8 SIAPS-supported countries developed or updated and submitted 32 pharmaceutical laws and regulations for approval between 2011-2017

Sound legislation is critical to the establishment of an effective national regulatory framework and should be complemented by specific regulations. SIAPS provides technical assistance to country governments to advocate for, develop, and enact practical, enforceable legislation supported by the rule of law; develop sufficient regulatory capacity; and introduce and apply appropriate technologies.

By engaging a broad range of stakeholders—including ministries of health and finance, other relevant public-sector entities, civil society organizations, professional associations, and advocacy groups—SIAPS supports a participatory approach to the development of relevant pharmaceutical legislation.

Country	Number
Burundi	1
Dominican Republic	2
Ethiopia	11
Guinea	2
Sierra Leone	1
South Sudan	2
Swaziland	2
Ukraine	11

For more information on SIAPS' approach to strengthening pharmaceutical sector governance and the importance of laws and regulations, please visit: http://siapsprogram.org/approach/pharmaceutical-systems/laws-and-regulations/

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22 countries developed or updated **guidelines, lists, and standard operating procedures** with SIAPS support

A challenge that many low- and middle-income countries face is a lack of robust guidelines, lists, and SOPs that define norms and standards for performing pharmaceutical functions and are based on international guidance and best practices. Since the start of the project, SIAPS has assisted 22 countries to prepare or revise pharmaceutical and disease-specific guidelines and SOPs that reflect international guidance and best practices and provide the foundation for good governance and sound practices in pharmaceutical systems. 12 SIAPS-supported countries have updated national medicines, device, and equipment lists.

*Life of project figure (2011-2017)

For more information on SIAPS' approach to strengthening pharmaceutical sector governance, standard treatment guidelines, and essential medicines lists, please visit:
http://siapsprogram.org/approach/pharmaceutical-services/essential-medicines-lists/

Product registration improved in 10 SIAPS-supported countries through advocacy, process restructuring, capacity building, and the introduction or updating of information systems

DRC

Angola

Namibia

Ethiopia

Bangladesh

Philippines

Guinea

Benin

Swaziland

Mozambique

With support from SIAPS, three countries (Bangladesh, Mozambique, Namibia) have adopted the internationally-endorsed Common Technical Document format and specifications to standardize the medicines registration application process and the remaining seven have improved electronic information systems for product registration to make their processes more efficient and transparent. Of these, four countries (Bangladesh, Ethiopia, Mozambique, and Namibia) are implementing SIAPS's web-based regulatory information system, Pharmadex.
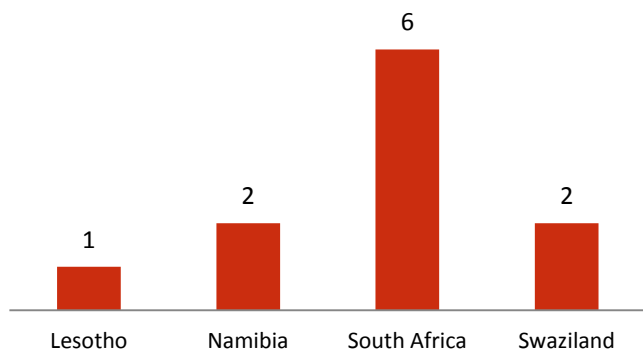
*Life of project figure (2011-2017)

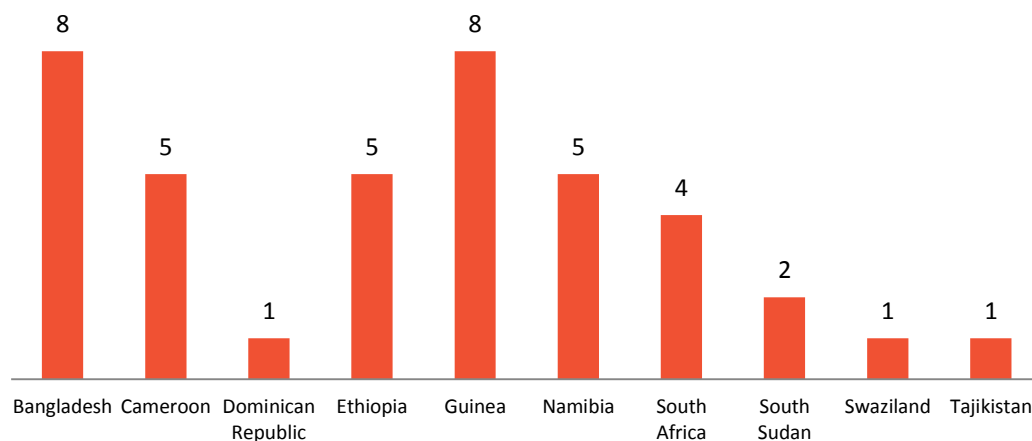For more information on SIAPS' approach to strengthening product registration and regulatory systems strengthening, please visit: http://siapsprogram.org/approach/pharmaceutical-systems/regulatory-affairs/

From October 2011 to September 2017, SIAPS assisted **4 countries** to develop or reform **11 preservice health professional training curricula** to address pharmaceutical topics

From October 2011 to September 2017, SIAPS assisted **10 countries** to develop or reform **40 in-service health professional training curricula** to address pharmaceutical topics

Preservice curriculum reform and development and in-service training are cost-effective and sustainable interventions that contribute to broader health system strengthening. They provide students and professionals with a critical foundation of knowledge and skills and allow them to continue to develop their competency to practice in the real world. Effective preservice training reduces the need for future large-scale and expensive in-service trainings. SIAPS worked with a number of university and government training programs to build the capacity of the pharmaceutical training institutions to enhance the pharmaceutical education capacity and produce pharmaceutical professionals locally as a key mechanism to sustain the system.

For more information on SIAPS and the role of pre- and in-service training in health system strengthening, please visit: http://siapsprogram.org/2015/05/13/fighting-antimicrobial-resistance-with-pre-service-training/ http://siapsprogram.org/publication/building-local-capacity-for-clinical-pharmacy-service-in-ethiopia-through-a-holistic-in-service-training-approach/ http://siapsprogram.org/publication/altview/continuing-pharmaceutical-education-guide-to-establishing-quality-assured-and-accredited-programs/english/

3,022 people completed SIAPS-developed online learning courses in TB, governance, or antimicrobial resistance between 2011 and 2017

Developing stronger pharmaceutical systems that allow for greater and more equitable access to medicine hinges on the availability of skilled health care workers, program managers, and leaders—people with the appropriate and upgraded knowledge, skills, and competency-based training to effectively implement activities related to pharmaceutical management.

Course	Number completing the course
Antimicrobial Resistance (Part 1)	1,454
Antimicrobial Resistance (Part 2)	1,168
Good Governance in the Management of Medicines	363
QuanTB course	19
Using New TB Medicines and Regimens	18

For more information on the AMR and the good governance courses, please visit:
https://www.globalhealthlearning.org/course/good-governance-management-medicines and
https://www.globalhealthlearning.org/program/health-systems
For information on the QuanTB and new TB medicines courses, please visit:
https://leadernet.org/courses/
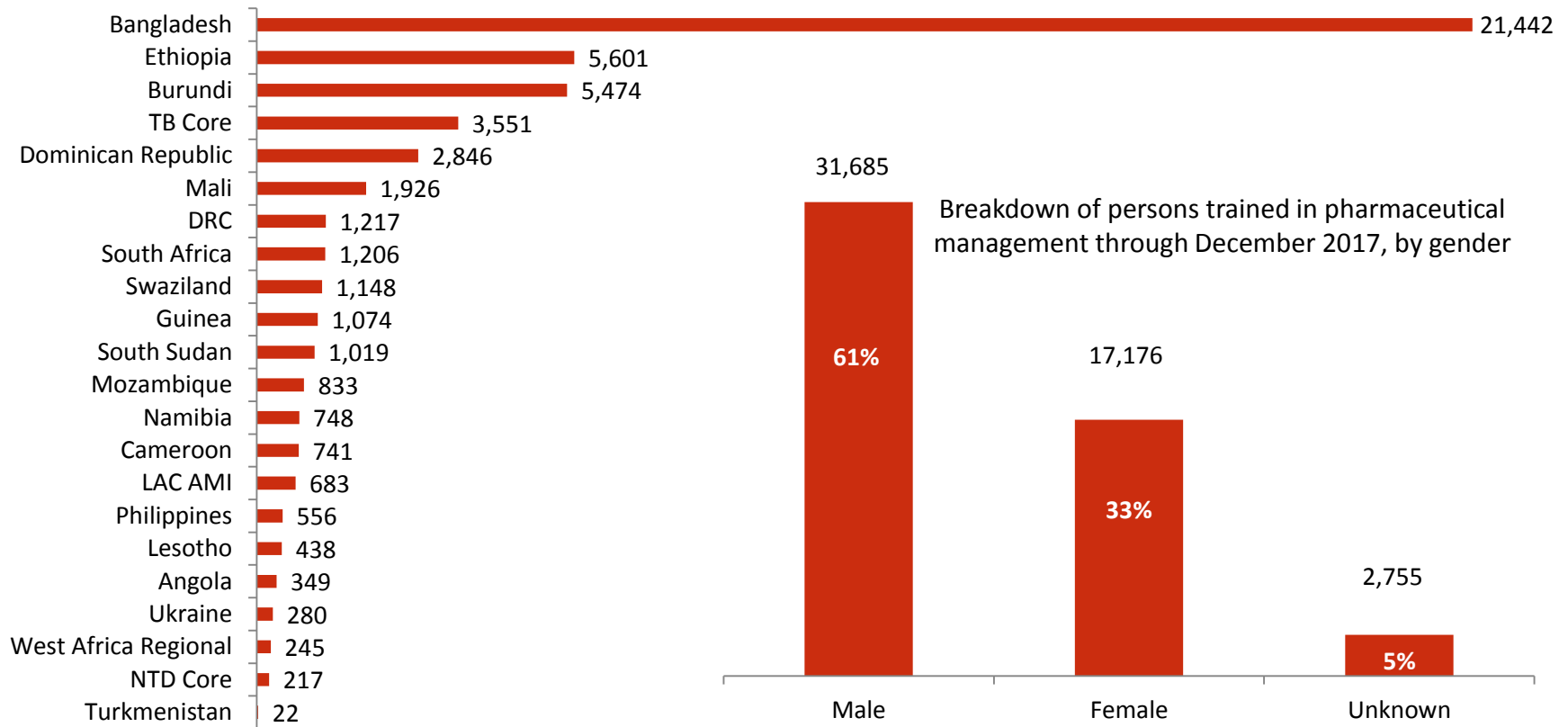
Through December 2017, SIAPS trained **51,616** people in pharmaceutical management[1] *Actual values presented below*

Country	Value
Bangladesh	21,442
Ethiopia	5,601
Burundi	5,474
TB Core	3,551
Dominican Republic	2,846
Mali	1,926
DRC	1,217
South Africa	1,206
Swaziland	1,148
Guinea	1,074
South Sudan	1,019
Mozambique	833
Namibia	748
Cameroon	741
LAC AMI	683
Philippines	556
Lesotho	438
Angola	349
Ukraine	280
West Africa Regional	245
NTD Core	217
Turkmenistan	22

Breakdown of persons trained in pharmaceutical management through December 2017, by gender

Gender	Value	Percent
Male	31,685	61%
Female	17,176	33%
Unknown	2,755	5%

There are pervasive capacity gaps in the delivery of pharmaceutical services in resource-constrained countries. The lack of qualified pharmaceutical professionals and associates stems from institutions not being able to produce adequate numbers of personnel. SIAPS is working with in-country partners to building capacity to meet the demands of an advancing pharmaceutical system.
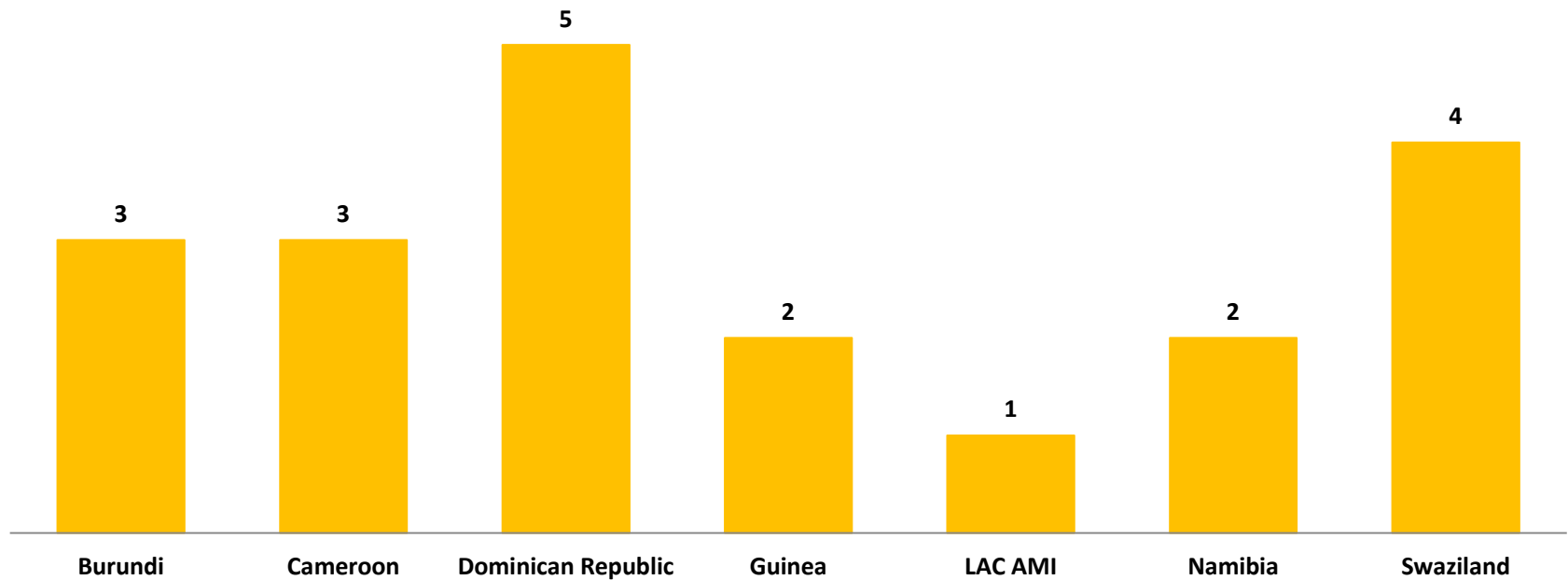
[1] *While it is difficult to avoid double counting entirely, the SIAPS data collecting and reporting system is set up to minimize it as much as possible.*

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From October 2011 to September 2017, SIAPS assisted in the development of **20 Global Fund proposals or grants** that collectively amount to more than $500 million
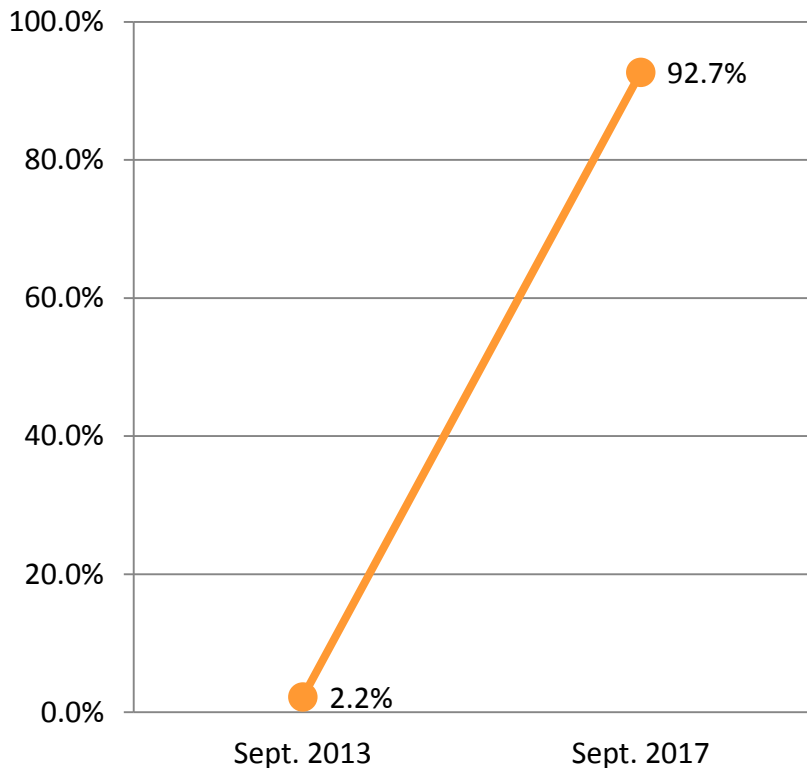

SIAPS continues to provide technical assistance to countries seeking additional financial support from the Global Fund. By developing Global Fund grant proposals and ensuring donor compliance to access additional rounds of existing funds, SIAPS countries have been able to access critical funding.

SIAPS contributed to more than **$120 million** in savings in 4 countries through improved pharmaceutical management practices, namely, improved national quantification and procurement, revised national essential medicines list, as well as revised hospital formularies and stock redistribution at service delivery points

Portfolio	Approx. Amount Saved (USD)	Action
Bangladesh	$6,380,000	SIAPS support for quantification support for tuberculosis; reproductive health/family planning; and maternal, newborn, and child health commodities
Ethiopia	$186,678	Stock redistribution to reduce expiries
South Africa	$2,043,520	Revised formulary
Dominican Republic	$53,000,000	Pooled procurement
	$62,000,000	Revised high-cost medicines list

More than **$500 million—Value of Global Fund** proposal and grant applications receiving technical assistance from SIAPS

Portfolio	Approx. Value (USD)
Burundi	$65,847,948
Cameroon	$165,216,878
DR	$19,102,251
Guinea	$70,000,000
Namibia	$19,330,281
Niger	$39,184,958
Swaziland	$127,798,683
Total	**$506,480,999**

SIAPS continues to provide technical assistance to countries seeking additional financial support from the Global Fund. By developing Global Fund grant proposals and ensuring donor compliance to access additional rounds of existing funds, SIAPS countries have been able to access critical funding.

Of those health facilities surveyed in 7 SIAPS countries, the proportion that used consumption data to inform ordering improved to **93%** over the life of the project.

Consumption data are the information on quantities of consumed pharmaceuticals or supplies during a reporting period. Consumption data offer the best estimates used to make decisions on quantities to supply and/or order.

Accurate information reduces wastage due to overestimation and stock-outs due to underestimation of commodity demand.

For more information about SIAPS and the use of data for decision making in Bangladesh, please visit:
http://siapsprogram.org/publication/altview/strengthening-governance-in-procurement-in-bangladesh/english/

7 countries improved electronic information systems for medicines registration

DRC

Bangladesh*

Namibia*

Ethiopia*

Benin

Philippines

Mozambique*

* Pharmadex, a SIAPS-developed online medicines registration system, is used by Bangladesh, Ethiopia, Mozambique, and Namibia

For more information about establishing a medicines registration system and Pharmadex, please visit:
http://siapsprogram.org/publication/altview/technical-brief-implementing-a-computerized-medicine-registration-system-in-mozambique/english/ and http://siapsprogram.org/tools-and-guidance/pharmadex/

43 countries use 7 electronic pharmaceutical management information systems developed by SIAPS

SIAPS-supported tool	Where it's used
RxSolution	Lesotho, Namibia, South Africa, Swaziland, and Uganda
Pharmadex	Bangladesh, Ethiopia, Mozambique, and Namibia
QuanTB	Bangladesh, Brazil, Colombia, Dominican Republic, DRC, Ethiopia, Guatemala, Honduras, Mexico, Mozambique, Myanmar, Nicaragua, Nigeria, Philippines, Sierra Leone, South Sudan, Uruguay, Uzbekistan, Venezuela, Zambia, Zimbabwe
e-TB Manager	Armenia, Azerbaijan, Bangladesh, Brazil, Cambodia, Indonesia, Namibia, Nigeria, Ukraine, Vietnam
Quantimed	Afghanistan, Angola, Bangladesh, Cameroon, Ethiopia, Mali, Sierra Leone, South Sudan, and Swaziland
Electronic Dispensing Tool (EDT)	Ethiopia, Guyana, Haiti, Kenya, Namibia, Rwanda, Tanzania, and Zambia
Pharmacovigilance Monitoring System (PViMS)	Georgia, Philippines, and Swaziland

An effective health system depends on high-quality pharmaceutical information, from supply inventory records to financial data. SIAPS improves the quality and availability of information with a suite of electronic tools that help pharmaceutical managers develop sound policies and monitor supplies and services.

SIAPS worked with **29 countries** to strengthen supply chain components to improve the availability of essential medicines

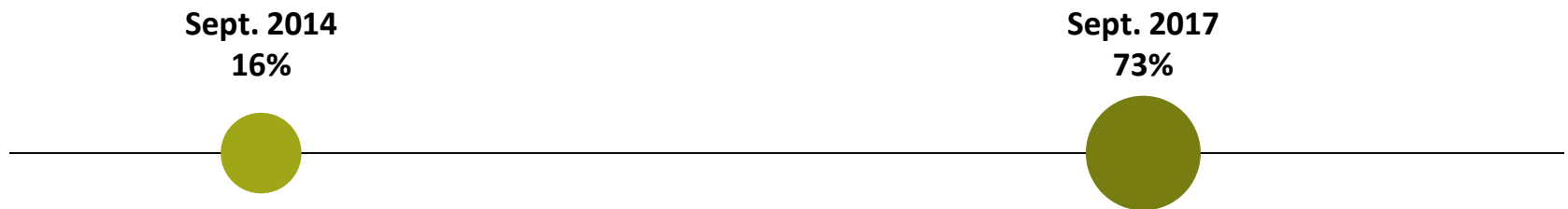| Angola	Burundi	Ethiopia	Mali	Sierra Leone	Togo
Bangladesh	Cameroon	Guinea	Namibia	South Africa	Uzbekistan
Benin	Democratic Republic of Congo	Honduras	Nicaragua	Swaziland	Zambia
Bolivia	Dominican Republic	Kenya	Philippines	Tajikistan	Zimbabwe
Brazil	Ecuador	Lesotho	Peru	Turkmenistan	

73% of assessed health facilities across 10 countries now use a **standardized checklist** to monitor storage conditions, an increase from 16% in September 2014

Sept. 2014
16%

Sept. 2017
73%

Poor storage affects safety and quality; a disorganized store creates room for poor inventory control and increases the risk of expired and wasted products. As part of strengthening supply management functions, SIAPS supports improved storage conditions through standard operating procedures, lists and guides, and information management systems.
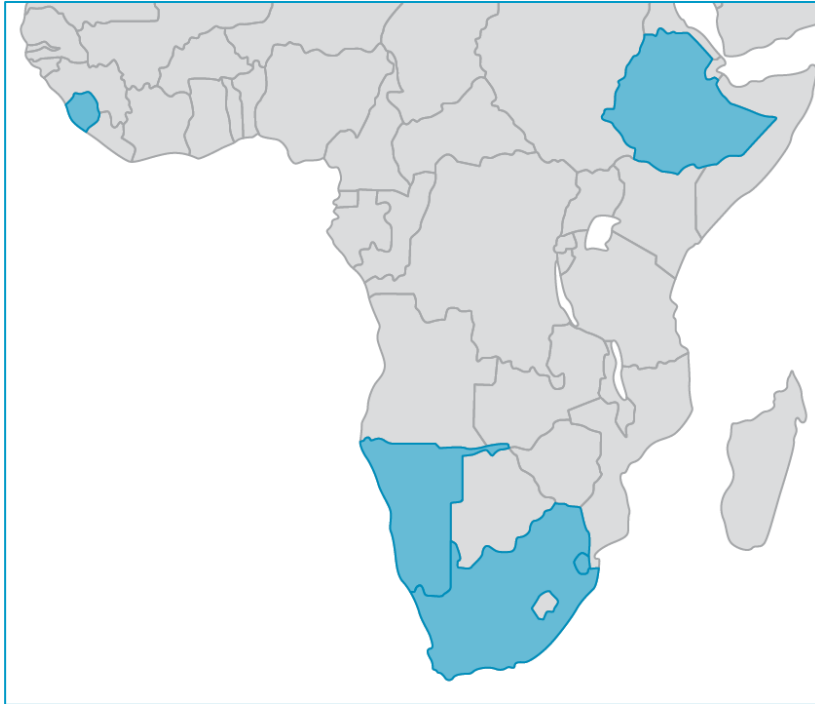
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SIAPS supported **5 countries** in ensuring safety of patients receiving **new MDR-TB medicines**

The first new TB medicines in more than 40 years—bedaquiline and delamanid—were endorsed by WHO for the treatment of MDR-TB and released onto the market in 2011 and 2012. However, uptake has been slow by countries for myriad reasons, including a lack of knowledge on how to manage implementation of new TB medicines.

To increase access to these new medicines, SIAPS built country capacity in **Georgia, Kenya, Philippines, Swaziland, and Uganda** to improve quantification, supply planning, and pharmacovigilance.

5 national antimicrobial resistance strategies have been developed with SIAPS assistance

Ethiopia

Namibia

Sierra Leone

South Africa

Swaziland

The irrational use of antimicrobials is common and accelerates the emergence of antimicrobial resistance (AMR). WHO recommends that countries develop national AMR strategies that align with WHO's global action plan on AMR to ensure a coordinated response. SIAPS supports countries in building awareness of the threat of AMR, advocating for a coordinated response, and implementing interventions that support the goals of WHO's Global Action Plan on AMR.
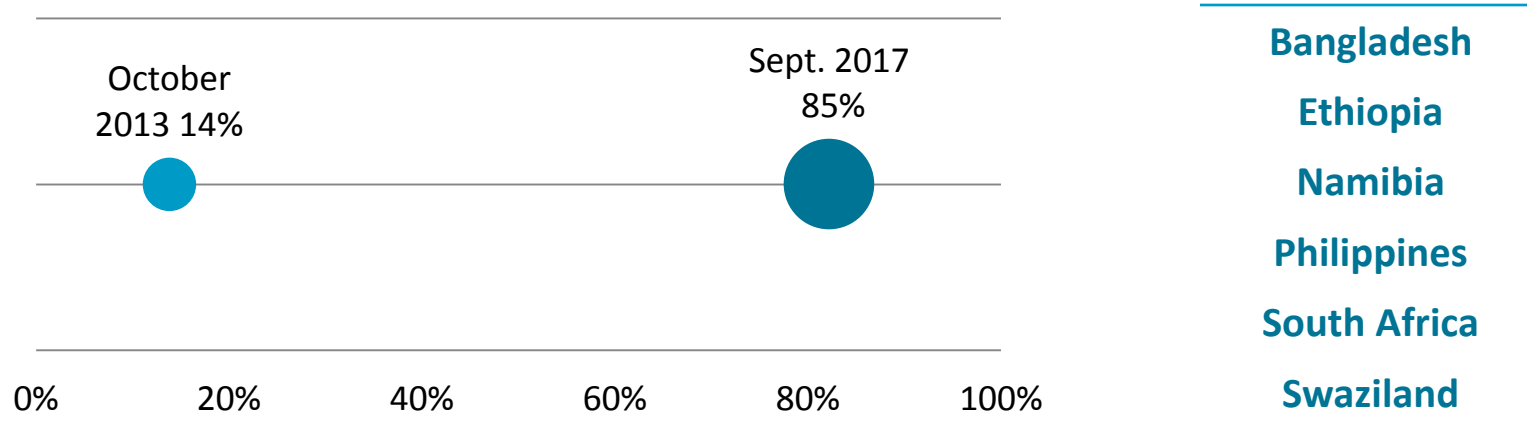
To learn more about SIAPS' work on AMR, please visit: http://siapsprogram.org/wp-content/uploads/2017/11/USAID-SIAPS-Technical-Update-on-AMR.pdf

85% of the surveyed SIAPS-assisted sites in **6 countries** have implemented pharmacovigilance or medicine safety activities

October
2013 14%

Sept. 2017
85%

0%   20%   40%   60%   80%   100%

Bangladesh

Ethiopia

Namibia

Philippines

South Africa

Swaziland

SIAPS works with in-country stakeholders to develop and implement pharmacovigilance and medicine safety activities that contribute to a reduction in medicine-related morbidity and mortality, protect patients, and improve treatment outcomes.

- *Pharmacovigilance activities* include spontaneous reporting systems for adverse events and suspected ADRs, active surveillance, risk management and communication, development of tools, trainings, and improving the use of data for implementing safety actions
- *Medicine safety activities* include therapeutic effectiveness, rational use of medicines, and product quality. Medicine safety is a major component of pharmacovigilance.

For more information on SIAPS' activities in pharmacovigilance and medicine safety and an example of this work in South Africa, please visit: http://siapsprogram.org/2014/10/27/strengthening-patient-centered-pharmacovigilance-in-south-africa/

Methodology and Data Validation

- Data are regularly collected for selected indicators at the country level from established LMIS systems, specific surveys, or information collected during site visits. SIAPS field offices enter this information into a database, which is reviewed at HQ to assess completeness, timeliness, and accuracy for each indicator. Once data are reviewed, and refined if necessary, they are published in quarterly dashboards, and used by SIAPS staff for reporting and decision making.