

Driving Forward After COVID-19: A Call for Continued Investment in Research on Differentiated Models of HIV Service Delivery for Vulnerable Populations Globally

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Differentiated service delivery (DSD) is a client-centred, responsive model of HIV care that has the potential to address structural barriers to accessing care and ultimately improve the quality of care for people living with HIV globally. Despite progress, there has been a lack of investment in understanding the impact and implementation of DSD models across specific client populations and contexts. The COVID-19 pandemic, however, accelerated innovations in healthcare access and allowed us to reimagine the way healthcare is delivered. To fully transform HIV healthcare, continued research, funding and collaboration are needed to bolster evidence for differentiated models of HIV care at scale post-COVID-19.

Keywords

Adolescents, client-centered care, COVID-19, differentiated care, differentiated service delivery, HIV, South Africa, young people

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The expansion of HIV treatment access during the past two decades, particularly in low- and middle-income countries, stands as a significant accomplishment in the field of public health.¹ Currently, there are an estimated 30 million people on antiretroviral treatment for HIV globally, of whom approximately 70% reside in Africa.² Despite advancements in the provision of antiretroviral therapy (ART), challenges remain in maintaining people living with HIV (PLWH) in successful, sustainable and responsive HIV treatment programmes, which are fundamental to ending the HIV epidemic. There are approximately 9 million PLWH globally who are not receiving treatment, and among those who are receiving the treatment, approximately 30% have unsuppressed HIV viral loads.² There is an urgent need for health systems to ensure better access and support for individuals who are not currently receiving HIV care and provide those in HIV care with opportunities to enhance their care engagement.³ The objective of this editorial is to call for research, innovation, funding and collaboration to bolster evidence for differentiated models of HIV care.

Differentiated service delivery (DSD) is “a client-centred approach that simplifies and adapts HIV services across the cascade in ways that both serve the needs of PLWH better and reduce unnecessary burdens on the health system”.⁴ Essentially, when a health system adopts a more responsive model of care that is tailored to the needs of various groups of PLWH, it can allocate resources more effectively, provide better access for underserved populations and deliver care in ways that effectively improve care quality.⁴ Models of DSD have largely been implemented in high-prevalence countries in sub-Saharan Africa (SSA) and include client-managed groups, healthcare worker-managed groups, facility-based individual models and out-of-facility individual delivery models.⁴ Although DSD models, including home ART delivery, have been implemented in SSA with evidence of sustained or improved clinical outcomes compared with conventional care, most programmes have been limited to clinically stable, adult clients and rarely target the unique needs of vulnerable groups.^{5,6} For example, adolescents and young people living with HIV (YPLWH) have historically experienced worse HIV treatment outcomes compared with their adult counterparts.⁷⁻⁹ In SSA, YPLWH experience significant barriers to accessing traditional HIV care services, including a lack of disclosure to family and peers; overcrowded clinics with long wait times and inflexible scheduling; a lack of confidentiality at clinics; stigma from providers, community members and peers and a lack of adolescent-friendly spaces.¹⁰⁻¹² Implementation of DSD models may provide opportunities to confront the structural barriers that prevent YPLWH from engaging in HIV care.

Although it is apparent that vulnerable populations in SSA and globally would likely benefit from differentiated models of HIV care, there has been a lack of investment in testing innovations in DSD, evaluating the potential large-scale impact of DSD approaches and exploring considerations for DSD implementation. The COVID-19 pandemic, however, conveyed a powerful message to the world about the need to build a resilient and sustainable health system and accelerated the

adoption of new ways to improve healthcare globally, including home-based and virtual healthcare services.¹³ For example, we conducted an evaluation of a courier home ART delivery intervention among YPLWH in Cape Town, South Africa, which was funded through a COVID-19 Emergency Response Fund from Viiv Healthcare, London, UK. From February to October 2021, we enrolled YPLWH aged 13–24 years into a pilot study, which was aimed at examining the acceptability, feasibility and preliminary effectiveness of a courier ART delivery intervention to retain YPLWH in HIV care while reducing patient visits to the clinic during the COVID-19 pandemic (Bidirectional, Upbeat communication and Differentiated, Distanced care for Young people [BUDDY]; ClinicalTrials.gov identifier: NCT04781400).¹⁴ All participants had the option to enrol in the courier ART delivery service. We found high uptake and acceptability of the courier ART intervention as well as promising evidence for its effectiveness in increasing viral suppression. This is one of the first studies to provide home ART delivery as a model of DSD for YPLWH in SSA, and our findings indicate that there may be a promise for this delivery modality within DSD models in South Africa post-COVID-19.

There are several priority areas for investigation for DSD research, including the impact on key populations and clinically unstable

patients, integration with comorbidities and co-infections and large-scale programme evaluations that incorporate implementation science designs to bolster evidence for the benefits and costs of DSD at scale.¹⁵ Research is also needed to inform DSD models across HIV treatment and prevention cascades and for novel treatment and prevention modalities, including long-acting injectable ART, which will carry unique implementation challenges.¹⁶ Although the COVID-19 pandemic has facilitated recent investment in DSD research, it is now imperative that we capitalize on this momentum and continue ‘driving forward’ to generate evidence for DSD interventions among those who stand to benefit the most. Moreover, in addition to continued investment from funders, engagement with local policy-makers, healthcare workers and PLWH is critical to obtaining policy-, organizational- and client-level support for successful DSD scale-up. The COVID-19 pandemic revolutionized health systems globally by demanding rapid innovation in the provision of accessible care and allowing us to reimagine the way healthcare is delivered. In this post-COVID-19 era, we must continue to expand the evidence base for DSD, ensuring its successful implementation and ultimately transforming HIV healthcare delivery worldwide. □

1. El-Sadr WM, Holmes CB, Mugenyi P, et al. Scale-up of HIV treatment through PEPFAR: A historic public health achievement. *J Acquir Immune Defic Syndr*. 2012;60 Suppl 3:S96–104. DOI: 10.1097/QAI.0b013e31825eb27b.
2. WHO. HIV data and Statistics. 2023. Available at: www.who.int/teams/global-hiv-hepatitis-and-stis-programmes/hiv/strategic-information/hiv-data-and-statistics (Date last accessed: 27 October 2023).
3. Grimsrud A, Wilkinson L, Eshun-Wilson I, et al. Understanding engagement in HIV programmes: How health services can adapt to ensure no one is left behind. *Curr HIV/AIDS Rep*. 2020;17:458–66. DOI: 10.1007/s11904-020-00522-1.
4. Grimsrud A, Bygrave H, Doherty M, et al. Reimagining HIV service delivery: The role of differentiated care from prevention to suppression. *J Int AIDS Soc*. 2016;19:21484. DOI: 21484.
5. Limbada M, Macleod D, Situmbeko V, et al. Rates of viral suppression in a cohort of people with stable HIV from two community models of ART delivery versus facility-based HIV care in Lusaka, Zambia: A cluster-randomised, non-inferiority trial nested in the HPTN 071 (PopART) trial. *Lancet HIV*. 2022;9:e13–23. DOI: 10.1016/S2352-3018(21)00242-3.
6. Long L, Kuchukhidze S, Pascoe S, et al. Retention in care and viral suppression in differentiated service delivery models for HIV treatment delivery in sub-Saharan Africa: A rapid systematic review. *J Int AIDS Soc*. 2020;23:e25640. DOI: 10.1002/jia2.25640.
7. Zuma K, Simbayi L, Zungu N, et al. The HIV epidemic in South Africa: key findings from 2017 national population-based survey. *Int J Environ Res Public Health*. 2022;19. DOI: 10.3390/ijerph19138125.
8. Nglazi MD, Kranzer K, Holele P, et al. Treatment outcomes in HIV-infected adolescents attending a community-based antiretroviral therapy clinic in South Africa. *BMC Infect Dis*. 2012;12:21. DOI: 10.1186/1471-2334-12-21.
9. Haas AD, Lienhard R, Didden C, et al. Mental health, ART adherence, and viral suppression among adolescents and adults living with HIV in South Africa: A cohort study. *AIDS Behav*. 2023;27:1849–61. DOI: 10.1007/s10461-022-03916-x.
10. Ritchwood TD, Ba A, Ingram L, et al. Community perspectives of South African adolescents’ experiences seeking treatment at local HIV clinics and how such clinics may influence engagement in the HIV treatment cascade: A qualitative study. *AIDS Care*. 2020;32:83–8. DOI: 10.1080/09540121.2019.1653442.
11. Clair-Sullivan NS, Mwamba C, Whetham J, et al. Barriers to HIV care and adherence for young people living with HIV in Zambia and mHealth. *Mhealth*. 2019;5:45–45. DOI: 10.21037/mhealth.2019.09.02.
12. MacCarthy S, Saya U, Samba C, et al. How am I going to live? Exploring barriers to ART adherence among adolescents and young adults living with HIV in Uganda. *BMC Public Health*. 2018;18:1158. DOI: 10.1186/s12889-018-6048-7.
13. Yamey G, Pai M. How COVID-19 is revolutionizing health care around the world. *Time*. 2021. Available at: <https://time.com/6052677/covid-19-health-care-innovations/> (Date last accessed: 30 October 2023).
14. Giovenco D, Pettifor A, Qayiya Y, et al. The acceptability, feasibility, and preliminary effectiveness of a courier HIV-treatment delivery and SMS support intervention for young people living with HIV in South Africa. *J Acquir Immune Defic Syndr*. 2023;95:161–9. DOI: 10.1097/QAI.0000000000003332.
15. Grimsrud A, Barnabas RV, Ehrenkrantz P, Ford N. Evidence for scale up: The differentiated care research agenda. *J Int AIDS Soc*. 2017;20:22024. DOI: 10.7448/IAS.20.5.22024.
16. Rizzardini G, Overton ET, Orkin C, et al. Long-acting injectable cabotegravir + rilpivirine for HIV maintenance therapy: Week 48 pooled analysis of phase 3 ATLAS and FLAIR trials. *J Acquir Immune Defic Syndr*. 2020;85:498–506. DOI: 10.1097/QAI.0000000000002466.