

Review

Open Access



A Literature Review on Recommendations to Improve Utilisation of the CCMDD Programme in Sekhukhune District PHC Facilities

Sekopa Ragosebo Portia*, Netangaheni Thinavhuyo Robert

University of South Africa, Department of Health Studies, Pretoria, South Africa

*Correspondence to: Sekopa Ragosebo Portia, University of South Africa, Department of Health Studies, Pretoria, South Africa; Email: portiasekopa@gmail.com

Sekopa Ragosebo Portia ORCID ID: <https://orcid.org/0000-0002-7910-0340>

Netangaheni Thinavhuyo Robert ORCID ID: <https://orcid.org/0000-0003-1038-0740>

Abstract: Background: An unpredicted growth of patients requiring access to long-term therapies has been experienced over the past decades in South Africa which put strains on existing resources. Public health facilities are overcrowded due to the high volume of patients with chronic conditions are relying on free services for collection of their medications. The National Department of Health has introduced Central Chronic Medicines Dispensing and Distribution programme in 2014, to provide chronic patients with alternative ways to collect their medications. **Aim:** To describe recommendations for the utilisation of the CCMDD programme in Sekhukhune primary healthcare facilities. **Methods:** An integrated literature review was conducted and PICO framework was adopted as searching strategy to extract studies. Studies were extracted from databases such as CINAHL, Academic Search Ultimate, PubMed, Google, and WHO websites. Data was analysed thematically as documented by Whittemore & Knafl. **Findings:** Ten studies that include six qualitative studies and four guidelines were extracted. Three themes that support recommendations for the utilisation of the CCMDD programme were formed during data analysis. These themes include training healthcare workers on DSD models, provision of information and health education on DSD models, and tracing of clients. **Conclusions:** The utilisation of the CCMDD programme could be improve through staff training, provision of information and health education and tracing of clients. **Contribution:** The findings of this study would contribute to the development of guidelines to improve CCMDD programme which would add to effective utilisation of the programme within Sekhukhune District PHC facilities.

Keywords: Literature review; Recommendations; Utilisation; Central; Chronic; Medicines; Dispensing; Distribution



© The Author(s) 2025. **Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License (<https://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, sharing, adaptation, distribution and reproduction in any medium or format, for any purpose, even commercially, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made.

1. Introduction

Since 2016, numerous countries—particularly in sub-Saharan Africa—have incorporated differentiated service delivery (DSD) models into their national policies to support adults receiving antiretroviral therapy (ART), especially those who are stable on treatment (WHO, 2021). In South Africa, the National Department of Health introduced the National Adherence Guidelines for Chronic Diseases in 2015, which included DSD strategies aimed at enhancing the overall efficiency of healthcare services (University of Columbia, 2022). One such initiative was the Central Chronic Medicines Dispensing and Distribution (CCMDD) programme, designed to streamline the distribution and dispensing of medication from centralized locations for patients with chronic conditions who consistently adhere to their treatment regimens (Health System Trust, 2020).

This study conducted an integrative literature review to explore recommendations for utilising the CCMDD programme within primary healthcare facilities in Sekhukhune. According to Adelphi University (2025), the goal of an integrative literature review is to foster a comprehensive understanding of a topic, assess the current state of research, and contribute to theoretical development. The University of Houston (2024) defines this method as a systematic approach to summarizing both empirical and theoretical literature to gain a deep understanding of a specific healthcare issue or phenomenon.

Whittemore and Knafl (2005:546) describe the integrative literature review as a flexible methodology that accommodates various research designs and supports evidence-based nursing practice. Dholandé,

Taylor, Meyer, and Scott (2021) emphasize that integrative reviews synthesize findings from diverse research approaches to produce well-rounded and dependable conclusions. This method enables healthcare professionals to draw on both qualitative and quantitative evidence to inform clinical practice with a more holistic perspective.

The study adhered to a seven-step process outlined by Kutcher and LeBaron (2022:13) for conducting an integrative literature review. These steps include: (1) selecting the topic, (2) defining the purpose, (3) conducting a literature search, (4) organizing and evaluating the data, (5) analyzing and synthesizing the findings, (6) summarizing results and drawing conclusions, and (7) the seventh final step is the dissemination of the results.

2. Objectives of the Integrated Literature Review

To describe recommendations to improve utilisation of the CCMDD programme in Sekhukhune District primary healthcare facilities.

3. Methods

An integrated literature review was conducted using PICO framework to extract the studies. Critical Appraisal Skills Programme (CASP) (2025) define PICO framework as a mnemonic formula originally developed to help investigators to frame their research questions when designing a study. **Table 1.1** below is a representation of the PICO elements in respect of the review questions, with Q and A respectively depicting the review question and attendant answer in the Review Question column.

Table 1.1: Elements involved in PICO review questions

FRAMEWORK (PICO)	REVIEW QUESTION
Patient, Population or Problem	Q: Who and /or what is my question focused on? A: Nurses and CCMDD enrolled Patients.
Intervention	Q: What intervention is being considered? A: Recommendations for the utilisation of the CCMDD programme.
Comparison	Q: What intervention is this being compared with? A: No comparison.
Outcomes	Q: What do you hope to accomplish, improve or affect? A: To improve the utilisation of the CCMDD programme.
Full review question: What are recommendations for the utilisation of DSD models or CCMDD programme?	

The studies were sourced from various databases, including the Cumulative Index to Nursing and

Allied Health (CINAHL), Academic Search Ultimate, PubMed, Google, and the World Health Organization (WHO) websites. For grey literature, the search focused on the WHO and the South African National Department of Health's Standard Operating Procedures (SOPs) related to Differentiated Models of Care (DMOC). The central question guiding the review was: *"What are the recommendations for implementing DSD models or the CCMDD programme?"*

To identify relevant literature, specific keywords were used, such as: *"healthcare workers' experiences with DSD models," "patient experiences within DSD models," "challenges or barriers to implementing DSD models or the CCMDD programme," "recommendations for enhancing DSD models or the CCMDD programme," and "interventions aimed at improving DSD models or the CCMDD programme."* The selection process involved reviewing article titles and abstracts, followed by downloading and reading the full texts of studies deemed

potentially relevant to the research.

Inclusion criteria

Studies that focus on experiences of healthcare workers and patients on DSD models or CCMDD programmes.

Studies that focus on utilization of the DSD models or CCMDD programme.

Studies that outlined recommendations for the utilisation of the DSD models or CCMDD programme.

Studies that are published between 2018 and 2024.

Studies that are written in English.

Exclusion criteria

Studies that lack specific recommendations regarding the implementation of DSD models or the CCMDD programme.

Research that does not align with the defined scope or inclusion criteria of the integrative literature review.

Articles for which the full text was inaccessible or could not be obtained.

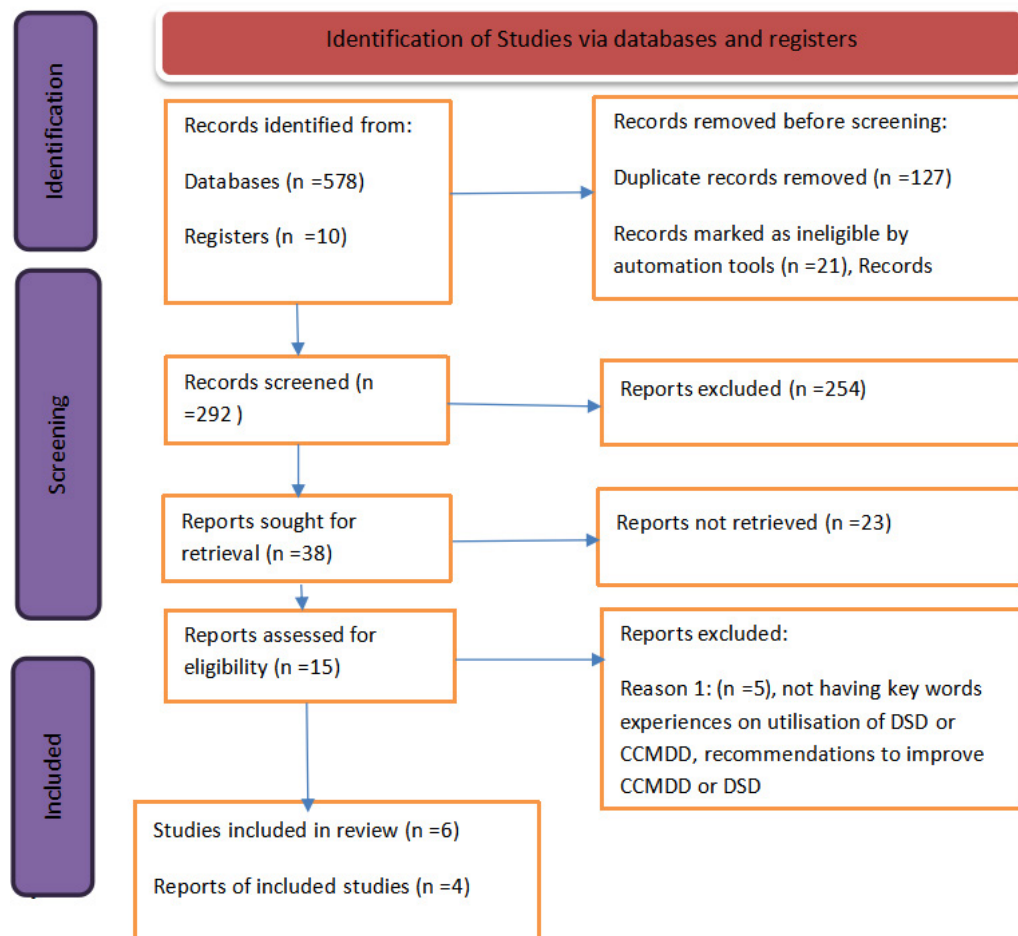


Figure 1.1: PRISMA 2020 flow diagram for integrative literature review

Source: (Page, McKenzie, Bossuyt, Boutron et al., 2021:n71)

A total of 588 articles were initially Identified from databases and registers. Mendeley for reference management and duplicate removal was utilised to remove 127 duplicates and 21 ineligible articles. Then, 292 articles remained for further screening after removal of duplicates. The inclusion and exclusion criteria of the review were then applied, which resulted in 38 articles. Additional screening was conducted and led to the removal of 23 articles. A total number of 15 articles remained and undergone review of titles and abstracts. Five articles were excluded because they were not having keywords such as experiences on utilisation of DSD or CCMDD and recommendations to improve DSD or CCMDD. The whole process resulted in selection of 10 articles that include original research studies and official reports that provided recommendations for implementing DSD models. Among the selected literature were six qualitative studies and four policy guidelines issued by the World Health Organization (WHO), South Africa’s National Department of Health (NDoH), and the Ministry of Health in the Republic of Zambia. These documents were included in the integrative literature review due to their diverse approaches to promoting the use of

DSD models. **Figure 1.1** above illustrates the decision-making flow chart.

The quality of the six qualitative studies was evaluated using the CASP (Critical Appraisal Skills Programme) checklist, while the AGREE II instrument was applied to assess the four guidelines. These studies and guidelines were selected for inclusion in the review as they met the established criteria. Thematic analysis was employed to interpret the data, following the approach outlined by Whittemore and Knafl (2005:243).

4. Findings

Characteristics of the Study

The literature review incorporates a total of ten studies. This includes four policy guidelines issued by the World Health Organization (WHO), South Africa’s National Department of Health, and the Ministry of Health in the Republic of Zambia, along with six qualitative research studies. Of the qualitative studies, three originated from South Africa, two from Geneva, and one each from Mozambique, Rwanda, Tanzania, sub-Saharan Africa, and Zambia. **Table 1.2** below outlines the categories of studies selected for the integrative literature review.

Table 1.2: Types of Studies Selected for the Integrative Literature Review

Authors; Year of publication; Country of origin	Study type/ approach	Population and sample size	Objectives	Intervention/ Recommendations
Bogart et al (2022); South Africa	Qualitative study	One hundred nine semi-structured interviews were conducted with stakeholders (pick-up points staff, CCMDD service providers and administrators). 16 Focus groups were conducted with 138 patients	To explore barriers and facilitators regarding CCMDD implementation for ART in ten healthcare facilities and their related pick-up points to understand recent challenges to CCMDD implementation	-Provision of patient education and improvement on communication around refills. -Provision of dedicated space and staff and on-going training at the organizational level. -Allowing for prescription renewal at pick-up points and less refills. -Provision of feedback to the clinic at the CCMDD programme level.
Sebeza et al (2024); Rwanda	Qualitative study	The study included selected health centres in Kigali city; patients were those exposed to the new HIV care model (DSD) and those exposed to the previous model who were transitioned to the current model (sample size not specified)	To identify perceptions, enablers and challenges associated with DSD model adoption among people living with HIV.	-Training on DSD models and improved peer education retention is recommended to improve the implementation of DSD models.

Continuation Table:

Authors; Year of publication; Country of origin	Study type/ approach	Population and sample size	Objectives	Intervention/ Recommendations
Uetela et al (2023). Mozambique	Qualitative study	Twenty in-depth interviews were conducted with managers and providers from the Ministry of Health and implementing partners from all health system levels.	To describe managers' and providers' perspectives on the determinants of successful implementation of the DSD models adopted in Mozambique, for all models as a package of HIV service delivery and for each specific model, to contribute to the body of knowledge on this subject in Saharan Africa.	-Availability of resources and on-going training for frontline providers provides a successful implementation of DSD models.
Pascoe et al (2020); South Africa	Qualitative study	48 in-depth interviews were conducted with healthcare providers, 16 with Department of Health and implementing partners and 24 focus groups with three HIV patient groups: new, stable and those not stable on treatment or not adhering to care	To describe barriers and facilitators of implementing the Adherence Guidelines for Chronic Diseases (HIV, TB and NCDs) (AGL) experienced by stakeholders in eight intervention and control sites.	-DSD providers and implementers should have necessary training tools and resources. -Tracing of clients should be prioritised and there should be designated people to trace patients.
Wilkinson and Grimrud (2024); Sub-Saharan Africa	Qualitative study	Not applicable	Three transition categories must be defined to address DSD transitions, and crucial enablers must be emphasised when revising DSD guidance and implementation.	-Increasing of DSD literacy and service delivery communication among and between the healthcare workers and clients is recommended to ensure proper transitions of DSD models.
Kandasami et al (2019) Kenya and Uganda	Qualitative study	The study was conducted in 30 health facilities in Kenya and Uganda using observations, document reviews and semi-structured interviews with site management and clinical staff.	To explore the development of innovative service delivery for HIV programs in low- and middle-income countries.	-Provision of training or career development and building system to improve staff condition is recommended to improve the implementation of the DSD models.
Republic of Zambia, Ministry of Health: Zambia Differentiated Service Delivery (DSD) Framework 2022-2026: Zambia	Expert consensus	The framework targeted physicians, clinical officers, nurses, pharmacists, and trained community workers and patients.	To guide how DSD models will be implemented at different levels (national, provincial, district, facility and community) to fast-track progress towards HIV epidemic control.	-Facilities should have trained skilled health providers and well linked community support systems with basic understanding of person-centered care principle to sustain and maintain the DSD models.
WHO's Consolidated Guidelines on HIV Prevention, Testing, Treatment, Service Delivery and Monitoring (2021); Geneva	Expert consensus	Guidelines targeted all populations of age groups	To provide a series of recommendations to promote the highest quality, person-centred delivery care for people living with and affected by HIV	-Healthcare workers should receive appropriate recurrent training and sensitization to improve the implementation of differentiated care models.

Continuation Table:

Authors; Year of publication; Country of origin	Study type/ approach	Population and sample size	Objectives	Intervention/ Recommendations
WHO's Updated Recommendations on Service Delivery for the Treatment and Care for people living with HIV (2021). Geneva	Expert consensus	Guidelines targeted all populations of age groups	To provide recommendations and good practice statements in the following areas. (1) Starting ART, including initiating treatment outside the clinic and supporting the same- day ART initiation. (2) Frequency of clinic visits and ART refills; measuring adherence; tracing and re- engagement in care. (3) Psychosocial support for adolescents living with HIV; task sharing for diagnostic services and service integration	-Implement interventions to trace people who have disengaged from care and provide support for re- engagement
National Department of Health: the 2020 Standard Operating Procedures (SOP) for the "minimum package of interventions to support linkage to care, adherence and retention in care." South Africa	Expert consensus	Guidelines targeted all populations of age groups	To enable delivery of effective differentiated care to patients within the health care system.	-Patients should be provided with information about FAC- PUP -Patients should be added on the tracing list if it is impossible to contact him or her. -Tracing and recall consent should be sought from the patients.

Adapted from Mhlanga (2023:198)

Findings of the integrative literature review

Three key themes emerged to guide recommendations for utilising the CCMDD programme. These include: equipping healthcare workers with training on DSD models, delivering targeted information and health education about DSD models, and establishing systems for tracking and following up with clients.

Training of healthcare workers on DSD models

Six out of the ten reviewed studies emphasized the importance of training healthcare professionals in the implementation of DSD models. These included works by Sebeza et al. (2024:2941), Uetela et al. (2023:11), Kandasami et al. (2019:534), Pascoe et al. (2020:16), the Zambia Ministry of Health's Differentiated Service Delivery Framework 2022–2026 (2022), and the WHO's Consolidated Guidelines on HIV Prevention, Testing, Treatment, Service Delivery, and Monitoring (2021). According to the Republic of Zambia (2022:n. p.), effective application of DSD models should be led by well-trained healthcare providers and supported by

integrated systems rooted in community engagement and person-centered care.

According to WHO (2021:353), healthcare providers should receive consistent and comprehensive training to equip them with the necessary skills and knowledge for delivering services to adolescents and adults in key populations, while upholding principles of health equity, non-discrimination, and confidentiality. Kandasami et al. (2019) suggests that enhancing the use of differentiated care models in HIV programmes in Uganda and Kenya requires reforming service delivery approaches, investing in staff development, and improving working conditions. In their Rwandan study, Sebeza et al. (2024:2941) advocate for training on DSD and strengthening peer education retention. Uetela et al. (2023:9) also highlight the importance of ensuring resource availability and ongoing training for frontline healthcare workers to effectively implement DSD models. Similarly, Pascoe et al. (2020:16) stress that successful adoption of DSD models depends on

provider experience and access to appropriate training materials and support tools.

Provision of information and health education on DSD models

Delivering information and health education has been identified as a key strategy to enhance the implementation of DSD models. Several sources—including the Republic of Zambia (2022:n.p.), South Africa's National Department of Health (2020:n.p.), Wilkinson and Grimsrud (2024:615), and Bogart et al. (2022:2600)—emphasize the importance of educating both healthcare providers and recipients about DSD models. Effective utilization of these models requires that patients are well-informed about the available options, enabling them to make empowered decisions and provide consent to participate in their preferred model. The Republic of Zambia (2022:n.p.) further advocates for active community involvement, recommending that key stakeholders such as gatekeepers, members of neighbourhood health committees, and other influential figures be educated about DSD models within their local health facilities.

Wilkinson and Grimsrud (2024:615) emphasize the need to strengthen communication around service delivery and enhance DSD literacy among both clients and healthcare providers to support the effective transition to DSD models. According to SOP4 from South Africa's National Department of Health (NDoH) (2020:48), patients should be informed about Facility Pick-up Points (FAC-PUP) as part of the repeat prescription collection strategy (RPCs). Enrollment in this option is available to those who meet the eligibility criteria and opt for the FAC-PUP service.

Additionally, SOP 8 on recall and tracing outlines that when patients consent to home visit follow-ups, they should be informed that a community health worker or appointed individual will visit them if they miss an appointment by more than seven days (NDoH, 2020:84). Aerts et al. (2020:252) propose that successful implementation of DSD models relies on patient education, enhanced communication regarding medication refills, designated spaces and staffing, and ongoing clinical training. Ben-Tovim, Bajger, Bui, Qin, and Thompson (2022:1503) further advocate for enabling prescription renewals at Pick-Up Points (PUPs), minimizing refill frequency, and establishing feedback channels at the clinic level to strengthen the

CCMDD programme. Ben-Tovim, Bajger, Bui, Qin, and Thompson (2022:1503) recommend that patients be given the option to renew their prescriptions at Pick-Up Points (PUPs), reduce the frequency of medication refills, and have mechanisms in place to provide feedback to clinics participating in the CCMDD programme.

Tracing of clients

Key sources forming the basis of the integrative literature review—namely WHO (2021), Pascoe et al. (2020:19), and South Africa's National Department of Health (NDoH) (2020:48)—advocate for client tracing as a critical component in the effective implementation of DSD models. WHO (2021:n.p.) recommends that HIV programmes incorporate strategies to trace individuals who have disengaged from care and offer support to facilitate their return. According to SOP4 of the NDoH's repeat prescription collection strategy (2020:52), patients who fail to collect their medication within seven days of the designated collection period should be contacted via SMS or reminder calls. If these efforts are unsuccessful, the patient must be placed on the facility's tracing list, prioritized according to urgency.

SOP8 from the National Department of Health (NDoH) (2020:84) specifies that healthcare workers must obtain patient consent for recall and tracing efforts. They are also required to record the patient's preferred method of contact and ensure confidentiality throughout the tracing process. Pascoe et al. (2020:18) further stress the importance of prioritizing patient tracing and advocate for assigning dedicated staff to carry out these follow-up activities.

5. Critique of the Integrated Literature Review

The literature review identified three core themes that contribute to the effective implementation of DSD models. These include: equipping healthcare workers with training on DSD models, delivering comprehensive information and health education, and establishing client tracing mechanisms. These themes emerged from the reviewed studies and serve as the foundation for recommendations aimed at enhancing the CCMDD guidelines. The importance of training healthcare providers on DSD models was emphasized in six of the included sources: Sebeza et al. (2024:2941), Uetela et al. (2023:10), Kandasami et al. (2019), the

Ministry of Health's Zambia DSD Framework 2022–2026 (2022), and the WHO's Consolidated Guidelines on HIV Prevention, Testing, Treatment, Service Delivery, and Monitoring (2021).

Musonda and Nawa (2024:10–13) identified several challenges affecting the implementation of DSD models in public health facilities within Masaiti District. These included insufficient funding, a shortage of trained personnel, resistance to change among healthcare workers, inadequate infrastructure and resources, and weak monitoring and evaluation systems. Similarly, Muthelo et al. (2020:30) highlighted gaps in healthcare worker training related to DSD models. To address these issues, Musonda and Nawa (2024:12) recommended the introduction of continuous training initiatives aimed at strengthening staff competencies. These should encompass workshops focused on innovative approaches, strategies for engaging patients, and the integration of technology to enhance health outcomes.

The findings of this study align with those reported by de Beer, Tladi, and Mokoena-de Beer (2025:6), who found that external Pick-Up Points (PUPs) for chronic medication—such as those used in South Africa's CCMDD programme—necessitate a comprehensive strategy that emphasizes patient-centered care while tackling operational barriers to ensure effective implementation.

Recommended actions include implementing focused training programmes for healthcare workers to enhance communication, alongside investing in infrastructure and resources—especially in underserved and rural areas. These efforts should support staff development, establish robust quality assurance systems, and introduce technological innovations such as digital tools that promote patient engagement, improve medication adherence, reduce errors, and enhance programme visibility and data management. Motsieloa, Phalane, Abdulrahman, and Phaswana-Mafuya (2024:37) found that community-based models yield positive outcomes when supported by well-trained personnel. The current study's findings align with those of Musonda and Nawa (2024:13) and De Beer et al. (2025), all of which underscore the critical role of healthcare worker training in the successful implementation of DSD models.

The Republic of Zambia (2022:n.p.), South Africa's National Department of Health (2020:48), and

Wilkinson and Grimsrud (2024:615) all advocate for the dissemination of information and health education on DSD models to strengthen their adoption and use. In line with this, de Beer et al. (2025:7) recommend intensifying patient education through focused campaigns aimed at bridging knowledge gaps and promoting better adherence to medication.

Limited patient knowledge has been identified as a barrier to the effective use of DSD models. Studies by Monyela (2021:51) and Wogayehu et al. (2020:161) found that chronic patients' lack of awareness regarding DSD models negatively affects their uptake. Chimukuche et al. (2021:51) stress the importance of equipping patients with comprehensive information about the available care models, including eligibility requirements and access procedures, to enhance their engagement. Ensuring patients are well-informed fosters a clearer understanding of DSD options, which in turn encourages more individuals to enroll in the model that best suits their needs.

The integrated literature review emphasized the importance of client tracing as a key strategy for enhancing the effectiveness of DSD model implementation (WHO, 2021; NDoH, 2020d:n.p.). Edwards et al. (2021:8) found that tracing is a practical and impactful method for identifying patients who miss clinic visits, resolving their care status, and facilitating their re-engagement and retention. Similarly, de Beer et al. (2025:7) advocate for the adoption of comprehensive tracking systems to monitor medication pick-up, accurately identify defaulters, and ensure that adequate space and staffing are allocated to support the CCMDD programme.

The IAS (2023:n.p.) underscores the importance of tracking and tracing patients who miss follow-up clinical appointments, noting that failure to do so may lead to a rise in default rates. Chaudhry, Zamzami, Aldin, and Pazdirek (2012:99) point out that it is often difficult to locate and determine the status of patients who have dropped out of care, particularly when they relocate without leaving any documentation. Therefore, they stress the need to maintain accurate contact information and to follow up with individuals who miss their scheduled appointments.

6. Conclusion

Enhancing the use of the CCMDD programme in Sekhukhune primary healthcare facilities can be achieved

by ensuring staff receive adequate training, delivering health education and programme-related information to both the community and key stakeholders, and implementing effective client tracing for those who default on medication. It is therefore advised that Sekhukhune Primary Health Care administrators include the CCMDD programme in the induction materials for newly appointed staff to support better programme uptake across the district.

Acknowledgements

Dr TR Netangaheni for his contribution and guidance in this manuscript.

Competing interests

The authors have declared that there is no existing competing interest in this study that may have inappropriately influenced them in writing this article.

Authors' contributions

R.P.S contributed by designing the study and acquisition, collecting, analyzing and interpreting data and drafting of the manuscript. TRN contributed by conceptualizing the study and reviewing methodology, editing and validating of the data analysis process.

Funding information

This research received no specific grant from any funding agency in the public, commercial sectors.

Data availability

Data are available upon request from the first author.

Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors, and the publisher. This research summarises the work completed as part of evaluation of PHD research titled "guidelines to improve Central Chronic Medicines Dispensing and Distribution (CCMDD) programme in Sekhukhune District: Limpopo Province.

References

- [1] Adelphi University. 2025. What is an integrative review. [Online]. Available at: <https://libguides.adelphi.edu/systematic-Reviews> [Accessed 26 May 2025].
- [2] Aerts, N., Van Bogaert, P., Bastiaens, H. & Peremans, L. 2020. Integration of nurses in general practice: A thematic synthesis of the perspectives of general practitioners, practice nurses and patients living with chronic illness. *Journal of Clinical Nursing*, 29(1-2): 251–264. <https://doi.org/10.1111/jocn.15092>.
- [3] Ben-Tovim, D.I., Bajger, M., Bui, V.D., Qin, S. & Thompson, C.H. 2022. Modular structures and the delivery of inpatient care in hospitals: A network science perspective on healthcare function and dysfunction. *BMC Health Services Research*, 22(1): 1503. <https://doi.org/10.1186/s12913-022-08865-8>
- [4] Bogart, L.M., Shazi, Z., MacCarthy, S., Mendoza-Graf, A., Wara, N.J., Zions, D., Dube, N., Govere, S. & Bassett, I.V. 2022. Implementation of South Africa's central chronic medicine dispensing and distribution program for HIV treatment: a qualitative evaluation. *AIDS and Behavior*, 26(8): 2600–2612. Available at: <https://link.springer.com/article/10.1007/s10461-022-03602-y> [Accessed 20 February 2023].
- [5] Chaudhry, L.A., Mamzami, M., Aldin, S. & Pazdirek, J. 2012. Clinical consequences of non-compliance with directly observed therapy short course (DOTS): Story of a recurrent defaulter. *International Journal of Mycobacteriology*, 1(1): 99–103. Available at: <https://www.sciencedirect.com> [Accessed 12 June 2025].
- [6] Chimukuche, R.S., Wringe, A., Songo, J., Hassan, F., Luwanda, L., Kalua, T., Moshabela, M., Renju, J. & Seeley. 2020. Investigating the implementation of differentiated HIV services and implications for pregnant women: A mixed methods multi-country study. Available at: <https://doi.org/10.1080/17441692.2020.1795221> [Accessed 12 May 2025].
- [7] Critical Appraisal Skills Programme. 2025. CASP Articles. [Online]. Available at: <https://casp-uk.net> [Accessed 04 June 2025].
- [8] De Beer, P., Tladi, K.M. & Mokoena-de Beer, A.G. 2025. A literature review of the Central Chronic Medicine Dispensing and Distribution Programme in South Africa. *Journal of Oral & Public Health*, 6(3): e1225. Available at: <https://dx.doi.org/10.4314/orapj.v6i3.25> [Accessed

- 29 May 2025].
- [9] Dhollande, S., Taylor, A., Meyer, S. & Scott, M. 2021. Conducting integrative reviews: A guide for novice nursing researchers. *Journal of Research in Nursing*, 26(5): 427–438. Available at: <https://doi.org/10.1177/174487121997907> [Accessed 25 May 2025].
- [10] Edwards, R.J., Lyons, N., Samaroo-Francis, W., Lavia, L.O., John, I., Todd, S., Edwards, J. & Boyce, G. 2021. The expansion of a patient tracer programme to identify and return patients lost to follow-up at a large HIV clinic in Trinidad. *AIDS Research and Therapy*, 18(20). Available at: <https://doi.org/10.1186/s12981-021-00341-3> [Accessed 12 June 2022].
- [11] Health Systems Trust. 2020. The CCMD story. [Online]. Available at: www.hst.org.za [Accessed 3 June 2022].
- [12] International AIDS Society. 2025. Differentiated Service Delivery. [Online]. Available at: <https://www.differentiatedservicedelivery.org> [Accessed 13 May 2025].
- [13] Kandasami, S., Shobiye, H., Fakoya, A., Asimwe, S., Inimah, M., Etukoit, M., Morison, L., Johnson, M. & Dybul, M. 2019. Can changes in service delivery models improve program quality and efficiency? A closer look at HIV programs in Kenya and Uganda. [Online]. Available at: <https://www.ncib.nim.nih.gov> [Accessed 28 August 2024].
- [14] Kutcher, A.M. & Lebaron, V.T. 2022. A simple guide for completing an integrative review using an article. *Journal of Professional Nursing*, 40: 13–19. Available at: <https://doi.org/10.1016/j.profnurs.2022.02.04> [Accessed 28 July 2024].
- [15] Mhlanga, N.L. 2023. Guidelines for the reduction of type 2 diabetes mellitus among older people living with HIV in Harare Urban District, Zimbabwe. [Online]. Available at: <https://uir.unisa.ac.za> [Accessed 9 July 2024].
- [16] Monyela, R.S. 2021. Exploring the Views of Nurses Regarding the Implementation of Differentiated Care for Patients Receiving Antiretroviral Treatment. (Master's thesis, University of Pretoria). Available at: <https://repository.up.ac.za> [Accessed 7 February 2024].
- [17] Motsieloa, L., Phalane, E., Abdulrahman, A. & Phaswana-Mafuya, R.N. 2024. Differentiated HIV service delivery model for female sex workers in Sub-Saharan Africa: A systematic review. *South African Journal of HIV Medicine*, 26(1). Available at: <https://sajhivmed.org.za> [Accessed 12 June 2025].
- [18] Musonda, B. & Nawa, M. 2024. Assessing the efficacy of various Differentiated Service Delivery (DSD) Models in chosen healthcare centers within Masaiti District. *International Journal of Health Sciences*, 7(5): 1–14. Available at: <https://carijournals.org> [Accessed 29 May 2025].
- [19] Muthelo, L., Nemagumoni, T., Mothiba, T.M., Phukubje, A.T. & Mabila, L.N. 2020. Experiences of Professional Nurses Regarding the Implementation of a Central Chronic Medicine Dispensing and Distribution Program at Primary Health Care Facilities in South Africa. *The Open Public Health Journal*, 13(1). Available at: <https://benthamopen.com/FULLTEXT/TOPHJ-13-477/> [Accessed 29 January 2023].
- [20] National Department of Health. 2020. Standard Operating Procedures: Minimum package of interventions to support linkage to care, adherence and retention in care. [Online]. Available at: <https://health.gov.za> [Accessed 29 June 2024].
- [21] Page, M.J., McKenzie, J.E., Bossuyt, P.M., Boutron, I., Hoffmann, T.C., Mulrow, C.D., Shamseer, L., Tetzlaff, J.M., Aki, E.A., Brennan, S.E., Chou, R., Glanville, J., Grimshaw, J.M., Hrobjartsson, A., Lalu, M.M., Li, T., Loder, E.W., Mayo-Wilson, E., MacDonald, S., McGuinness, L.A., Stewart, L.A., Thomas, J., Tricco, A.C., Welch, V.A., Whitting, P. & Moher, D. 2021. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. [Online]. Available at: <https://pumed.ncib.nim.nih.gov> [Accessed 3 September 2024].
- [22] Pascoe, S.J.S., Scott, N.A., Fong, R.M., Murphy, J., Huber, A.N., Moolla, A., Phokojoe, M., Goergens, M., Rosen, S., Wilson, D., Pillay, Y., Fox, M.P. & Fraser-Hurt, N. 2020. “Patients are not the same” – A qualitative content analysis of provider, patient and implementer perspectives on differentiated

- service delivery models for HIV treatment in South Africa. *Journal of International AIDS Society*, 23(6): 1–19. Available at: <https://doi.10.1002/jia2.25544> [Accessed 28 August 2024].
- [23] Republic of Zambia Ministry of Health. 2022. Zambia differentiated service delivery (DSD) framework 2022–2026. [Online]. Available at: <https://www.differentiatedservicedelivery.org> Accessed 12 July
- [24] Sebeza, J., Muiruri, C., Riedel, D.J., Stafford, K., Omari, H., Memiah, P., Lavoie, M.C., Tuyishime, S., Rwibasira, G., Dyessa, N. & Ntaganira, J., 2024. Is the differentiated service delivery model suited to the needs of people living with HIV in Rwanda? *AIDS & Behaviour*, 28(9), pp.2941–2949. [Online] Available at: <https://ror.org/03jggqf79> [Accessed 28 August 2024].
- [25] Uetela, M.D., Gimbela, S., Inguane, C., Uetela, O., Dinis, A., Couto, A., Gaspar, I., Gudo, E., Chicumbe, S., Gaveta, S., Augusto, O. & Sherr, K., 2023. Managers' and providers' perspectives on barriers and facilitators for the implementation of differentiated service delivery models for HIV treatment in Mozambique: a qualitative study. *Journal of the International AIDS Society*, 26(30), pp.1–11. [Online] Available at: <https://doi.10.1002/jia2.26076> [Accessed 29 August 2024].
- [26] University of Columbia, 2022. Differentiated service delivery in South Africa. [Online] Available at: <http://cquin.icap.columbia.edu> [Accessed 12 April 2024].
- [27] University of Houston, 2024. Literature reviews in the Health Sciences. [Online] Available at: <https://guides.lib.uh.edu> [Accessed 9 September 2023].
- [28] Whittemore, R. & Knafl, K., 2005. Methodology issues in nursing research. The integrative review: Updated methodology. *Journal of Advanced Nursing*, 52(5), pp.546–553. [Online] Available at: <https://doi.org/10.1111/j.1365-2648.2005.03621.x> [Accessed 28 August 2024].
- [29] Wilkinson, L. & Grimsrud, A., 2024. Enabling effective differentiated service delivery transitions for people on antiretroviral treatment. [Online] Available at: <https://www.ncbi.nlm.nih.gov> [Accessed 28 August 2024].
- [30] Wogayehu, B., Adinew, A. & Asfaw, M., 2020. Knowledge of dispensed medications and their determinants among patients attending outpatient pharmacy at Chenchu Primary Level Hospital, Southwest Ethiopia. *Integrated Pharmacy Research and Practice*, pp.161–173. [Online] Available at: <https://doi.org/10.2147/IPRP.S274406> [Accessed 28 January 2024].
- [31] World Health Organisation, 2021. Consolidated guidelines on HIV prevention, testing, treatment, service delivery and monitoring: Recommendations for a public health approach. [Online] Available at: <https://www.who.int> [Accessed 29 May 2024].
- [32] World Health Organisation, 2021. Updated recommendations on service delivery for the treatment and care of people living with HIV. [Online] Available at: <https://www.who.int> [Accessed 26 February 2023].