



Strengthening Namibia's Pharmacy Sector and Workforce

The **Systems for Improved Access to Pharmaceuticals and Services (SIAPS)** program works to ensure access to quality pharmaceutical products and effective pharmaceutical services through systems strengthening approaches to achieve positive and lasting health outcomes. SIAPS is funded by the US Agency for International Development (USAID) and is implemented by Management Sciences for Health (MSH).

Namibia faces a dual public health burden of HIV and AIDS and tuberculosis (TB). Critical to the treatment and management of these diseases is an effective workforce that can provide quality pharmaceutical services throughout the country. Pharmacists and pharmacist assistants (PAs) play critical roles in dispensing life-saving medications, monitoring patient health and progress, and educating both patients and other health professionals about proper medication use, storage, and dispensing practices. To meet the high demand for quality pharmaceutical services and to ensure that pharmacy personnel needs are being met, the US Agency for International Development (USAID)-funded Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program supported the Government of the Republic of Namibia in the long-term planning of pharmaceutical human resources and building the capacity of two local institutions to provide pre-service and in-service pharmaceutical management training.

Holistic Approach to Strengthening Human Resource Capacity

Since 2011, SIAPS has supported capacity building in the pharmaceutical sector at both the institutional and individual levels. Although there was a clear, immediate need for personnel to support the public health sector, SIAPS understood the critical need to build the capacity of the two local institutions that were serving as gateways for pharmaceutical training—the University of Namibia's School of Pharmacy (UNAM-SoP) and the National Health Training Center (NHTC) of the Ministry of Health and Social Services (MoHSS). SIAPS also supported the

SIAPS' holistic approach to capacity building

Institutional

- Strategic planning
- Curriculum development
- Virtualized classroom and training tools
- Establishment of quality management system (at NHTC)
- Training lecturers and tutors to enhance their capacity for pre-service training

Individual

- Pre-service training
- In-service training
- Mentorship and supervision

Pharmacy Council and the Health Professions Council of Namibia (HPCNa) in strengthening licensure of pharmacy professionals by developing a framework for assessing the suitability of applicants for registration and licensure to practice as pharmacists and PAs. By building capacity at the pharmaceutical management-level and promoting enhanced pre- and in-service training for pharmacists and PAs, SIAPS was able to take a cost-effective approach that ensured sustainable training of pharmaceutical personnel, thus contributing to improved health outcomes for the country.

Namibian Context

Namibia has a decentralized public health system with 14 administrative regions and approximately 350 public and faith-based health facilities serving its 2.2 million population. In 2015, the estimated HIV prevalence in adults aged 15 to 49 was approximately 13.3% with an estimated 210,000 people living with HIV. TB/HIV co-infection is a major public health problem (UNAIDS, 2015). The HIV and AIDS burden increases the demand for health and pharmaceutical services, such as dispensing antiretroviral (ARV) medicines, and increases the workload of pharmacy personnel, who require continuous clinical competency development to keep up with antiretroviral therapy (ART) service delivery, especially as Namibia has been rolling out ART services from hospitals to lower-level health facilities. MoHSS operates approximately 350 public health facilities in the country, of which 52 served as the main sites for ART service delivery to over 140,000 people according to reports for December 2015. ART service delivery, as well as other important public health programs, requires a workforce of qualified pharmacists and PAs for adequate service delivery. However, Namibia has historically struggled with a persistent shortage of pharmaceutical

personnel due to its reliance on a largely foreign-trained pharmacist workforce, with approximately 90% of pharmacist positions filled by non-Namibians working on short-term contracts.

Predecessor Projects

With the increased burden of HIV and AIDS, MoHSS sought to scale up ART services to achieve the goals set out in the National Strategic Plan on HIV and AIDS. In early 2005, the Rational Pharmaceutical Management (RPM) Plus Project, funded by USAID and implemented by Management Sciences for Health (MSH), supported a human capacity development (HCD) assessment of Namibian pharmaceutical services to assess the pharmaceutical human resource situation. The report produced from this comprehensive assessment, entitled *Human Capacity Development Assessment for Public Sector Pharmaceutical Services in Namibia: Strategies to Scale Up HIV/AIDS Programs and ART Therapy*, presented findings and recommendations for both short- and long-term solutions to address the country's shortage of pharmacists and PAs. Guided by this assessment, MoHSS realized that to ensure long-term sustainability of pharmaceutical provision, the scale-up of its pharmaceutical services would need to be matched by a scale-up of its human resources.

Beginning in 2007, the USAID-funded Strengthening Pharmaceutical Systems (SPS) Program built upon these efforts, focusing on implementation of the HCD assessment recommendations. In 2008, SPS assisted the NHTC in revising the curriculum for the PA course and incorporating ARV-related content into the curriculum; recruiting, hiring, and seconding three tutors for the PA course; and refurbishing classrooms and equipping the PA skills laboratory to accommodate a larger student intake at the NHTC.

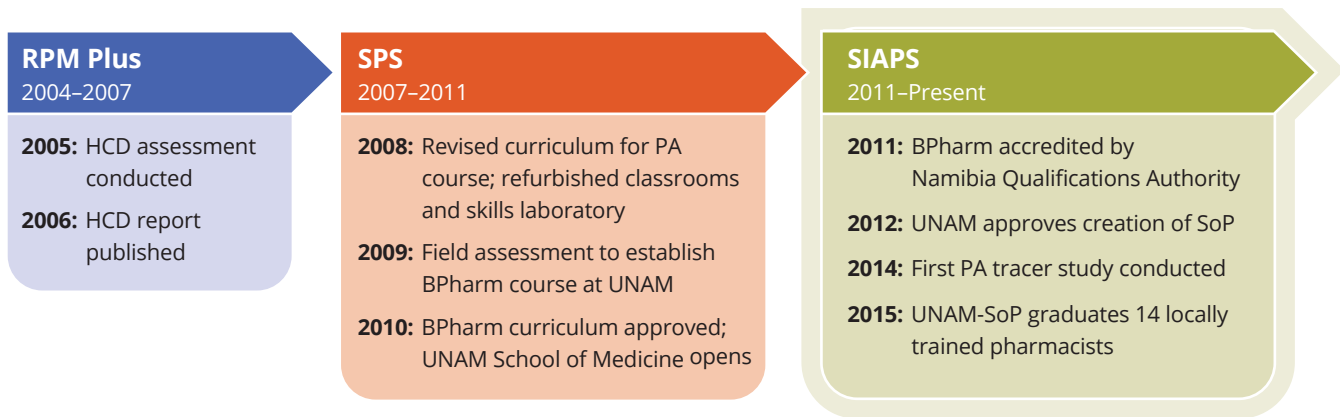
Subsequently in 2009, SPS supported a field assessment to explore the feasibility of establishing a bachelor of pharmacy (BPharm) course at UNAM. The BPharm curriculum and standards for qualification of pharmacists were approved in 2010. The degree was launched in 2011 and was initially housed within the UNAM School of Medicine.

Strategic Approach

Enhancing In-Country/Local Pharmaceutical Personnel Training

There are two pharmaceutical training pathways in Namibia, and SIAPS has played an important role in building and strengthening both. Before the BPharm course was launched in 2011, students could pursue pre-pharmacy training at

Building a foundation for the SIAPS Program



UNAM, but the only in-country option for pharmaceutical training was a two-year certificate course at NHTC. Further, according to MoHSS, in 2003/2004, only 2 (0.3%) of the 515 UNAM students pursuing health and social welfare-related studies chose to focus on pre-pharmacy training. It was imperative to scale up the local training of pharmacy personnel.

Implementation

Continued Support for NHTC

To support NHTC's mission toward increased training of qualified and competent PAs, SIAPS, in collaboration with stakeholders such as I-TECH, provided technical assistance (TA) to NHTC to develop a quality management system (QMS), competency framework, and standards for pharmacy staff to enable reaccreditation by the Namibia Qualifications Authority (NQA). In addition, SIAPS supported trainings for NHTC tutors and stakeholders from the public and private sectors on moderating, facilitating, and assessing skills to equip them with the knowledge and attitudes necessary to design and deliver quality health-care education. A total of 56 individuals participated in these trainings.

SIAPS supported not only the development of the human resources capacity of lecturers, but also provided basic tools and equipment for pre-service training of pharmacy personnel. For example, SIAPS installed a local area network (LAN) server for hosting a training-records database at NHTC, allowing students and staff to exchange training and course materials with ease and to safely house student records and related academic files. SIAPS installed the Electronic Dispensing Tool (EDT) in the NHTC training laboratory so that PAs can learn to use the tool before their clinical attachments at ART sites in the field. EDT training modules include ART patient and stock management, use of

the EDT mobile, and reporting. This helped to modernize and virtualize the classroom environment and simulate ART dispensing using the EDT, thus allowing lecturers to teach good dispensing practices.

Supporting Local Training with Technical Assistance and Tools

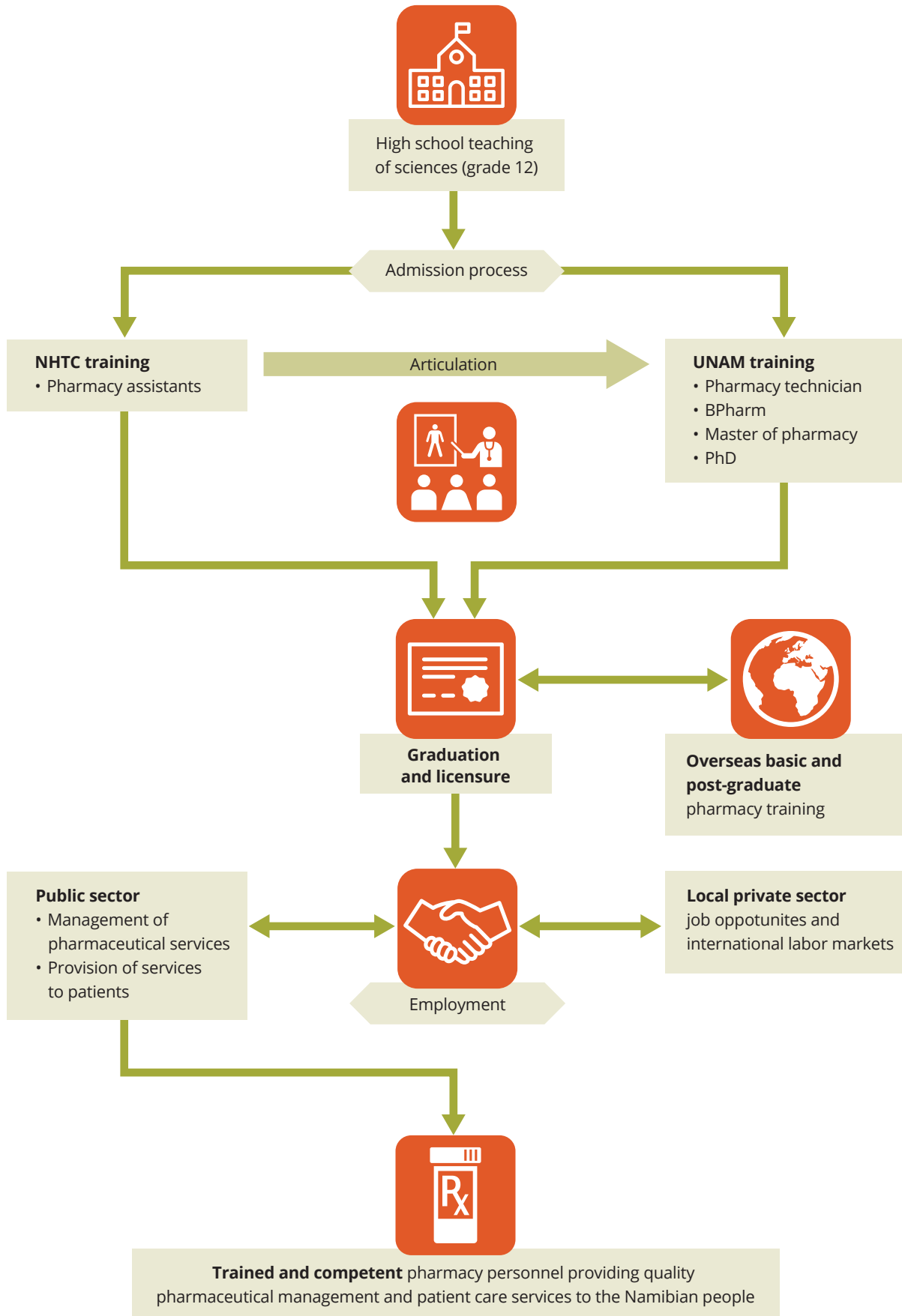
An early success came with the accreditation of the UNAM BPharm by HPCNa and the NQA. The nascent pharmacy program enrolled 24 students and offered an alternative option for in-country pharmaceutical training. In 2012, the UNAM Department of Pharmacy was approved to become the SoP. To facilitate this evolution, SIAPS provided TA to UNAM-SoP to develop a strategy to ensure long-term planning for teaching and enhancing the capacity of pharmacy personnel. SIAPS facilitated meetings between UNAM and stakeholders to map out strategic priorities and areas for stakeholder collaboration.

With SIAPS technical support, the following modules—complete with materials including manuals, PowerPoint presentations, and instructor guides—were developed for the BPharm curriculum to enhance training in pharmaceutical management.

SIAPS was actively involved in developing curriculum materials and orienting UNAM-SoP lecturers on module implementation. SIAPS collaborated with its partner, the University of Washington, to develop the pharmacovigilance and pharmacoconomics materials.

Similar to NHTC, SIAPS also supported the UNAM-SoP in installing the EDT in their training laboratory at the university. The EDT is currently used in Namibia's public sector health facilities to dispense ARVs to people living with HIV. The incorporation of EDT in pre-service pharmacy training at UNAM-SoP offers a sustainable method of

Pharmaceutical training pathways in Namibia





Mr. Nasser Mbaziira (right), SIAPS Senior Technical Advisor, providing on-the-job training and support on the mobile EDT to Ms. Priscah Sikubo (left), Enrolled Nurse and Clinic In-Charge, and Ms. Lydia Mukungo (standing), HIV/AIDS Community Counsellor, at Sesheke Clinic in Zambezi Region in 2014.

providing students with hands-on training on the tool before they enter their clinical attachments, which is particularly important as the Namibian Government focuses on increased countrywide roll-out of ART services.

Reaching Trainees and New Graduates in the Workplace

Workplace-based training is vital to graduating competent, well-qualified pharmacists and PAs. The trainees in pharmacy require continued supervision at their places of deployment and continuous on-the-job training to keep up with advancements in health care, ART developments, and pharmaceutical management.

New graduates also require supervision and mentorship from qualified, licensed, and experienced professionals. Indeed, the HCD assessment earmarked this as an area in need of strengthening. More pharmacy practitioners need to be accredited as workplace-based tutors, mentors, and preceptors to avoid overwhelming the few experienced staff with training, mentoring, and supervisory duties. SIAPS assisted in identifying and orienting pharmacists from Namibia's public and private sectors who were appointed by the HPCNa (Pharmacy Council) to serve as tutors and supervisors of newly trained pharmacists. These accredited tutors, including lecturers at UNAM, participated in SIAPS-supported workshops to learn the skills required to mentor

interns toward professional licensure to practice pharmacy. By building the preceptorship knowledge and capacity of the tutors, SIAPS played a crucial role in ensuring that pharmacy graduates are competent in providing quality pharmaceutical services to the public.

In addition to supporting pre-service training, SIAPS supported the MoHSS to conduct in-service training and on-the-job mentoring of pharmacy staff and nurses on pharmaceutical management and service delivery. SIAPS trained the health care workers on the Pharmaceutical Management Information System (PMIS), the EDT and mEDT, eTB Manager (for managing drug-resistant TB patients), pharmacovigilance, and medicines registration and quality assurance. SIAPS also supported MoHSS in training Therapeutics Committees on their role in rational medicine use and accountability for pharmaceutical products.

Streamlining and Structuring Licensure

To streamline the professional regulation and the licensure of pharmacy professionals, SIAPS provided TA to the Pharmacy Council and HPCNa by developing a framework for assessing the suitability of registration and licensure of individuals trained in pharmacy. Pharmacy Council evaluators were oriented on the framework and methods of assessing applicants' competencies, providing a structured process of evaluating and licensing new graduates.

Description of the BPharm training modules

Pharmaceutical Supplies Management

Ensuring access to necessary medicines and supplies

This module deals with the planning and management of all activities involved in selecting, quantifying, budgeting, sourcing, procuring, warehousing, distributing, and controlling inventories of pharmaceutical products. A well-functioning pharmaceutical supply chain system will ensure that the right product is available at the right time, in the right quantity, at the right place and that it is of the right quality, at a price that is affordable.

Rational Medicine Use and Antimicrobial Resistance

Ensuring that patients receive medicines appropriate to their clinical needs, at the right dose, for the appropriate length of time, and at the lowest cost that do not encourage the development of antimicrobial resistance

This module deals with the safe, judicious, responsible, and cost-effective use of medicines, supported by the current medical and scientific evidence. Rational medicine use requires that patients receive appropriate medications for their clinical needs, in doses meeting individual requirements, for an adequate period, and at the lowest cost to them and their community. The inappropriate use of antimicrobial drugs promotes the development of drug resistance by microorganisms.

Pharmacoeconomics

Applying economic evaluation techniques to drugs and drug therapies

This module deals with the application of principles of economics—such as cost-benefit, cost-effectiveness, cost-minimization, cost-of-illness, and cost-utility analyses—to compare pharmaceutical products and treatment strategies. This enables health systems to select the pharmaceuticals and treatment strategies that optimize scarce health resources.

Pharmacovigilance

Monitoring the effects and safety of drugs, particularly to understand and detect adverse reactions

This module deals with the science and activities relating to the detection, assessment, understanding, and prevention of adverse effects or any other medicine-related problems. Medicines have both beneficial and potentially harmful effects. It is important to ensure that the beneficial effects outweigh the harmful ones.

Pharmaceutical Regulation

Ensuring that the manufacture, trade, and use of drugs is properly regulated to ensure safe, effective, and available drugs for the public

This module deals with the protection of public health by controlling the safety, efficacy, and use of pharmaceutical products by a legally mandated regulatory authority, such as the Namibian Medicines Regulatory Council (NMRC).

Results

Measurable Successes

To assess and monitor SIAPS' impact on the country's pharmaceutical system, a number of indicators were used. Recent indicator-based assessments by pharmacy students have shown increasing patient satisfaction with the information received about their medication. Importantly, the services patients are receiving are being rendered by an increasingly Namibian workforce (76%), which is a big contrast to the situation in 2006 when only 10% of public sector pharmacist posts were held by Namibians.

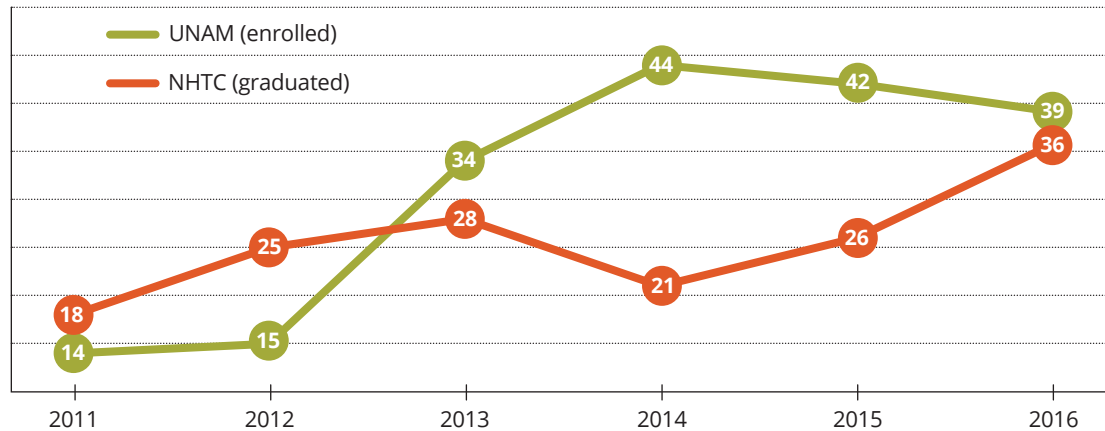
Increased Pre-Service Enrollment Expands Pharmacy Workforce

Through SIAPS technical assistance, the NHTC has graduated a steadily rising number of PAs. In 2007, when the USAID-funded SPS Project began supporting NHTC, nine PAs graduated from NHTC. By 2011, when SIAPS took over from SPS, 18 PAs graduated, which rose steadily to 36 in 2016.

Between 2012 and 2016, 140 PAs cumulatively graduated from NHTC, which was well above the SIAPS target of 125. According to the 2016 round of supportive supervision visits conducted by the MoHSS Division of Pharmaceutical Services, 100% of the 35 district hospitals visited had at least one certified pharmacy staff member providing services to the public. This was a 25% improvement from when SIAPS began supporting the scaled-up training of PAs in Namibia. Combined with the support provided to the Namibian Pharmacy Council and the HPCNa in streamlining the licensure of pharmacy practitioners, SIAPS has evidently contributed to improving both the quantity and the quality of pharmacists and PAs who provide ART and other essential pharmaceutical services to Namibians.

Similarly, the enrollment of pharmacy students at the UNAM-SoP increased each year, with SIAPS support. The inaugural class graduated 14 students in April 2015, the second group graduated 9 pharmacists in 2016, and as of June 2016, 138 students were enrolled in the BPharm and

Number of UNAM BPharm enrollees and NHTC PA graduates



SOURCE: Mazibuko, G, et al., 2014

60 students in the diploma in pharmacy program. Increased graduation rates offer an expanded pharmaceutical workforce in the local market. This makes it easier for the MoHSS to fill pharmacy staff vacancies across the country, thereby enabling more locally trained pharmacists to serve Namibia and to expand access to and improve the quality of delivery of ART and other essential pharmaceutical services.

The strategic plan developed by the UNAM-SoP with technical assistance from SIAPS was acknowledged by the school's associate dean as being instrumental in guiding the future direction of the school. Additionally, early in the school's development, SIAPS continued supporting the salaries of two senior lecturers who were originally recruited by SPS in 2010. By 2012, these seconded lecturers were fully absorbed into the university's payroll, marking a significant early success for SIAPS and ensuring a smooth transition of SIAPS interim support to UNAM.

Further, in line with the strategic plan that SIAPS helped to develop, the UNAM-SoP introduced a two-year pharmacy technician diploma course that was launched in February 2015, with an initial enrollment of 31 students. In the same vein in June 2016, the UNAM-SoP launched a master of pharmacy (clinical pharmacy) program with seven students and has implemented several continuing professional development programs, demonstrating the long-term effects of SIAPS institutional strengthening support to the UNAM-SoP.

Overall, through in-service training workshops and on-the-job technical support, 501 health care workers including pharmacy staff, nurses, field promoters, and clinical members of Therapeutics Committees were trained on pharmacovigilance; medicines regulation; use of electronic tools, like the EDT, mEDT, and eTB Manager; and generating data for programmatic decision making.

PA Performance in the Workplace

NHTC conducted a comprehensive assessment of its graduates, tracing their job placements, the services they provide, and their satisfaction with training; employer and supervisor satisfaction with PAs' performance at work; and the overall strengths and weaknesses of the NHTC's PA training program. SIAPS supported NHTC in conducting this comprehensive assessment (tracer study), which marked the first formal workplace assessment of NHTC PA graduates since 2007.

The results revealed that PAs trained at NHTC were actively delivering pharmaceutical services, with a majority of them working in the public sector, particularly at the ART clinics where they are greatly needed. Overall, their employers and supervisors were satisfied with PA performance in the workplace. They suggested areas for improving NHTC's curriculum to ensure that PAs are better prepared to serve the current and future needs of Namibia's health care.

Challenges

Winning Stakeholder Buy-in for the UNAM-SoP

At the beginning, the major stakeholders in Namibia were focused on establishing the first School of Medicine at UNAM. SPS and later SIAPS faced an uphill task in persuading UNAM management and other stakeholders that starting a school of pharmacy at the same time was feasible and cost-effective since the two schools would mutually support one another. Tight deadlines and strict requirements were laid out, such as developing the curriculum within six months for submission to the university senate for approval. SIAPS engaged well-known experts and stakeholders to accomplish the challenge by hiring notable scholars from Ghana, Tanzania, Zimbabwe, Rwanda, Kenya, South Africa, and the United States to provide expertise in curriculum

development. Further, SPS and later SIAPS provided the initial support for lecturers' salaries and supplied basic teaching materials. However, the largest portion of resources came from the Namibian Government.

Lessons Learned

Local Leadership and Ownership

Strong commitments and ownership of the SoP project by UNAM management, the MoHSS, and other key stakeholders were critical to strengthening human resources capacity. Local commitment provided the impetus that drove forward the process and produced results.

Continuous Engagement for Effective Problem Solving

SIAPS facilitated continuous engagement with UNAM-SoP, NHTC, and the MoHSS Division of Pharmaceutical Services by organizing meetings on a regular basis to plan activities and review progress. These regular meetings allowed key players to anticipate and overcome challenges as they arose. SIAPS also assisted with regular follow-up with stakeholders, ensuring that the quality of pharmaceutical management training satisfied the expectations of stakeholders.

Post-Training Action Plans for In-Service Training to Support Individuals

A major pitfall of most in-service training workshops is that the students often do not implement meaningful improvements at their places of work. So SIAPS adopted a pre- and post-test for every workshop to assess changes in knowledge and required participants to develop action plans for the improvements they intend to achieve when they return to their work places. This has enabled participants to have clarity about the activities they will undertake to make those improvements happen.

Quality Assurance of Pre-Training is Paramount

Ensuring the quality of training becomes even more essential with the sharp increase in the numbers of persons undergoing pre-service training at local institutions. SIAPS provided TA to the NHTC to review PA standards and further supported NHTC in the development of a QMS, consisting of the standards and qualifications necessary for reaccreditation. Institutionalizing quality assurance and improvement methods ensures that trained personnel are able to deliver quality pharmaceutical services when they are deployed to work at health facilities.

Conclusion

By taking a holistic approach to pharmaceutical capacity-building, SIAPS has contributed in a sustainable way to alleviating the human resource constraints that Namibia faced at the dawn of the ART era. The number of pharmacists and PAs graduating from UNAM-SoP and the NHTC has grown exponentially, with TA from the SIAPS Program. Individual and institutional capacity-building is a sustainable way of providing local skilled human resources for a country.

This publication was written by Erin Fults with contributions from Evans Sagwa, Greatjoy Mazibuko, and Harriet Kagoya. Thank you to all of the staff from SIAPS Namibia for their support in the development of this technical brief.

For more information, please contact lessons@msh.org.

REFERENCES

- Kutenda O, Leboea J, Kambyambya K, Mavu D, Kagoya H. R, Mazibuko G, Mbaziira N, et al. 2015. *Post-qualification Monitoring and Evaluation of Pharmacist Assistants Trained at the National Health Training Centre in Namibia*. Arlington, VA: Management Sciences for Health.
- Management Sciences for Health. 2006. *Human Capacity Development Assessment for Public Sector Pharmaceutical Services in Namibia: Strategies to Scale Up HIV/AIDS Programs and ART Therapy*. Arlington, VA: Management Sciences for Health.
- Mazibuko, G, Phulu, B, Sagwa, E, Kibuule, D, Kagoya, H, and Mavu, D. 2014. *Support to local training institutions to address human resources shortages and capacity affecting ART service delivery in Namibia*. Arlington, VA: Management Sciences for Health.
- Ministry of Health and Social Services. 2015. *The Namibia AIDS Response Progress Report*.
- Muungo, T, Sagwa, E, Mazibuko G, and H, Kagoya. 2012. *Improving the Professional Registration Process of Pharmacy Personnel through Streamlining the Assessment Framework, Methods, and Tools in Namibia*. Arlington, VA: Management Sciences for Health.
- National Health Training Center (NHTC) graduation list, 2016.
- UNAIDS. HIV and AIDS estimates (2015). <http://www.unaids.org/en/regionscountries/countries/namibia/>. Accessed October 2016.
- University of Namibia's School of Pharmacy enrollment data provided by email, July 2016.