



South Africa

Country Context

South Africa is home to a racially and culturally diverse population of more than nearly 55 million people, including some 7.1 million people living with HIV. According to 2016 UNAIDS reports, the adult HIV prevalence rate is 18.9 percent, with rates varying greatly depending on the province. A sharp rise of multi-drug resistant TB among HIV patients poses a significant threat and has prompted national efforts to integrate treatment for HIV, TB, STIs, and other communicable diseases. A severe lack of trained medical providers, particularly in rural areas of the country, also represents a major challenge to the country's health system. While South African medical schools graduate 1,200-1,400 annually, their retention in the public sector is quite low and more than half of the country's 14,000 practitioner posts unfilled. This translates to an average of just 2.0 health workers per 10,000 people.

With support from the US President's Emergency Plan for AIDS Relief (PEPFAR) and the US Government team in country, the overarching goal of AIHA's country program in South Africa is to ensure adequate supply and quality of human resources for health to expand HIV/AIDS services in PEPFAR-supported high HIV-burden districts. AIHA currently manages programs focused on strengthening mid-level health professions in medicine and pharmacy, and ensuring these care providers have the skills to provide quality HIV services in high prevalence and underserved parts of the country.

Strengthening Clinical Associates Programs

South Africa's National Department of Health (NDOH) introduced Clinical Associates as a new health occupation designed to fill critical human resource gaps at rural district hospitals and enable task sharing in 2008. The first cohort of Clinical Associates graduated from Walter Sisulu University in December 2010.

This 3-year Bachelor of Clinical Medical Practice (BCMP) program produces qualified professionals, similar to Physician Assistants in the United States, who have the ability to assess and diagnose patients, determine appropriate treatments, and undertake minor surgical procedures under the supervision of medical officers.

The introduction of this new cadre of mid-level medical worker is serving to strengthen primary care services across South Africa by bolstering the number of trained healthcare providers working in district hospitals. In addition to general medical services, Clinical Associates are also trained to provide a broad range of HIV prevention, care, and treatment services, including voluntary male medical circumcision (VMMC), which has been identified by the NDOH as a key HIV prevention strategy for South Africa.

AIHA, through our HRSA-supported HIV/AIDS Twinning Center Program, established three university-based partnerships that worked to strengthen the Clinical Associates programs being offered by each South African institution:

- **Walter Sisulu University (WSU) in the Eastern Cape and the University of Colorado, Denver (UCD)**
2010-2017
- **University of the Witwatersrand (Wits) in Johannesburg and Emory University in Atlanta**
2010-2017
- **University of Pretoria (UP) and Arcadia University near Philadelphia**
2011-2017

In addition to the twinning partnerships, AIHA provided support for the South African universities and other stakeholders



Walter Sisulu University graduated South Africa's first cohort of 23 Clinical Associates in December 2010. To date, 909 Clinical Associates have been graduated from the three universities offering the BCMP degree.

to collaborate on cross-cutting issues that affect the establishment and sustainability of the profession through the **Clinical Associates Forum**. The Forum addressed needs related to professional association building, advocacy, career pathing, student assessment, mentoring by volunteer preceptors, data collection, and coordinated research. It also provided the three South African universities and other stakeholders with opportunities to meet and discuss best

practices and lessons learned, as well as to coordinate strategies for the future of the programs and the profession. These and other related activities were funded by PEPFAR through CDC/South Africa.

In addition, all partners worked together to strengthen each university's capacity to more effectively market, advocate, and make policy recommendations that promote the Clinical Associates profession in South Africa.

To enable students to pursue more in-depth study in select disciplines, partners at Wits established the **Clinical Associates Honors Program in Emergency Medicine** in 2017.

To date, 909 Clinical Associates have qualified from the three programs and another 461 students are currently enrolled.

Clinical Associates are now working in district hospitals in all of South Africa's provinces and in the military service.

While each university program is unique, the partnerships focused on similar objectives, such as faculty and staff development and mentoring. Activities implemented included conducting faculty development workshops for teaching staff and the placement of clinical preceptors at district hospitals.

South African faculty developed skills in effective teaching, student assessment, and other topics during visits to US partner institutions and through participation in international conferences. Faculty development workshops initially led by the US partners have now been integrated into programs and focus on their needs, especially in problem-based learning.

Between 2008 and 2017, AIHA supported faculty development with long-term placement of 32 American Physician Assistants, who volunteered their time and expertise to help strengthen learning and clinical training for these programs by leveraging best practices and experiences from the United States through our **Volunteer Healthcare Corps**.

AIHA also helped establish and support the **Professional Association of Clinical Associates in South Africa** (PACASA) as the formal representative body for Clinical Associates working in South Africa. AIHA's support focused on strengthening PACASA's organizational development, increasing their membership and representation, and developing strategic business and sustainability plans. AIHA supported PACASA's participation in international and regional bodies, such as the African Network for Associate Clinicians, which represents the mid-level medical profession in more than 10 African countries.

AIHA supported the implementation and development of a standardized national exam for graduating third-year students, which is important since there is no mechanism for certification by an external body. **Annual National Exam Workshops** provided ongoing training to faculty and tutors from the three universities in test-question writing and implementation of practical skills-based assessments (OSCEs). AIHA also provided the universities with access to QuestionMark software and training to better manage the national exam, create a test bank of questions, analyze the quality of questions, and provide the option for tests to be taken via computer instead of on paper.

AIHA worked to improve access to evidence-based clinical resources for Clinical Associates students and faculty through our **Knowledge Management Program**. In 2014, AIHA helped Wits launch the **Digital Integration of Clinical Associates Program (DICAP)**. With the aid of tablet devices, students now have access to evidence-based and curricular resources while training in district hospitals and other remote locations. Additionally, Wits teamed up with the technology company Dimagi to create an electronic logbook for students to track their clinical experiences. With this information on the clinical experiences of students, Wits coordinators and faculty electronically monitor performance and adjust clinical rotations and practical training as needed to ensure students receive optimal hands-on experience.



AIHA supported partner use of mobile and eHealth resources and technologies to improve both teaching and clinical care.



Clinical Associates working at the Centre for HIV and AIDS Prevention Studies (CHAPS) currently provide an average of 1,500 VMMC procedures per month at 16 sites across four South African provinces. A 2015 program evaluation assessed the applicability of Clinical Associates' VMMC training and found that quality of care they provided is comparable to that of physicians.

At UP, AIHA improved access to learning resource materials at rural rotation sites by establishing a **Clinical Learning Center at Tembisa Hospital**, a main teaching site. The center features simulation equipment and computer tablets pre-loaded with medical databases. Additionally, AIHA trained clinical tutors at WSU on integrating evidence-based medical resources into their training and piloting the use of tablets at district hospitals where Clinical Associates train.

AIHA is collaborating with Wits to utilize the DICAP CommCare application to document the impact of graduates working in public facilities throughout South Africa. DICAP captures data on the daily activities and practice of Clinical Associates where they work, generating reports in real time and tracking the medical and HIV-related services they provide.

AIHA will analyze this data to identify performance gaps and inform future in-service training and continuous professional development needs, then collaborate with our partners to update existing training modules, create new short courses and distance learning opportunities, and ensure the latest HIV guidelines and content (e.g., UTT and same-day initiation) are integrated. A team of HIV experts from partner universities and affiliated hospital training sites is slated to deliver in-service courses to Clinical Associates who provide HIV/AIDS-related services in PEPFAR's 27 focus districts.

AIHA, our university partners, and PACASA are members of the **NDOH Clinical Associates Task Team** working to address issues related to the scope of practice, conditions of service, supervision, deployment, and career path for the profession. AIHA is supporting the NDOH to develop and implement regulations, policies, and guidelines for how to effectively utilize,

supervise, and support Clinical Associates to provide effective HIV treatment and VMMC services in underserved parts of the country where they are needed most.

Strengthening Mid-level Pharmacy Education

The 2006 South Africa National Human Resources for Health Planning Framework identified the need for mid-level workers in all professional disciplines to meet the country's ever increasing need for healthcare services. Pharmacy services are no exception. According to the South African Pharmacy Council (SAPC), the optimal number of pharmacy support personnel the country needs to produce annually is 2,500, yet currently only about 1,000 are completing their studies.

To address this shortage, AIHA managed a twinning partnership between Nelson Mandela University (NMU) and St. Louis College of Pharmacy (STLCOP) from 2013 to 2017. Together, partners worked to support NMU's Pharmacy Technician (PT) training program, which was established in 2013.

The overall goal of this twinning partnership was to strengthen the capacity of NMU to train skilled mid-level pharmacy workers capable of addressing existing gaps in service. Faculty development was a primary objective of the partnership, implemented through the development of teaching materials and workshops in innovative teaching and assessment methodologies.

To enhance the experience of students before they enter the workforce, partners helped NMU develop and manage a clinical experiential rotation program in various pharmacy work settings. NMU implements a clinical experiential program (externships) for PT students utilizing an electronic management system to better manage the hands-on training with STLCOP technical assistance and support.

AIHA also improved access to learning and teaching resources by introducing



More than 187 Pharmacy Technicians have graduated and are currently deployed across South Africa.

tablet devices for NMU modeled on our successful implementation of this method of support to South Africa's Clinical Associate programs.

At the outset, partners conducted a practice analysis for mid-level pharmacy workers in South Africa to determine and verify PT responsibilities and scope of practice. This exercise also served to create an inventory of knowledge, skills, and competencies PTs need to become productive, effective members of the country's health workforce. It also helped the team differentiate competencies of previously trained mid-level pharmacy assistants to better inform educational requirements for "up-skilling" to the PT level.

In July 2016, partners released ***The Southern African Pharmacy Technician Training Manual***, the first textbook designed specifically for pharmacy technicians in the southern African region. This jointly developed text can be used as a learning tool for pharmacy technicians in English-speaking countries throughout southern Africa as part of a university-level course or as part of an on-the-job training program for mid-level pharmacy workers.

In 2018, AIHA will support NMU in the development of an in-service short course program for graduated pharmacy technicians, pharmacy assistants, and other healthcare workers. This course will supplement continuous professional development opportunities for health workers focusing on updated HIV guidelines, including UTT and same-day initiation, medication supply management, dispensing ARVs in the context of Centralized Chronic Medicine Dispensing and Distribution (CCMDD), ARV side effects and monitoring, TB co-infection, and health literacy communication.



NMU's Pharmacy Technician Program is training mid-level pharmacy workers to help address serious gaps in care and service across South Africa.

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