Integration of hypertension and HIV care in Uganda

What can we learn for DSD for chronic disease?

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Differentiated service delivery for other chronic diseases
Harare, 5 December 2023

Background

- High risk of CVD among PLHIV
- Prevalence of HTN in PLHIV in Uganda 20-29%[1]
- Prevalence of DM in PLHIV in Uganda 2.3-5.3%
- Suboptimal HTN and DM care among PLHIV

Lunyera, J., Kirenga, B., Stanifer, J. W., Kasozi, S., van, Winceslaus Katagira, Kamya, M. R., & Kalyesubula, R. (2018). Geographic differences in the prevalence of hypertension in Uganda: Results of a national epidemiological study. *PLOS ONE*, *13*(8)

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Methods

FORMATIVE ASSESSMENT

- Baseline HTN, DM and HIV cascades
- Explored barriers and facilitators of integration

IMPLEMENTATION

- Adapted WHO HEARTS package
- One page protocol
- Trained providers
- Task shifting

EVALUATION

- Implementation Processes
- Effectiveness
- Implementation Outcomes

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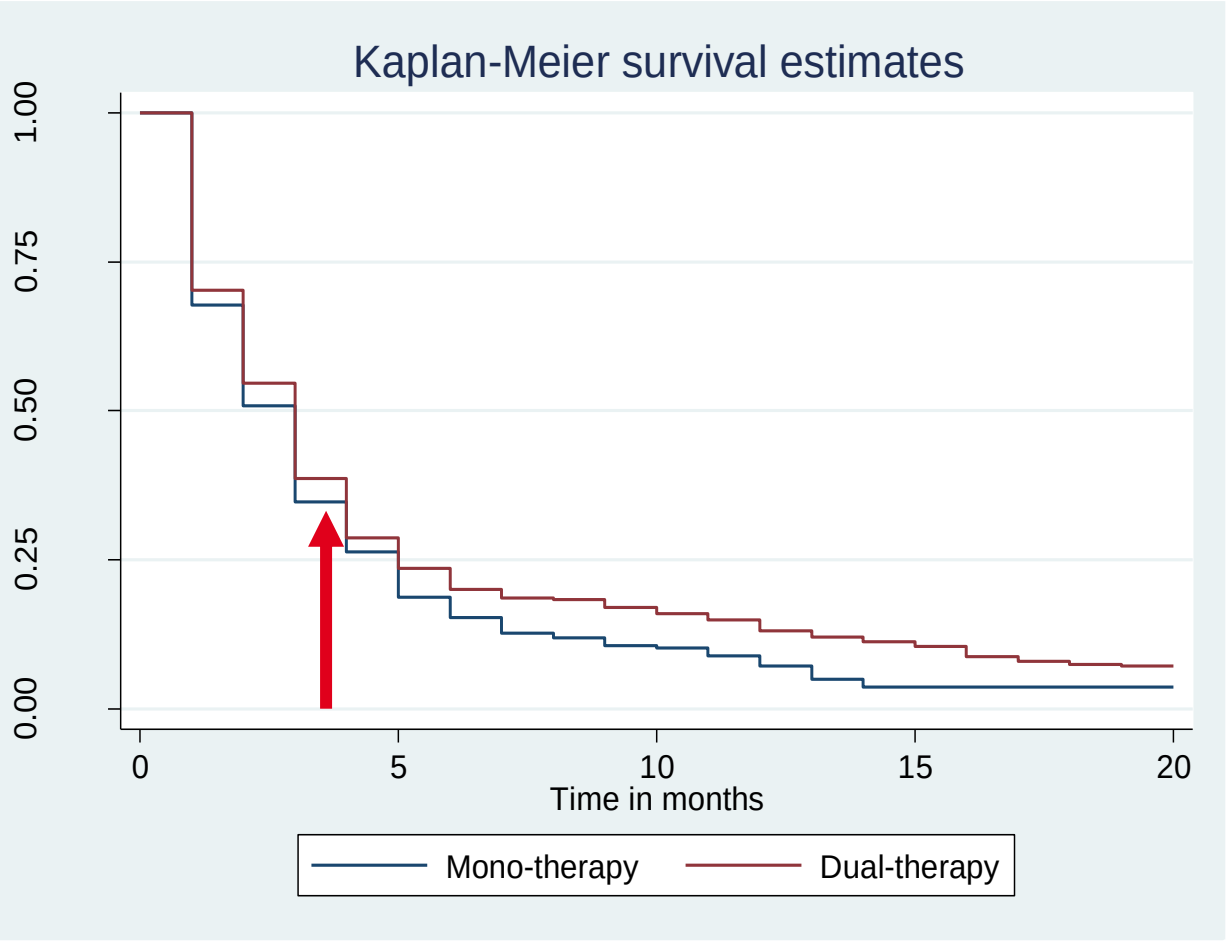
How are clients defined as established on treatment?

Criteria for established on treatment	HIV	HYPERTENSION	T2DM
Duration of treatment	On ART for at last 6 months	On HTN treatment for at least 3 months	On DM treatment for at least 3 months
Health status	No current illness	Clinically well	Clinically well
Chronic conditions	Controlled chronic conditions	Controlled chronic conditions	Controlled chronic conditions
Adherence	Good adherence	Good adherence	Good adherence
Treatment success	Viral load < 200 copies/ml	BP < 140/90mmHg	FBS < 7.0 mmol/L
Drug toxicity	No ART limiting toxicity	No HTN medicine toxicity	No DM medicine toxicity

Medium time to BP control among PLHIV on HTN treatment



- N= 877 PLHIV with HTN
- Mean = 50.5 years
- Females =62.1%
- HTN medicines:
  - *Amlodipine,*
  - *Valsartan,*
  - *Hydrochlorothiazide*

Amutuhaire et al (under review): https://doi.org/10.21203/rs.3.rs-2641141/v1

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Service delivery intervention - WHEN

	WHEN clinical visit	WHEN refill visit
HIV	Once a year Viral load test Clinical assessment	3 to 6 months
Hypertension	Every 6 months BP monitoring Clinical assessment	3 to 6 months
Diabetes	Every 6 months Blood sugar, HbA1C Clinical assessment	3 to 6 months

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Service delivery intervention - WHERE

	WHERE clinical visit	WHERE refill visit
HIV	Health facility	Community/Health Facility
Hypertension	Health facility	Community/Health Facility
Diabetes	Health facility	Community/Health Facility

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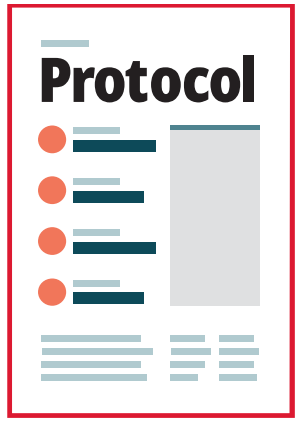
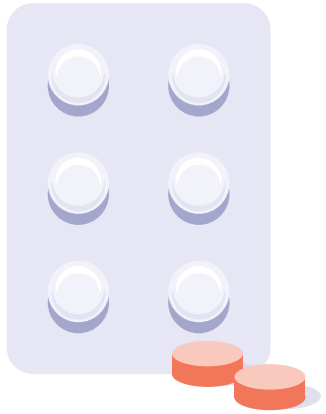
Service delivery intervention - WHO

	WHO clinical visit	WHO refill visit
HIV	Clinician/nurse	Nurse/community health worker/peer
Hypertension	Clinician/nurse	Nurse/community health worker/peer
Diabetes	Clinician/nurse	Nurse/community health worker/peer

Components of our adapted WHO HEARTS strategy

E A T T S





Adapted HTN treatment protocol

Free HTN medicines to patients

Task shifting of prescribing HTN medicines

BP screening by lay provider (PLHIV peer)

HTN registry

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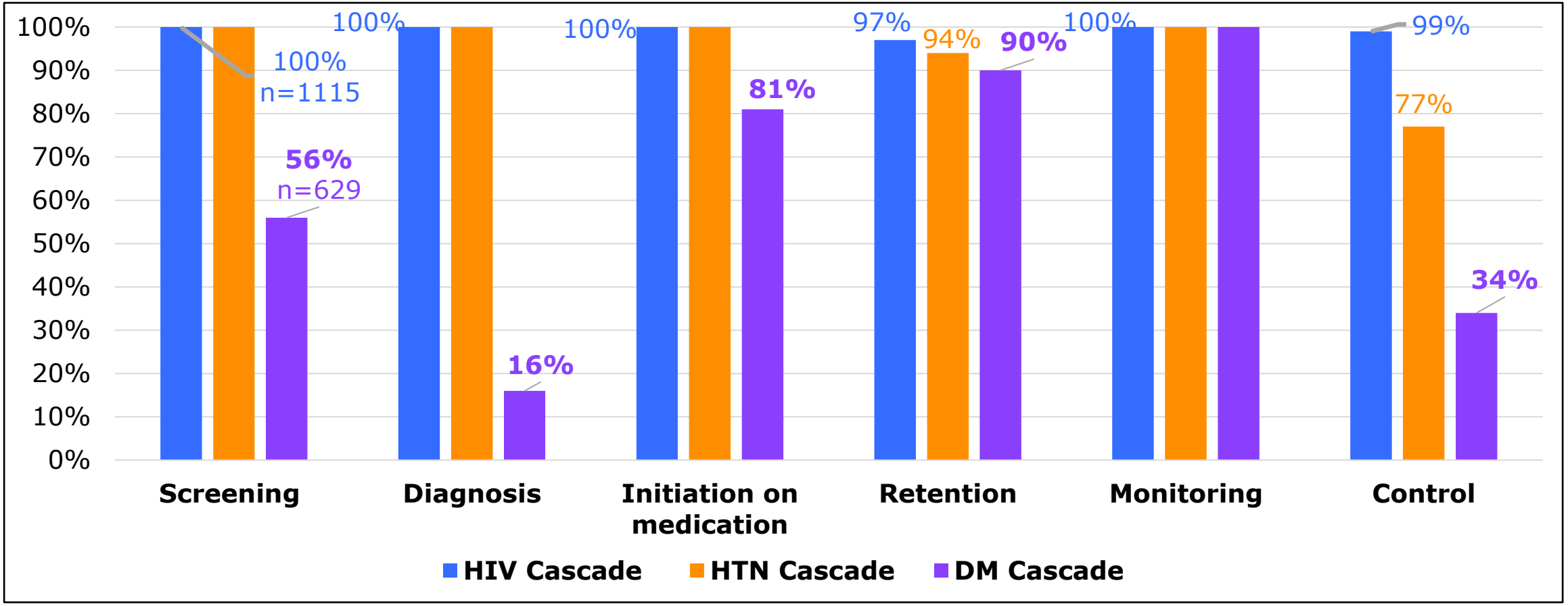
HTN and HIV outcomes at 21 months (N=1084)

Outcome variable	At baseline	At 21 months	P-value
% HTN control (BP <140/90mmHg)	54 (5%)	813 (75%)	<0.001
Mean systolic BP ± SD	153.9 ± 0.7	129.7 ± 0.9	<0.001
Mean diastolic BP ± SD	96.7 ± 0.5	85.1 ± 0.7	<0.001
%Viral load control	1,051 (97%)	1,073 (99%)	0.063

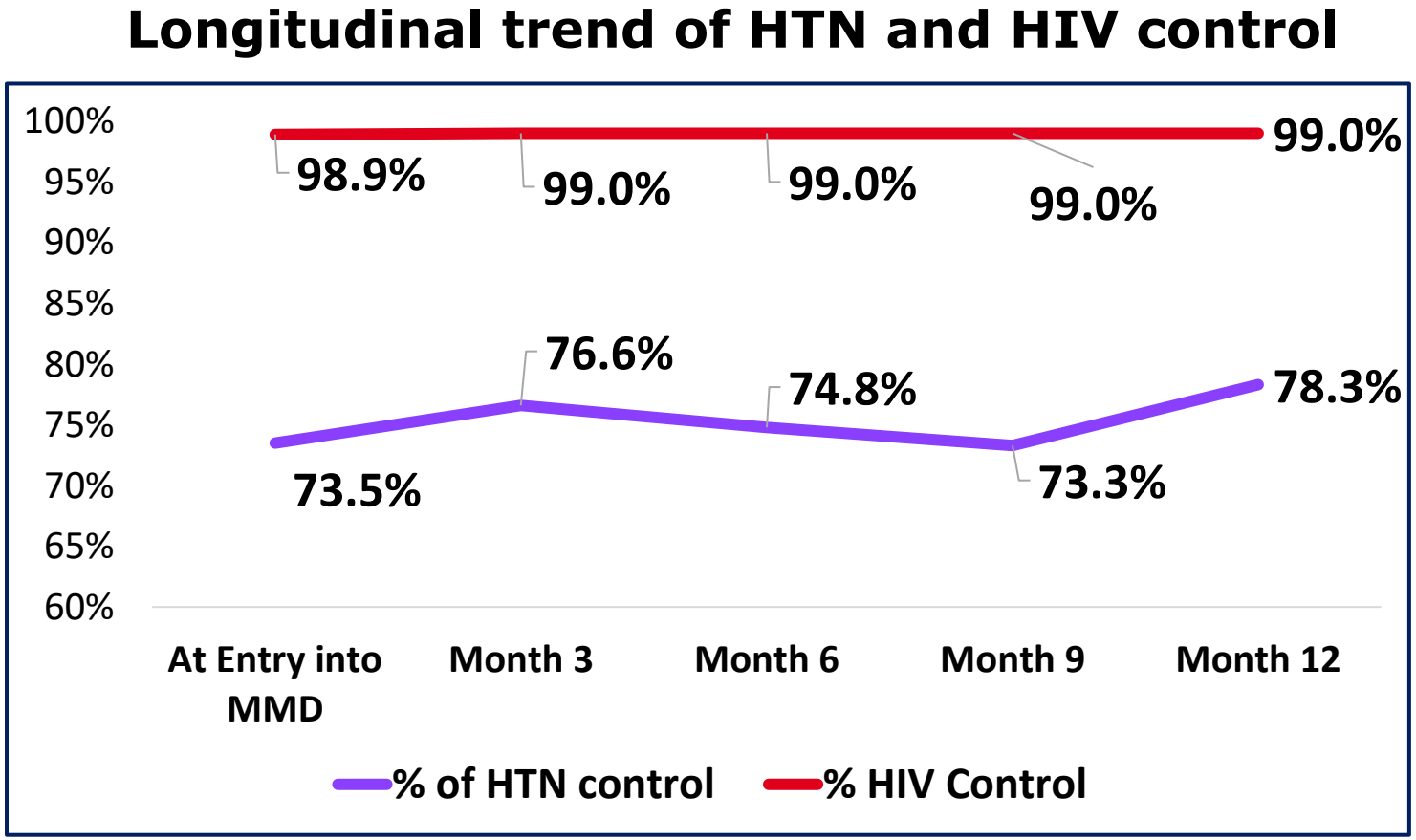
Integrated HIV-HTN-DM care cascades



Fortunate Ambangira, Sharman, J. E., Martín, M., Kimera, I., Namara, D., Douglas Joseph Musimbaggo, Christabellah Namugenyi, Ssenyonjo, R., Mbuliro, M., Rodgers Katwesigye, Schwartz, J. I., Semitala, F. C., & Ssinabulya, I. (2023). Diabetes mellitus care cascade among a cohort of persons living with HIV and hypertension in Uganda: A retrospective cohort study. *International Journal of STD & AIDS*, *34*(10), 728–734.

PLHIV with HTN on integrated MMD for ART and HTN medications

- Mean age: 51 (SD = 9) years
- Average time to MMD: 2 months
- Retention in care: 96.4%
- Adverse drug reactions:1.4%
- Comorbidities: DM (6%) and CKD (16%)



Kimera, I., et al. (2022). Integrated multi-month dispensing of antihypertensive and antiretroviral therapy to sustain hypertension and HIV control. *Journal of Human Hypertension*, *37*(3), 213–219.

Users' & providers' feedback: Qualitative

- "The treatment of HTN helped us to reduce the costs and the time we could take moving from one place to another accessing treatment. It saved us from attending the HIV clinic on one day and then a HTN clinic the following week" (FGD, PLHIV with HTN).

- "Integration is the way to go because it gives the patient a comprehensive package" (KII, Health Care Provider).

- "We plan to adopt and scale up nationally a similar single-page, stepwise treatment protocol as the one used in this project. With this evidence, we shall revise our policies and treatment guidelines" (KII, MoH, Policy maker).

Muddu, M., et al. (2023). Using the RE-AIM framework to evaluate the implementation and effectiveness of a WHO HEARTS-based intervention to integrate the management of hypertension into HIV care in Uganda: a process evaluation. *Implementation Science Communications*, *4*(1).

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Implementation outcomes: Evaluation using RE-AIM framework

Reach

- Improved Access to HTN medications will promote reach of PLHIV with HTN

Effectiveness

- PLHIV who received integrated care felt healthy and saved more money

Adoption of integration was promoted by:

- Training providers
- Task shifting and
- Synchronised visits for HIV and HTN care

Feasibility of integration

- Integration of HTN and HIV care was feasible

Sustainability of integration

- Leveraging the HIV program resources to integrate NCDs
- Adopt NCDs management protocols into national HIV guidelines

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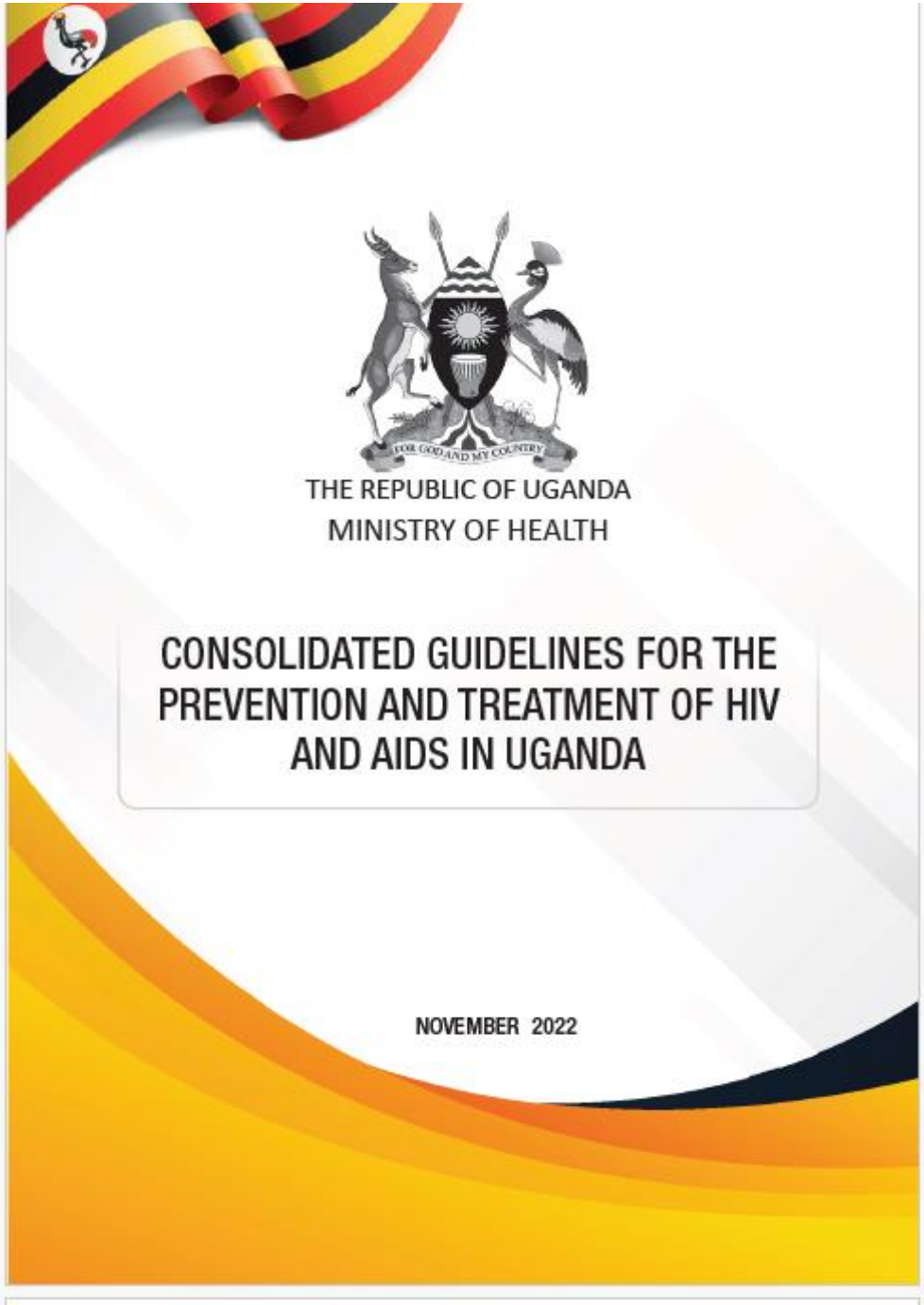

Uganda HIV guidelines were revised to include NCDs

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Conclusions and lessons learned

- Leveraging existing HIV structures is key to integration of NCDs
- Integrated hypertension, DM and HIV care is feasible
- DSD for NCDs in PLHIV is feasible but requires access to NCD medicines
- Sustainable integration requires policy guidelines (WHO and National)

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- Uganda MoH
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- PULESA Uganda team