# Evaluation of a Nurse-Managed Wellness Centre for Healthcare Workers in Swaziland

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## Abstract

Southern Africa is experiencing unprecedented levels of morbidity and mortality as a result of the HIV pandemic. Healthcare workers (HCWs) living with HIV infection may be at risk from illness and death, but may not access needed services within their workplace facility. The Swaziland Wellness Centre for Health Care Workers® was designed to enhance the health and well-being of HCWs through a nurse-managed, community-based clinic. The purpose of the parent mixed-methods study was to describe the enrolment of clients into care over the first 10 years of the clinic's operation and assess the HCWs' perceptions of the Centre and its services. This report describes the findings from a retrospective review of medical records used to describe the characteristics of the clients, enrolment patterns, and services delivered. The Centre enrolled HCWs ($n$ = 2,562) and their dependents ($n$ = 2,571) into primary care. The HCW clients represented a variety of cadres across the health sector; nurses (29%) were the largest single cadre enrolled. The Centre nurses initiate antiretroviral and/or antitubercular treatments and provide ongoing monitoring. The database was not designed for evaluation purposes and written documentation of client care was often incomplete or illegible. The enrolment and treatment patterns suggest that nurse-managed clinics can successfully integrate HIV and tuberculosis care with primary care services for HCWs in southern Africa. Recommendations include improving the written

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documentation and electronic management of services provided to support ongoing evaluations.

**Keywords:** Africa; healthcare workers; HIV; primary care; tuberculosis; wellness

## Introduction and Background Information

In the Kingdom of Swaziland, the healthcare workforce is challenged by a chronic shortage of skilled healthcare workers (HCWs) and an extraordinary high disease burden (CIA 2017). The HIV/AIDS pandemic has led to the development of workplace programmes to provide healthcare services to public sector employees to reduce the impact of infectious diseases and non-communicable conditions. These employee programmes need to holistically deal with the intersection of physical and psychological health needs (Pillay and Terblanche 2012, 229). In Swaziland, the impact of HIV is complicated by increasing diagnoses of tuberculosis (TB), contributing to the high rates of morbidity and mortality among all cadres of HCWs (Carrier-Walker 2011, 273; Tudor et al. 2016, S255).

HCWs are less likely than the general public to access HIV or TB screening, prevention, and treatment services owing to a variety of structural, economic, and psychosocial barriers (Carrier-Walker 2011, 273). Kerr, Brysiewicz and Bhengu (2017, 93) have provided guidelines for managing nurses in the workforce who are living with HIV infection and/or TB. Both stigmatising attitudes (Haber, Roby, and High-George 2011, 541) and a lack of confidentiality of personal health information have been identified as significant obstacles for HCWs accessing primary healthcare services (De Vries et al. 2011, 1; Mataboge et al. 2014, 1).

HCWs in sub-Saharan Africa face unprecedented challenges owing to the shortage of HCWs and high disease burden due to the HIV pandemic and the increasing numbers of TB as a co-morbidity (Mallinson 2015, 531; Tudor et al. 2016, S255). In response to the mounting crisis, the Swaziland Nurses Association and the International Council of Nurses (ICN), with the support of numerous international donors and partners across several sectors, established the Wellness Centre for Health Care Workers in Swaziland. The Centre opened in September 2006, introducing an innovative, nurse-managed model of care to deal with the unique health needs of HCWs and their immediate family members; any HCW who enrols for services is allowed to enrol up to four immediate family members as “dependents”. The Centre is centrally located and easily reached with public transportation. To maximise the clients’ privacy and confidentiality, the clinic is situated in a community setting and not in a healthcare facility.

Over the first 10 years of the Centre’s operation, the increasing number of client visits has necessitated the hiring of additional nursing staff (Mamba et al. 2013, 30). With

guidance and support of a Wellness Centre Board, the parent association (the Swaziland Democratic Nurses Union), and collaborating partners, the Wellness Centre staff have framed a strategic plan for the ongoing operations and continuous quality improvement needed to sustain the Centre's operations. An evaluation of the Wellness Centre services was designed to provide valuable data to guide the ongoing strategic initiatives.

The principal investigator of this study was a U.S Fulbright Scholar serving on the Faculty of Health Sciences at the Southern African Nazarene University during the 2012–2013 academic year. This research study was supported as a primary component of the Fulbright activity plan and was designed to focus on the expressed needs of the Wellness Centre management.

In 2007, a year after the opening of the Swaziland Wellness Centre, the Lesotho Nurses Association opened a Wellness Centre for HCWs based on the same family-centred model (ICN 2017, 1). The Swazi Centre staff provided valuable mentorship to the Lesotho Centre staff to ensure success and sustainability (R. Fosa, personal communication, 5 April 2016). Subsequently, similar centres have been built in the countries of Malawi, Uganda, and Zambia. Ethiopia is in the process of developing such a centre.

## Statement of the Research Problem

To optimise the health and well-being of HCWs, it is necessary to provide culturally acceptable and accessible primary care services; integrating HIV and TB treatment and prevention programmes may keep nurses and other HCWs healthy and contributing to a stable workforce. The national nursing association and its local, national, and international stakeholders requested data on the ability of the Wellness Centre to meet its mission to provide HIV, TB, and primary care services to HCWs and their families. To date, there has been no structured assessment to characterise the Wellness Centre client enrolments or measure the uptake of antiretroviral therapy (ART) through the Centre.

## Purpose and Objectives of the Study

The purpose of this mixed-methods study was to characterise how Swazi HCWs and their immediate family members access primary care and ART services [quantitative component] and to assess the HCWs' perceptions of the acceptability and accessibility of the services [qualitative component]. This article reports on the quantitative component of the study. The objective was to analyse the client database to describe enrolment trends and service use over the first 10 years (2006–2016) of the Centre's operation.

## Research Methodology

### Study Design

A descriptive design was used to evaluate the Wellness Centre over the first 10 years of its operation.

### Data Source

This study used the clinic's electronic database to answer questions about client characteristics. The specific questions that guided the analyses were "Are there trends in the characteristics of clients who enrolled for the Wellness Centre services over the first 10 years of its operation?" and "How many HCWs have received ART services at the Wellness Centre?" The de-identified data for all of the HCWs and their immediate family members who had enrolled in the Wellness Centre between September 2006 and August 2016 were included in this analysis. Any healthcare worker in the country can enrol for services, though the physical clinic structure is centrally located in Manzini, one of the four regions of Swaziland. HCWs in distant locations may travel to the Centre or receive services through the mobile outreach van staffed by Centre nurses.

### Procedures to Prepare the Dataset

In an effort to protect the clients' confidentiality, the initial step in the analysis of the data was to "de-identify" the electronic medical records by removing the names of the clients from the output files. The de-identified quantitative data were collected through a retrospective review of medical records as captured in the Wellness Centre's computerised database. Before data analysis began, a random sample of client records ($n$ = 30) was reviewed, comparing the database records to the paper documentation to assess the accuracy and completeness of the data. Subsequently, problematic formulas in the database were adjusted to correct for systematic inconsistencies; a follow-up validation of a random selection of medical records ($n$ = 20) provided assurance of the data's accuracy.

In an effort to compare changes over the years, the clients were categorised into cohorts according to the year during which they enrolled in care at the Wellness Centre. Table 1 outlines the period of enrolment associated with each of the respective cohort years.

**Table 1:** Categorisation of new client enrollees into cohorts (Year 1–Year 10)

| | |
|---|---|
| 1 Sept 2006–31 Aug 2007 | Cohort 1 |
| 1 Sept 2007–31 Aug 2008 | Cohort 2 |
| 1 Sept 2008–31 Aug 2009 | Cohort 3 |
| 1 Sept 2009–31 Aug 2010 | Cohort 4 |
| 1 Sept 2010–31 Aug 2011 | Cohort 5 |
| 1 Sept 2011–31 Aug 2012 | Cohort 6 |
| 1 Sept 2012–31 Aug 2013 | Cohort 7 |
| 1 Sept 2013–31 Aug 2014 | Cohort 8 |
| 1 Sept 2014–31 Aug 2015 | Cohort 9 |
| 1 Sept 2015–31 Aug 2016 | Cohort 10 |

The cohort year categories were used to identify trends in client enrolments and allow comparisons among variables for the different cohorts.

### Ethics

The study procedures were approved by the Human Protections Committee at the Washington University in St. Louis, Missouri, United States, and the Scientific and Ethics Committee of the Ministry of Health in the Kingdom of Swaziland.

## Results

### Enrolment of Clients and Dependents

Healthcare worker clients began to enrol in 2006 and increased steadily over the first six years of the Wellness Centre operations, after which new enrolments declined. Figure 1 illustrates the numbers of new clients that entered into the clinic during each of the cohort years. For example, in Year 1, there were 108 HCWs that began receiving care in the Centre; there were only 3 dependents in that first year (total $n = 111$ clients). In Year 2, another 172 clients enrolled in the clinic for care, for a cumulative client base of 283 clients.

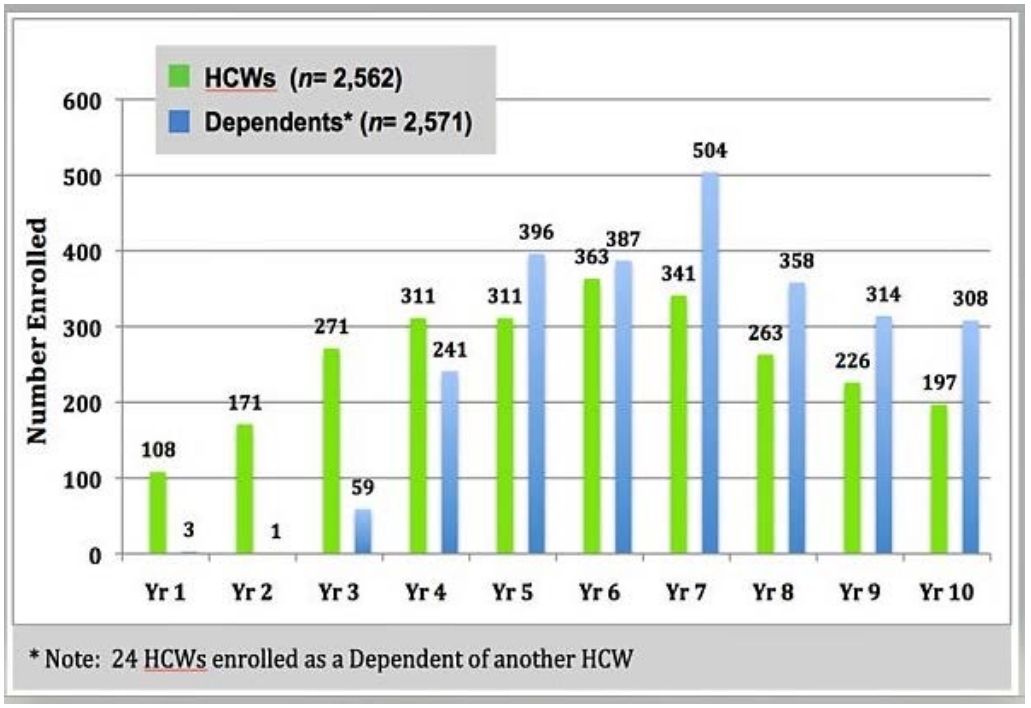


**Figure 1:** New enrolment of HCWs and their dependents (Year 1–Year 10)

In the first 10 years of the Centre's operation, a cumulative total of 2 562 HCWs and 2 571 dependents were enrolled in care. As noted, 24 of the dependents were actually HCWs themselves, but they enrolled as the dependents of other HCWs who were listed as the primary clients. There were very few dependents enrolling in the first two years of the Centre's operations. By Year 3 and Year 4, the numbers of dependents rose precipitously and the trend of engaging dependents in care followed a pattern similar to the HCW clients.

### Characteristics of the Healthcare Worker (HCW) Clients

Upon the establishment of the Wellness Centre, the staff intended to enrol a diverse client base that represented all cadres in the healthcare workforce and all four regions of the country. The clinic database was analysed to describe the general characteristics of the HCW clients ($n$ = 2,562) who had enrolled in the Centre.

*Gender*. Each year, the Centre enrolled HCWs of both genders. Figure 2 shows that the ratio of females to males remained fairly consistent at approximately 2:1 for each of the cohort years. The percentage of male enrollees would appear to be proportional to the distribution of males and females in the HCW workforce in Swaziland.

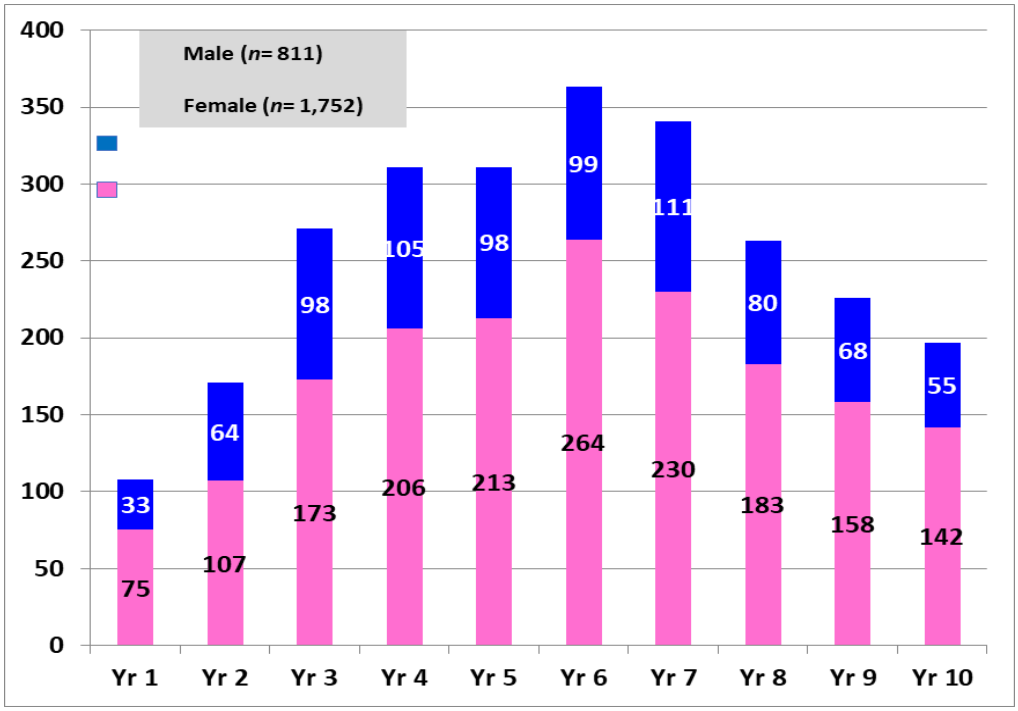


**Figure 2:** New HCW enrollees by gender for each cohort year (Year 1–Year 10)

*Cadres of healthcare workers.* Although the Wellness Centre was established by the Swaziland Nurses Association, it was designed to provide primary care services to all cadres in the healthcare workforce. The staff conducted outreach activities to encourage non-nurse HCWs to enrol in the Centre. Nurses are the single largest cadre in the healthcare workforce. However, as illustrated in Figure 3, "nurses" accounted for 29 per cent of the Centre's HCW clients. The "other" category (44% of enrollees) consisted of clients that were not able to fit into existing categories; the inability to label by cadre was largely due to the lack of options in the database and incomplete documentation by the clinic staff when enrolling clients for services.

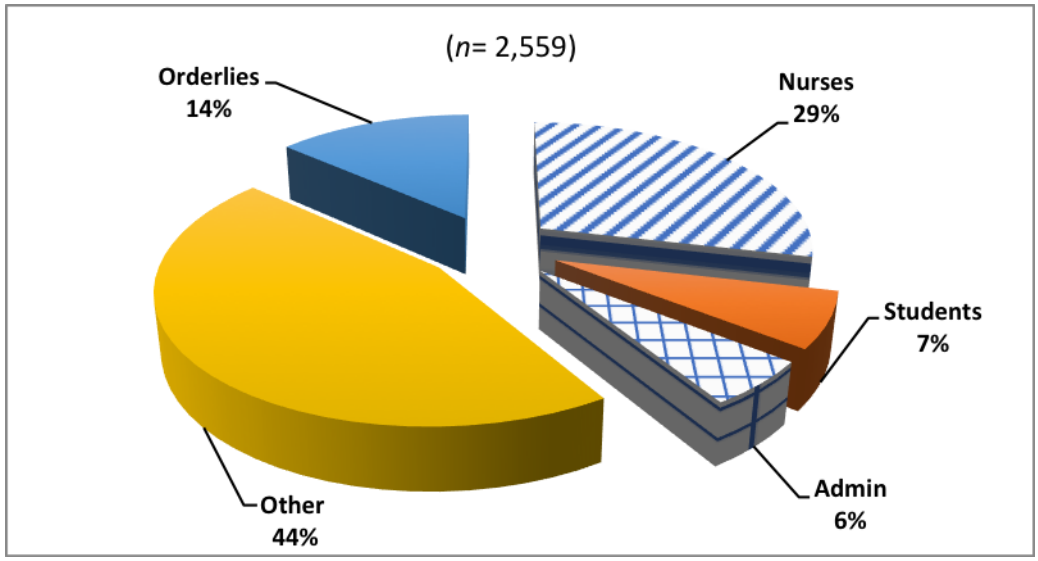


**Figure 3:** Healthcare workers' clients categorised by cadre (all cohorts)

A unique aspect of the Wellness Centre model is that the outreach for clients included students in the health profession programmes. As Figure 3 illustrates, clients from diverse cadres in the workforce – from students to healthcare administrators – have been enrolling at the Centre. As Figure 4 shows, there have consistently been a low number of new healthcare student enrollees over the first 10 years.

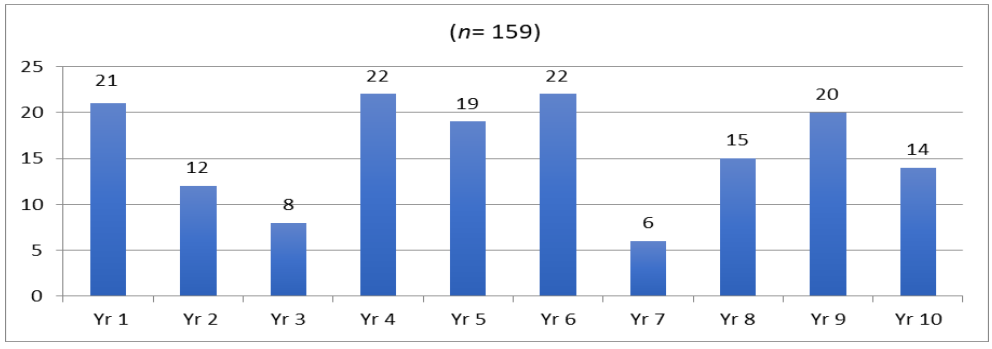


**Figure 4:** New healthcare student enrollees by cohort year

*Regional distribution.* It was expected that outreach activities would enrol HCWs from all four regions of the country (see Figure 5). The staff used the clinic vehicle to reach out to hospitals, rural clinics, and health facilities and to attend health-related community events to engage HCWs in the Wellness Centre services.

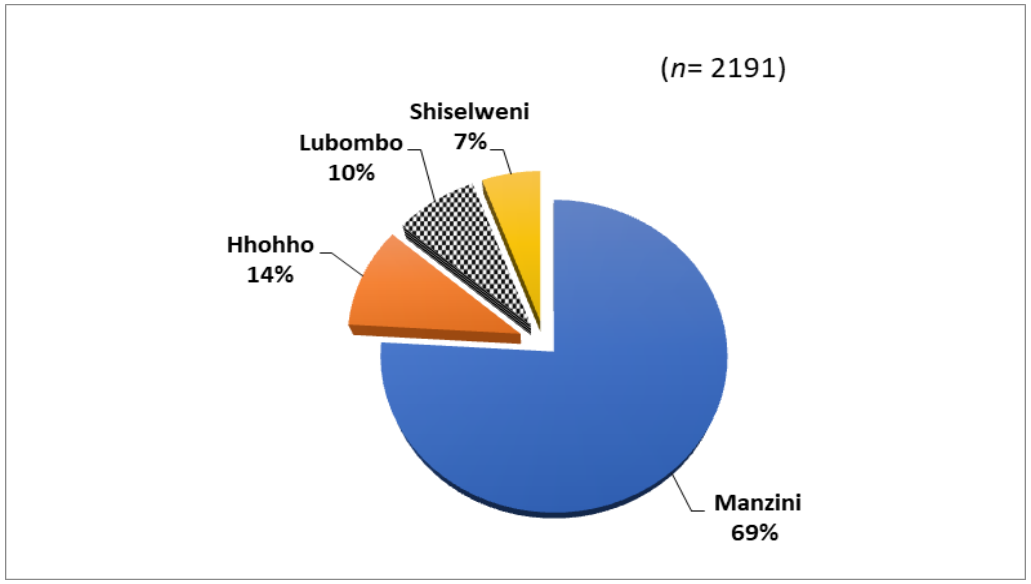


**Figure 5:** HCW clients by geographical region of residence

## Client Care

*Number of client visits.* Over the course of the first seven years of operation, the Centre saw increasing numbers of client visits, after which the total visits per year decreased. Figure 6 illustrates the increase in visits by HCWs and their dependents.

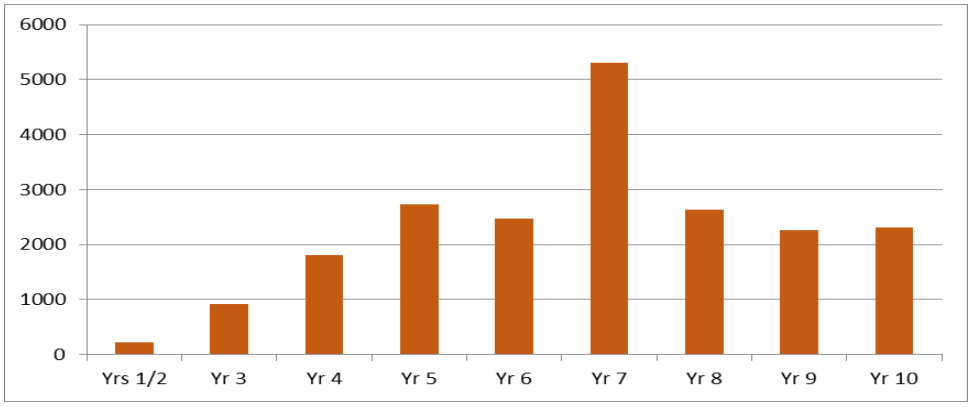


**Figure 6:** Annual number of client visits to the Wellness Centre

When the Wellness Centre opened in September 2006, there were three nurses on staff, one administrator and two clinical nurses. The Centre Director was a nurse, but not assigned as a member of the clinical staff that would tend to the care of the clients.

Figure 7 illustrates how two nurses provided care for the first four years of the Centre's operation; they were joined by two additional clinical nursing staff in 2010 (Year 4 – Year 5). Figure 7 shows the new enrollees – HCWs and dependents – for each year at the Wellness Centre.

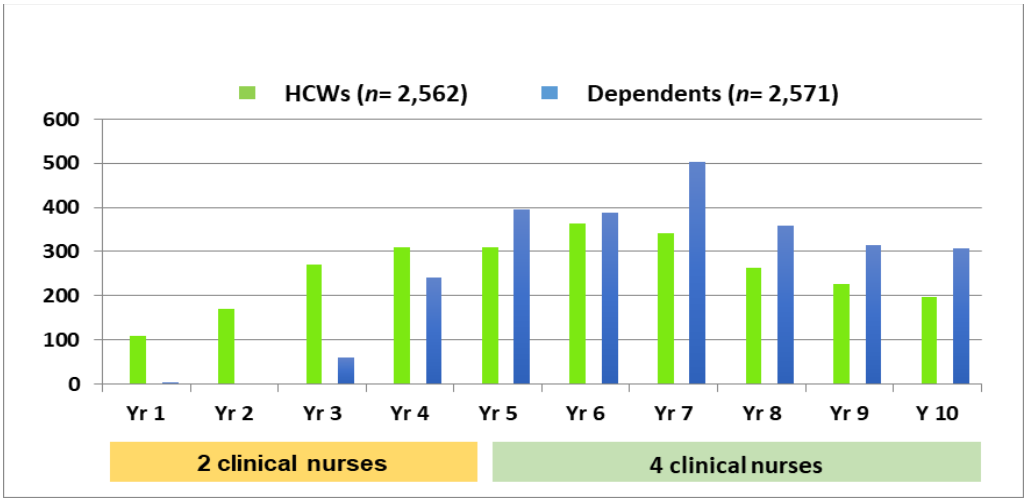


**Figure 7:** Clinical nursing staff over cohort years 1 – 10.

*Clients receiving antiretroviral therapy (ART).* Over the years of the Wellness Centre's operation, an increasing number of Swazi citizens were being tested for the HIV virus at public and private sites, and receiving, when appropriate, ART. Hence, some clients arrived at the Centre already having been started on ART at another facility while other clients were initiated on ART by the staff of the Centre. The electronic database did not provide reliable information on the numbers of clients who were tested for HIV infection over the 10 cohort years. Furthermore, the data on how many clients were eligible for ART – but declined taking the medication – were not reliable. There was also no reliable documentation of clients who defaulted on ART or transferred their care to another health clinic. Therefore, the data presented in this report focus on the clients who were initiated on therapy or continuing on therapy while at the Wellness Centre.

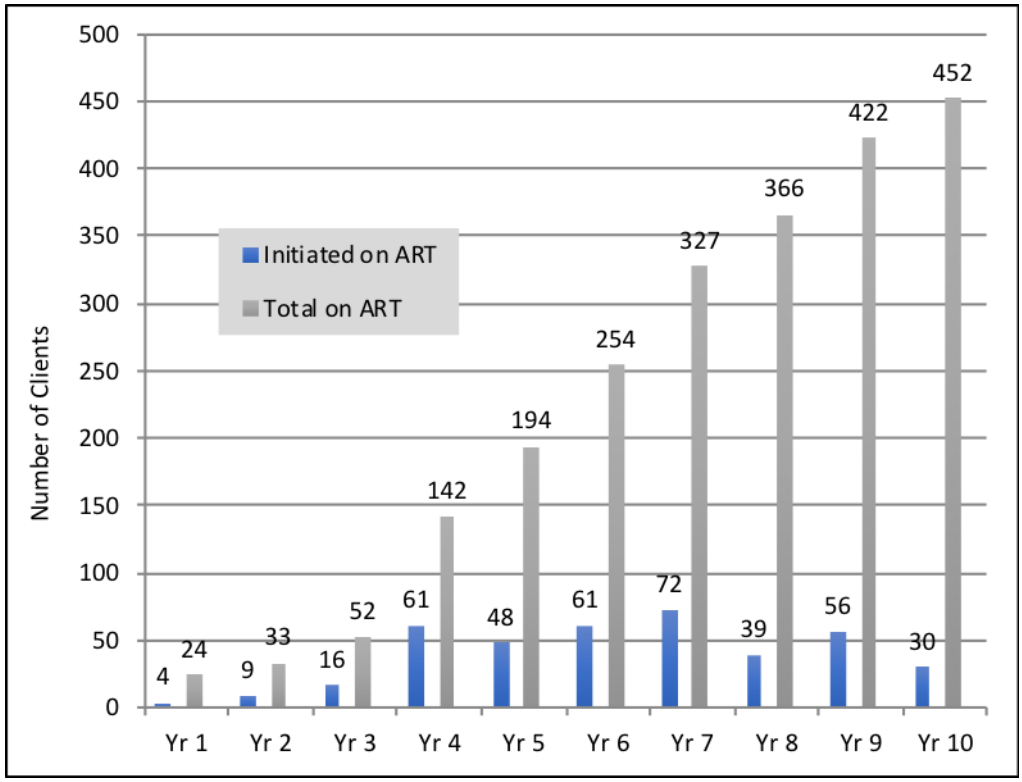


**Figure 8:** Annual new ART initiates and cumulative total for all cohorts (Year 1-Year 7)

Figure 8 outlines the numbers of clients initiated on ART and also the cumulative number of clients maintained on ART over the 10 cohort years.

## Discussion

This evaluation of the first 10 years of the Wellness Centre provides evidence for the acceptability of an innovative model for a community-based, nurse-managed clinic to serve the needs of both male and female HCWs. The Centre's holistic, patient-centred, and community-focused design is consistent with characteristics of successful nurse-managed clinics that serve diverse or at-risk populations as described by Mason et al. (2015, 540). This unique model of care that was established by the national nursing association to reduce the high rates of morbidity and mortality among Swazi HCWs succeeded in engaging its HCWs in screening, prevention, and treatment activities. The Centre enrolled HCWs from a wide range of cadres representing all four regions of the country. There were no physicians who had enrolled for care at the Centre; physicians may have options for private medical care that may not be affordable for large segments of the healthcare workforce.

In South Africa, nurse initiation and management of antiretroviral therapy (NIMART) has been an effective component of the national response to the HIV pandemic, reducing hospital admissions and improving the patients' quality of life (Jones and Cameron 2017, 839). The findings of this study support that a nurse-managed, free-standing clinic can effectively enrol HCWs to engage in HIV services (i.e. testing, prevention education, and ART) integrated with primary care delivery. Over the years, the nurses developed their skills in NIMART and sustained an increasing number of clients on maintenance therapy to reduce viral loads and minimise the occurrence of opportunistic infections (P. Mamba, personal communication, 4 April 2016). The Centre's approach to "caring for the caregivers" aims to engage nurses and other HCWs in optimal health maintenance so that they may be gainfully employed and contributing to the Swazi healthcare workforce.

Swazi HCWs have reported that stigmatisation and the fear of breaches in their confidentiality were major barriers to seeking health services (De Vries et al. 2011, 7). Over the years of the Centre's operation, the numbers of HCWs and dependents (i.e. family members) enrolled at the Centre increased quickly; the Centre's aim to empower HCWs to maintain their health and the health of their families (Mamba et al. 2013) may be realised in the family-centred approach upon which the Centre was established. The increase in enrolments may also be an indication that HCWs have developed trust and rapport with the Centre staff.

In 2010, the addition of two more clinical nurses to the staff may have contributed to the increase in client enrolments. The enrolment of healthcare students remained modest over the years; while the mobile van reduced transportation barriers to the educational programmes, there was a limited number of Centre staff to conduct recruitment of student clients.

In the recent years, the total number of new enrollees has been declining; this may be owing to a ceiling effect in which the Centre has reached a critical mass of eligible clients. However, it may also be that recruitment is hindered by the limited clinical space and staff time to contact and enrol new clients.

**Centre Activities beyond Clinical Care**

The nurses at the Wellness Centre actively engaged more than clinical care duties as part of their job; it is within this context that one can appreciate their successes at enrolling HCWs and their dependents into care. The nurses engaged in a wide range of additional initiatives, projects, and collaborations in partnership with governmental agencies and community organisations. Beyond the provision of clinical care, the staff spearheaded initiatives by the Ministry of Health to vaccinate HCWs against hepatitis B, to screen all HCWs for TB, and to consult on the establishment of "Wellness Corners" in the country's health facilities. The Centre staff expertise and specialised skills contributed to the success of collateral programmes. For example, the Centre established

an innovative collaboration with the mothers2mothers® programme to provide mentor mothers living with HIV with counselling, health literacy education, and expanded access to primary care services as "healthcare workers" who contribute to improved outcomes in Swaziland. The staff also lent technical assistance and support to an initiative by the ICN for the Girl Child Education Fund® initiative that provides school fees, programming, and other supports to orphan girls whose parent had been a nurse. Over the 10 years, the Centre staff collaborated with the SOAR-RN® capacity building programme to provide grief retreats to alleviate the symptoms experienced by HCWs who had lost many patients, family members, and/or others to the HIV epidemic. This component of wellness was designed to improve the HCWs' psychological and spiritual well-being.

### Leadership in the Wellness Centre Network

Finally, it should be noted that the Swaziland Wellness Centre for Health Care Workers was the first facility of its kind in the world. After opening in 2006, it became clear that the concept needed to be replicated in other countries. The second Wellness Centre opened a year later in Lesotho; with their experience, the Swaziland Centre staff became mentors to their colleagues, sharing their lessons learned and successful strategies. With the support and guidance of the ICN and international collaborators, the Wellness Centre "network" has expanded to similar clinics in Malawi, Uganda, Zambia, and (soon) Ethiopia. In each case, the national nursing organisation assumes the responsibility for managing its country's Centre; the Swazi staff continue to provide mentorship, programming, and assistance with strategic planning activities.

## Lessons Learned and Recommendations

This study was the first formal evaluation of a Wellness Centre. There were several lessons learned that would be valuable to any similar endeavour.

### Need for Improved Documentation

There were deficiencies in the documentation of client services. For example, entry errors when documenting that a client was seen by the receptionist, a nurse, or another staff member providing direct care undermines accuracy. In some files, specific data (e.g. gender, age, cadre) were missing, requiring inordinate amounts of time to recover. For many HCWs, the specified cadre was not recorded in the record. The more serious documentation omissions related to HIV voluntary counselling and testing (VCT) services, medication administration and adherence, or referrals to other health facilities. Some nursing notes were difficult to read due to poor handwriting. It is recommended that the staff receive training on the importance of legibility and accuracy of documentation.

## A Database Must Meet the Needs of the Clinic

The database that had been created for the Centre in 2006 was not designed to support an evaluation of this type. The database did not allow a range of discrete categories that would have assured the clients' proper placement in a single cadre. For example, it was clear that numerous clients who had been categorised as "administrators" were, indeed, nurses. They were recorded in the database by their main role or position at their facility. The database was not constructed for the easy extraction of data in meaningful ways to answer specific questions. The medical records retrieval limitations undermined the ability of these researchers to evaluate specific characteristics of the clinic enrollees that would have been valuable to the Centre staff who wished to improve care delivery. For example, the database did not include an option to document the death of a client; hence, we were unable to calculate how many Centre clients had died over the 10-year period. This was a serious oversight for a clinic treating persons with HIV and/or TB. It was also not possible to make generalisations about clinical outcomes for pregnant clients who received VCT and were found to be HIV infected; the database was not designed to capture the necessary points of clinical contact. The Centre may consider hiring a full-time monitoring and evaluation staff member who has experience with the collection, analysis, and representation of data. This person might collaborate with the staff to devise a strategic plan for the collection and maintenance of data that readily produce meaningful output reports.

Finally, the range of client services was not captured in one coordinated source; the ART services were documented in a separate database (required by the funder). Similarly, the home care services and the TB treatments were documented in separate, hand-written registers. As a result, evaluating the integration and coordination of client services was impossible owing to the various sources of data. The Centre staff may strategise with the Ministry of Health, funders and other stakeholders to align and standardise data collection and storage.

## Tracking Loss to Follow-Up is Crucial

An important lesson learned was that the clinic did not have a standard method for catching clients who "fall out of care" and do not show up for scheduled appointments. Eholié et al. (2012) noted that a significant challenge for resource-constrained environments is the high degree of "loss to follow-up" for clients on ART medications. Only an estimated two-thirds of clients started on ART were retained on therapy after five years in a study of programmes in the sub-Saharan region (Haas et al. 2018), contributing to increased morbidity and mortality. Retention in care is particularly crucial for clients receiving pre-ART services, ART regimens, or medications for TB. It was not feasible to determine which clients may have been accessing care elsewhere or filling prescriptions at a different location. The staff may consider instituting a monitoring or contact protocol for clients (particularly those on ART and/or TB treatments) to reduce the "loss to follow-up"; for example, a text-messaging

intervention was rated highly by patients with TB in Uganda (Hermans et al. 2017, 1486). There may be a specific role for a nurse to monitor the clinical progress of patients on HIV or TB treatments that necessitates high levels of medication adherence.

## Implications and Conclusions

The findings of this study underscore the importance of designing an effective medical record database that is tailored to the specific needs of a clinic. Our findings may inform major stakeholders (i.e. funding agencies or the Ministry of Health) of the benefits of a community-based, nurse-managed model of care and provide guidance for future expansion of services. Keeping Swaziland's HCWs healthy by managing HIV treatment and other illnesses may serve to strengthen the healthcare workforce in the country. This evaluation may also support other "sister" Wellness Centres in Africa that provide similar services for their HCWs. The nurse-managed Wellness Centre clinic has been effective in engaging HCWs in care.

## Limitations

The data for this study represent a unique clinic in Swaziland. The inconsistencies in the data collection and database management limited the ability to integrate several sources of data to determine clinical outcomes. Further, the scope of the study did not allow for an in-depth evaluation of the wide range of additional services and health-related activities in which the Centre staff had engaged over the 10-year period.

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## References

Carrier-Walker, Linda. 2011. "Focusing on the Wellbeing of Health Care Workers in Sub-Saharan Africa." *International Nursing Review* 58 (3): 273–274. https://doi:10.1111/j.1466-7657.2011.00933.x/full.

CIA (Central Intelligence Agency). 2017. “CIA Factbook: Country Comparison: HIV/AIDS Adult Prevalence Rate.” Accessed 11 November 2017. https://www.cia.gov/library/publications/the-world-factbook/rankorder/2155rank.html.

De Vries, Daniel H., Shannon Galvin, Masitsela Mhlanga, Brian Cindzi, and Thabsile Dlamini. 2011. “’Othering’ the Health Worker: Self-Stigmatization of HIV/AIDS Care among Health Workers in Swaziland.” *Journal of the International AIDS Society* 14 (60): 1–9. https://doi:10.1186/1758-2652-14-60.

Eholié, Serge-Paul, François Eba Aoussi, Ismael Songda Ouattara, Emmanuel Bissagnéné, and Xavier Anglaret. 2012. “HIV Treatment and Care in Resource-Constrained Environments: Challenges for the Next Decade.” *Journal of the International AIDS Society* 15 (2):17334. https://doi.org/10.7448/IAS.15.2.17334.

Haas, Andreas., Elizabeth Zaniewski, Nanina Aneregg, Nathan Ford, Matthew P. Fox, Michael Vinikoor, Francois Dabis, Denis Nash, Jean d’Amour Sinayobye, Theodore Niyongabo, Aristophane Tanon, Armel Poda, Adebola A. Adedimeji, Andrew Edmonds, Mary-Ann Davies, and Matthias Egger. 2018. “Retention and Mortality on Antiretroviral Therapy in Sub-Saharan Africa: Collaborative Analyses of HIV Treatment Programmes.” *Journal of the International AIDS Society* 21 (2): e25084. https://doi.org/10.1002/jia2.25084.

Haber, Daniel B., Jini L. Roby, and Laurel D. High-George. 2011. “Stigma by Association: The Effects of Caring for HIV/AIDS Patients in South Africa.” *Health and Social Care in the Community* 19 (5): 541–49. https://doi.org/10.1111/j.1365-2524.2011.01002.x.

Hermans, Sabine M., Sawsan Elbireer, Harriet Tibakabikoba, Bas J. Hoefman, and Yukari C. Manabe. 2017. “Text Messaging to Decrease Tuberculosis Treatment Attrition in TB-HIV Coinfection in Uganda.” *Patient Preference and Adherence* 11:1479–87. https://doi.org/10.2147/PPA.S135540.

ICN (International Council of Nurses). 2017. “Lesotho Ministry of Health Signs Support for ICN Wellness Centre at 10-Year Anniversary Celebration.” International Council of Nurses press release, 28 November 2107. Accessed 26 September 2018. https://www.twna.org.tw/frontend/un07_international/webPages_1/file/2017/Lesotho%20Ministry%20of%20Health%20signs%20support%20for%20ICN%20Wellness%20Centre%20at1128.pdf.

Jones, Martin, and David Cameron. 2017. “Evaluating 5 Years’ NIMART Mentoring in South Africa’s HIV Treatment Programme: Successes, Challenges, and Future Needs.” *South African Medical Journal* 107 (10): 839–42. https://doi.org/10.7196/SAMJ.2017.v107i10.12392.

Kerr, Jane, Petra Brysiewicz, and Busi Bhengu. 2017. “Developing Guidelines for Managing a Nursing Workforce Infected with HIV and TB in South African Hospitals.” *African Journal of Nursing and Midwifery* 18 (2): 87–102. https://doi.org/10.25159/2520-5293/482.

Mallinson, R. Kevin. 2015. “The Fulbright Scholar Program and Nursing in Southern Africa.” In *Global Health Nursing in the 21st Century*, edited by Suellen Breakey, Inge B. Corless, Nancy L. Meedzan, and Patrice K. Nicholas, 531–46. New York: Springer.

Mamba, Phetsile, Muzi Dlamini, R. Kevin Mallinson, and Virginia Williams. 2013. “Nurse-Managed Care for Health Care Workers in Southern Africa.” *International Journal of Tuberculosis and Lung Disease* 17 (Supplement 1): 30–34. http://dx.doi.org/10.5588/ijtld.13.0337.

Mason, Diana J., Dorothy A. Jones, Callista Roy, Cheryl G. Sullivan, and Laura J. Wood. 2015. “Commonalities of Nurse-Designed Models of Health Care.” *Nursing Outlook* 63 (5): 540–53. https://doi.org/10.1016/j.outlook.2015.04.009.

Mataboge, Mamakwa. S., Mmapheko D. Peu, Martha Chinuoya, Richard Rikhotso, Royinah N. Ngunyulu, and Fhumulani M. Mulaudzi. 2014. “Healthcare Workers’ Experiences of HIV Testing in Tshwane, South Africa.” *Curationis* 37 (1): 1–8. http://dx.doi.org/10.4102/curationis.v37i1.1170.

Pillay, Roshini, and Lourie Terblanche. 2012. “Caring for South Africa’s Public Sector Employees in the Workplace: A Study of Employee Assistance and HIV/AIDS Workplace Programmes.” *Journal of Human Ecology* 39 (3): 229–39. https://doi.org/10.1080/09709274.2012.11906515.

Tudor, Carrie, Martie L. Van der Walt, Bruce Margot, Susan E. Dorman, William K. Pan, Gayane Yenokyan, and Jason E. Farley. 2016. “Occupational Risk Factors for Tuberculosis among Healthcare Workers in KwaZulu-Natal, South Africa.” *Clinical Infectious Diseases* 62 (S3): S255–61. https://doi.org/10.1093/cid/ciw046.