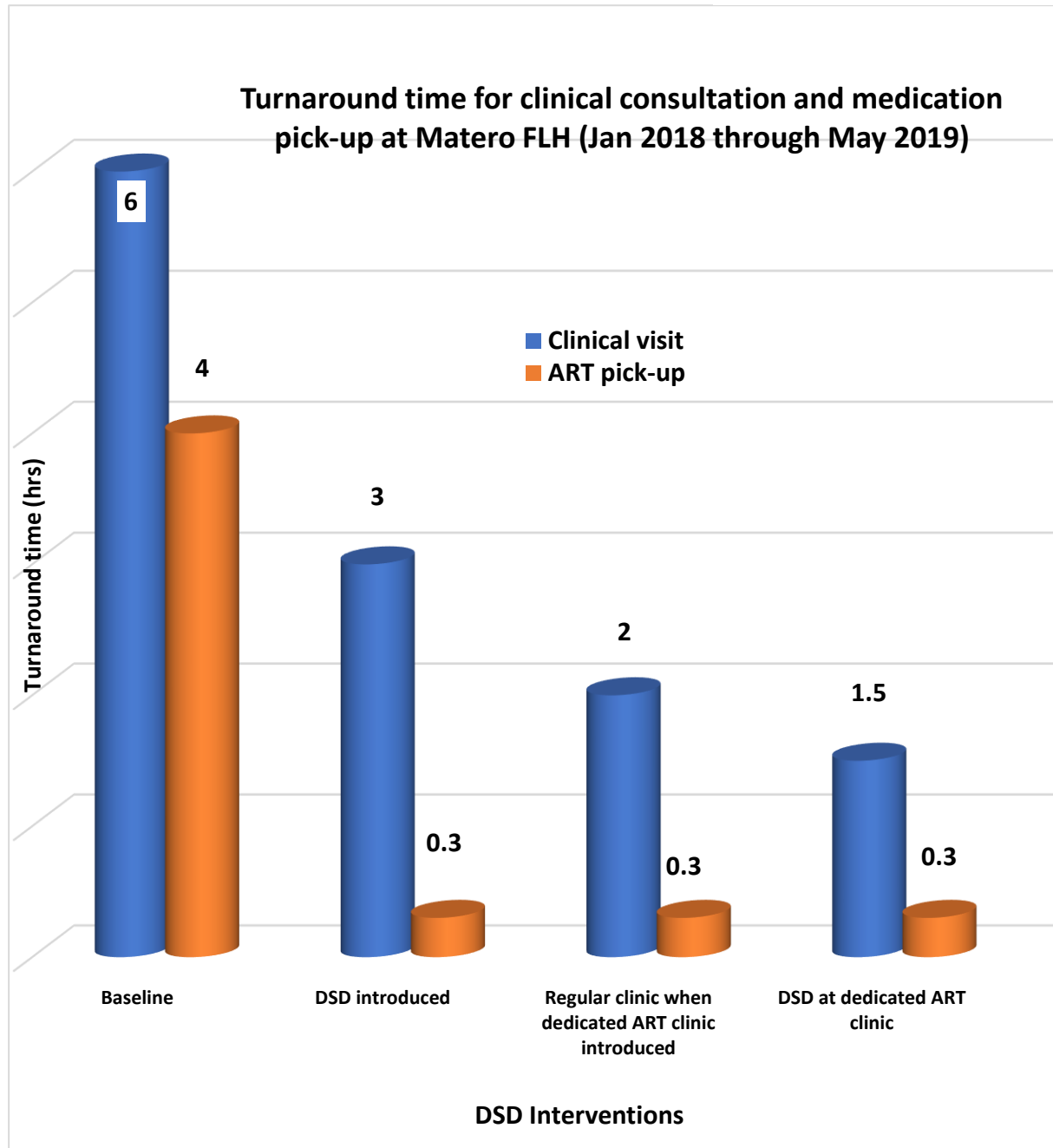
MULTIDISCIPLINARY HEALTH CARE APPROACH TO MANAGING ADULT STABLE CHRONIC HIV PATIENTS



PLHIV receiving treatment services through the DSD-plus program in Zambia - 2024



HU - DSD Achievements



Client waiting time assessment Trend - August 2024

Baseline average waiting time = 4hrs.

Baseline waiting time of 4 hours

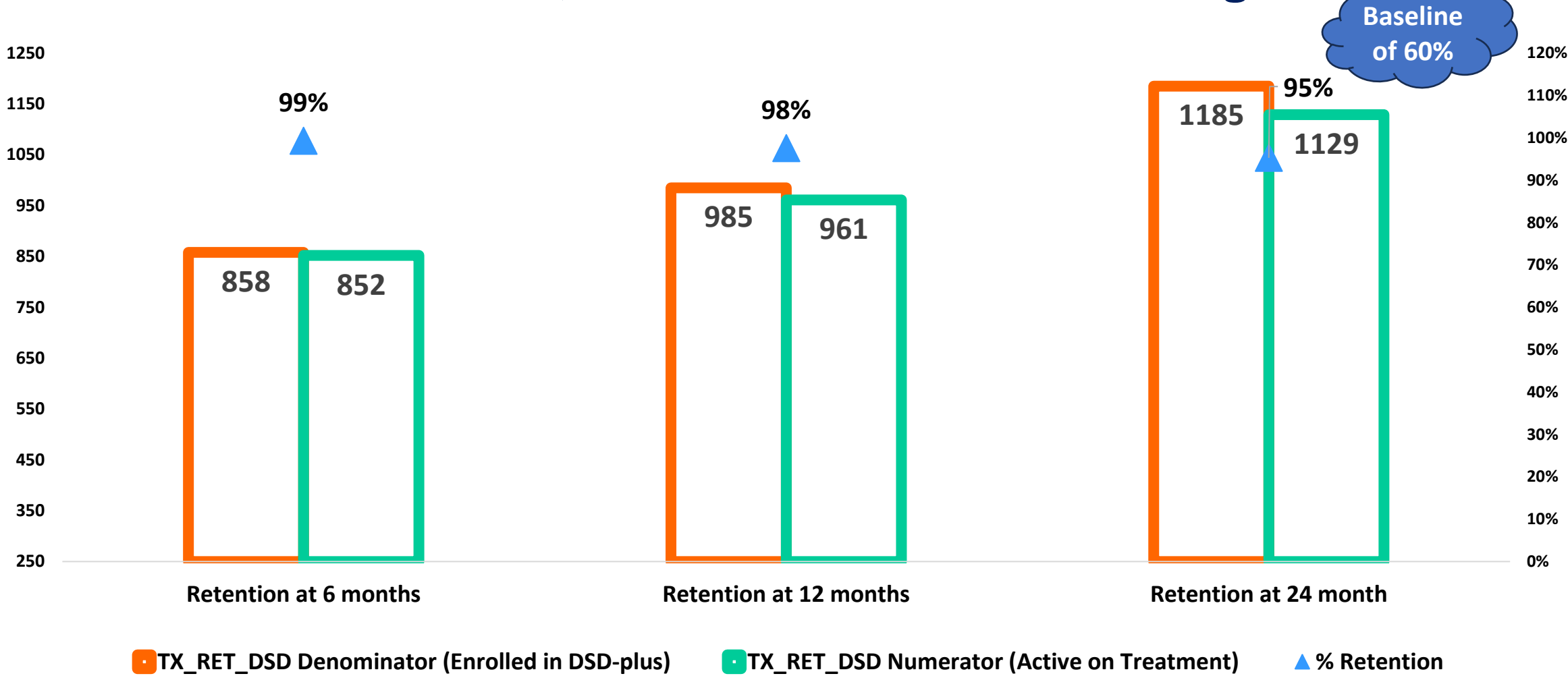
1:04
0:57
0:50
0:43
0:36
0:28
0:21
0:14
0:07
0:00

| | May FY23 | June FY23 | July FY23 | Aug FY23 | Sept FY23 | Oct FY24 | Nov FY24 | Dec FY24 | Jan FY24 | Feb FY24 | Mar FY24 | April FY24 | MayFY24 | JuneFY24 | JulyFY24 | AugFY24 |
|------------|----------|-----------|-----------|----------|-----------|----------|----------|----------|----------|----------|----------|------------|---------|----------|----------|---------|
| Lusaka | 0:44 | 0:42 | 0:40 | 0:40 | 0:41 | 0:39 | 0:32 | 0:38 | 0:36 | 0:36 | 0:37 | 0:36 | 0:37 | 0:37 | 0:36 | 0:38 |
| Southern | 0:34 | 0:34 | 0:34 | 0:34 | 0:32 | 0:35 | 0:37 | 0:33 | 0:34 | 0:36 | 0:34 | 0:34 | 0:38 | 0:35 | 0:34 | 0:38 |
| Copperbelt | 0:44 | 0:43 | 0:44 | 0:47 | 0:40 | 0:39 | 0:38 | 0:40 | 0:40 | 0:35 | 0:39 | 0:42 | 0:42 | 0:41 | 0:39 | 0:40 |
| Max Target | 1:00 | 1:00 | 1:00 | 1:00 | 1:00 | 1:00 | 1:00 | 1:00 | 1:00 | 1:00 | 1:00 | 1:00 | 1:00 | 1:00 | 1:00 | 1:00 |

— Lusaka — Southern — Copperbelt - - - Max Target

☐ Waiting sustained below 60 minutes.

Cohort Retention at 6, 12 and 24 months as at August 2024

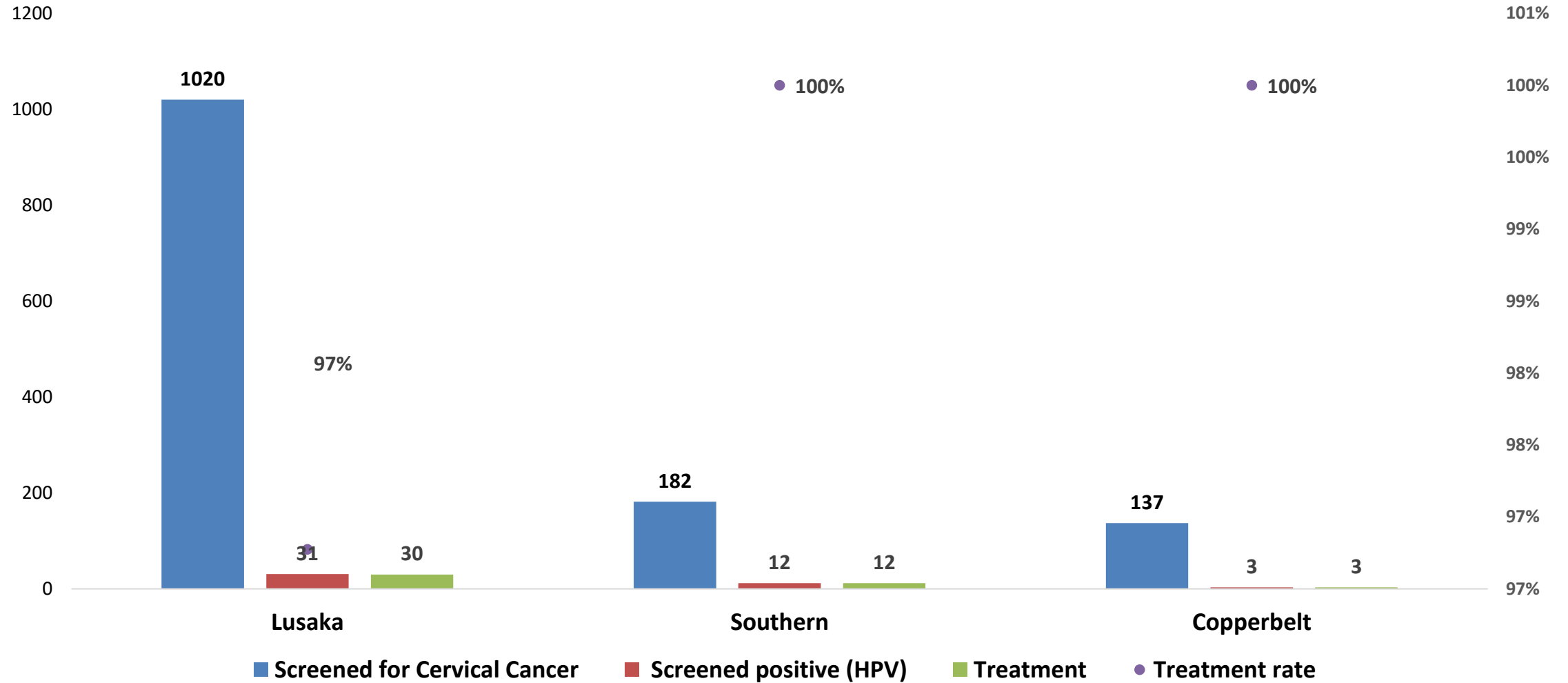


□ Cohort retention at 6, 12, and 24 months was at 99%, 98% (2% increase), and 95% (1% increase) respectively as of Sept 24. **TX_ML Outcomes at 6 months= { Died 1, IIT 2, Trans-outs 3} | TX_ML outcomes at 12 months= {IIT 5, Trans-outs 19.} | TX_ML outcomes at 24 months= {Died 6, IIT 15, Trans-outs 35}. Causes of death included RTA, Malaria and Diarrhea.**

INDEX TESTING SERVICES IN DSD-plus 2025



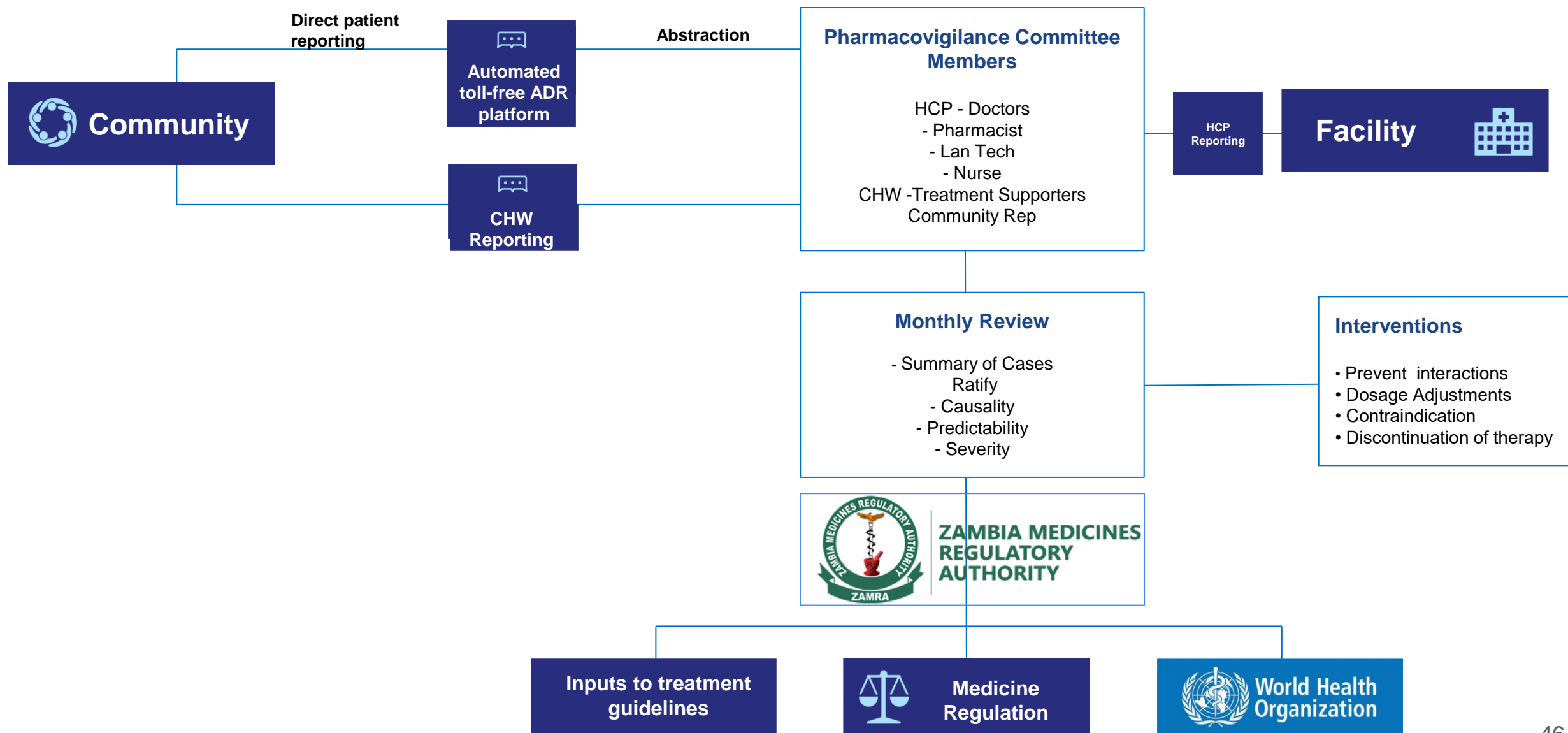
Cervical Cancer Screening & Treatment – Feb FY 25



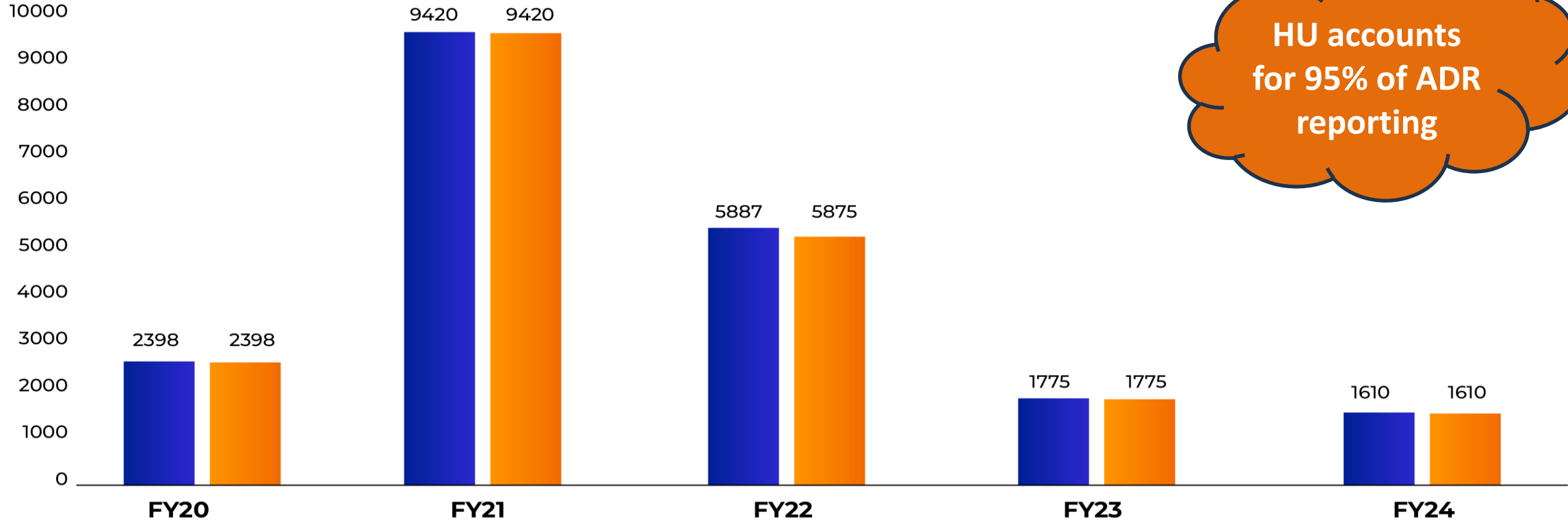
Quality Assurance of Treatment- Pharmacovigilance



Patient-Centered, Community-Facility based integrated Pharmacovigilance



Pharmacovigilance Case Identification and Reporting FY20-FY24




 HU accounts for 95% of ADR reporting

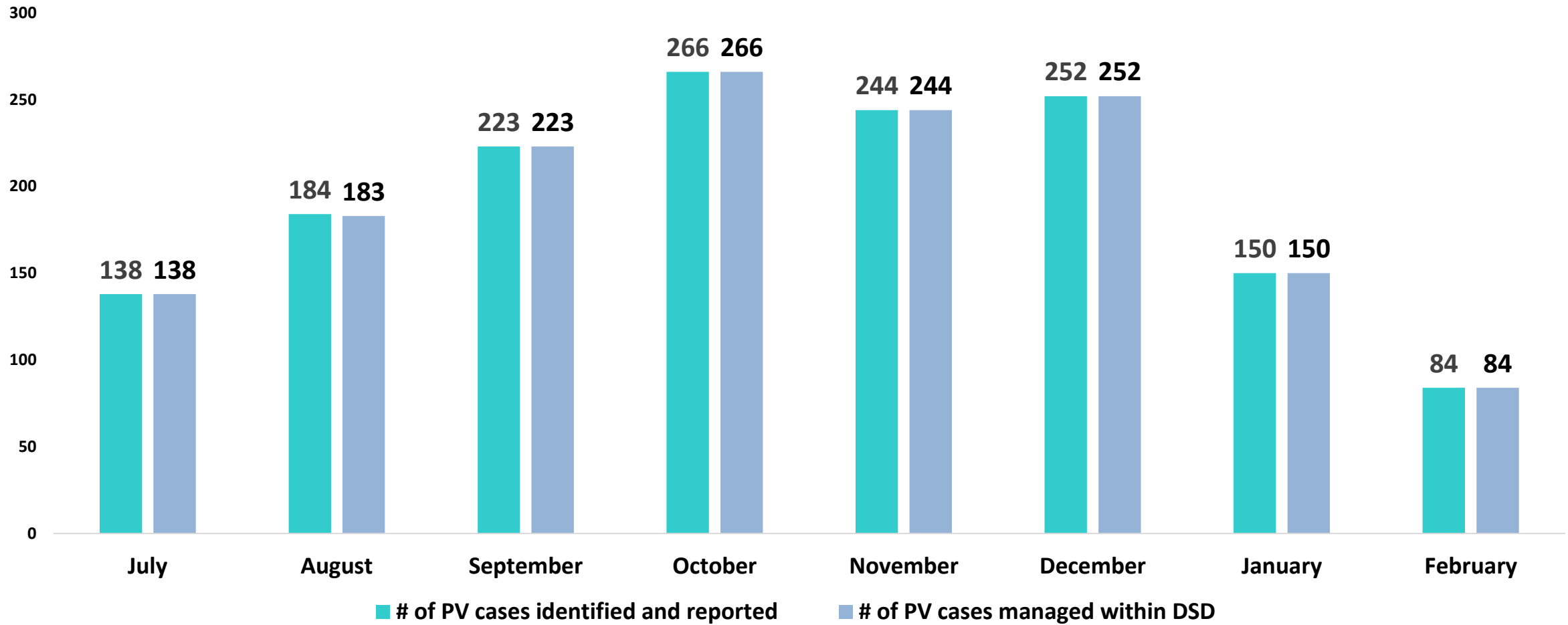
■ # of Pharmacovigilance cases identified and reported

■ # of pharmacovigilance cases managed within DSD

- Baseline data review a total of 5 ADR case were confirmed to have been documented
- Community-based ADR reporting accounts for 20% of all ADRs reported since 2021



Pharmacovigilance Case Identification and Management 2024-2025



* 84 cases identified, managed in February 2025.

HUI Community Pharmacovigilance

Monthly Check-in Calls provide an effective platform for:
Adherence counselling,
drug storage education,
adherence to Appointments,
mental health concerns, and
patient feedback.

CHWs trained in basic Pharmacovigilance



Community Sensitization:
Through the NHCs and CEGs



ADR Reporting
Community: via monthly check-in calls¹, apps, text, IVR & advocacy groups.
Facility: Patients walk in to report ADRs



Facility Management
Healthcare workers
Review & manage issues presented in the MCC

Community management
Via Patient advocacy groups, Support helplines. Peer counseling. & Community health workers (CHWs)



Facility Causality Reviews
Multidisciplinary Team:
Collaborative review and personalized care planning

Complicated Case Causality Reviews
Multidisciplinary consultants offer expert guidance on complex ADR cases."



Reporting to ZAMRA
Facility Focal point person
Reviews quality of reports and sends to ZAMRA

PV Program for Reporting on Product Quality and Therapeutic Failure

New

Product Quality

- Disintegrated tablets
- Sticky capsules
- Cloudy Liquid Formulations

Therapeutic Failures

- Sudden rebound VL
- Unsuppressed VL
- * After all efforts on Adherence support

This will assist ZAMRA (MRA) to investigate substandard and falsified medicines

Summary & Conclusion



Ensuring Epidemic Control Through DSD-plus

- **Customised interventions** based on clients' needs and the health care infrastructure ie DSD
- Ensure that services or health care delivery is **integrated ie HIV services and NCDs**
- Introduce frequent **patient satisfaction** surveys as part of quality improvements
- Introduce interventions to **prevent LTFU rather than managing LTFU**
- Introduce interventions to **reduce congestion** at the facilities
- Seek the **involvement of males** in the health care of their families
- **Engage the community** to be involved in health care delivery.

How to Sustain HIV/AIDS Epidemic Control

- **Abuja Declaration on Health:** Increase domestic funding for health to 15% of the national Budget
- **Foreign Aid** should be considered as supplemental or in emergency cases
- Engagement of all stakeholders, for the common goal; **patients, community, government, health facilities & implementing partners**
- HIV vaccine and PreP (long-acting injectable cabotegravir (CAB-LA)) is a safe and highly effective HIV prevention option for people at substantial risk of HIV infection
- **Customize & Implement innovative approaches** such as the DSD-plus model
- Ensure **sustainability , quality improvement,** and quality assurance activities
- **Treatment monitoring** (pharmacovigilance) to include product quality and therapeutic failure reporting
- **Reengineering at facility level** a comprehensive one stop shop for operations and patient care (*integration of services*)
- **Community involvement** is a critical aspect of epidemic control and sustainability.

Self-Reliance Beyond Sustainability

- African governments to ensure their national budgets can support HIV prevention and treatment programs in their countries.
- African governments to step up and partner with global entities to develop an HIV vaccine that is **safe, effective, and affordable.**
- African governments and other stakeholder to double their efforts in research and development to prevent HIV resurgence
- **Perhaps develop an HIV vaccine to administer to children from the age of nine like the HPV vaccine (before any sexual debut).**

*Preventive HIV vaccine has game-changing potential for controlling and **ultimately ending the HIV/AIDS pandemic***



Thank you

