



Strengthening the Leadership and Management of Pharmaceutical Services in South Africa

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).

South Africa's health system is under enormous strain. There is a sizeable and increasing number of people with chronic diseases, both communicable and non-communicable. The country has the largest population living with HIV, estimated at 7 million; an HIV prevalence rate of 19.2%; and 180,000 HIV-related deaths in 2015.¹ South Africa has the highest number of people on HIV treatment—nearly 2.6 million—and has committed to nearly doubling that number in the next few years.² It also has a significant burden of tuberculosis (TB), including multi- and extensively-drug resistant TB.

According to the World Health Organization, South Africa ranks third in terms of TB burden, after India and China.³ There is also high maternal, neonatal, and child mortality. In partnership with civil society and development organizations, the country has made significant strides in reducing the tide of HIV, AIDS, and TB, thereby contributing to an increase in life expectancy. Nevertheless, the effectiveness and efficiency of the country's health system remain a huge challenge.⁴ The burden of communicable and non-communicable diseases and the rapidly growing patient population have considerable implications for the delivery of pharmaceutical services.

Background

MSH has been working in South Africa since 1997. Its pharmaceutical systems strengthening projects—the current SIAPS Program and its predecessor projects (Rational Pharmaceutical Management Plus and Strengthening Pharmaceutical



SIAPS SOUTH AFRICA

GJ Crookes Hospital,
Ugu District, KZN

“The majority of pharmacy managers do not have the capacity to manage. The Pharmaceutical Leadership Development Program was exciting for us because it was the first time we had a program designed just for pharmacy managers.”

Monitoring & Evaluation
Officer, KwaZulu-Natal (KZN)
Pharmaceutical Services

Systems [SPS])—forged an excellent working relationship with the Government of South Africa and local government counterparts at all levels (national, provincial, district, and health facility). The partnership has featured extensive consultation with stakeholders and the development and implementation of technical interventions. The holistic approach used by these USAID-funded programs to address the government’s priorities has included technical assistance in areas that are not unique to pharmacy, such as leadership and management development.

Ensuring the accessibility and availability of medicines in public health facilities is a government priority. Pharmacy managers face multiple leadership and management challenges that they may not be prepared to handle. They need to be able to respond to the complexity of the health challenges within the context of difficult conditions, including busy facilities with a high volume of patients, insufficient qualified pharmacy personnel, and lack of resources. These issues can impede efficient pharmaceutical service delivery and profoundly impact patient care.

In 2009, during a regular meeting convened by the National Department of Health (NDOH) with provincial heads of Pharmaceutical Services (HOPS), concern was raised regarding the inadequacy of undergraduate training of pharmacists in leadership and management. These discussions resulted in a request from the NDOH to SPS to implement an in-service management training program for pharmacy personnel. SPS wrote the activity into its work plan, which was approved by USAID.

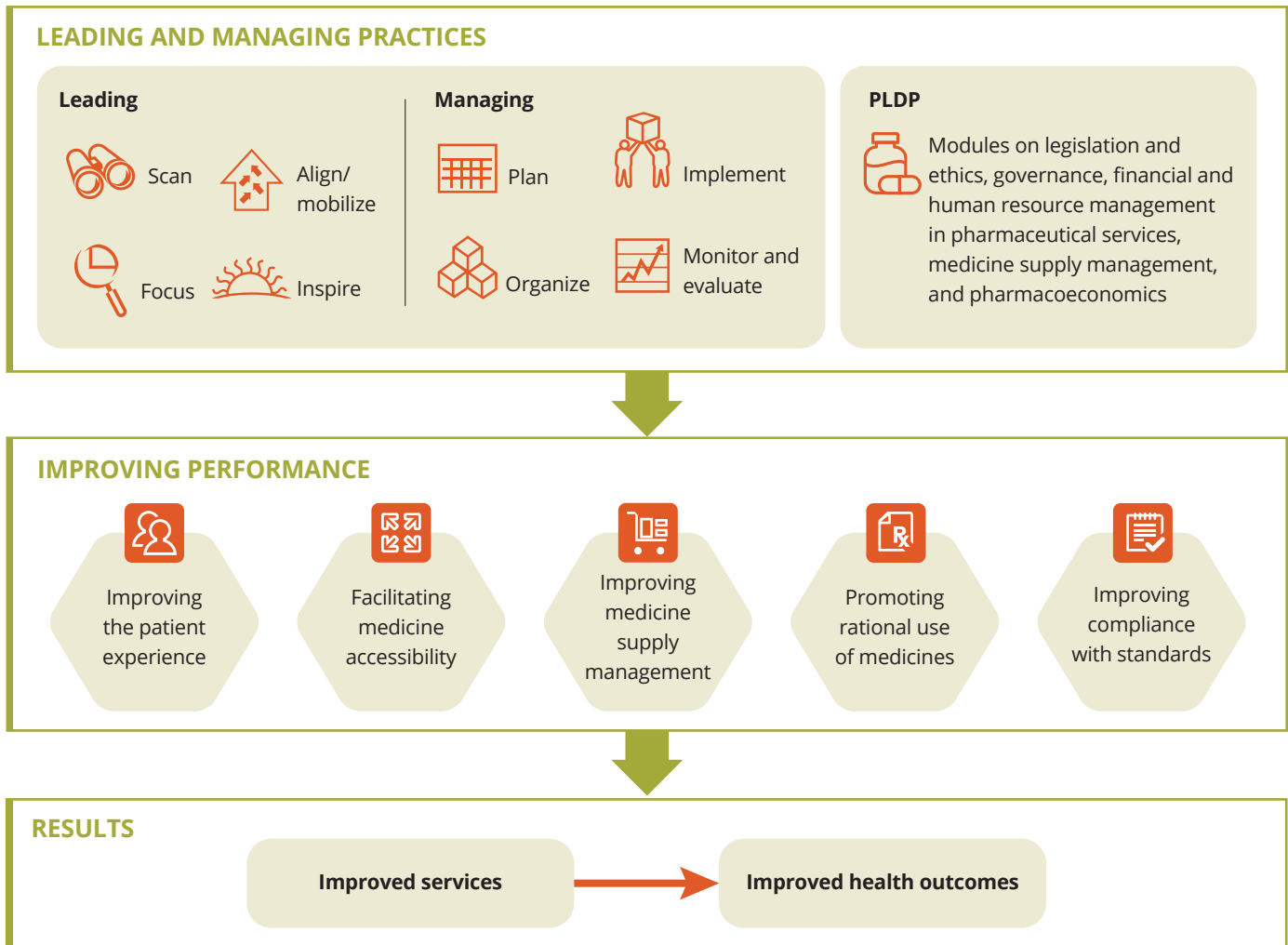
Strategic Response: Pharmaceutical Leadership Development Program

SPS offered to customize a program that would meet the needs of public sector pharmacists. It leveraged MSH’s proven Leadership Development Program (LDP), which has been implemented in over 40 countries since it was launched in Egypt in 2002. SPS adapted the LDP for South Africa’s pharmaceutical system, creating the Pharmaceutical Leadership Development Program (PLDP). The PLDP combines technical pharmaceutical knowledge with training in leading and managing practices to better equip pharmacy managers to respond to challenges in their work environment and improve service delivery (figure on next page). The PLDP brings together pharmacists and other health care professionals to strengthen leadership and management skills, while enabling them to analyze persistent challenges they face in their health facility or in the district they serve. As participants confront service delivery, compliance, and management challenges, facilitators provide supportive coaching to assist them in implementing action plans to provide better pharmaceutical services. Inspired by a shared vision of what they can accomplish, participants gain confidence in their ability to lead, manage, govern, and produce results. Through the PLDP, leadership, management, and governance capacity have been strengthened, and pharmaceutical service delivery has measurably improved in the eight provinces where the program has been offered.

Key Elements of the PLDP

The LDP is a team-based, results-oriented process that was adapted specifically for the pharmaceutical services context, thereby creating the PLDP. Modules on legislation and ethics, governance, financial and human resource (HR) management in pharmaceutical services, medicine supply management, and pharmacoeconomics were added to the program.

Pharmaceutical Leadership Development Program



By combining pharmaceutical management knowledge and sound leading and managing practices, pharmacists, pharmacy managers, and pharmaceutical service managers are better equipped to respond to challenges and add value to the services they provide.

By the end of the PLDP, participants have gained practical working knowledge of:

- Leadership and management practices that can be used to strengthen and sustain organizational systems and processes
- Management of processes and resources, such as the budget, personnel, and pharmaceutical supplies, to ensure optimal delivery of an efficient and effective pharmaceutical service
- Implementation of good governance principles to ensure accountability and transparency
- How to respond in an ethical manner to challenges in the work environment
- The legislative and regulatory framework that underpins health service delivery in South Africa
- Analysis and control of pharmaceutical expenditure in the workplace
- Creating abstracts, presentations, and posters

LDP participants from Khayelitsha Eastern Suburbs Sub-Structure, Western Cape





SIAPS SOUTH AFRICA

Capricorn Team, Capricorn District, Limpopo

“Not all of the principles learned were new, but we were encouraged and had opportunities to implement them in the work environment. This allowed us to understand how to use the principles to effect changes in both the work environment and life in general.”

PLDP participant from Limpopo Province

The PLDP is delivered in a series of five workshops over a period of six to seven months. The facilitation approach is highly participatory and includes group discussions and practical activities. The exchange of experiences and ideas among participants adds depth to the learning process and provides a forum for sharing best practices. Participants are required to complete assignments following the end of each workshop. Facilitators guide them through the process of selecting a workplace challenge and identifying specific measurable results that can be achieved within the duration of the PLDP. Each team develops a quality improvement (QI) project to address the challenge they have selected. The workshops are interspersed with a period of four to five weeks of workplace application of principles, practices, and tools learned. Participants are encouraged to bring what they learn at the workshops back to their institutions, where they teach and inspire their co-workers to apply the practices and tools.

Benefits of Coaching

Between workshops, coaching visits are conducted to support participants in the implementation of their QI projects. During the coaching visits, facilitators monitor and evaluate progress made and reinforce material covered in the workshops. Coaching also includes encouraging participants to find creative ways of dealing with challenges at the workplace, recognizing achievements made by the teams, and giving constructive feedback.

At the core of the PLDP is the realization that good leadership and management are about achieving measurable improvements in services, thus permitting better health outcomes, as illustrated in MSH’s Leading and Managing for Results Model. When applied consistently, good leading and managing practices strengthen organizational capacity and result in higher-quality services and sustained improvements in health outcomes. As seen in the Results Model, there are three core components of a strong, well-functioning organization—a good work climate, the capacity to respond to change, and good management systems and processes.

Leading and Managing for Results Model⁵

The PLDP is grounded in three methodologies: experiential learning; the challenge-feedback-support triangle; and the Challenge Model.

Experiential learning. In the workshops, the teams learn the eight leading and managing practices that validate their own individual experiences. They apply these practices to real workplace challenges and engage in continuous reflection and improvement in their teams. This cycle of application and reflection moves teams through the experiential learning cycle.

Challenge, feedback, and support. Participants choose the challenges they want to address, informed by local evidence of needs and gaps, and receive feedback and support from facilitators and local managers as they work toward measurable results.

Challenge Model.⁵ Each team completes this model for a priority problem that it has decided to address. In working through the model, participants:

- ▶ Create a shared vision and define one measurable result
- ▶ Assess the current situation and identify opportunities for action
- ▶ Define their challenge and select priority actions
- ▶ Develop an action plan with measurable indicators

- ▶ Implement their action plan
- ▶ Monitor and evaluate their progress toward achieving their desired result

At the end of the PLDP, participants are required to prepare an abstract, a poster, and a PowerPoint presentation. They present their results to senior managers and other key stakeholders from their province, district, and facility. The purpose is to share what they have achieved and learned during the PLDP, while discussing ways to build on and scale up successes.

Implementation Experience, Critical Success Factors, and Challenges

SPS launched the PLDP as a pilot project in Gauteng Province in 2011, and it was expanded from 2012 through 2015. In just four years, the PLDP/LDP had been scaled up and offered in seven more of South Africa's nine provinces (see p. 12).

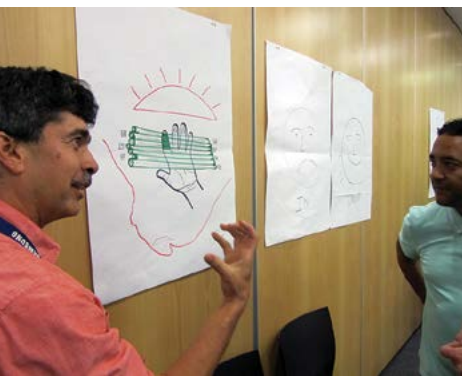
In response to an expression of interest from the appropriate health authority, SIAPS first conducts a meeting with stakeholders to discuss the PLDP's objectives, structure, and benefits. The responsibilities of the health authority and SIAPS are then reviewed and agreed upon. SIAPS has strict selection criteria for participants that each authority must follow when identifying potential program participants and to demonstrate its commitment. Participants needed to commit to attending all workshops and participating in all coaching visits; obtain written approval for attendance from their managers or facility chief executive officer (CEO); and hold the post of pharmacy manager or above. If the participant is not a pharmacy manager, they must obtain a letter of nomination from their pharmacy manager and the facility CEO. In addition, there must be sufficient staffing at the workplace to allow each participant to be away to attend all workshops. Prospective participants who meet these criteria and are approved by their provincial office then complete an application form.

SIAPS collaborates with the health authority to customize PLDP sessions based on local priorities, including key pharmaceutical-related indicators that they track (in the case of South Africa, the health authority is the provincial departments of health [PDOHs]). With assistance from each province, SIAPS identifies technical experts to co-facilitate modules, such as HR and financial management. Close cooperation with the province ensures the buy-in of local stakeholders and the long-term sustainability of the approach, including institutionalizing key components and tools in organizational systems. In terms of financing agreements, the provinces support the participants' travel to the workshops and provide venues for coaching visits. In some cases, provinces also provide venues for workshops and final presentations.

Following the completion of the initial LDPs, KZN Province and the Northern Tygerberg Sub-Structure (NTSS) in Western Cape Province asked SIAPS to replicate the program and ensure the sustainability of achievements. SIAPS supported these requests to scale-up the QI projects, institutionalize key components of the programs, and build local ownership. Modified LDPs tailored to the specific needs of the KZN Province and NTSS were implemented in 2014-2015, in close collaboration with senior managers at the provincial and sub-structure levels. Interactive workshops were held and coaching visits were conducted, but this time, district/provincial personnel in KZN and supervisors in NTSS were more involved. SIAPS has examples of sustained interventions in KZN

“Change does take time. Repetition is needed in order to change habits.”

Director of Pharmaceutical Services, Northern Tygerberg Sub-Structure



SIAPS SOUTH AFRICA

Participant from Mitchells Plain CHC, Western Cape explaining his vision.

“At university, we do basic management but many are made managers without any experience. Pharmacy managers feel this is not what they studied for. PLDP teaches them how to approach problems, resolve problems, especially in team-based settings ... that is why we welcomed this program.”

Head, KZN Pharmaceutical Services

Province and NTSS, including the standardization of practices. For example, in KZN, all district managers participated in the sustainability phase of the PLDP. As a result, a strong team of district-level pharmacy managers has been created. In NTSS, four key outputs of the program were identified and incorporated into the performance agreements of both pharmacy and facility managers (e.g., reducing waiting times for patients receiving medicines for chronic diseases to less than 30 minutes; ensuring 100% compliance with applicable norms and standards of South Africa’s National Core Standards).

In 2015, SIAPS signed a memorandum of understanding with the Department of Pharmacy at Sefako Makgatho Health Sciences University (SMU) to integrate the LDP into one of the modules in the existing post-graduate curriculum in Public Health Pharmacy, and Management. SMU had a strong pharmaceutical management component, but it needed strengthening in the practical aspects of leading and managing. Drawing from the PLDP, SIAPS designed a results-oriented leadership and management module, “Management of Pharmaceutical Services,” for SMU’s Master of Pharmacy, Public Health Pharmacy, and Management Course. The module provides students with an opportunity for practice-based learning that builds their capacity in leadership and management and to face challenges and achieve measurable results in their work environments. The first group of 13 students from the public and private sectors as well as academic interns began using the module in May 2015, facilitated by SIAPS. They completed the program in January 2016.

The LDP approach was modified again in 2015 in response to a request from Free State Province. It wanted to expand the program to additional participants and to introduce a new, stronger governance component. SIAPS further refined the PLDP to create the Pharmaceutical Leadership and Governance Initiative (PLGI). It was conducted beginning in October 2015 for 32 pharmacists, organized into 7 teams. They addressed challenges relating to expired medicine stock and medicine availability. The teams delivered their final presentations to stakeholders in mid-May 2016.

Lessons Learned

As the program expanded and the number of participants and teams increased, SIAPS had to expand the core team of facilitators. A single PLDP/LDP could involve eight or more teams from one province. With multiple PLDPs operating at the same time and at various stages of implementation, there could be as many as 25 different measurable results on which teams were working. In response, SIAPS South Africa expanded the core team of facilitators from the initial two staff to up to four staff.

It is critical that content and materials are adapted for participants. In SIAPS South Africa, given that the PLDP participants were pharmacists accustomed to scientific methods many initially thought that their QI projects should be carried out as operational research. The facilitators emphasized the critical role of leadership and management development and the distinction between implementing this QI initiative versus research.

Each PLDP team is unique. There were one or two teams per PLDP that struggled to get going, to get organized, to engage with colleagues back at their facility, or to define their measurable result. It is important for facilitators to have a firm understanding of the unique barriers and challenges that teams may face implementing QI initiatives.

Critical Success Factors for South Africa

1 SIAPS South Africa was **committed to refining the technical approach over time** on the basis of implementation experience, participant feedback, and participant needs. There were multiple opportunities to obtain information, including the facilitators' daily reflections with participants and daily reflections among the facilitators, external content experts, and in later PLDPs, senior provincial pharmaceutical management staff. Also, each workshop was formally evaluated by participants.

2 The PLDP was **delivered by experienced facilitators**, who had the freedom to create what was needed in the specific context. SIAPS South Africa staff operated in a learning organizational environment that allowed for experimentation. For the majority of the project implementation time under SIAPS, there was a **stable core facilitation team** that had the human and financial resources it needed. Initially there were two facilitators, but as the PLDP scaled up, additional SIAPS staff were trained to deliver the program. At its peak under SIAPS, there were three or four SIAPS facilitators, supplemented by technical experts (funded by the government, as a contribution). In later offerings under SIAPS, senior staff from provinces and districts were part of the core team for each PLDP or LDP.

3 MSH's standard LDP curriculum was used but **important adjustments were made** to incorporate South African-specific information and to address weaknesses in the curriculum, results of the pilot in Gauteng Province and subsequent offerings under SPS, and the needs of participants. In addition to the technical content on priority pharmaceutical management topics, substantive changes to the standard LDP curriculum included:

- Combining the scanning and planning components in workshop 1 and strengthening these sessions by including tools, such as strengths, weaknesses, opportunities, and threats (SWOT) analysis and engaging stakeholders. Linkages between planning and M&E were also explained.
- Strengthening the M&E component and moving the development of indicators to the workshop where participants define their expected measurable result. The M&E component was also aligned with M&E systems used in South Africa. Participants were oriented on various M&E frameworks, such as the conceptual and results frameworks and logic model.
- Ensuring that by the end of workshop 2, all teams have a complete Challenge Model.
- Adding information on South Africa's National Core Standards.

By the time the PLDP was offered for the third time, the content and flow of the program had been systematized. At the same time, **the approach remained flexible**, depending on and in response to the needs of participants and their formal evaluations of each workshop and the overall program.

4 The **use of technical experts** to facilitate the financial and HR management technical modules allowed for the theoretical aspects of technical topics to be discussed alongside current practice(s) in the provinces/districts.

5 The PLDP evolved in terms of the **participants who were invited to attend**. SIAPS South Africa quickly learned that it worked better to involve teams of pharmacy personnel from districts, rather than pharmacy personnel from different facilities and districts. This refinement was launched in 2012 when the PLDP was first offered under SIAPS, in the North West Province. SIAPS engaged with senior staff at the provincial level to have all districts participate and to organize district teams, meaning pharmacists from the same district. In addition, district-level pharmacy managers were invited to participate.

6 **Administering the PLDP through existing management structures** ensured that participants understood that there was a relationship between the program and their regular work routines and built local ownership of the program. For example, it was provincial managers who drove the process of selecting participants, insisting that each participant's facility CEO sign the letter agreeing to allow him/her to attend all workshops. The HOPS' supervisors were also on board. Participant applications were submitted through the district Pharmaceutical Services head office. This was important for buy-in and to position the PLDP, from the beginning, as an initiative owned and implemented by the district authorities as well.

7 **Each Challenge Model completed by the teams was evidence-based and aligned with a national, provincial, and/or district priority.** Challenges were identified through a review of routine district data generated for performance monitoring. Moreover, each district's progress in addressing its challenge became part of regular reporting practice at the provincial headquarters.

8 **Participants were encouraged to create a broader team at their home facilities** to work together on the identified challenge. Many participants were highly successful in orienting their colleagues to the PLDP/LDP approach, content, and tools and in enlisting support for and participating in the implementation of the action plan. Some participants were less successful in this effort.

9 **One of the main successes of the program was the coaching component**, which prevented the teams from slipping back into "business as usual" when they returned to their workplaces following each workshop. The coaching visits were conducted by SIAPS facilitators. As the PLDP evolved, **management staff from the provincial level became involved in the coaching visits**. Coaching visits were often conducted on-site at the participant's facility, especially if s/he was having difficulty applying what was covered in the workshops. The on-site visits gave facilitators insight into the participants' working conditions. Coaching workshops were sometimes organized at the district level, bringing a few district teams together at a venue, which reduced the distances facilitators had to travel and also benefited participants by giving them more opportunities to interact with their peers. SIAPS encouraged teams to bring in other key stakeholders, such as the district manager and primary health care (PHC) manager. Coaching workshops were sometimes done at the provincial level with the involvement of senior provincial personnel.

10 **The rapid scale-up of the PLDP across eight of nine provinces** was facilitated by the fact that the program was designed and delivered in response to a compelling need for specific training in leadership and management. Moreover, SIAPS was already working in the provinces and therefore had a track record and technical credibility.

Challenges

SIAPS South Africa encountered a number of challenges in expanding the scale of implementing PLDP. For example, SIAPS was unable to scale up to all nine provinces because one province failed to meet the criteria for participant selection and to ensure their attendance at all workshops. Additionally, facilitators had to travel great distances to conduct coaching visits, whether on-site at participants' facilities or in district- or provincial-level coaching workshops, and participants found it challenging to find sufficient time to implement their QI projects. Funding reductions and the impending close-out of the program also hampered scale-up and sustainability work in KZN Province and Western Cape.

Implementing the LDP in an academic context (SMU) highlighted additional challenges that were specific to this environment:

- The program is a team-based approach, involves on-the-job challenges, and is best offered to participants who come from a uniform setting. The SMU program involved participants from a variety of work settings (e.g., public and private sectors, prison, military, etc.) and whose primary focus was on their individual learning as university students.
- Despite students interest in leadership and management, they were primarily motivated to pass their exams rather than to effect changes at their facilities.
- When implemented in the in-service context, before scheduling a PLDP, SIAPS met with local stakeholders (provincial and district managers) to obtain their commitment. With the SMU program, SIAPS did not have an opportunity to meet with the students' employers, nor to conduct a stakeholder engagement prior to the initiation of the module, which negatively impacted the ability of some students to implement their action plans. There was also not an opportunity for on-the-job coaching.

SMU faculty felt that the theoretical aspects of leadership and management were well covered, and the enrolled students completed this accredited program. SMU has continued using the LDP in their masters program in 2016 with mentoring of personnel by SIAPS. However, this experience is not necessarily a good indicator of the way forward for ensuring the sustainability of the program. By contrast, evidence from PLDPs in the in-service context indicates that the path to sustainability is institutionalizing key tools (e.g., Challenge Model, stakeholder analysis tool), such as in KZN Province, or engaging with multidisciplinary teams, as was done in Western Cape.

Results

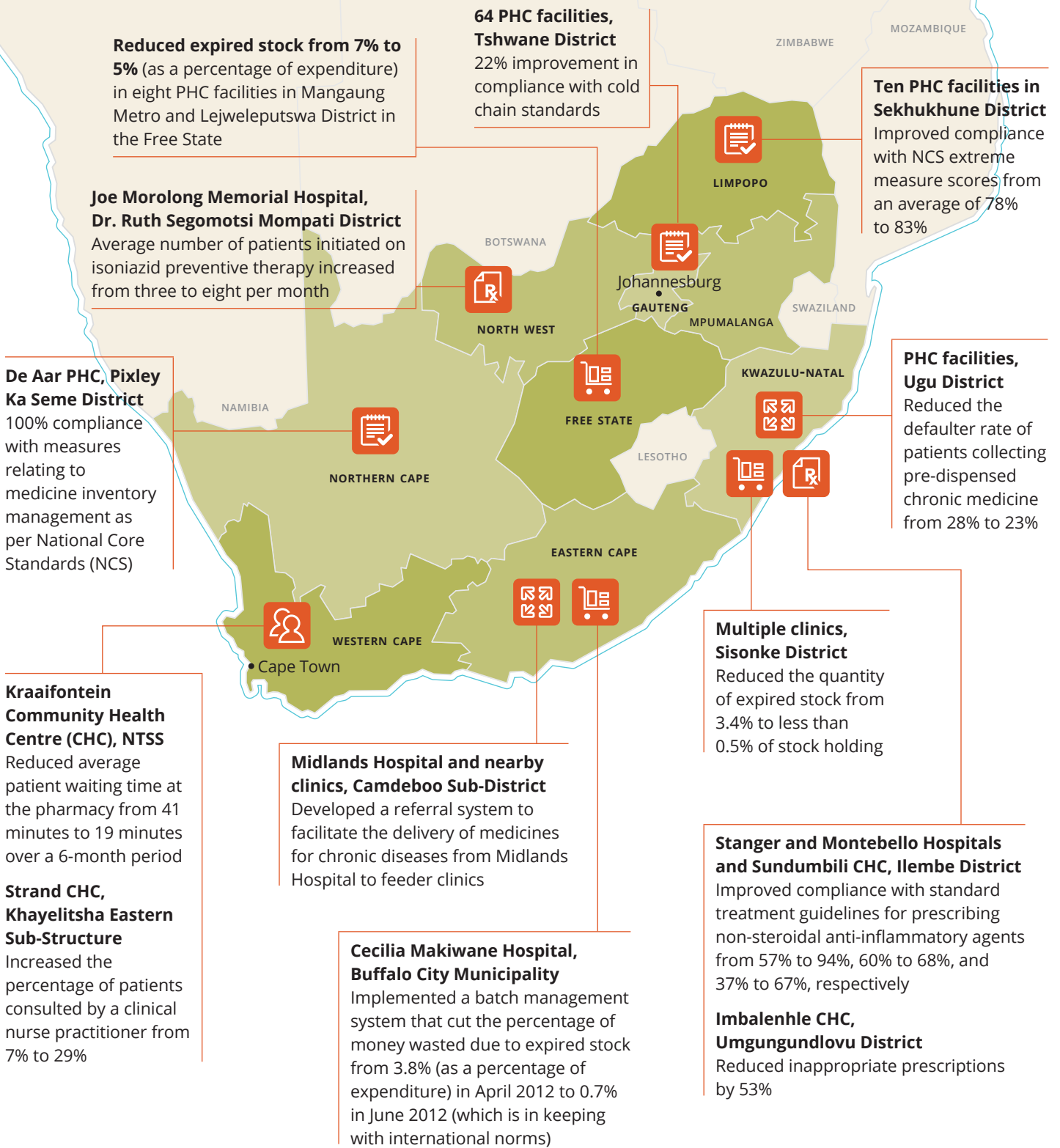
Between March 2011 and May 2016, the PLDP was delivered in seven provinces, the LDP in the Western Cape, and the PLGI in Free State, involving 287 participants and 76 teams. These participants implemented 87 QI projects at 467 facilities and offices (for examples, see map). The program has also been offered once in an academic setting, for an additional 13 participants. More than 50% of the teams participating in the PLDPs/LDPs achieved their desired measurable results within the six-month implementation period of the programs. Many of the teams have continued to apply the tools and methods they learned to new challenges, long after the PDLP was completed. Several teams have continued to scale up their initial interventions. For example, one team expanded its QI project to increase patient access to chronic medicines by opening two community collection sites, thereby bringing medicines closer to the people who need them. In one sub-district in the Western Cape Province, key outcomes from the QI projects have been included in the performance agreements of both facility managers and pharmacy managers and have been expanded across the sub-district.

“Through this training, using the leading principles and other skills gained, we are now able to scan, analyze, and understand things differently. We are now confident that as pharmacists, we have an important role to play in ensuring the success of government initiatives, such as National Health Insurance [universal health coverage].”

Pharmacist,
Mokopane Hospital

Examples of Quality Improvement Activities Implemented and Results Achieved

Achievements resulted from both SPS and SIAPS quality improvement activities.



Improving the patient experience



Improving medicine supply management



Promoting rational use of medicines



Facilitating medicine accessibility



Improving compliance with standards



Pharmacy Team from GJ Crookes Hospital, Ugu District, KZN with the Member of the Executive Council for Health's Annual Service Excellence Award for Innovation given in 2014.

Conclusion and Way Forward

The PLDP develops the skills and capacity of health care professionals in leadership and pharmaceutical management, in response to service delivery challenges in the work environment. Through facilitated capacity development, technical assistance, and mentoring and coaching, these programs have strengthened the institutional capacity of the PDOHs and district-level health services. The methodology can bring about important health system changes. The QI projects implemented by the teams have resulted in a wide range of individual, organizational, and health service delivery outcomes, including an improved reach and quality of services, time savings, and resource mobilization.

One of the key lessons from the implementation of the PLDP is the importance of stakeholders assuming ownership for the introduction and rollout of any system strengthening intervention through the development and nurturing of internal champions. The scale-up of the PLDP in KZN Province and the results this province achieved across the districts is a compelling example. Several provinces, such as KZN, that have the tools and experienced staff who know how to use them, will continue to apply what they have learned to address identified challenges and monitor progress as part of their routine district quarterly progress reports.

Several recent developments indicate that the PLDP/LDP will be sustained by South Africans. For one, the achievements in the Western Cape Province point to the potential future replication of the LDP. Second, the presence of a former SIAPS facilitator in the Pharmaceutical Services Office in the Eastern Cape bodes well for replication. Third, the LDP has been integrated into the master's program at SMU and will be facilitated by university staff. Adaptations have been made to accommodate the needs and the context of SMU. Lastly, many PLDP teams are showcasing the work they have done at various forums, which inspires the continued application of the approaches and tools in the workplace. For example, participants from the Khayelitsha team in Western Cape recently presented their QI project at a Pharmaceutical Society of South Africa continuing professional development event in that province. The presentation led to keen expressions of interest from two facilities to implement similar QI projects and to use the LDP's tools and approaches.

FOR FURTHER INFORMATION

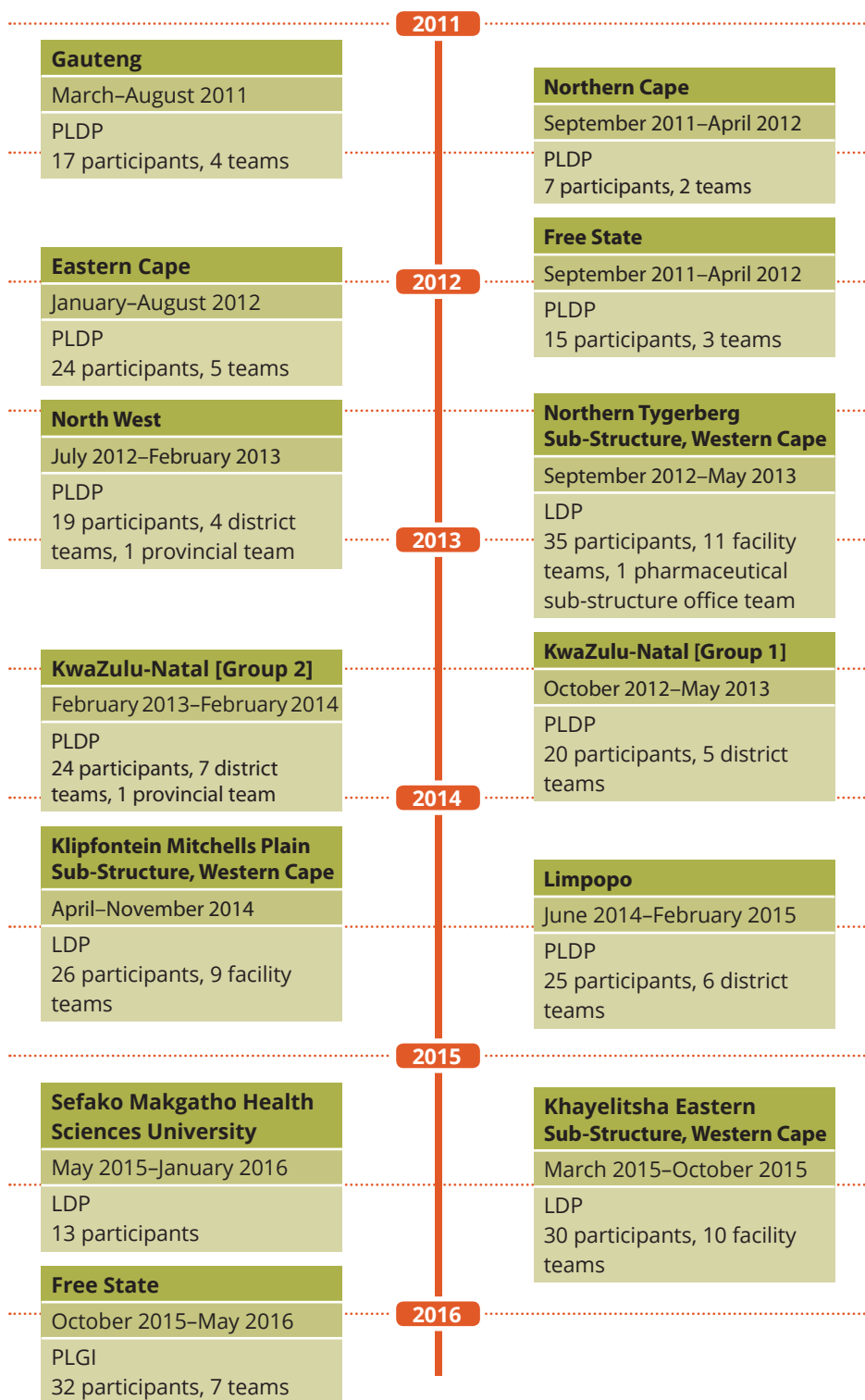
Rising to the Challenge: Developing the Pharmaceutical Leadership Development Program in South Africa

(video): <https://www.msh.org/news-events/stories/rising-to-the-challenge-developing-the-pharmaceutical-leadership-development>

Technical Report: South Africa Pharmaceutical Leadership Development Program (PLDP),

May 2015; Putter, S, Mkele, G, et al.

Leadership Development Programs held under SPS and SIAPS



Sustainability and Scale Up for the Leadership Development Programs

KwaZulu-Natal
August 2014–September 2015
PLDP
109 participants, 12 district teams, 1 provincial team

Northern Tygerberg Sub-Structure, Western Cape
April 2014–March 2015
LDP
24 participants, 12 facility teams

This publication was written by Alison Ellis with contributions from Gail Mkele and Susan Putter from SIAPS South Africa. Thank you to all of the staff from SIAPS South Africa for their support in the development of this technical brief.

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

REFERENCES

- 1 UNAIDS. HIV and AIDS estimates (2015). <http://www.unaids.org/en/regionscountries/countries/southafrica/>. Accessed October 2016.
- 2 UNAIDS. Gap Report (2014). http://www.unaids.org/sites/default/files/media_asset/UNAIDS_Gap_report_en.pdf.
- 3 TBfacts.org. <http://www.tbfacts.org/tb-south-africa/>. Accessed May 2, 2016.
- 4 Department of Health, Republic of South Africa. National Health Insurance for South Africa: Towards Universal Health Coverage. Government Gazette, 11 December 2015, Version 40.
- 5 Galer JB, Vriesendorp S, Ellis A. Managers Who Lead: A Handbook for Improving Health Services. Cambridge, MA: Management Sciences for Health; 2005.