Analysis of the impact of pharmacist initiated management of antiretroviral therapy (PIMART) on health services inputs, processes and outcomes in South Africa

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Abstract

The analysis investigates the impact of the pharmacist initiated management of antiretroviral therapy (PIMART) programme on South Africa's healthcare system. Amid challenges in meeting UNAIDS 2030 targets, particularly in antiretroviral treatment (ART) accessibility, the PIMART initiative seeks to address these issues by leveraging community pharmacists. The study adopts the Donabedian model, assessing inputs, processes, and outcomes on the quality of the programme.

Inputs highlight the potential benefits of task-sharing to pharmacists, including extended operating hours, shorter waiting times, and increased accessibility. The regulatory framework ensures pharmacist readiness through training, which aligns with the national policy of competency-based prescribing.

Processes involve a legal dispute between PIMART and private doctors, emphasising the need for collaboration and stakeholder engagement. As community pharmacists transition to patient-centred care, they offer early intervention and improved adherence through existing mechanisms. Financial implications underscore cost savings to patients, though a robust referral system is crucial for those unable to afford treatment.

Outcomes focus on the programme's ability to improve accessibility, reduce disease burden, and address medical professional shortages. Outcome measures include changes in infection rates, treatment rates, viral suppression, and mortality reduction. Quality of care is assessed through safety, efficiency, and community acceptability.

The analysis highlights the potential for PIMART to enhance human immunodeficiency virus (HIV) care, urging a careful balance between accessibility, patient safety, and continuous monitoring to ensure programme sustainability. Leveraging community pharmacists' expertise emerges as a strategic move to achieve UNAIDS targets and improve overall public health in South Africa.

Keywords: pharmacist initiated management of antiretroviral therapy, health services

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Introduction

South Africa's healthcare system faces significant challenges as it contends with an overburdened, underfunded and understaffed public sector that serves over 80% of the population.[1] This strain is particularly evident in South Africa's struggle to meet the UNAIDS 95-95-95 HIV targets. The UNAIDS 95-95-95 target is a goal set by the United Nations Programme on HIV/AIDS to achieve significant milestones in the management and control of the HIV epidemic. The targets provide a roadmap for healthcare systems to effectively address the HIV epidemic by focusing on key pillars of prevention, treatment, and care. These targets aim for:

1. **95% of people living with HIV to know their HIV status**. This target focuses on increasing the rate of HIV testing and diagnosis by implementing widespread HIV testing strategies, such as routine testing in healthcare settings, community-based testing programmes, and self-testing initiatives. It also requires addressing barriers to testing, such as stigma, discrimination, and lack of access to testing services, to reach marginalised and high-risk populations.
2. **95% of people who know their status have access to antiretroviral therapy (ART)**. This target links a positive HIV diagnosis to retention on treatment. Treatment not only improves the health outcomes and quality of life for people living with HIV but also plays a crucial role in preventing the transmission of the virus to others. By aiming for 95% of diagnosed individuals to be on ART, healthcare systems prioritise early initiation of treatment and ensure that medications are accessible, affordable, and appropriate. This target highlights the importance of strengthening healthcare infrastructure, including expanding healthcare coverage, training healthcare providers, and ensuring a consistent supply of medications.
3. **95% of people on ART to have viral suppression.** Achieving viral suppression not only benefits individual health but significantly reduces the risk of HIV transmission to others. This target emphasises the importance of adherence to treatment and regular monitoring to ensure that ART effectively supresses the virus. Healthcare systems play a critical role in supporting individuals on treatment by providing comprehensive care, including adherence support, regular viral load monitoring, and addressing barriers to medication adherence such as side-effects, mental health issues, and socioeconomic challenges.

Achieving these targets would significantly reduce the impact of HIV/AIDS by ensuring that a vast majority of those infected are aware of their status, have access to treatment, and are able to suppress the virus to prevent further transmission.

South Africa has 7.2 million people living with a known HIV status while only 75% of those diagnosed receive ART,[2,3] highlighting challenges in medication access and healthcare delivery. Following which, there is a reported 68% of people with a suppressed viral load,[2] highlighting the need for improvement in achieving the third component of the UNAIDS target.

In 2018, the South African Pharmacy Council (SAPC) and South African HIV Clinicians Society (SAHIVCS) recognised the role of community pharmacists as a potential solution in addressing these challenges through task sharing and introduced the pharmacist initiated management of antiretroviral therapy (PIMART) programme. This aligns with the World Health Organization's (WHO) Decision Framework for ART delivery by addressing the concept of differentiated service delivery as it allows pharmacists to prescribe and initiate ART and tuberculosis (TB) prophylaxis, a role primarily carried out by doctors and specialised nurses in primary care.[4,5]

In this analysis, the Donabedian three-dimensional model for assessing healthcare quality will be used to evaluate the impact of the PIMART programme in contributing to a more efficient and accessible healthcare system, aiding South Africa in overcoming its challenges and advancing towards the UNAIDS targets. The Donabedian Model, developed in the 1960s, is an influential framework used in health care for quality assessment and focuses on evaluating the inputs (structure and resources), outputs (activities), and outcomes together with the interplay between these dimensions. It is commonly used in healthcare settings for quality improvement, performance measurement and benchmarking as well as policy development and regulation.

Inputs

There is a skewed distribution of healthcare professionals across the South African health system which results in workforce shortages, hindering the health sectors' capacity to provide quality of care. The density of pharmacists in South Africa was reported as 2.7 per 10 000 in 2016, compared to 8.1 doctors per 10 000 in 2021.[6] This is below the WHO recommendation of five pharmacists per 10 000 and 10 doctors per 10 000, highlighting the need to optimise the healthcare workforce and healthcare delivery model in order to strengthen the health system in its aim to achieve universal healthcare.[7]

Community pharmacies offer extended operating hours, are open at more convenient times and over weekends, while also providing shorter waiting times compared to primary care clinics, which benefit the working class who work long hours and cannot miss a day of work to attend monthly clinic visits. Hard-to-reach populations, particularly young women, and those already seeking sexual and reproductive care in the forms of emergency contraception, pregnancy tests and contraception from pharmacies can be reached through providing care at the pharmacy level.[8] While the geographical distribution of South African communities remains unequal, there is a potential to increase the accessibility of HIV care in underserved communities by involving pharmacists in the management of HIV, particularly as 40% of independently owned pharmacies are distributed in rural communities within the poorest provinces.[8] As a consequence, the pressure on clinics can be relieved such that they can focus on other health needs of the community, particularly as the burden of non-communicable diseases in South Africa rises.

The period from completing an undergraduate degree in pharmacy to complete registration is six years, which is a notably shorter period than the nine-year trajectory experienced by doctors. The quicker professional path for pharmacists, together with the reduced fees and waiting time required to access pharmacy services makes task sharing from doctors to pharmacist evident. The regulatory framework set out by the SAPC defines the scope of practice of a pharmacist who is PIMART-ready.[9] It outlines a clear distribution of responsibilities which include testing, prevention of HIV through PrEP (pre-exposure prophylaxis), PEP (post-exposure prophylaxis), treatment and management of TB/HIV co-infections. To support pharmacists in building capacity and ensuring patient safety, pharmacists are required to undergo an additional training course set out by specialists at SAHIVCS, together with obtaining a licensing permit from the National Department of Health to allow the prescribing of ART.[10] This is in line with South Africa's National Drug Policy of 1996 and the ideals of task shifting, which states that "At primary level, prescribing will be competency, not occupational based".[10] Limitations to the scope of practice and referral system to a clinic or doctor are also clearly defined in this framework. While additional training and licensure may be considered as barriers of entry to the programme, these prerequisites are essential elements to ensure a high quality of care is provided and ensures that patient safety remains at the core of the service.

Processes

PIMART is widely accepted by HIV advocacy groups, specialist groups and the Department of Health but lacks widespread approval from doctors, which has led to a legal dispute.[11] An association of private doctors contested the implementation of PIMART, arguing that the services provided by the programme encroach on their domain and questioned the competency of pharmacists.[11] Despite this, a court ruling in August 2023 favoured PIMART and emphasised the need for a collaborative approach to task-sharing. The legal dispute resulted in a two-year delay in the implementation of PIMART and highlights that, while tensions between healthcare professionals are common, key stakeholder engagement is pivotal in the restructuring and transformation of roles, to encourage collaborations and avoid delays in the progression of the health system. Care that falls outside of first-line treatment requires professional judgement of the pharmacist and a referral system to a doctor, highlighting that the success of

the programme relies on efficient and effective communication and collaboration between disciplines. Furthermore, the success of the programme relies on the trust of the public which can be influenced by other healthcare professionals.

Community pharmacists have transitioned to a more patient-centred care role as they serve as the first point of contact for health care by offering routine services, advice and over-the-counter medications which is crucial when analysing the staff-user interaction in HIV management. Pharmacies are a common place to seek sexual and reproductive health advice, particularly when accessing emergency contraception, a signal of HIV risk, and the need for PEP or PrEP can be assessed at the point of contact, further bridging the gap between the need felt by patients when seeking health advice, and a normative need.[8] Streamlining care at the point of contact can result in early intervention and ensure that patients are not lost to follow-up.

The ability for pharmacists to monitor adherence is enhanced through mechanisms already in place such as prescription reminders and faster medication collection processes which can improve the staff-user interaction as patients are supported with their treatment plans and are encouraged to retain in HIV care which will ultimately improve viral suppression, a key UNAID target.[12,13]

When analysing the financial implications of the PIMART programme, there is a notable cost saving to patients as the cost of visiting a pharmacy is significantly less than a consultation with a doctor. However, HIV care in the public sector is free, therefore a clear and robust referral system is essential for those unable to afford treatment. To address the inequality faced by this payment mechanism, government may need to introduce a reimbursement model to compensate pharmacists and alleviate patient costs. Private insurance must be encouraged to include pharmacists as designated providers for HIV care and reduce co-payments to further encourage accessibility of treatment. Granting early and improved access to treatment is cost-effective for the health system resulting in increased efficiency of healthcare resources and a reduced overall cost of healthcare despite the initial increase in cost as accessibility is expanded.

Outcomes and evaluating quality of care

Task-sharing to pharmacists can improve the accessibility of HIV treatment and relieve the burden of disease placed on the health system whilst addressing the shortage of medical professionals. Reducing the delays in treatment through task shifting is in line with the test-and-treat approach which is critical in reducing the progression of HIV and improving the overall health of the population.

Outcome measures such as changes in HIV infection rates, treatment rates (particularly pharmacist managed ART) and viral suppression rates are distinct measures to analyse the success of the PIMART programme. Additionally, measuring reductions in mortality and morbidity related to HIV are important in assessing the strength of the programme.

To evaluate the quality of care provided through task-sharing, patient safety, efficiency and acceptability within the community must be measured. Pharmacist prescribing patterns will be governed by evidence-based approaches outlined by the SAHIVCS in the form of standard treatment guidelines.[9] The adherence to guidelines will be reinforced through continuous professional development and site visits, which, while inconvenient, fosters a close alliance with infectious disease specialists and ensures pharmacists remain up to date with advancements in care. It would be valuable to assess the geographical distribution of pharmacist-managed ART to determine changes in healthcare utilisation rates and assess the effectiveness of encouraging pharmacies to operate in hard-to-reach areas.

While safety outcomes such as improved adherence and management of side-effects are anticipated through the programme, the potential for medication errors requires vigilant monitoring and minimisation efforts by pharmacists to maintain high standards of care. Monitoring medication supply will also indicate the sustainability of the PIMART programme.

Efficiency of the referrals system needs to be closely monitored to ensure timely and effective referrals. Patient satisfaction surveys need to be conducted to gauge patient acceptance of pharmacists in the provision of ART and ensuring sufficient support and empathy is provided.

Limitations and the future

Pharmacist-initiated care has a rich history, with established programmes like the primary care drug therapy (PCDT) paving the way for innovative approaches to enhancing access to essential medications. The PIMART programme can be seen as a natural extension of the PCDT, aimed at broadening access to essential medications, including ART. While similar initiatives are being implemented globally, most studies have focused on ART refills at the community pharmacy level or on PrEP initiation.[14-17] Acceptability studies conducted in South Africa and Botswana shed light on ART patients' receptiveness to pharmacy-delivered ART refills, highlighting the convenience and efficiency of such services compared to clinic-based alternatives.[16] Economic evaluations, such as those carried out in Canada on pharmacist prescribing programmes, emphasise the potential for cost savings within healthcare delivery systems, presenting an area for further research.[18] As these models progress, the establishment of robust frameworks for sustainable public-private partnerships will be paramount in effectively navigating the complexities inherent in pharmacy-based ART services, ensuring their long-term viability and efficacy in meeting the needs of patients.

Conclusion

The PIMART programme represents a multifaceted approach to addressing the UNAIDS targets in South Africa. By harnessing the expertise of community pharmacists in patient care management and expanding the provision of ART, the programme has the potential to significantly improve accessibility to HIV treatment,

alleviate the burden on the healthcare system, and enhance patient outcomes.

Regarding the first target, achieving 95% of people living with HIV knowing their status, the PIMART programme plays a pivotal role in increasing the rate of testing. By addressing barriers such as stigma, discrimination, and limited access to testing services, particularly among marginalised and high-risk populations, the programme can contribute to a more comprehensive and inclusive approach to HIV testing.

For the second target, ensuring that 95% of individuals who know their HIV status have access to ART, the PIMART programme's efforts to strengthen the healthcare system are crucial. Through expanding healthcare coverage, providing training to healthcare providers, and ensuring a consistent supply of medications, the programme can help ensure that patients are effectively linked to care and retained in treatment programmes.

Finally, the third target, achieving viral suppression in 95% of people on ART, emphasises the importance of adherence to treatment and regular monitoring. Here, the PIMART programme provides essential support to individuals on treatment, including adherence counselling, viral load monitoring, and addressing barriers to medication adherence. By prioritising comprehensive care and addressing the broader socio-economic challenges faced by patients, the programme can contribute to improving viral suppression rates and overall health outcomes.

In conclusion, the PIMART programme offers a nuanced and comprehensive approach to addressing the UNAIDS targets in South Africa. By leveraging community pharmacists' expertise, expanding access to ART, and strengthening healthcare systems, the programme has the potential to drive significant progress towards ending the HIV/AIDS epidemic in the region.

Conflict of interest

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