The impact of differentiated service delivery (DSD) on retention in care and viral suppression in South Africa: A target trial emulation of routine care data

Amy N. Huber[1], Lise Jamieson[1,2], Matthew P. Fox[1,3], Musa Manganye[4], Lufuno Malala[4], Thato Chidarikire[5], Nthabiseng Khoza[4], Brooke E. Nichols[3,6], Sydney Rosen[1,3], Sophie Pascoe[1]

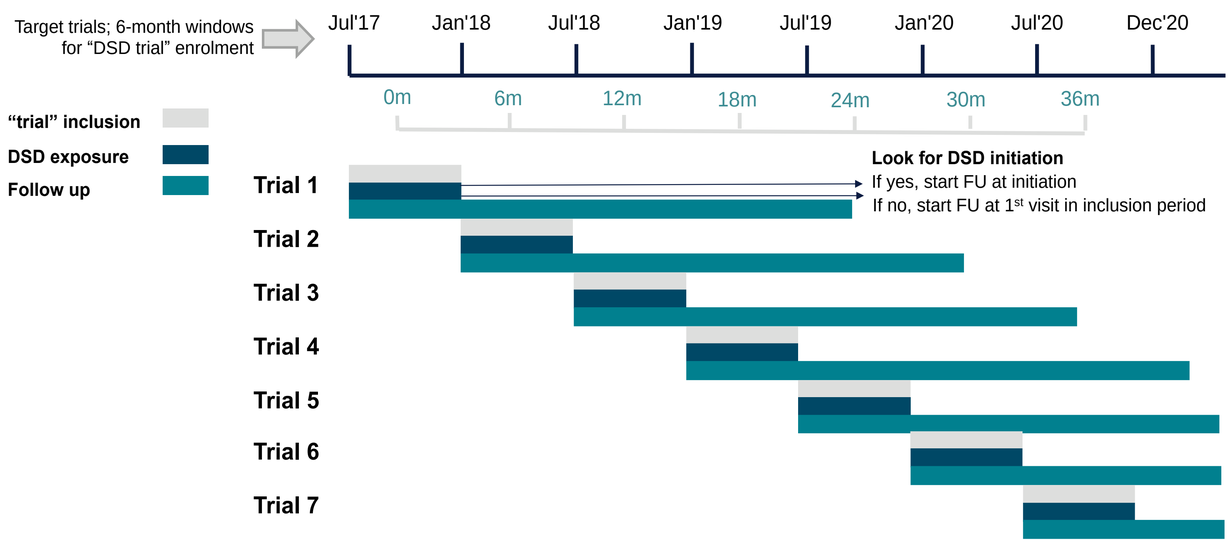
[1] Health Economics and Epidemiology Research Office, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, South Africa, [2] The South African Department of Science and Innovation/National Research Foundation Centre of Excellence in Epidemiological Modelling and Analysis (SACEMA), Stellenbosch University, Stellenbosch, Republic of South Africa, [3]Department of Global Health, Boston University School of Public Health, Boston, MA, USA, [4] National Department of Health, Pretoria, South Africa, [5] World Health Organization , [6]Department of Global Health, Amsterdam Institute for Global Health and Development, Amsterdam UMC, University of Amsterdam, Amsterdam, Netherlands

- Replacing conventional, facility-based HIV treatment with less intensive differentiated service delivery (DSD) models could benefit DSD clients and the health system, but its value depends on maintaining or improving clinical outcomes.
- We compared retention and viral suppression between antiretroviral therapy (ART) clients enrolled in DSD models to those eligible for but not enrolled in DSD models in South Africa.

METHODS

- We applied a target trial emulation (TTE) methodology to data from South Africa's electronic medical record system (TIER.Net) for 18 clinics across 3 districts.
- Clients were eligible for less intensive DSD models if they were ≥18 years old, on ART ≥12 months, and had two suppressed viral load (VL) measurements, per prevailing national guidelines. For the TTE, we designated eight 6-month target trial enrolment periods between 1 July 2017 and 1 July 2021.
- For each period, we estimated the risk differences for retention in care and viral suppression by comparing those enrolled in DSD models to those not enrolled, using a Poisson distribution with an identity link function.

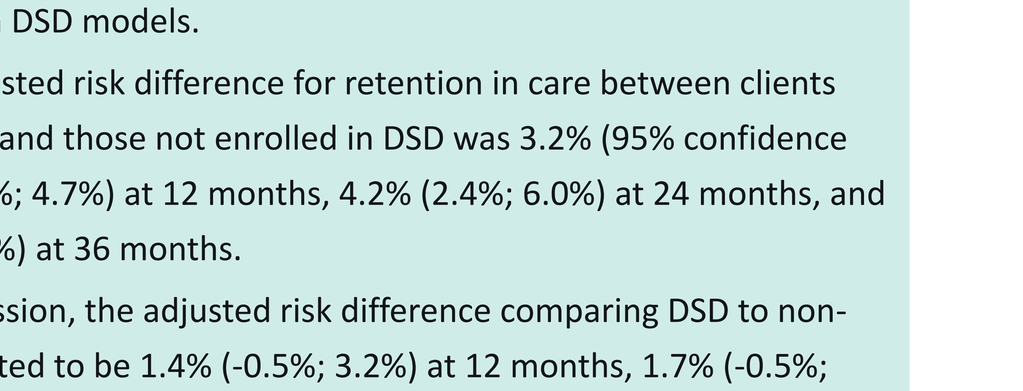
Figure 1. Summary of the eight target trial periods



RESULTS

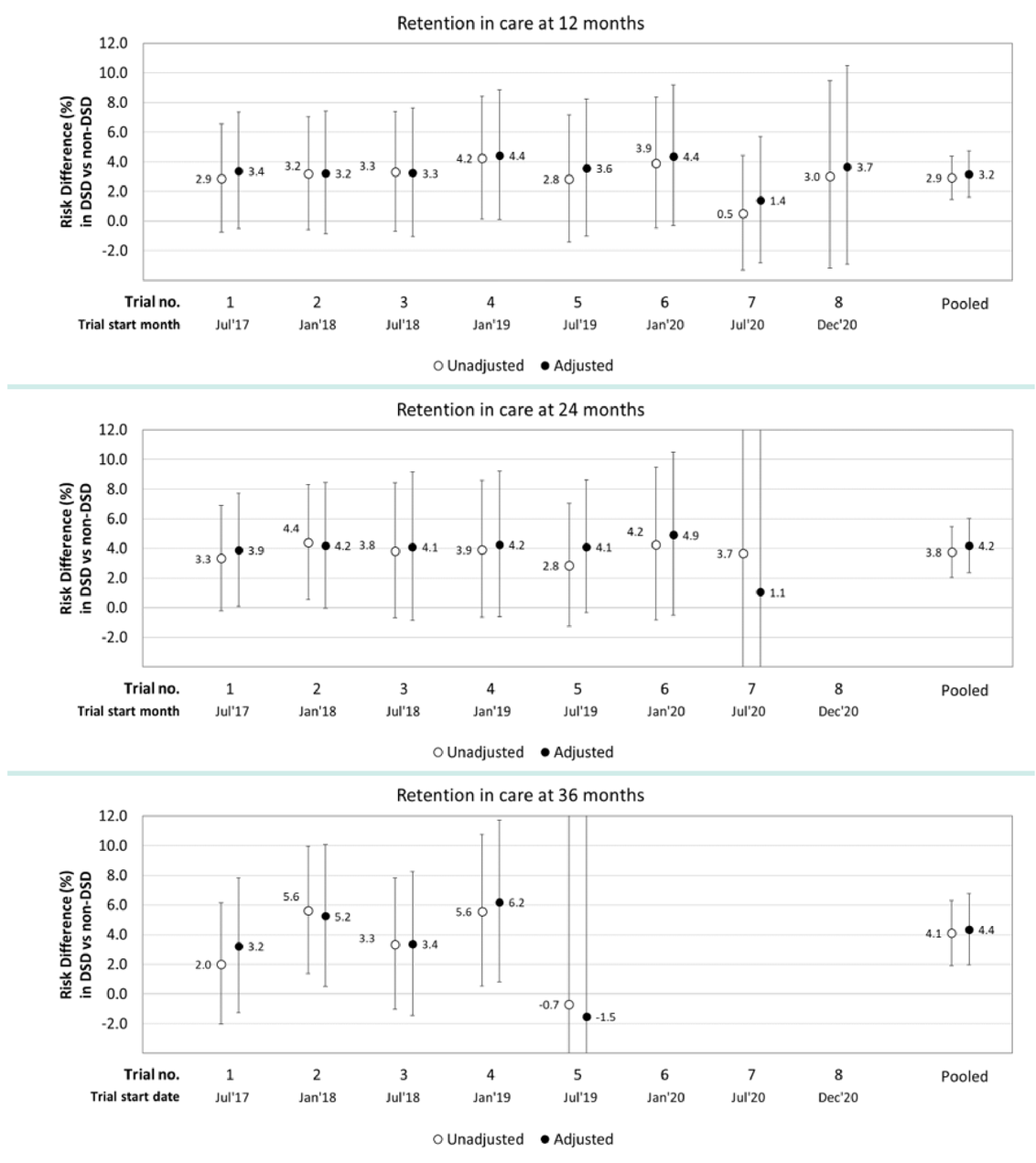
- 49,595 unique individuals were eligible for DSD enrolment over eight target trials, contributing to a total of 148,943 trial-clients, of whom 17% (25,775) were enrolled in DSD models.
- The pooled adjusted risk difference for retention in care between clients enrolled in DSD and those not enrolled in DSD was 3.2% (95% confidence interval (CI) 1.6%; 4.7%) at 12 months, 4.2% (2.4%; 6.0%) at 24 months, and 4.4% (2.0%; 6.8%) at 36 months.
- For viral suppression, the adjusted risk difference comparing DSD to non-DSD was estimated to be 1.4% (-0.5%; 3.2%) at 12 months, 1.7% (-0.5%; 4.0%) at 24 months, and 1.4% (-0.6%; 4.4%) at 36 months.
- Results remained consistent across target trials. Clients who were younger, lived in urban settings, or had less ART experience at trial enrolment had lower retention.

Figure 2: (A) Retention in care and (B) viral load suppression outcomes by DSD enrolment, at 12, 24, and 36 months; adjusted mean estimates with 95% CIs



	A: 12 months	A: 24 months	A: 36 months	B: 12 months	B: 24 months	B: 36 months
No. DSD trial-clients	19,881	13,733	8,015	15,320	10,241	5,807
No. non-DSD trial-clients	103,786	72,788	41,512	77,643	51,107	27,735
No. with insufficient follow-up	25,276	62,422	99,416	55,980	87,595	115,401

Figure 3. Adjusted risk differences for retention in care (12, 24, and 36 months) comparing DSD vs non-DSD clients



CONCLUSION

Clients enrolled in less intensive DSD models in South Africa had slightly better retention in care and similar viral suppression to those who were eligible for but not enrolled in DSD. With better or equivalent outcomes, less intensive DSD models can be assessed on the basis of non-clinic costs and benefits, such as changes in quality of care and resource utilization.

This study was funded by the Gates Foundation. Further information about AMBIT can be found at https://sites.bu.edu/ambit/.

Further information:
Amy Huber, ahuber@heroza.org

CQUIN 8th Annual Meeting | December 9-13, 2024 – Johannesburg, South Africa