Strengthening the Health Workforce for Improved Services:

Results and Lessons Learned from Capacity*Plus* 2009-2015

USAID FROM THE AMERICAN PEOPLE

CapacityPlus Serving health workers, saving lives.

PEPFAR U.S. President's Emergency Plan for AIDS Relief

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Cover photo: Nurse cares for a child at Mbonzuki Dispensary, Kenya. Photo by Wycliffe Omanya for IntraHealth International

Back cover photo: Trevor Snapp for IntraHealth International

*Midwifery students at Garden City University College, Ghana. Photo by Gracey Vaughn for Capacity*Plus *and IntraHealth International*

Table of Contents

Overview

BACKGROUND

To meet USAID and global goals for family planning, ending preventable child and maternal deaths, and achieving an AIDS-free generation, countries must significantly scale up health service delivery. Sufficient scale-up is not attainable without having the right number of the right health workers in the right place—all the time. In countries, this can only be accomplished through strong human resources for health (HRH) leadership and well-functioning systems for health workforce planning, development, recruitment, deployment, and support. Yet current estimates of the global shortage of health workers are as high as 13 million (International Labour Organization [ILO] 2015). Access to quality health care is severely constrained for millions of people by deficits in the health workforce, including:

- Poor distribution of health workers, especially in rural and remote areas
- Mismatches between health needs and the composition and competencies of the health workforce
- Insufficient production and skills tied to inadequate education and training capacity
- Low retention and productivity
- Weak human resources management systems and absence or lack of use of data for decision-making.

Placing health workers at the center of every effort, Capacity*Plus* assisted partner countries to take the lead in achieving significant progress in addressing the health workforce crisis while also playing a global leadership role in advancing HRH knowledge and advocacy. A five-year project with a one-year extension, Capacity*Plus* (2009–2015) built on and expanded the accomplishments of the Capacity Project (2004–2009), which worked in 47 countries to begin supporting national stakeholders to address workforce gaps through activities such as developing computerized human resources information systems (HRIS) for informed decision-making; building capacity to rapidly train and deploy health care workforces; and strengthening health workforce leadership and management. Both projects were led by IntraHealth International.

HEALTH WORKFORCE GOALS AND FOCUS AREAS

Offering state-of-the-art HRH expertise, approaches, and tools, Capacity*Plus* supported countries to address barriers to attaining the health workforce needed to achieve national goals for improving health services and to contribute toward meeting the Millennium Development Goals and the goals of priority global initiatives to improve health outcomes:

- The US President's Emergency Plan for AIDS Relief (PEPFAR)'s work toward achieving an AIDS-Free Generation
- USAID's Ending Preventable Child and Maternal Deaths (EPCMD) action plan to save the lives of 15 million children and nearly 600,000 women by 2020
- The Family Planning (FP) 2020 global partnership's efforts to enable 120 million more women and girls to use contraceptives by 2020.

To advance these ambitious global development goals—and in response to USAID and country priorities for improving population health—the project's technical assistance and support concentrated on identifying and addressing gaps in the following key components of health workforce strengthening:

- Producing more health workers equipped to meet the family planning/reproductive health (FP/RH), HIV/AIDS, and maternal, newborn, and child health (MNCH) needs of the local populations they serve by **transforming health professional preservice education**
- Giving health workers the support they need to deliver quality care and save and improve lives by **strengthening human resources management and leadership**

Hospital staff in Kenya. Photo by Trevor Snapp for IntraHealth International

- Increasing the population's access to needed services by **enabling the generation and use of timely, accurate health workforce data for policy- and decision-making** to improve health workforce recruitment, deployment, and management
- Making quality health care services more available by building the capacity of national HRH leaders and managers to apply evidence-based approaches for **improving health worker retention (especially in rural facilities) and productivity**
- **Supporting the professional development of under-recognized but vital members of the health workforce**, including the supply chain personnel who deliver essential medicines and family planning commodities, and the social service workers who care for the most vulnerable populations, including children orphaned by HIV/AIDS
- Advancing progress in important overarching areas of HRH, including **improving monitoring and evaluation and knowledge-sharing, addressing gender equality in education and the workforce**, and better **integrating faith-based health care organizations** into national and global HRH efforts.

As described in the Results and Lessons Learned section of this report, in some cases the timing and nature of Capacity*Plus*'s support contributed to demonstrable national or subnational improvements in accessibility and coverage of services. In other cases, the project supported countries to undertake longer-term health workforce strengthening priorities—e.g., national HRH policies and strategic plans, leadership development, strengthening school management—for which the service delivery impacts will take longer to emerge.

Country-Level Capacity-Building

Aligned with the core principles advocated by the US Government (USG)'s Global Health Initiative and USAID Forward, country ownership and capacity-building represented two key tenets underpinning Capacity*Plus*'s strategies and the sustainability of the project's investments. For the purposes of the project, capacity-building meant empowering country stakeholders to: 1) take the lead in determining health workforce system needs; 2) apply evidence-based methods to address challenges in HRH policy, planning, management, development, and effectiveness; and 3) engage the multisectoral entities needed to implement HRH initiatives at the country level.

KEY ACCOMPLISHMENTS

Highlights of Capacity*Plus*'s achievements toward the goals of AIDS-Free Generation, EPCMD, and FP2020—and the priorities of USAID missions and partner countries—include the following, which are described more fully in the Results and Lessons Learned section of the report:

- **Supporting more than 50 health professional schools in 12 African countries to strengthen health workforce education and school management, contributing to over 9,000 new health workers and building the capacity of these schools to continue scaling up production of graduates and improving the efficiency and quality of their programs. (see pages 13-19)**
- **Building the evidence base for the importance of human resources management (HRM) and leadership; a compelling case study is the Dominican Republic, which implemented a comprehensive program of HRM strengthening that demonstrates how such an effort can contribute to long-term policy improvements, cost savings, and increased accessibility and use of HIV/AIDS, family planning, and other key services. (see pages 20-25)**
- **Expanding use of the open source human resources information systems platform, iHRIS, to enable countries to use data to make decisions to more effectively recruit and deploy health workers for increased access to services and to track health worker qualifications and education pipelines; the iHRIS software is now used in 20 countries to manage almost a million health worker records at a potential cost savings of over $275 million when compared to commercial software. (see pages 26-31)**
- **Building the capacity of national HRH leaders and managers in Uganda, Laos, and Malawi to use the project's retention and productivity tools to generate evidence and inform decisions to influence policy-making and improve the availability of services through increased staffing and distribution. (see pages 32-39)**
- **Raising awareness of the need to professionalize under-recognized cadres of health workers who play essential roles in well-functioning health systems, including contributing to the launch of global coalitions and tools to strengthen and support the supply chain and social service workforces. (see pages 40-44)**
- **Improving HRH measurement and monitoring and evaluation capacity at the country level and developing an HRH Effort Index for national and subnational application to spur policy changes and enable cross-country comparisons. (see pages 45-50)**
- **Developing learning tools to address the challenges of gender inequalities and discrimination in the health workforce and health professional education systems and promote gender-transformative principles in advocacy, policy-making, and program implementation. (see pages 51-56)**

*Nurse at Hospital Jaime Mota, Barahona, Dominican Republic. Photo by Wendy Tactuk for Capacity*Plus *and IntraHealth International*

Capacity*Plus* at a Glance

PARTNERS

IntraHealth International (lead partner)

Abt Associates

IMA World Health

Liverpool Associates in Tropical Health (LATH)

Training Resources Group, Inc. (TRG)

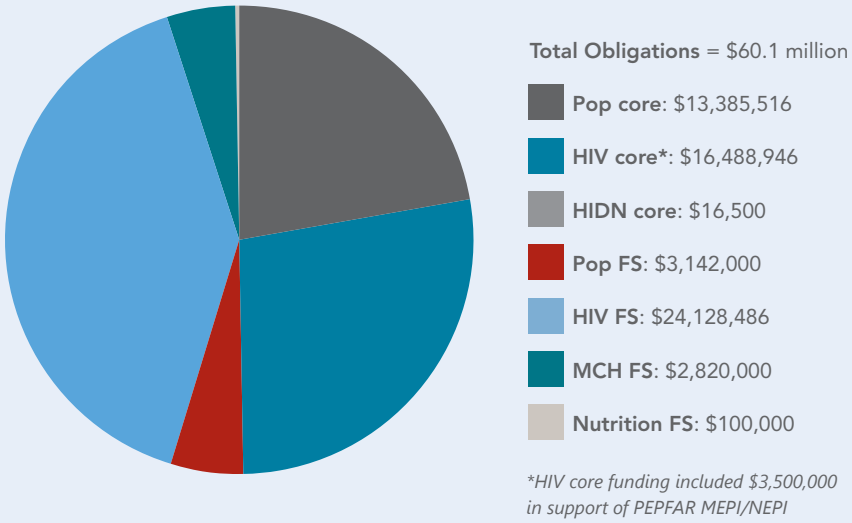
Regional Partners

African Population and Health Research Center (APHRC), Asia-Pacific Action Alliance on Human Resources for Health (AAAH), Partners in Population and Development (PPD), West African Institute of Post-Graduate Management Studies (CESAG)

FUNDING

Capacity*Plus* received over $60 million in total obligations (Figure 1), almost equally divided between core funding from the USAID offices of Population and Reproductive Health and HIV/AIDS and field support funding from USAID missions and regional bureaus. See Annex A for a complete list of funding by sources and countries.

Figure 1: Capacity*Plus* Funding by Source



ASSOCIATE AWARDS

Both the Capacity Project and Capacity*Plus* were Leader with Associates awards, which allow USAID missions to enter into bilateral cooperative agreements—Associate Awards—directly with the Leader (in this case, IntraHealth) if they have a similar scope of work. Over the life of the two projects, 8 missions took advantage of this option (see Table 1). In Namibia and Uganda, Capacity*Plus* collaborated closely with these Associate Award projects, applying technical expertise and supporting development and use of project tools in synergy with bilateral goals and priorities. Other Associate Awards benefited from specialized assistance from Capacity*Plus* or used the project's tools independently of direct project support. In other cases, country programs initiated through Capacity*Plus* continue under Associate Awards (Dominican Republic, Namibia, Nigeria). While it is beyond the scope of this report to describe the results from the Associate Award projects, their cumulative achievements represent added value and impact from USAID's 11-year investment in the global Capacity and Capacity*Plus* projects.

Table 1: Capacity Project and Capacity*Plus* Associate Awards

Country	Associate Award	Dates
Central America Regional	Central America Capacity Project	2009-2013
Central America Regional	Central America Capacity*Plus* Project	2011-2016
Dominican Republic	Capacity*Plus* Dominican Republic	2015-2017
Kenya	Capacity Kenya	2009-2014
Kenya	HRH Capacity Bridge	2014-2015
Namibia	Capacity Building for HIV/AIDS Services	2008-2014
Namibia	USAID Clinical Services Technical Assistance Project (UTAP)	2015-2019
Nigeria	Project to Strengthen HIV/AIDS Service Delivery through HRH Systems	2015-2017
Tanzania	Tanzania Human Resource Project	2009-2013
Uganda	Uganda Capacity Program	2009-2014
Uganda	Uganda Strengthening Human Resources for Health	2014-2019
West Bank/Gaza	Palestinian Health Capacity Project	2013-2018

WHERE CAPACITY*PLUS* WORKED

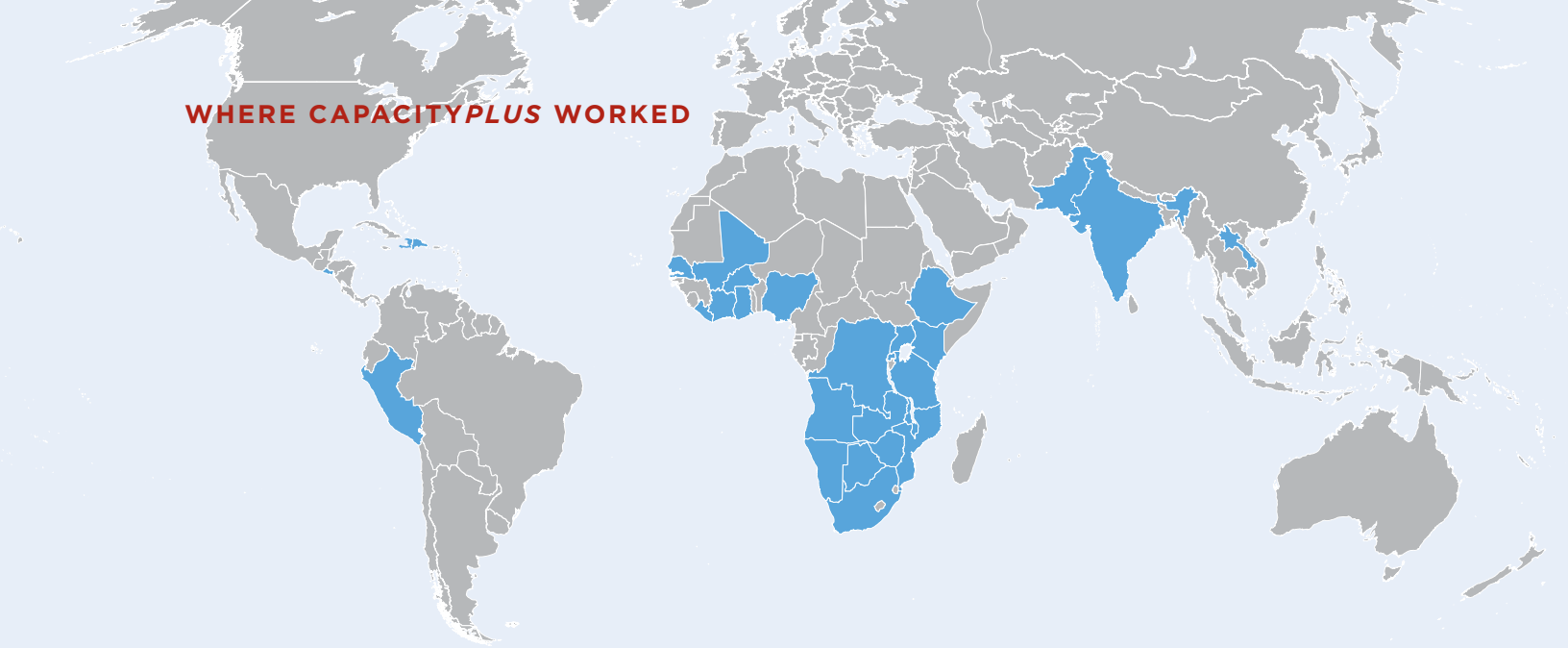


Table 2: Capacity*Plus* Country Work by Key Focus Areas

Country	Education and Training	Health Workforce Information Systems	HR Management and Leadership	Retention and Productivity	Social Service/ Supply Chain Workforce Strengthening
Angola					
Botswana					
Burkina Faso					
Côte d'Ivoire					
DR Congo					
Dominican Republic					
El Salvador					
Ethiopia					
Ghana					
Haiti					
India					
Kenya					
Laos					
Liberia					
Malawi					
Mali					
Mozambique					
Namibia					
Nigeria					
Pakistan					
Peru					
Rwanda					
Senegal					
South Africa					
Tanzania					
Uganda					
Zambia					
Zimbabwe					

HRH TOOLS AND RESOURCES

Building on progress made and filling gaps identified through the work of the Capacity Project and other HRH initiatives, Capacity*Plus* prioritized working with countries to develop adaptable, replicable tools and approaches that can be directly applied by national and subnational HRH stakeholders. A key component of the project's strategy for capacity-building and sustainability, these tools and methods are designed to empower country users to build the HRH evidence base for decision-making, revise national policies to provide an enabling environment for the health workforce, and implement comprehensive strategies to ensure that the right numbers of motivated and skilled health workers are in the right places to provide quality health services.

Table 3: Selected Tools Developed by Capacity*Plus*

Tool	Brief Description	Country Applications
Strengthening Human Resources Management & Leadership		
Human Resources Management (HRM) Assessment Approach	Enables users to analyze four key functional areas of HRM to inform decision-making, identify underlying problems, and implement interventions	Dominican Republic, Ghana, Nigeria
Guidelines for Forming and Sustaining HRH Stakeholder Leadership Groups	A practical set of actions countries can take to successfully launch and sustain HRH stakeholder leadership groups	Ghana, Malawi, Mali, Uganda
HRH Professional Development Program	An adaptable course with mentoring to strengthen HRH competencies, management, and decision-making	Dominican Republic, Uganda, East Africa (participants from 9 countries), and West Africa (participants from 11 countries)
Using Health Workforce Data for Decision-Making		
iHRIS Platform, including iHRIS Implementation Toolkit	Open source software applications for tracking, managing, regulating, and planning the health workforce	20 countries (see map on page 28)
Transforming Preservice Education		
Bottlenecks and Best Buys Approach	Identifies institutional bottlenecks in scaling up the production of quality health workers and prioritizes "best buy" investments to eliminate bottlenecks	DR Congo, Ethiopia, Ghana, Kenya, Mali, Nigeria, Uganda
Guide and Tools for Strengthening School Management	A package for assessing and improving the efficiency and effectiveness of school management	Ghana, South Africa
Dean's Dashboard	Open source software to enable school leaders to track and measure progress toward management goals	Botswana, Ghana, South Africa
Preservice Education Costing Methodology and Instruments	Calculates the whole cost of preservice education to help schools in fundraising and improving cost-effectiveness	DR Congo, Ethiopia
Improving Rural Retention and Health Workforce Productivity		
Rapid Retention Survey Toolkit and iHRIS Retain	Enables managers to determine health workers' and students' incentive preferences for accepting posts in rural areas and to cost retention strategies at district, regional, or national level	Burkina Faso, Laos, Namibia, Nigeria, Pakistan, Uganda
Productivity Analysis and Improvement Toolkit	Comprehensive reference guide for stakeholders to measure and identify productivity challenges, understand the causes, and implement solutions	Laos, Malawi
Enhancing Measurement of HRH to Spur Policy- and Decision-Making		
HRH Effort Index	Guides key informants through a self-administered survey tool to rate national progress in seven HRH dimensions	Burkina Faso, Dominican Republic, Ghana, Kenya, Mali, Nigeria

RESULTS AND LESSONS LEARNED

The country-level results described in this section were typically achieved through collaboration and funding from USAID missions and by working closely together and in partnership with national and subnational leaders and stakeholders. Work at the country level incorporated the use of the HRH capacity-building tools and approaches developed by Capacity*Plus* as a global project (as described throughout this section and listed in Table 3), allowing for their further refinement based on lessons learned from their application in countries.

Transforming Health Professional Preservice Education to Meet National Needs

BACKGROUND

Given the global health workforce shortage, it is clear that more health workers must be educated and trained—especially in Africa where the health needs are greatest. In addition, preservice education (PSE) institutions must ensure that graduates develop the competencies needed to address local health needs, particularly in underserved areas. Preservice education determines who will become a health worker (e.g., man or woman, rural background or urban), what skills and behaviors they will learn (e.g., respectful, high-quality care), and how adaptable they will be to different practice environments (e.g., district hospitals or rural clinics without electricity or running water). The one to six years of PSE health workers receive have a profound impact on the subsequent 30 to 40 years that they practice and represent the best investment countries can make to ensure that health workers with the right skills are practicing in the right communities. Development assistance to health professional schools has often focused on curriculum improvement and faculty support; however, dramatic improvements in the efficiency of these schools are also needed to strengthen and scale up the production of health workers required to realize the goals of AIDS-Free Generation, EPCMD, and FP2020.

STRATEGY AND APPROACHES

In collaboration with global, regional, and national stakeholders in the public and private sectors, Capacity*Plus* provided leadership in developing, testing, and building capacity in the use of innovative approaches and tools to address common challenges in scaling up and transforming health workforce education and training. As a first step, the project developed the Bottlenecks and Best Buys Approach, which has been adapted and applied in more than 30 nursing, midwifery, medical, health assistant, and community health worker schools in seven African countries. This tool allows stakeholders inside or external to a school to consider a range of issues that might impede the school's ability to increase the number or skills of its graduates, and identify and prioritize actions that can efficiently address those issues.

A comprehensive Guide and Tools for Strengthening School Management, tested in Ghana and South Africa, builds the capacity of school leaders to use existing resources more efficiently and effectively. This package guides school leaders—who often have limited formal education in facility or budgetary management—through a cyclical process of assessment, planning, and improvement in key management areas. The tools allow leaders to consider their own organizations' performance in the context of evidence-informed good practices in nine management dimensions: leadership and governance; strategic planning; external relations; financial resources; personnel; students; equipment and materials; facilities and infrastructure; and evaluation and knowledge management. Capacity*Plus*'s school management package includes the Dean's Dashboard, an open source software application that can be customized according to schools' needs to track progress in areas such as infrastructure management, student academic progress, and faculty productivity.

Capacity*Plus* also developed tools and approaches in response to schools' more specialized needs. These include the Preservice Education Costing Methodology and Instruments, finalized after applications at diverse schools in Ethiopia and South Africa, which allows schools to estimate the unit cost of producing a graduate to guide investments for increasing the number and/or quality of graduates; and a technical brief, report, and advocacy tool that highlight interventions to eliminate gender discrimination and promote equal opportunity and gender

*Opposite: Student at Garden City University College, Ghana. Photo by Carol Bales for Capacity*Plus *and IntraHealth International*

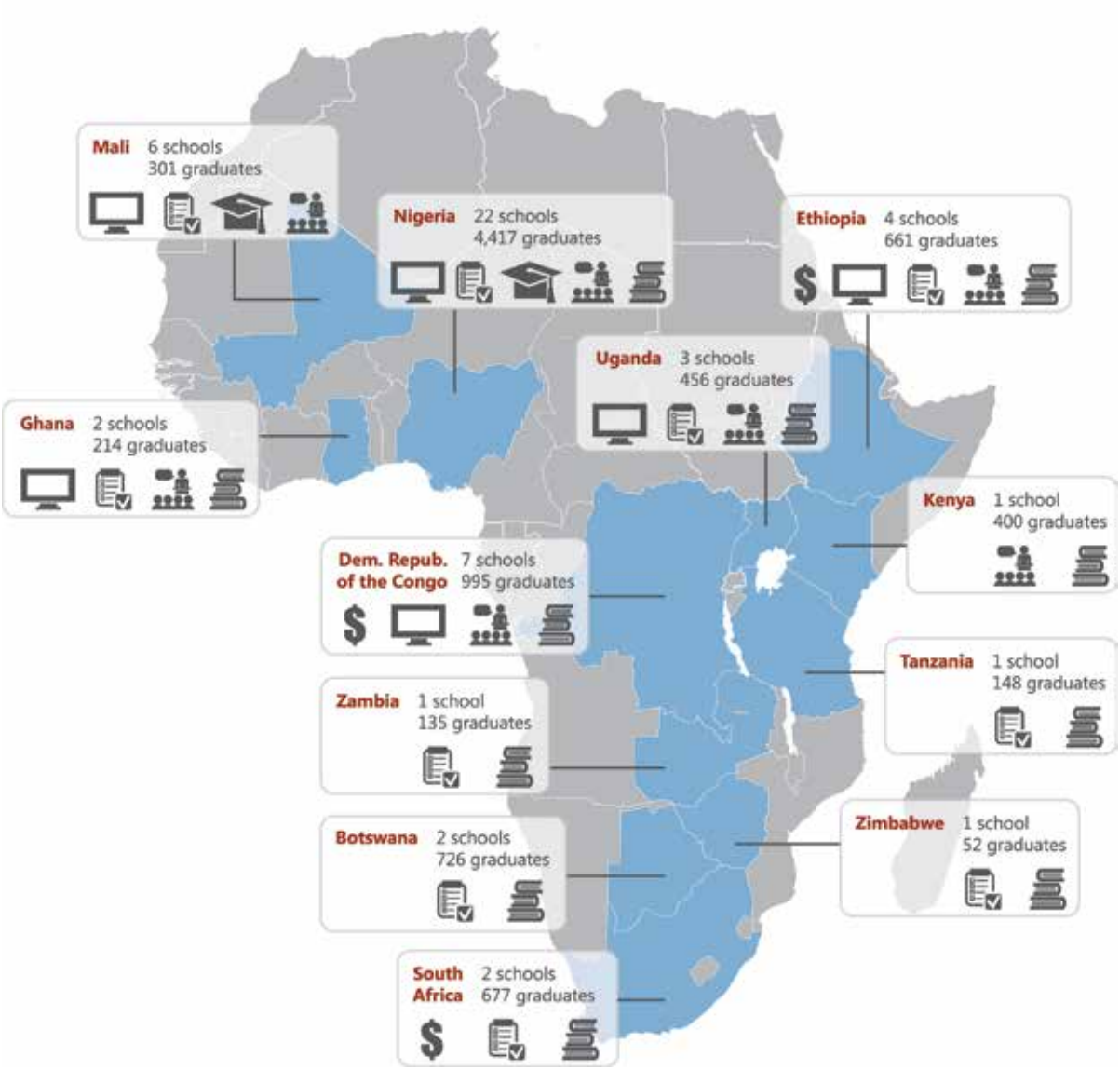
Gao Nursing School, Mali. Photo by Trevor Snapp for IntraHealth International

equality in health professional education (see pages 51-56). With PEPFAR support, the project collaborated with PEPFAR's Medical and Nursing Education Partnership Initiatives—MEPI and NEPI—to build capacity and develop approaches and tools for eLearning, community-based education, and graduate tracking now in use among MEPI-supported medical schools in 12 African countries. Capacity*Plus* supported school leaders as they developed and implemented eLearning strategies; assisted them to create the evaluation plans and tools they needed to better understand the effects of community-based educational programs; and created MEPI Connect—an iHRIS-based software application being used by schools to track and connect with alumni.

HIGHLIGHTS OF RESULTS

Capacity*Plus* supported the application of its PSE approaches and tools by 12 countries in sub-Saharan Africa, contributing to the education of over 9,000 additional health worker graduates between 2012 and 2015 (see Figure 2). The capacity built—in terms of increased quality and quantity of teaching staff, improved learning materials and equipment, more effective

Figure 2: Impact Map: Targeted Support to Schools Contributes to the Education of More than 9,000 Graduates across 12 African Countries



Costing studies: calculate the costs to produce a graduate to help schools understand their fundraising needs and improve efficiency

Materials and equipment: provision of textbooks, mannequins, computers, projectors, software, teaching aids

Student support: scholarships, loans, transportation to clinical sites, tutoring, etc.

Management reforms: capacity-building for streamlined administration, student and/or graduate tracking, management support systems strengthening

Teacher support: teacher training (clinical and pedagogical), salary top-ups, etc.

Curricula and learning methods: review, revisions, upgrading

Community health extension worker (CHEW) students with new equipment at the School of Health Technology, Keffi, Nasarawa State, Nigeria. Photo by Uko Gabriel Chukwudi for IntraHealth International

school management, updated curricula, and enhanced collaboration among schools, health facilities, government authorities, and graduates—will contribute to producing greater numbers of competent and qualified graduates for years to come. Highlights of results at the country level include the following:

Comprehensive Support to Enhance Learning and Increase Graduates: Nigeria

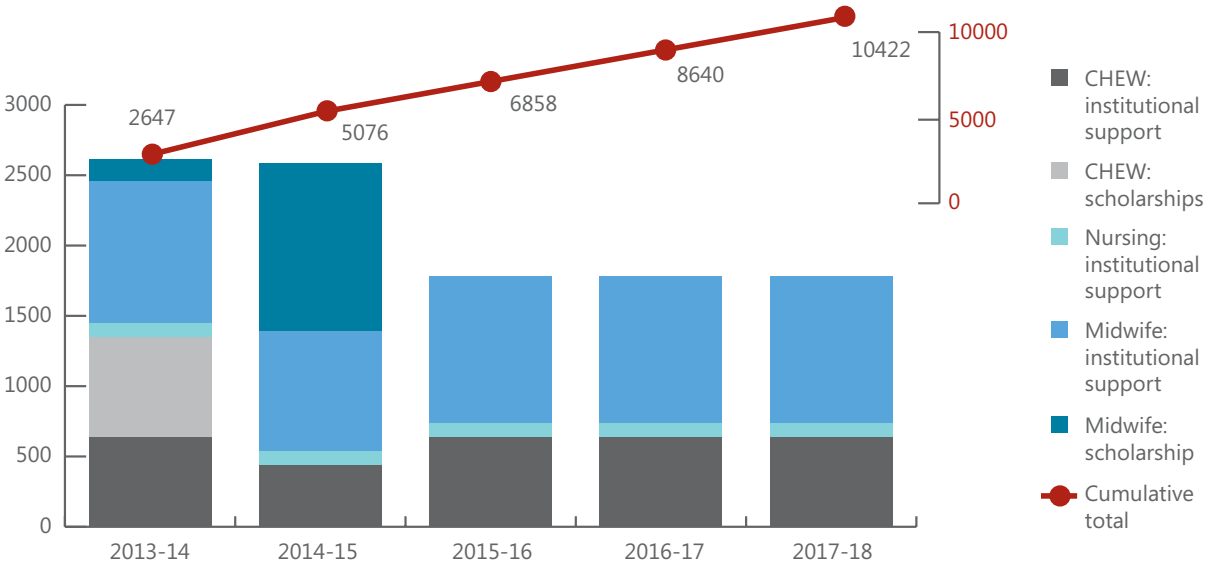
Nigeria accounts for almost 10% of the global burden of HIV, with over 1.5 million individuals in need of antiretroviral (ARV) treatment (National Agency for the Control of AIDS 2014). In collaboration with USAID/Nigeria, Capacity*Plus* assisted national stakeholders to implement a comprehensive package of interventions to strengthen PSE to produce more qualified health workers to provide HIV/AIDS and other critical services. The work began with Bottlenecks and Best Buys assessments at 19 training institutes to define best buys for increasing the numbers and quality of nursing, midwifery, and community health extension worker (CHEW) graduates. The assessments revealed that more than 50% of students dropped out between enrollment and certification and that schools lacked basic learning materials, as well as opportunities for tutors to improve their clinical and teaching skills. In response, Capacity*Plus* established a scholarship program for students at risk of dropping out, initiated communications among supported schools and with the government and local stakeholders who will eventually employ their graduates, procured learning materials and equipment for 22 schools, and trained 79 teachers on current clinical practice guidelines, which also enabled topics previously available only through in-service training to be taught in the preservice environment (e.g., counseling of HIV/AIDS-affected persons, prevention of mother-to-child transmission of HIV, selected emergency obstetric procedures).

Increased pass rates on qualifying exams: In total, 2,065 students (88% female) received scholarships in 2013, with 1,440 (70%) finalizing their studies and qualifying on their national examinations on their first attempt. Scholarship recipients (who were more likely to be poor and from rural communities) qualified to practice at a higher rate than other students. More than 1,700 graduates of 22 schools that received institutional support (e.g., textbooks, anatomical models, training of tutors in priority clinical skills) also became health workers. Some of these schools saw remarkable gains in students' success. For example, the Health Coordinator at the School of Midwifery Our Lady of Apostles Jos credited this institutional support for the school's increase in national examination pass rates from 72% to 100% over 18 months.

Increased number of graduates: An evaluation indicated that over 3,000 newly qualified health workers benefited from the project's support. Production of more than 100 additional new

CHEWs and 550 new midwives can be directly attributed to Capacity*Plus* support. CHEW scholarship recipients are more likely to work in underserved rural areas compared to non-recipients; encouraging such distribution is vital as CHEWs provide the bulk of primary health care services in rural and northern Nigeria. Over the next five years, it is expected that interventions supported by Capacity*Plus* will have contributed to the education of more than 10,000 students in Nigeria at an average direct cost of about $150 per student. This includes scholarship recipients as well as an estimated additional 8,890 students who have benefited or will benefit from enhanced pedagogical resources and teaching capacity at their schools (Figure 3).

Figure 3: Number of Students Supported by Capacity*Plus* Preservice Education Activities in Nigeria, by Year and Cumulatively



Note: Scholarships were offered only in 2013; it is assumed that the effect of institutional support will remain in schools for at least five years.

Producing Qualified Health Workers for Underserved Fragile Regions: Mali

In collaboration with USAID/Mali, Capacity*Plus* provided comprehensive support to the privately-owned Gao Nursing School, the only health professional institution in Mali's remote and crisis-prone northern region. Building on successes from the previous Capacity Project, in 2011 Capacity*Plus* assisted the school in the development and implementation of improved family planning and child health curricula using Learning for Performance, a competency-based approach to adult learning developed by IntraHealth with USAID support. The project also assisted in: 1) training of faculty to teach active management of the third stage of labor, a proven practice to prevent postpartum hemorrhage; 2) implementation of the school's strategic plan; and 3) management and oversight of the school's new computer lab and technologies. This support contributed to students achieving an 88% success rate on the national nursing exam in 2011, while nursing schools in the capital, Bamako, had only a 30%-40% success rate; over 90% of Gao graduates in 2011 were recruited by the Ministry of Health (MOH) and deployed to provide essential health services in the north.

The armed insurgency in the north in 2012 severely undermined these investments and gains in Gao. A Capacity*Plus*-led analysis of the school post-crisis, using the Bottlenecks and Best Buys approach, highlighted an 80% shortage of teachers and preceptors and deterioration of buildings and materials due to looting. In 2013, the project provided support to reinforce the school, including recruitment and clinical and pedagogical training of teachers, procurement

"We are doing the things we need to [do] day-to-day, but this [school management self-assessment] tool really makes you think about things you may not be considering.... Every institution has to have this."

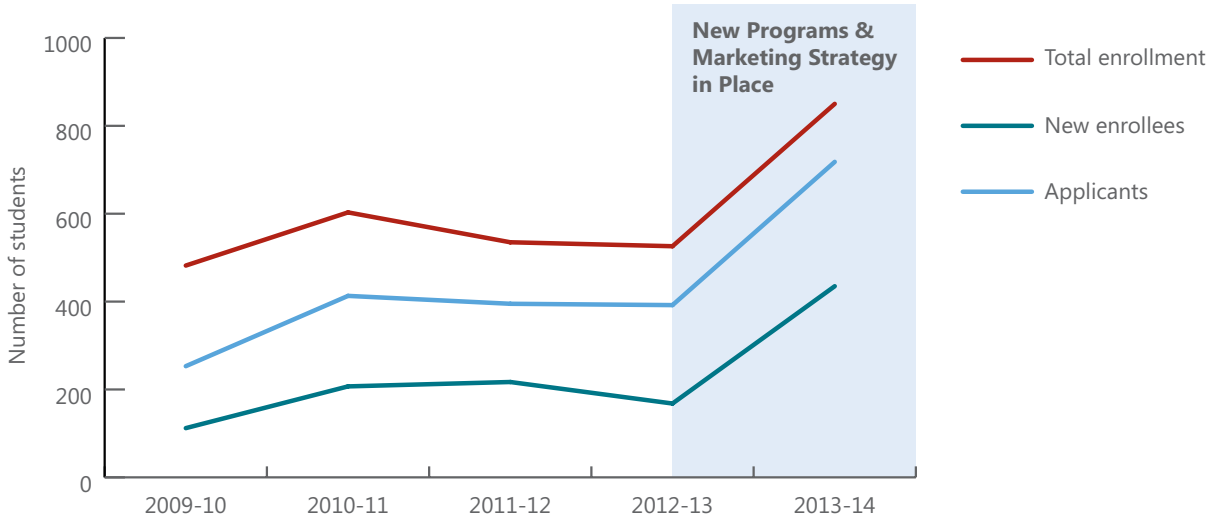
—Albert Acquah, founder, Garden City University College, Ghana

of learning materials and computers, provision of scholarships and living expenses to 204 students at risk of dropout, revision of the school's strategic plan, and strengthening of security, administrative, and management structures. By 2014, graduates had a 42% success rate on the national nursing exam compared to 32% among students from all other schools in Mali. Approximately 58% of scholarship recipients who took the national exam passed.

Increasing Private-Sector School Capacity: Ghana

The pilot application of the Capacity*Plus* Guide and Tools for School Management by the private, non-profit Garden City University College resulted in the school developing a marketing strategy to attract applicants with higher qualifications to its programs. The strategy included adjusting how and where the school advertised, and having graduates speak with secondary school students about both the school and the nursing profession. Based on interviews conducted with current students as part of an assessment, these efforts contributed to nearly doubling the intake of paying students in one year (Figure 4), resulting in a student body of 850 and allowing the school to better meet its operating costs. Garden City also obtained accreditation for new degree programs in midwifery, laboratory science, and physician's assistants, thanks in part to the application of the school management and Bottlenecks and Best Buys approaches.

Figure 4: Garden City University College Enrollment, 2009-2014



Costing Health Worker Education: South Africa and Ethiopia

Application of Capacity*Plus*'s education costing tools with Walter Sisulu University School of Medicine in South Africa estimated that it cost the institution $162,000 in 2012 to produce a single graduate of the five-year Bachelor of Medicine and Surgery program. These findings resulted in the school receiving government funding to address the need for additional infrastructure before the school could respond to government requests to enroll larger classes of students. The results also allowed the school to bill the government for student scholarships based on real costs. A similar study in Ethiopia looked at cost in terms of improving the quality—rather than the quantity—of nursing student education. The study estimated a cost to health sciences colleges of between $1,051 and $1,733 (over three or four years, depending on

the program) to produce a nursing or midwifery graduate in 2012. It also found colleges operating at or above their maximum capacity, with too many students in classroom and skills lab sessions and insufficient learning materials and teachers, which greatly compromised the quality of education. After adding the estimated cost of a scenario of interventions to overcome the most pressing constraints to the quality of education, the new estimated cost to produce a graduate ranged between $1,233 and $2,384 depending on the program—an increase of 17% to 38% over 2012 spending levels. The Federal Ministry of Health used the results to inform the ongoing revision of the national HRH strategy.

Innovation in mHealth for In-Service Training

A pilot study in Senegal found family planning refresher training delivered via an interactive voice response (IVR) mLearning platform developed by Capacity*Plus* feasible to implement and well liked by participants (Diedhiou et al. 2015). All participants reported that the overall experience of using a mobile phone for learning was good or very good, and 90% reported that following instructions for the course on a mobile phone was easy or very easy. The course created minimal interruptions to service delivery, as most learning calls were taken outside of working hours, and was associated with sustained increases in content knowledge. The IVR platform has the potential to be an effective and efficient approach to providing refresher training and/or updates to national guidelines, policies, and protocols in family planning and other health service areas, and is especially well suited for reaching rural health workers with low levels of literacy.

LESSONS LEARNED AND RECOMMENDATIONS

- High dropout rates dramatically reduce the capacity of health professional schools throughout sub-Saharan Africa, with many having rates over 60%. In some countries (e.g., Nigeria), a significant factor is the cost of students' national qualification examinations. Advocacy to decision-makers to spread this cost out over time or provision of loans and bursaries to students to cover the cost of taking the qualification examination after course completion are likely to have a large impact on graduation rates.
- It is important to bring schools out of isolation by linking the education, health, and employment sectors. Networking all stakeholders involved in training and hiring health workers is valuable for recommending new and validating existing strategies to increase the quantity and quality of health workers.
- Computers, mannequins, lab equipment, and textbooks are major expenses for health professional schools in low- and middle-income countries, and provision of high-quality materials became an important part of institutional support efforts in Mali, Nigeria, and Uganda. Giving schools the ability to bulk purchase such supplies, similar to the bulk purchasing of vaccines that Gavi oversees, and share supplies among several institutions, might lower these costs while increasing the quality of education.
- Supporting students from and schools located in underserved locations are effective strategies for encouraging equitable distribution of the health workforce after those students graduate. Surveys of 357 scholarship recipients in Nigeria indicated that those who originated in rural areas or who attended rurally located schools were more likely than their peers to be employed in those locations after graduation. Surveys of students in Mali showed those who attended Gao Nursing School were significantly more likely to be employed in the underserved north than students educated elsewhere in the country.
- Limited, cost-effective actions can be used to increase production of health workers and improve the quality of their education. However, it is vital that actions be taken on the basis of evidence. Use of specific, objective assessment techniques and consideration of the costs of proposed actions per graduate can help private and public institutions decide how to utilize their limited resources to best effect. Moreover, these considerations can assist educators as they advocate with policy-makers regarding HRH scale-up.

Strengthening Human Resources Management and Leadership

BACKGROUND

Human resources management is the "integrated use of data, policy and practice to plan for necessary staff, recruit, hire, deploy, develop and support health workers" (Global Health Workforce Alliance [GHWA], USAID, and World Health Organization [WHO] 2006). An effective HRM system in the health sector is vital to achieving sustainable solutions to workforce challenges and improving health system performance (Buchan 2004). A well-functioning HRM system requires a cadre of human resources managers who possess leadership and management skills, have access to timely and accurate information for decision-making and planning, and can establish effective and efficient processes for workforce recruitment, deployment, performance management, and retention.

STRATEGY AND APPROACHES

Capacity*Plus* built the capacity of national stakeholders to apply approaches, tools, and resources to improve HRH leadership and strengthen their HRM systems to provide an enabling environment for the health workforce to perform well and deliver quality health services. Key areas of focus included:

Identifying and addressing HRM challenges: Capacity*Plus*'s Human Resources Management Assessment Approach guides policy-makers, managers, and supervisors to conduct an in-depth diagnosis and analysis of key HRM functions, policies, and practices; identify inefficiencies and weaknesses; and determine the most appropriate solutions and interventions to address HRM challenges affecting service delivery in a systemic manner. The assessment approach focuses on the four main functional areas that are key for an effective HRM system: 1) health workforce planning and implementation; 2) work environment and conditions; 3) HR information systems; and 4) performance management.

Building capacity of HR leaders: The project's comprehensive HRH Professional Development Program contains training session plans and materials that have been used to develop the knowledge and skills of HR leaders, managers, and others responsible for the planning and management of the health workforce. The course includes multiple modules that can be tailored to the needs of learners, including content on HRM, leadership, data-driven decision-making, workforce planning, recruitment and deployment, retention, performance management, work environment, and HR finance.

Strengthening national HRH working groups: Capacity*Plus*'s Guidelines for Forming and Sustaining Human Resources for Health Stakeholder Leadership Groups provide a practical and clear set of actions that HRH leaders at the country level have taken to successfully launch and sustain stakeholder leadership groups. These groups represent the key cross-sectoral entities whose participation is vital in advocating for appropriate HRH action and providing strong leadership to ensure and sustain effective implementation of HRH interventions at the country level.

Contributing to AIDS-Free Generation, EPCMD, and FP2020

The Dominican Republic's investment of savings from payroll cleaning, coupled with the elimination of user fees (a significant financial access barrier for the poor) and increased membership in national health insurance have led to improved coverage of primary health services in various regions of the country. For example, Region IV, a poor area bordering Haiti with a large immigrant population, witnessed a 500% increase over one year in the number of patient consultations (from 2,039 to 12,237) for HIV and syphilis prevention, family planning, and prenatal care.

*Human resources staff at the Agency for Development and Strengthening of Regional Health Services, Dominican Republic. Photo by Wendy Tactuk for Capacity*Plus *and IntraHealth International*

HIGHLIGHTS OF RESULTS

Comprehensive HRM Strengthening to Improve HIV/AIDS Services: Dominican Republic

In the Dominican Republic, HIV testing among pregnant women remains low (47%) and rates of mother-to-child transmission high (4.7%) (Pan American Health Organization 2014). Capacity*Plus* collaborated with USAID/Dominican Republic to support the Ministry of Health to strengthen HRM to improve delivery of prevention of mother-to-child transmission (PMTCT) of HIV and other key services. The MOH drew on the HRM Assessment Approach to conduct a situation analysis of the health workforce in the country's nine regions. The results guided the MOH to develop a national HRH strategic plan and design interventions to strengthen HRM systems at the national, regional, and facility levels. Supportive site supervision and other processes have been enhanced to improve health worker performance for PMTCT and other services in ten priority hospitals. Job descriptions were developed for health workers, which HR managers have noted are improving recruitment processes.

"Everything changed after the training… it taught me to grow as a person and as a professional. I can defend my views and negotiate with my superiors. When something is not right, I have to point it out and be able to explain why."

—Diana Santana, HR Assistant, Regional Health Services, Dominican Republic Ministry of Health

After the HRM leadership and management training Diana Santana of the MOH refused to accept several unqualified candidates that a governor put forward for employment in her facilities. She and a colleague presented their reasons effectively, including the need to follow formal hiring procedures and to avoid a lawsuit from employees who would have been fired to make way for the unqualified candidates.

"Our arguments were clear and precise and were accepted," she noted. "This was possible because the training has enabled us to understand the role of human resources management in improving the quality of health services."

Savings from payroll cleaning used to improve services: The situation analysis identified the need for a payroll analysis, which revealed individuals receiving a salary but not working ("ghost workers"), along with workers who had been in the process of retirement for over three years. The MOH embarked on a process to clean its payroll and eliminated 3,913 ghost workers for an annual savings of $9.1 million, and also fully retired 2,241 staff, allowing their posts to be opened for new hires. The MOH has invested the savings to purchase medicines and supplies, repair health facilities, and increase access to health services at the primary level through hiring 2,511 doctors, nurses, and area coordinators.

Expanded role of HR managers in quality of care: Using Capacity*Plus*'s HRH Professional Development Program, the MOH also collaborated with the project to deliver a three-part program in leadership and management for 24 HR managers from the central and regional levels. To scale up and sustain HRM leadership development, regional managers were trained to build the capacity of hospital HR managers. To further professionalize the cadre of regional HR managers, the HRM leadership and management program has been formally established as a diploma course within the National Institute of Public Administration. Since its inception in 2014, 69 regional HR managers have graduated from this program, building a critical mass of Dominican leaders with specialized HRM skills.

The professional development program contributed to a shift in the role of HR managers from a purely administrative function to a more strategic role in improving the health workforce and quality of care through HR-related interventions. For example, coupled with newly standardized job descriptions, trained HR managers have improved recruitment processes resulting in hiring more qualified health professionals. Reorganization of services, extension

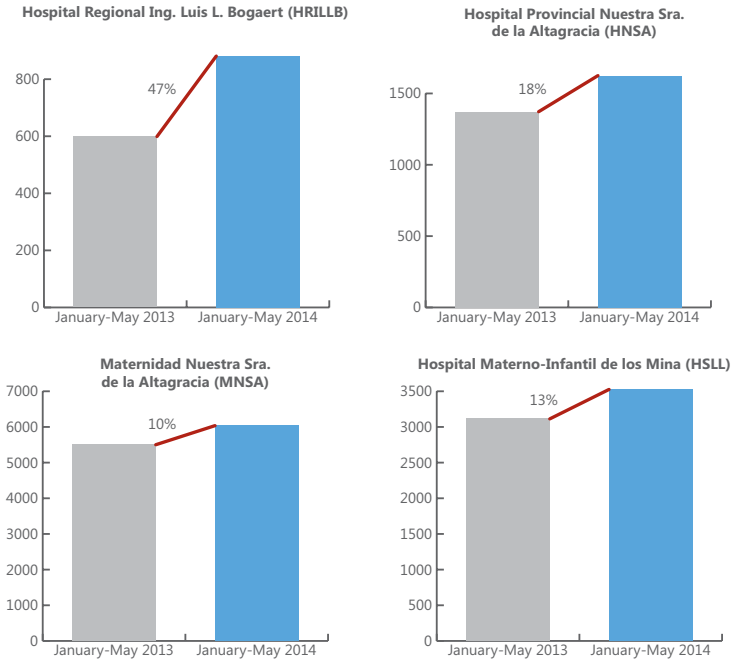


Figure 5: Number of Pregnant Women Who Know their HIV status in Four Project-Supported Hospitals, Dominican Republic

*Health worker and client in the maternity ward at the Seventh Day Adventist Akumadan Health Centre in Kumasi, Ghana. Photo by Carol Bales for Capacity*Plus *and IntraHealth International*

of clinic hours, and redeployment of staff following better planning and supportive supervision interventions have resulted in improvements at the facility level. Figure 5 shows the increase in the number of pregnant women who know their HIV status in four hospitals with reorganized services or extended hours. Overall, the percentage of infants tested for HIV within 12 months of birth at project-supported hospitals increased from 69% during October-December 2013 to 89% during April-June 2014.

Enhancing National Planning and Faith-Based Organization HR management: Ghana

A key finding of a situation analysis carried out in Ghana by Capacity*Plus* was the need for an active multisector, multiorganization HRH stakeholder leadership group. Such a group existed in the Ghana Health Workforce Observatory, but it was not fully functioning. At the request of the MOH, Capacity*Plus* provided support to re-energize and revitalize the Observatory, including addressing functionality challenges; strengthening strategic planning, monitoring, and evaluation capacity of members; and assisting the Ministry to redesign the Observatory website as an effective mechanism to communicate and disseminate national health workforce information. These efforts (using a number of components from the HRM Assessment Approach) contributed to the Observatory-led development of a five-year national HRH policy and implementation plan, which aims to improve the development, distribution, and productivity of the health workforce and is guiding MOH activities.

Strengthening faith-based organization (FBO) HR management: The Christian Health Association of Ghana (CHAG) provides nearly one-third of all health services in the country, making it the second largest provider of health care after the MOH. Like the Ministry, CHAG's efforts in meeting critical health needs have been hampered by human resources challenges, including poor distribution of health workers, high attrition, and low morale (WHO/GHWA 2008). To address these issues, CHAG used the Human Resources Management Assessment Approach as a basis to develop its own HRM scorecard for member organizations to assess and strengthen their HRM processes. With Capacity*Plus* support, CHAG piloted the scorecard first in 27 facilities in Greater Accra and, once modified, in a second group of 30 facilities. CHAG then scaled up the scorecard application to all of its 183 facilities without further external support. Findings from the scorecard

> "The HRH policy and plan are significant because we can't run a sector without knowing where we are heading to. We need to have a vision and focus, and it should be documented so that anyone coming to assist you will know the [priorities] and your strengths and weaknesses. This policy provides the direction for HRH planning, management, and monitoring and evaluation."
>
> *—Dr. Kwesi Asabir, Deputy Director, Human Resources for Health Development, Ghana Ministry of Health*

assessments have been used to prioritize interventions such as HRIS development, HRM policy implementation, and use of the WHO Workload Indicators of Staffing Need (WISN) tool to determine adequate staffing levels to meet service delivery needs at the facility level. The assessments also informed the development of a national HRM manual for CHAG managers and staff covering such topics as workforce planning, HR information management, and training. CHAG further incorporated the scorecard into an existing institutional assessment tool to ensure inclusion of health workforce components in its organization-wide performance assessments.

State and National HRH Strategic Planning: Nigeria

Nigeria has one of the largest health workforces in Africa. However, acute shortages in rural locations, low morale, poor job satisfaction, and continuing professional migration hinder further progress in HIV prevention, care, and treatment in the country, which has the second largest population living with HIV/AIDS in the world (UNAIDS 2014).

To help address these workforce challenges, a national team adapted the Human Resources Management Assessment Approach, with support from Capacity*Plus* through USAID/Nigeria, to conduct a situational analysis of the health workforce in six states. The team used the tool with each of the state Ministry of Health-led HRH technical working groups to map and clarify stakeholders' roles and responsibilities, and assess the stock, distribution, and characteristics of the health workforce. The results and findings provided each state MOH with a comprehensive overview of its HRH situation and highlighted state-specific challenges, including the availability, distribution, and productivity of the health workforce. Through participatory approaches each of the technical working groups then used the analyses to develop state-specific HRH strategic plans. The state ministries will use these strategic plans to strengthen the health workforce in each state. Drawing on these experiences at the state level, Capacity*Plus* supported national stakeholders to develop and validate a national HRH strategic plan to improve accessibility and quality of services to meet the nation's health goals. The state assessments also informed production of a national HRH training manual that will be used by the Federal MOH to develop the capacity of HR managers and other staff working in HR departments and units across the country.

Strengthening District-Level Leadership and Management: Uganda

To scale up accessibility and use of health services, Uganda has embarked on a program to strengthen decentralized HRM and leadership at the district level in areas such as workforce planning, recruitment, deployment, performance, and retention. At the request of the MOH and the USAID-funded Uganda Capacity Program, Capacity*Plus* adapted its HRH Professional Development Program to the Ugandan context and the needs of identified learners. The project delivered a training-of-trainers course to participants from the MOH, Ministry of Public Service, Health Service Commission, Makerere University, and private health organizations. Uganda Capacity Program then supported these master trainers to

HRH Policy Intervention among Kenyan FBOs Shows Positive Workplace Improvements

Capacity*Plus* conducted an evaluation of Christian Health Association of Kenya (CHAK) facilities that participated in the nationwide adoption by CHAK and the Kenya Conference of Catholic Bishops of a comprehensive policy on HRH (supported by USAID through the Capacity Project and subsequently through Capacity*Plus* and the bilateral Capacity Kenya project). The policy is designed to address health worker discontent and exodus from the FBO workforce, which provides about 30% of health services in the country. Using a mixed-methods retrospective approach, the evaluation, conducted in early 2014, found large improvements in managers' perceptions of professionalization of HR management (+67%); recruitment, promotion, and exit procedures (+84%); performance support mechanisms (+86%); and overall sense of pride and confidence (+84%). Health workers and workplace observations largely corroborated these and other positive changes. While inconsistencies in client data at facilities did not allow for analyses of trends in the services provided, the evaluation confirmed important changes in the FBOs' institutional culture favoring HR management and workforce policies with potential implications for improved service delivery. FBOs in Ghana, Lesotho, and Malawi replicated the policy intervention.

conduct a training needs assessment, adapt the materials to the district health context, and train district-based HRH leaders and managers. By the end of 2014, 179 participants from 17 health districts had completed the course. An evaluation found that graduates in 75% of the intervention districts had advocated with their district leadership to support their HRH improvement plans. These interactions triggered a range of responses in these districts, including increased budgets, recruitment of new health workers, and improved staff welfare (such as construction of staff housing). A study comparing "trained versus untrained" districts found better performance in trained districts in terms of reduced absenteeism, improved motivation of health workers, development and implementation of worker safety guidelines, integration of HRH development plans into overall district health plans, more regular supervision visits, and use of up-to-date electronic data systems to inform recruitment planning.

"As a result of the course, there seems to be an improvement in time management, quality of services, and customer care following the interventions we put in place."

—Member of the Namutumba District team

The interventions in Namutumba included forming a District Quality Improvement Team and a District Training Team, introducing arrival books at all health facilities, strengthening continuing medical education, and intensifying routine supervision.

LESSONS LEARNED AND RECOMMENDATIONS

- Supporting national HRH leaders to develop evidence-based HRH policies and plans ensures that there is an overarching strategic framework and long-term perspective for addressing health workforce challenges and strengthening the HRM system for better performance and access to family planning, HIV/AIDS, and other health services.
- Equipping HR managers at all levels with the skills and competencies to implement HRH policies and plans results in better linkages and integration between strategy/policy and HRM practice.
- Capacity development interventions that are designed in collaboration with learners and that utilize contextualized materials and resources provide HR leaders and managers with skills and knowledge that are relevant and applicable to the HRM issues and challenges they face.
- The positioning and credibility of the HR function within the public health sector is critical for the development of contextually appropriate HRH policies and practices and achieving health sector goals; more advocacy is needed in this area to increase recognition of HRM as an essential building block in developing a quality health system.
- Encouraging stakeholders to adopt and support strategic, long-term perspectives on health workforce strengthening—which go beyond the development of policies and plans to their resourcing, financing, and implementation—is especially difficult when there are frequent leadership changes, turnover of key staff, and loss of institutional memory.
- More research is needed to measure the impact of HRH leadership and HRM system strengthening interventions on quality and use of service delivery and ultimately health outcomes. Results of positive effects can then be used to make a strong case for further investment in leadership and HRM system strengthening.
- HRH stakeholder leadership groups need to be held accountable for development, implementation, and monitoring of HRH initiatives. The methods by which these groups can measure their progress need to be strengthened to allow them to make ongoing changes based on performance data, and to sustain a firm commitment to producing useful results that all stakeholders can see.

Using Health Workforce Data to Improve Access to Services

BACKGROUND

A strong human resources information system (HRIS) helps health care leaders to quickly answer key policy questions affecting service delivery in areas related to workforce planning, education, deployment, management, and retention, among others. Yet health systems in most low- and middle-income countries have had poor data on their health workforce numbers, skills, and location, and, therefore, limited ability to address health workforce challenges. Between 2005 and 2007, the Capacity Project worked with national stakeholders to develop and release the open source iHRIS software designed to capture and maintain high-quality information for health workforce planning and management. By the end of the Capacity Project, five countries had implemented iHRIS. During Capacity*Plus*, the power of open source approaches to maximize local ownership, capacity-building, innovation, and partnership for HRIS strengthening has accelerated, with country-led adoption and application of iHRIS reaching 20 countries (see Figure 6).

STRATEGIES AND APPROACHES

iHRIS has been developed into multiple applications to meet the needs of a variety of stakeholders and support health workers throughout their life cycle:

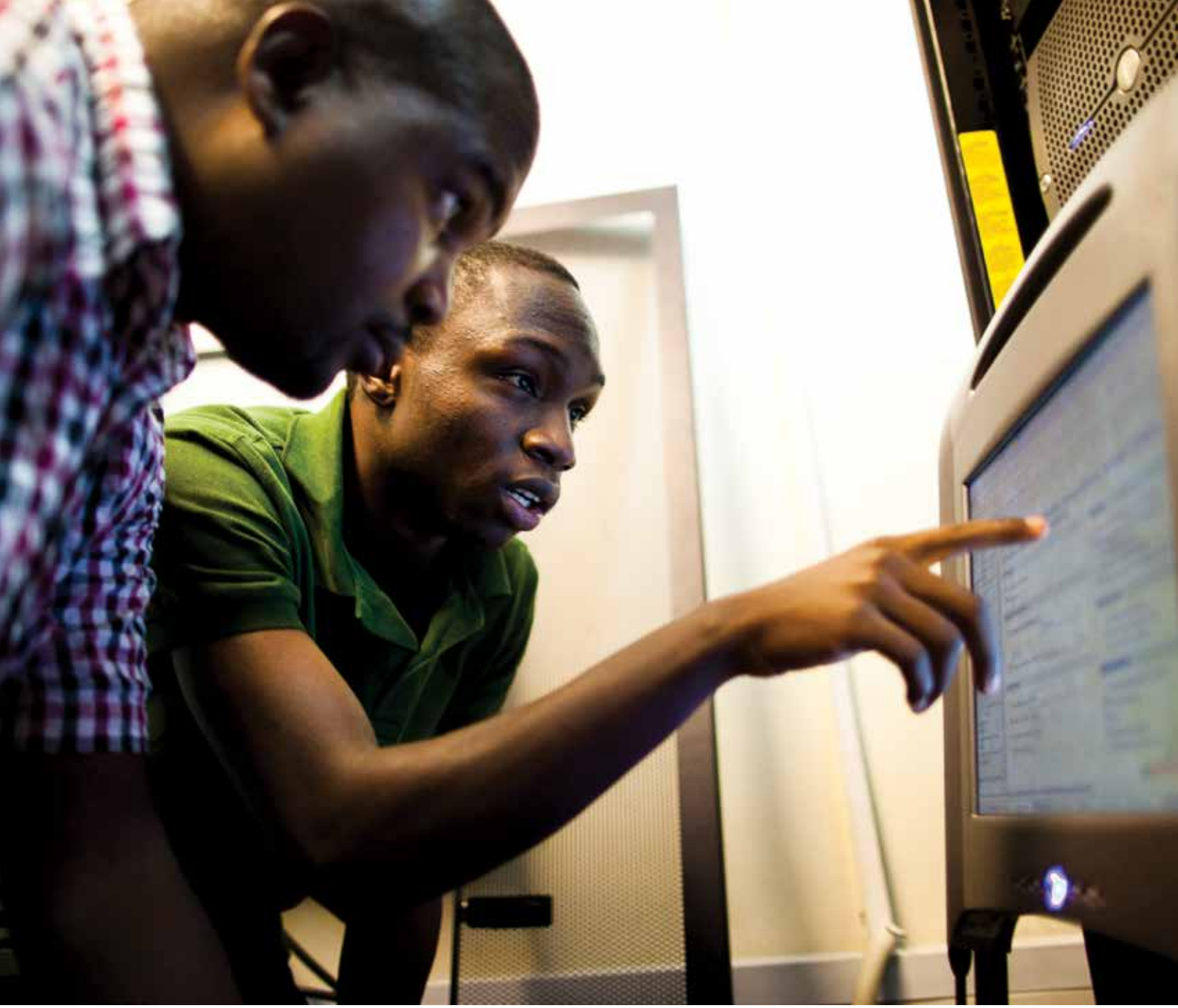
- iHRIS Manage allows tracking and management of health workers actively engaged in service delivery
- iHRIS Qualify enables health professional councils and associations to register, license, and regulate their respective cadres
- iHRIS Train supports tracking and management of preservice education pipelines and in-service training
- iHRIS Plan informs workforce planning and provides predictive modeling, forecasting changes in the health workforce supply over time
- iHRIS Retain, developed with the WHO, helps countries plan and cost rural health worker recruitment and retention interventions in alignment with the WHO's rural retention guidelines.

Capacity*Plus* emphasized open access to iHRIS through publishing the software, source code, and other resources online at www.ihris.org. These resources include the iHRIS Implementation Toolkit, which represents a strong example of open contributions to a global capacity-building product. Providing guidance and materials to assist in the implementation of all iHRIS software, the toolkit has received contributions of more than 100 resources from iHRIS users in 12 countries, all seeking to support others in the adoption and implementation of the software. Capacity*Plus* further expanded local capacity to adapt, deploy, and sustain iHRIS through establishing a global iHRIS online community and supporting other south-to-south knowledge-sharing mechanisms. For example, the University of Dar es Salaam in Tanzania now hosts annual regional iHRIS academies for developers from different countries to meet and learn together, and has supported iHRIS implementations in Malawi and Sierra Leone.

HIGHLIGHTS OF RESULTS

Use of Data for Decision-Making

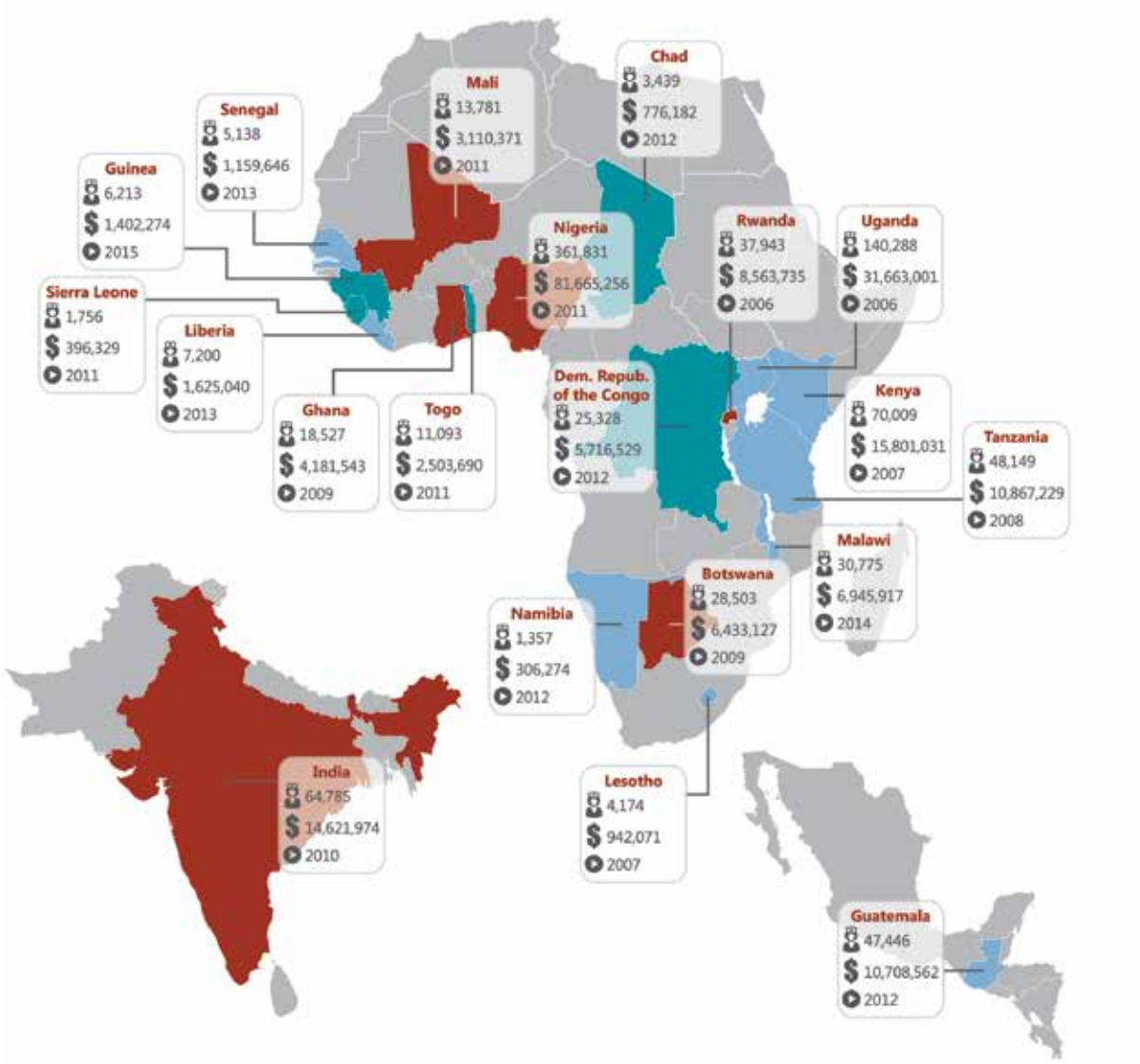
As iHRIS implementations expanded and matured in countries supported by Capacity*Plus*, national and subnational HRH leaders and managers increasingly began using iHRIS data for decision-making to improve both the accessibility and quality of health services.



iHRIS updates at the Ministry of Health, Kampala, Uganda. Photo by Trevor Snapp for IntraHealth International

Uganda: In collaboration with USAID/Uganda's Uganda Capacity Program, in 2013, the Ministry of Health used iHRIS data, along with data from a rural retention study supported by Capacity*Plus*, to successfully advocate for an investment of $20 million to fund recruitment and deployment of 7,200 health workers. The increased availability and more equitable distribution of health workers has likely contributed to significant increases in selected HIV/AIDS, FP, and MNCH indicators (see page 35). To inform workforce planning, future deployment, and health worker skill levels, the Ministry's Human Resources Development department is using iHRIS Train to track almost 30,000 students in preservice education as well as an expanding number of in-service training records. The Uganda Medical and Dental Practitioners Council used iHRIS Qualify to increase relicensure compliance from fewer than 100 to more than 2,300 doctors—providing essential information on qualified medical personnel across the country.

Figure 6: Impact Map: iHRIS Records and Potential Cost Savings by Country



India: In the state of Jharkhand, where Capacity*Plus* collaborated with USAID/India to support state leaders to scale up iHRIS Manage, data identified Ob/Gyn staffing shortfalls in 60% of health facilities. This finding prompted the Jharkhand principal secretary of health to redeploy 112 specialists with skills in emergency obstetric care and life-saving anesthesia skills and place them in first referral units, which are critical for saving mothers and newborns. As a result, 36 out of 52 first referral units in Jharkhand are now fully functioning, up from 18. The Department of Health and Family Welfare recruited nearly 450 new medical officers between 2012 and 2013 based on iHRIS reports. Estimating that a single medical officer covers 2,000 patients annually, these additional medical officers are increasing access to health services, including obstetric care, newborn care, a full range of family planning services, treatment of sexually transmitted

District Hospital, Hazaribagh, Jharkhand, India. Photo by Trevor Snapp for IntraHealth International

infections, and referral services for 900,000 Jharkhand residents. Now iHRIS is routinely used to assess the distribution and skills of health workers in district hospitals and community health centers in the state.

Mali: The Ministry of Public Health piloted iHRIS Manage in Sikasso Region, with results showing that urban facilities had disproportionately more midwives than health centers in the rural areas where 63% of the population lives. Taking quick action, regional leaders implemented a rotation system, in which midwives work one week each month in a rural health center to mentor lower-level auxiliary midwives and provide access to long-acting reversible contraceptive methods, including for postpartum family planning. These services are critically important in a country with a fertility rate of 6.1 births per woman and 26% unmet need for contraceptives (Mali Demographic and Health Survey 2014). Building on the success of the pilot intervention, the Ministry completed national rollout of iHRIS Manage in 2015. Its HRH Directorate has been using iHRIS data to serve a range of needs, including guiding deployment of newly recruited health workers, identifying experienced supervisors for deployment to a new health center, locating health workers who had fled from the northern regions during the armed conflict in 2012 to offer them grants to return, tracking international commitments, and advocating for more health workers.

Ghana: The MOH, Ghana Health Service, and CHAG led the rollout of iHRIS Manage, with support from Capacity*Plus*. More than 18,500 health worker records are captured in the system, which is being used to plan and adjust facility staffing levels to improve service delivery and to analyze data on issues such as retirement planning.

Nigeria: The Nursing and Midwifery Council of Nigeria and the Community Health Practitioners Registration Board of Nigeria deployed iHRIS Qualify for registration, certification, and licensing. Up-to-date records are now available for more than 250,000 nurses and midwives and an estimated 90,000 community health workers. The Federal MOH is using the data to inform deployment decisions to provide care in the most underserved areas, identify duplicate health workers, provide and track education and training, and for budget planning.

Contributing to EPCMD and FP2020

The redeployment of skilled specialists and addition of new medical officers in Jharkhand State based on using iHRIS data for decision-making contributed to significant increases in the availability and utilization of maternal health services across the state. As examples, improvements in the first year included a 740% increase in women receiving three antenatal care visits (from 51,880 to 436,228), a nearly 12 times increase in facility births (from 25,557 to 303,876), and a nearly 20 times increase in cesarean sections for women in need of them (from 369 to 7,231). The state also saw improvements in child health and family planning services and use due to a combination of strategic HR deployments and other programs (for example, between 2013 and 2015 there was a more than four-fold increase in the number of women choosing to receive a postpartum IUCD—from 3,544 to 15,098).

Cost Savings

Globally, the use of free, open source iHRIS software has saved a calculated $226.9 million in aggregate licensing costs when compared to initial licensing fees from a comparable commercial software product (Table 4). Each new iHRIS adoption adds to the total saved.

This cost is for the base software license alone and does not include customization of the software, capacity-building, infrastructure strengthening, or even all of the functionality offered in iHRIS. (For example, modules such as leave management, benefits, interoperability, and reporting require additional purchases in many commercial product licensing models.) In addition, the global iHRIS community provides ongoing updates and support. If the same degree of updates and support were procured from a commercial HRIS software vendor, it would cost country stakeholders almost $50 million every year (Table 5).

Table 4: Aggregate Savings of Licensing Costs Compared to Proprietary Software ***(Estimated cost of supporting the number of employees in iHRIS using proprietary software)***

Number of employees	License price per employee	Total cost of license alone
1,226,727	$185	$226,944,495

Source: Oracle PeopleSoft Component Global Price List October 16, 2014

Table 5: Aggregate Annual Savings in Ongoing Updates and Support ***(Estimated cost of iHRIS open source community updates and support if purchased for proprietary software)***

Number of employees	Annual support price per employee	Total support cost each year
1,226,727	$40.70	$49,927,788

Source: Oracle PeopleSoft Component Global Price List October 16, 2014

Independent Uptake and Support from Other Donors

The open source approach to HRIS has also proved its value through independent applications without direct USAID support and implementations supported by other donors, particularly in West Africa. In 2010, the West African Health Organization (WAHO) identified the need for a national HRIS for health workers, identified iHRIS as its preferred platform, downloaded and adapted the software, and piloted it in Ghana's Northern Region without direct support from Capacity*Plus*. This successful independent pilot application prompted rapid iHRIS uptake in the region through different funding sources. Ghana, Mali, and Nigeria received funding from USAID missions to expand iHRIS through Capacity*Plus*, while Liberia and Senegal adopted iHRIS through USAID bilateral projects. Mali also received support from the Canadian Cooperation and the WHO. Chad, Sierra Leone, and Togo adapted the software with support from the WHO, WAHO, and consultants from Nigeria's Foundation for Sustainable Development and the University of Dar es Salaam.

> "When there was Ebola, the ministry came to the HRH Directorate to have a clear idea about the distribution of health personnel in the affected areas. Since we had iHRIS at hand [we were able] to respond diligently to the request…in relation to the spatial and geographical distribution of health personnel by category and specialty. From there, we could get an idea of the decisions to be taken to respond to the epidemic in our country."
>
> *—Dr. Idrissa Cissé, Director of HRH, Ministry of Public Health, Mali*

Community Contributions

In 2012, Capacity*Plus* started actively supporting the global iHRIS community of software developers and information technologists with an online forum and regular interactive discussions and training sessions. The community has grown to 260 active participants, who have raised and resolved more than 450 technical issues since its inception. The community has contributed code to iHRIS; provided tools, guidance, and case studies for the iHRIS Implementation Toolkit; and translated iHRIS Manage into 16 languages. iHRIS Train represents a good example of how an open source community can empower local information technology teams to adopt, adapt, and deploy new software to

address unmet or emerging challenges. Originally developed by a Ugandan team to support preservice education and in-service training, the software was adapted by a Kenyan team to support training institutions, and is being further adapted in Nigeria for the coordination and tracking of participants in PEPFAR-funded HIV in-service training courses.

Developing a Health Worker Registry

To enable countries to link the various systems (including HRIS) in their health information architecture, Capacity*Plus* led development of a health worker registry for the global Open Health Information Exchange (OpenHIE) program. The registry provides a master list of health workers in a country, pulling information from all health workforce information systems in the public, private, and other sectors. This information is then made available to other digital health systems through open standards and can be used to select groups of health workers for targeted communications that take into account factors such as cadre, location, and services delivered. The registry also enables a health worker to refer a patient to another provider electronically, a service critically important for HIV patients who may need highly specialized services. Capacity*Plus* supported piloting and scale-up of a prototype registry in Rwanda, and worked with an international standards organization, Integrating the Healthcare Enterprise, to develop a new global standard for exchanging health worker information. The project then supported a local information technology (IT) organization to lead national-level implementation of a registry in Nigeria.

LESSONS LEARNED AND RECOMMENDATIONS

- Open source approaches are effective. Through building a virtual community, iHRIS has become a widely applied and extended solution demonstrating many development aid priorities including local ownership and partnership.
- Capacity*Plus*'s experiences with the University of Dar es Salaam in Tanzania, Makerere University in Uganda, and Luanar University in Malawi clearly indicate that universities have the best infrastructure for capacity-building in informatics and ensuring sustainability of capacity-building efforts. Returns on investments in local universities are magnified when they start working beyond the borders of a single country. Twinning between global and local universities may yield unique benefits to local development and support.
- Regional organizations such as WAHO are the strongest vehicles for disseminating and supporting uptake of HRIS best practices, tools, and technologies.
- Interoperability assists with uptake and leveraging of health information system strengthening activities. By ensuring that iHRIS is interoperable with other leading national health information systems, investments in those systems will benefit implementation of iHRIS, and vice versa. Once the systems are linked with quality data (e.g., DHIS 2), important correlations across health domains (e.g., services, supply chain) can be identified and incorporated into solution planning.
- National HRH stakeholders benefit by working through a stakeholder leadership group to develop a common strategy, policy, and standards for a national health workforce information architecture as well as to promote increased use of data for decision-making. One-time data use training can increase stakeholder buy-in and goodwill; however, mentorship and sustained collaborative development of skills with real-life examples are often needed to change data use behaviors.
- Countries should be encouraged to use iHRIS with the WHO's WISN tool to generate data on how many health workers are needed (from WISN) along with how many workers are present or missing from established positions (from iHRIS).

> "With iHRIS you can tell where the vacancies are, and then you base your advertisement on the vacancies. [That] will help to improve distribution, which will have a direct impact on quality of access to health care."
>
> *—Obeng Asomaning, principal human resources manager, Ghana Health Service*

Supporting Country-Led Efforts to Recruit and Retain Health Workers and Improve Productivity

BACKGROUND

The 13 million global health workforce deficit (Campbell et al. 2013), coupled with the difficult living and working conditions encountered in rural areas, result in serious geographical maldistribution of health workers: 56% of the global rural population—and 83% of Africa's rural population—are without health coverage (ILO 2015). Without aggressive efforts to increase access to health workers in rural areas, countries will be unable to meet their goals of increasing use of modern contraception, ending preventable child and maternal deaths, and achieving an AIDS-free generation. While rural attraction and retention strategies are implemented over the medium and long term, health system performance can be maximized in the meantime through improved productivity of currently available health staff. Moreover, if productivity issues are not adequately resolved, newly deployed health workers will enter into weak systems and perpetuate low productivity and inefficient service delivery leading to poor-quality services.

STRATEGIES AND APPROACHES

To attract and retain health workers to provide needed services in rural and other underserved areas, countries must develop recruitment and retention strategies that address the motivational factors that influence health worker behavior and guide their employment decisions. However, how do stakeholders know which are the right incentives and interventions and in what combination? How much will they cost and are they financially sustainable? Further, how will stakeholders identify and address productivity bottlenecks hindering the provision of quality health care? To aid countries in answering these essential questions, Capacity*Plus* developed three tools designed to build national HRH stakeholders' capacity to generate evidence for decision-making.

Rapid Retention Survey Toolkit: One powerful solution to the question of how to select the right incentive combination is the discrete choice experiment (DCE). The DCE is a rigorous quantitative research method that can be used to assess health workers' motivational preferences and design appropriate financial and non-financial incentive packages to increase rural job uptake and retention. To put the power of this complex econometric approach in the hands of HRH managers and other lay stakeholders, Capacity*Plus* developed the Rapid Retention Survey Toolkit, a step-by-step approach that, with the aid of specific software programs, guides HRH managers to rapidly assess motivational preferences to take up posts and remain in underserved facilities. The results of the rapid DCE survey are then used to create evidence-based incentive packages and to advocate with policy-makers regarding the most favorable recruitment and retention strategies for implementation.

iHRIS Retain: To directly engage HRH managers and other stakeholders in the costing aspects of the recruitment and retention strategy design process, Capacity*Plus* and the WHO developed iHRIS Retain, an open source software tool to cost health worker retention strategies. The tool guides users through the costing process step by step to capture all relevant financial, operational, and workforce data and calculate individual and aggregate costs of each incentive or intervention strategy and compare them to available funds.

Productivity Tools: The Health Workforce Productivity Analysis and Improvement Toolkit provides a stepwise process that empowers managers and supervisors to measure the productivity of facility-based health workers, understand the underlying causes of problems, and identify

*Nursing officer at Mukono District Health Center IV, Uganda. Photo by Carol Bales for Capacity*Plus *and IntraHealth International*

potential interventions to address them. In the tool's quantitative, formulaic approach, productivity is calculated by taking the ratio of the aggregate service delivery outputs (e.g., number of FP consultations, number of institutional deliveries) produced over the human resources inputs (salaries) used. Qualitative research methods are then used to identify the issues affecting productivity levels, such as health facility inefficiencies, health worker absenteeism, or low patient demand. Through participatory engagement approaches, stakeholders develop action plans to implement and monitor improvement interventions.

HIGHLIGHTS OF RESULTS

Increased Accessibility and Use of HIV and Family Planning Services: Uganda

To address issues of maldistribution and retention undermining the government's goals for halving unmet FP need, reducing HIV incidence by 40%, and achieving 75% of eligible persons receiving ARVs, Capacity*Plus* collaborated with the USAID/Uganda-funded Uganda Capacity

Program to build the capacity of the MOH, Ministry of Public Service, and FBOs in use of the Rapid Retention Survey Toolkit. National stakeholders conducted a rapid DCE with 158 health workers in the Western and Northern regions and 544 health professional students from three universities among priority cadres (doctors, nurses, pharmacists, and laboratory technicians). The resulting preferred financial and non-financial incentive packages were costed using iHRIS Retain to identify which combinations would be the most cost-effective and feasible.

Recruiting over 7,000 new health workers: The MOH, with technical assistance from the Uganda Capacity Program, used the results from application of the Rapid Retention Survey Toolkit and iHRIS Retain, along with data from the Uganda HRH Information System (developed by the MOH with Uganda Capacity Program and Capacity*Plus* mentoring using iHRIS Manage) to advocate with the Ministry of Finance to address workforce shortage and distribution issues. This resulted in allocation of an additional $20 million, or a 16% increase, for the health wage bill, allowing the MOH to recruit 7,211 new health workers in 2012–2013. The Ministry's recruitment previously averaged about 500 health workers annually. The bill also doubled the pay of medical doctors working at the health center IV (HC IV) level to attract more doctors to work in the lower-level facilities and increase access to health services in rural areas.

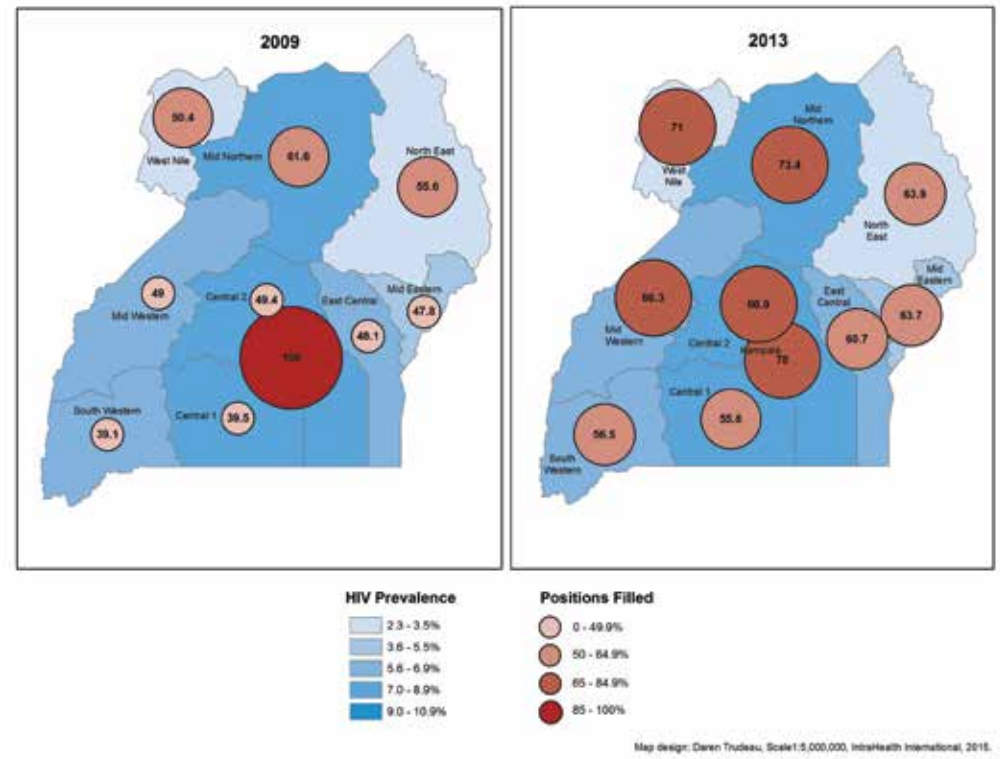
As presented in Figure 7, the percentage of filled health worker positions by region increased from a mean of 55% in 2009 (range 39%-100%) to 66% in 2013 (range 57%-78%). Figure 7 also illustrates how decision-makers can effectively use data to map where service burdens and workforce gaps intersect and better target recruitment, deployment, and retention efforts to the geographic areas and facilities with the highest HIV volume or unmet need for FP. For example, Central 1 region, where HIV prevalence is the highest in the country (10.6%), could be prioritized during health workforce recruitment. While Ugandan stakeholders did not necessarily use such data for deliberate planning, Central 1 witnessed a 41% increase in staffing (from 39.5% to 55.8% of positions filled). Other regions where HIV prevalence rose between the two survey years, such as West Nile, South Western, Mid Western, and Central 2, received a 35%-45% influx of new health workers. Notably, the urban area of Kampala (where HIV prevalence is slightly below the national average) experienced a decline in public-sector positions filled (from 100% to 78%), with more health workers recruited to work in rural areas to increase access for underserved communities.

Contributing to AIDS-Free Generation, EPCMD, and FP2020

The increased accessibility and more equitable distribution of health workers in Uganda contributed to a significant rise in utilization of HIV, FP, and MNCH services. The newly recruited health workers were deployed to 1,030 health center IIIs (HC III; subcounty-level inpatient facilities serving 20,000 people) and health center IVs (HC IV; county-level mini-hospitals) across all 111 districts. An ecological analysis of service statistics from the District Health Information System (DHIS 2) between 2012 and 2014 at 962 matched facilities found that the mean number of persons tested for HIV and the number of persons living with HIV (PLHIV) started on cotrimoxazole prophylaxis increased significantly (t-test: $p \leq 0.01$) [Figure 8]. While this rise in service use may also be attributed to other concomitant factors, the large increase in access to health workers is likely to have been a key factor.

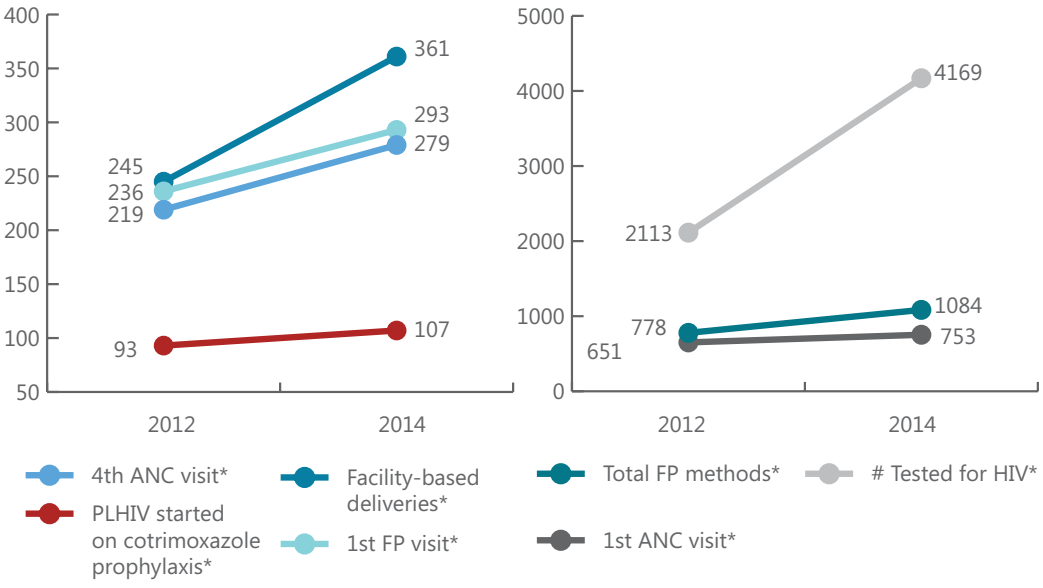
Similarly, the mean number of first visits for FP across 915 facilities witnessed a rise from 2012 to 2014 at a significance level of $p \leq 0.01$ (Figure 8). The average total number of FP methods provided across all facilities as well as at the HC III level rose approximately 40% during the same period ($p \leq 0.01$). Individual FP methods, such as injectables, IUCDs, and male condoms also went up overall across the facility sample. The average number of first and fourth antenatal care (ANC) visits rose significantly across all selected facilities combined from 2012 to 2014 ($p \leq 0.01$), as well as at the HC III ($n=808$ facilities; $p \leq 0.01$) and HC IV levels ($n=147$ facilities; 1st visit: $p \leq 0.05$; 4th visit: $p \leq 0.01$). Institutional deliveries across all facilities combined, by facility type (HC III and HC IV), and by region also increased significantly during the same time period ($p \leq 0.01$).

Figure 7: Change in Regional Staffing[1] in Uganda from 2009–2013, in Relation to HIV Prevalence in Men and Women Age 15-49[2]



[1]Source: Uganda Human Resources for Health Information System, September 2014; [2]Source: Uganda 2007 Service Provision Assessment (SPA) Survey and Uganda 2011 AIDS Indicator Survey (AIS). Note that there was a change in naming of some regions between the 2007 and 2011 surveys: in 2007 Mid Western was named Western; Mid Northern was North Central; and Mid Eastern was Eastern. Also, in the 2007 Service Provision Assessment, Central 1 and Central 2 were combined into one region (Central) for a total of nine regions (there were ten regions in the 2011 AIDS Indicator Survey).

Figure 8: Mean Annual Numbers Receiving HIV, FP, and MNCH Services between 2012 and 2014 at Health Facilities in Uganda with Newly Recruited Health Workers (logarithmic scale)



**p≤0.01*

*Rural health facility, Lao PDR. Photo by Wanda Jaskiewicz for Capacity*Plus *and IntraHealth International*

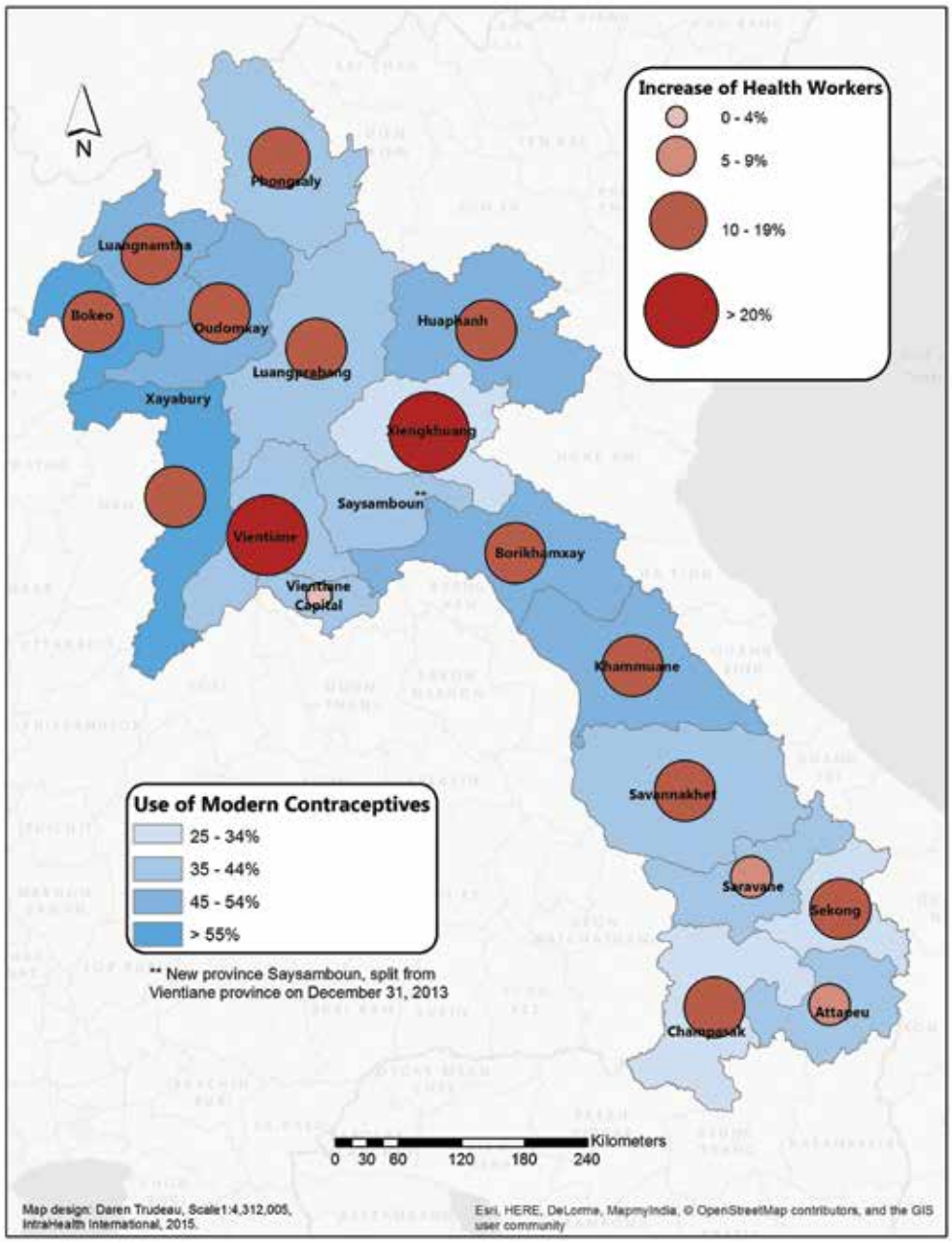
Rural Retention Policy Increases Service Access: Lao People's Democratic Republic

Although more than 70% of Lao People's Democratic Republic (PDR)'s population lives in rural areas, the majority of health workers are located in urban areas. The inequitable distribution of health workers hinders the country's goals to achieve a 55% contraceptive prevalence rate, 50% of births by skilled attendants, and 69% antenatal care coverage (Lao PDR MOH 2011). Following a governmental decree allowing for provision of financial incentives to civil servants working in rural areas, the MOH sought to develop a national rural recruitment and retention policy. To determine which incentives and interventions would be most effective to include in the policy, Capacity*Plus*, in partnership with the WHO, built the capacity of the MOH to apply the project's retention tools. The MOH conducted a rapid DCE survey among 970 students from three provincial colleges and the University of Medical Sciences and 483 health workers in three provinces from the physician, nursing, and medical assistant cadres, and then used iHRIS Retain to cost the resulting preferred incentive packages to determine their financial feasibility.

Implementing an evidence-based national retention policy: The MOH used the evidence generated from application of the tools to develop and implement a national recruitment and retention policy. The policy stipulates that all graduates in medicine, nursing, midwifery, pharmacy, and dentistry, as well as postgraduates in family medicine, must complete three years of rural service to receive their licenses to practice. The policy provides incentives, based on the rapid DCE and costing results, to motivate health workers to provide high-quality services as well as encourage them to stay after their compulsory service has ended. Incentives include permanent civil service positions, transportation, and eligibility for continued education. The first phase of the policy, initiated in 2013, placed 360 newly qualified doctors, pharmacists, and dentists in 51 rural districts (of 142 total districts). The second phase, implemented in 2014, placed an additional 1,191 health workers across the country to provide essential health services.

Increased access to services: While the MOH did not necessarily stress FP coverage when determining where to deploy the new graduates, Figure 9 demonstrates that in many provinces, the increase in health workers occurred in areas with generally lower use of modern contraceptives by married women. Sekong, Xiengkhuang, and Champasak provinces, with modern contraceptive prevalence rates (25%, 32%, and 32%, respectively) well below the national average (42%), received 13%, 22%, and 12% more health workers, respectively. The new health workers provide a spectrum of primary care services, including FP/RH, and thus contribute to improving women's access to FP and other essential services. As a result of the increased recruitment and deployment of health workers in rural areas, Capacity*Plus* estimates that over two million additional clients will gain access to a health worker.

Figure 9: Percent Increase of Health Workers[1] in Lao People's Democratic Republic Related to Use of Modern Contraception[2]



[1]Source: Ministry of Health and Lao Statistics Bureau 2012; [2]Source: Department of Organization and Personnel 2010; WHO Western Pacific Region 2013

Productivity Toolkit Informs Priority Interventions: Malawi

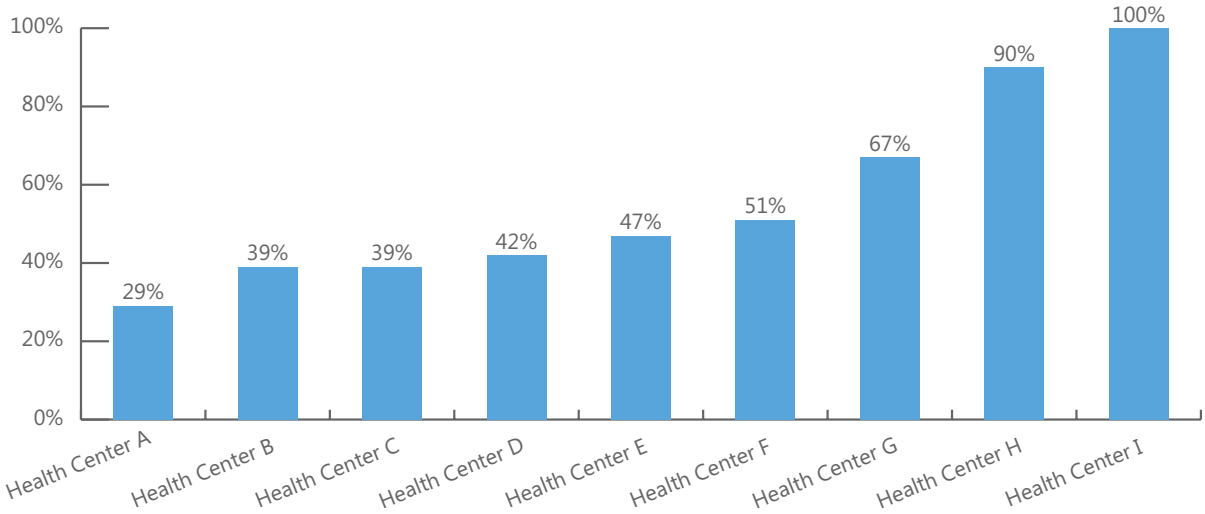
The Christian Health Association of Malawi (CHAM), which provides 37% of health services in the country, is contributing to the government's implementation of an essential health package—addressing HIV/AIDS, maternal and neonatal outcomes, and other conditions contributing to high levels of morbidity and mortality—by increasing coverage and quality of service delivery through its network of 175 health facilities and over 9,000 health workers (CHAM 2015; Malawi MOH 2011). In response to CHAM's request for technical support to strengthen

the productivity of its workforce, Capacity*Plus* built its capacity to apply the Health Workforce Productivity Analysis and Improvement Toolkit through a pilot at nine health centers.

Comparing the aggregated health service outputs, which included MNCH and HIV service variables, to the total HRH costs (salaries and allowances paid to health center staff) revealed moderate to low levels of productivity in the majority of the assessed facilities, ranging from 29%-67% of the benchmark (see Figure 10). Two-thirds of the health centers (six out of nine) were less than half as productive as the benchmark, or highest performing facility, in the sample. The qualitative portion of the assessment, which included community and health worker focus group discussions and health worker flow mapping, pointed to inefficiencies in service delivery, health worker absenteeism, and low patient demand as contributing to low productivity, and identified underlying causes and priority interventions.

Acting to improve productivity: In response, CHAM has progressed on many of the priority interventions. CHAM secured funding from DanChurchAid to pilot a community health insurance scheme at two facilities to reduce financial barriers. Health service price lists have been posted at most facilities to address lack of transparency. CHAM conducted a customer care orientation workshop for health facility in-charges to address issues of poor staff attitude and to institutionalize quality assurance methods to ensure that community expectations for quality care are met. CHAM also secured funding under a KfW Development Bank project to expand health center infrastructure, including construction of staff houses and maternity wards and installation of piped water, sewer, and solar systems; and to train health workers and procure equipment and supplies for basic emergency obstetric care. In the majority of facilities, in-charges acted immediately to correct individual issues affecting productivity and service quality such as adherence to clinical protocols and infection prevention standards, and adjusting staff rosters to reduce work overload while also providing day and night coverage.

Figure 10: Health Workforce Productivity (%)* by Health Center[1] (Malawi)



**The health workforce productivity rate is a relative measure whereby similar facilities are compared against each other. Though the facility with the highest productivity is the benchmark (100%) or reference facility, this does not mean its productivity cannot be improved. [1]Health center names were removed due to the sensitivity of the information.*

Students in Malawi. Photo by Alice Kadango

LESSONS LEARNED AND RECOMMENDATIONS

- Putting HRH stakeholders in the driver's seat by building their capacity to apply evidence-based tools, instead of relying heavily on external assistance, promotes country ownership and increases self-sufficiency of host-country counterparts. Stakeholders are thus empowered to make and act on HRH decisions to address the workforce access and productivity bottlenecks hindering the provision of quality health care. This approach should also enable countries to update their evidence-based recruitment and retention strategies more frequently as economic and other conditions and health worker preferences change over time.
- Geospatially mapping HRH data and health indicator data from demographic and health surveys can aid countries to visualize where the need for addressing workforce access and distribution is greatest as well as to monitor the effects of HRH strengthening interventions on health services and outcomes.
- More evaluations of the implementation of health worker recruitment and retention policies are needed to determine their effectiveness and long-term impact on FP/RH, HIV/AIDS, and MNCH service delivery as well as HRH performance, motivation, and productivity. Stakeholders can use any evidence of positive effects on services to encourage national scale-up within all health service areas, as well as advocate for application of the approaches in other sectors such as education and agriculture.
- Where discrete choice experiments have been carried out and resulting incentive packages implemented, longitudinal surveys should also be conducted to follow up on respondents and observe their actual decisions to validate the effectiveness of stated preference methods in predicting labor force decisions. To further validate the ultimate effectiveness of incentive strategies, follow-up studies should be conducted to measure the impact that using incentives to improve health worker recruitment and retention has on accessibility and utilization of services.
- To enable the cross-country and cross-regional comparison of results from different studies, common indices and frameworks should be developed and applied for performance, quality, and productivity.

Professionalizing Under-Recognized Cadres to Strengthen Health Systems

BACKGROUND

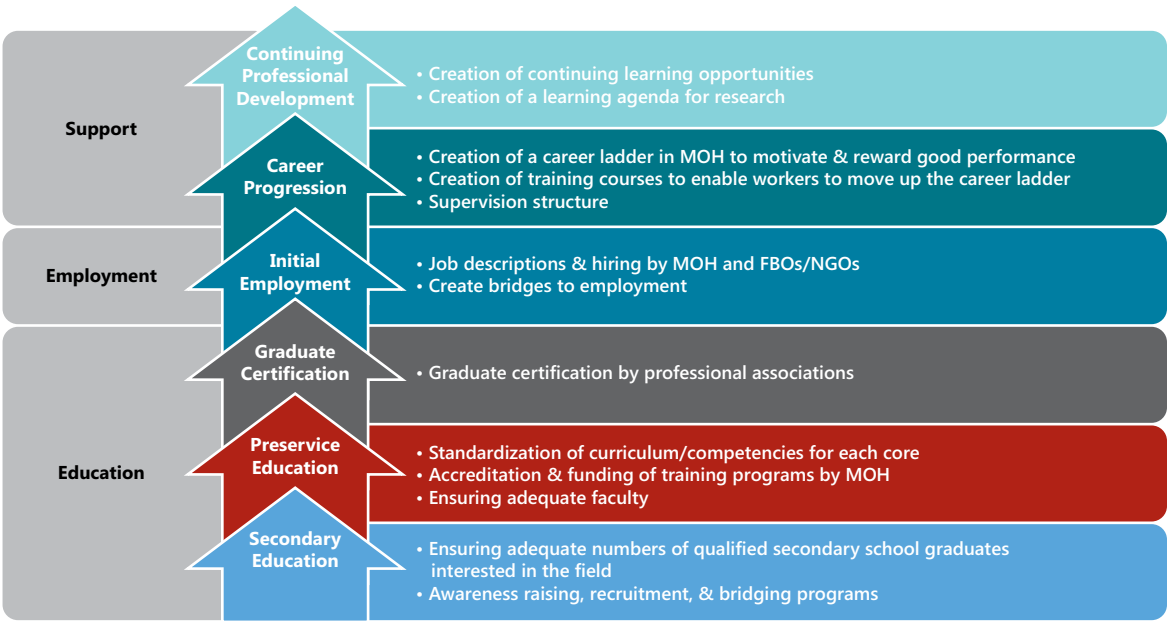
While the roles of doctors and nurses are widely recognized and understood, there are many types of health workers whose contributions to well-functioning health systems are under-recognized and under-valued. Social service and supply chain personnel are two cadres of health workers that often lack support and a voice in the health system, hindering their education, career development, and professional growth. Due to the amorphous nature of these careers, there is a shortage of talent entering these professions, and individuals currently holding positions often lack the opportunity to fully maximize their performance.

Yet social service workers form a vital safety net for children and families made vulnerable by challenging circumstances such as the HIV epidemic, providing access to an array of services to promote well-being and protection from harm, including referrals for primary health services such as family planning and maternal and child health care. Supply chain workers also play an essential role in the health system, ensuring access to medicines and other health commodities. Their role is often underestimated until stockouts occur and the effects are seen. When stocks of HIV drugs and supplies run out, unplanned treatment interruptions can lead to increased risk of HIV drug resistance, treatment failure, and death (Pasquet et al. 2010). The devastating effect of lack of access to necessary commodities is also felt in family planning, contributing to unmet need, unintended pregnancies, and maternal and newborn deaths.

APPROACHES AND RESULTS

Applying its HRH expertise, Capacity*Plus* developed a framework for the professionalization of under-recognized cadres (see Figure 11) and drew upon it to establish a strong foundation for advocacy and action to support the development of the social service and supply chain

Figure 11: Life Cycle Approach for Professionalization of Under-Recognized Health Workforce Cadres



*Supply chain worker at Hospital Alejandro Cabral, San Juan de la Maguana, Dominican Republic. Photo by Wendy Tactuk for Capacity*Plus *and IntraHealth International*

workforces. Activities focused on three primary areas: 1) global coordination and advocacy for professionalizing these cadres; 2) generation and use of HRH strategies, approaches, and evidence to improve planning for and managing these workforces at the country level; and 3) supporting national-level efforts to strengthen institutions and build capacity for social work and supply chain management.

Global Coordination and Advocacy

Capacity*Plus* supported the launch and growth of global coalitions working on behalf of social service and supply chain workers. Established with funding from USAID and PEPFAR, the Global Social Service Workforce Alliance promotes the knowledge and evidence, resources and tools, and political will and action needed to address key social service workforce challenges, especially in low- and middle-income countries. Through the Alliance, Capacity*Plus* introduced the first-ever multicountry knowledge-sharing platform on social service workforce strengthening, hosting 19 webinars that engaged speakers from 20 countries and 3,000 participants from 45 countries. The project also helped to refine a framework for planning, developing, and supporting this workforce, now being used by global and national partners. From the launch of the Alliance in June 2013 through June 2015, 510 members joined from 63 countries, representing a diverse membership of nongovernmental organization staff, donors, government ministry staff, professional association leaders, and academics. The Alliance website acts as a hub for information exchange and access to resources, with visitors from 180 countries. In 2015, support for and hosting of the Alliance transitioned from Capacity*Plus* to the new USAID 4Children Project.

In 2011, Capacity*Plus* contributed to the launch of People that Deliver, a broad coalition of more than 80 organizations from around the world that strives to build global and national capacity to implement evidence-based approaches to plan, finance, develop, support, and retain the national workforces needed for the effective, efficient, and sustainable management of health supply chains. People that Deliver is also supporting seven focus countries to address supply chain workforce challenges. Capacity*Plus* provided technical assistance in two of these countries—the Dominican Republic and Namibia. The project also played a leadership role in developing the initiative's five-year strategic plan, the implementation of which is resulting in increased attention to supply chain workers in other global and national efforts (e.g., the 2016–2020 Gavi strategy to immunize an additional 300 million children) and testing of HRH approaches and tools in focus countries. Capacity*Plus* contributed to key technical and advocacy tools, including a technical brief on applying the HRH action framework to the supply chain management workforce, a tool for assessing human resources capacity in supply chain management, and a system-wide competency compendium for supply chain management functions and tasks.

Generation and Use of Evidence at the Country Level

Recognizing the importance of data and evidence to enable national leaders and practitioners to make informed policy and programming decisions related to the social service and supply chain workforces, Capacity*Plus* supported a number of activities to provide national stakeholders with relevant and timely information. These resulted in reports that consolidate information about the social service workforce in HIV/AIDS-affected contexts in sub-Saharan Africa, and document promising practices from Ethiopia, Nigeria, and Tanzania in supporting parasocial workers that can be used to guide program scale-up and adaptation in other countries. In Kenya, the Ministry of Gender, Children & Social Development commissioned the project to conduct an assessment that provides an overview of the status of government-level workers, identifies gaps, and makes recommendations on workforce strengthening. In Nigeria, Capacity*Plus* worked with USAID/Nigeria, Maestral International, and UNICEF to carry out a mapping and assessment of the child protection systems in six states. State ministries of women's affairs and social development and other key constituencies are using the findings to identify, prioritize, and cost gaps in state child protection systems and present feasible strategies and activities to remedy the gaps.

To promote the regular collection and use of workforce data to facilitate appropriate deployment of social workers, Malawi and Tanzania established HRIS specific to the social service workforce with support from Capacity*Plus*. In Namibia, the project assisted the Ministry of Health and Social Services to apply the WHO WISN method to calculate the required number of pharmacists, pharmacist assistants, and administrative officers based on estimated workload needs in the central medical stores and two regional medical depots. The method generated evidence confirming severe shortages of all three supply chain cadres at the central level, as well as poor distribution and mix of cadres at the regional level. Activity standards for pharmacists and pharmacist assistants have since been adjusted to better inform staffing needs to ensure ARV provision. The project also supported Namibian stakeholders in completing an incentive and retention study of pharmacists and pharmacist assistants using the Rapid Retention Survey Toolkit to inform strategies to improve attraction and retention in hard-to-reach areas.

National Workforce Strengthening Efforts

Malawi: Capacity*Plus* collaborated with the Ministry of Gender, Children, Disability and Social Welfare, UNICEF, and USAID/Malawi to support Magomero College to establish the country's first degree program that will produce qualified social service workers to fill identified gaps in service delivery. The first class of 39 students enrolled in April 2014. These students will soon be on the front lines of Malawi's effort to reach the one in six children vulnerable to violence, abuse, exploitation, and neglect, and at risk from HIV/AIDS, including 476,000 children orphaned from AIDS-related causes (UNICEF 2012).

Democratic Republic of the Congo: A 2009 assessment estimated that the country had 8.2 million orphans and vulnerable children (OVC), representing one in four children (USAID/DRC 2010). Compounding the crisis, a World Bank assessment in 2013 revealed serious weaknesses in the day-to-day functioning of the national division of child protection (DISPE) at the Ministry of Social Affairs, Humanitarian Action, and National Solidarity. To begin to reinvigorate DISPE, Capacity*Plus* supported institutional strengthening, including training and mentoring DISPE and provincial child protection staff in leadership, supervision, program planning, and monitoring skills. As a result, with support from Capacity*Plus*, DISPE led the development of the first-ever annual operational plan for the national OVC strategy, trained stakeholders (in collaboration with the World Bank) on national norms and standards for the care of vulnerable children, and established a DISPE monitoring and

> "What has changed the most at the DISPE is the working environment, the tools to do our job, and the strengthening of staff capacity."
>
> *—Pierrot Mabiala, Chef du Bureau Secretariat de Direction, DISPE*

*DISPE staff, Kinshasa, Democratic Republic of the Congo. Photo provided by Daren Trudeau for Capacity*Plus *and IntraHealth International*

evaluation team that is tracking progress toward the goals specified in the national operational plan. With DISPE now actively taking responsibility for its role as coordinator of the social service sector, development partners who previously worked in a parallel fashion to DISPE are now engaging with and supporting DISPE.

Latin America and the Caribbean: Capacity*Plus* supported a regional collaboration to build the capacity of national health supply chains to ensure reliable and sustainable access to HIV/AIDS commodities (with a spillover effect on all commodities since supply chain workers handle these across the wide range of primary health care services, including family planning). The initiative launched at a strategic and action planning workshop held in Guatemala in 2013. During the workshop, country teams from the Dominican Republic, El Salvador, Guatemala, Honduras, and Panama identified challenges, shared possible solutions, and developed short-term supply chain actions and longer-term strategies for each country.

Following the workshop, the team from the Dominican Republic began implementing its strategic plan with support from Capacity*Plus*. Achievements have included revising the organizational structure of the Ministry of Health unit responsible for managing medicines and supplies, creating standard job descriptions for supply chain workers, launching a new supervision process, and developing and institutionalizing a diploma course for supply chain workers. The Ministry of Health, National Institute for Public Administration, Capacity*Plus*, and the USAID Systems for Improved Access to Pharmaceutical Services (SIAPS) Program collaborated to train 3,500 health workers in the new operational procedures of the integrated commodities program, and 96 supply chain managers completed the diploma course during 2013 and 2014. As a result, hospitals are using a more systematic approach to procurement and distribution, integrated across health programs.

One of the key challenges identified by the ministries of health in the Dominican Republic and El Salvador was low motivation of staff with supply chain management duties, in part due to perceived lack of support and disregard from others in the health system. Capacity*Plus* assisted in developing and delivering three-day workshops for 79 supply chain workers in the Dominican Republic in which participants produced advocacy plans to support their efforts to address gaps in supply chain management. In El Salvador, the project facilitated a similar workshop for 37 participants. Follow-up interviews revealed that many participants had taken steps to implement their advocacy plans and were beginning to see results. For example, one participant from the central warehouse reported that he advocated successfully for the purchase of two refrigerator trucks to transport medicines to health facilities while maintaining the cold chain.

Doctor visiting the Onaanda clinic in northern Namibia. Photo by Trevor Snapp for IntraHealth International

LESSONS LEARNED AND RECOMMENDATIONS

- Critical for any country is the need to understand that health systems are staffed by a wide range of workers at different levels of the system with varying types of education and training. Professionalization of under-recognized cadres requires advocacy to demonstrate the critical role these cadres play and the contributions they make to the delivery of quality health services and improvement of health outcomes.
- Many countries lack data on under-recognized cadres that are regularly collected, analyzed, and used in decision-making and planning. Further, these workforces are often fragmented and spread across sectors. As a result, workforce data are scattered, hard to track, and not readily available on a routine basis. Progress in mapping the social service and supply chain workforces is contributing to a clearer picture, but there is much work to be done. As one step, a theory of change should be developed and agreed on that provides recommended metrics for measuring the success of global and national initiatives to strengthen these workforces.
- Countries should be encouraged to take a "life cycle approach" to attract, educate, retain, and support workers in under-recognized positions. The approach should include: formally recognized avenues for education, training, and certification; suitable job descriptions and ladders for career progression; structures such as associations for interacting with peers and communicating the needs of workers with a common voice; and opportunities for continuing professional development.
- Countries should receive continued support to apply validated approaches and tools—such as the WHO WISN method and Capacity*Plus* Rapid Retention Survey Toolkit—to estimate the numbers and types of workers needed and the packages of salaries and incentives that will attract and retain personnel to under-recognized professions.
- Collaboration across disciplines is needed to effectively link health and social service workforce and service delivery needs. A holistic approach to health workforce planning, involving a variety of stakeholders and based on service delivery needs, must be followed to ensure the development of integrated networks of care that include the range of workers needed to support the delivery of quality services.
- Specific job descriptions or career ladders, coupled with incentives, are needed to make supply chain management an attractive professional option. Various cadres such as doctors, nurses, midwives, laboratory technicians and assistants, and even information technology specialists need clarity with respect to their roles, responsibilities, and accountability in the supply chain, and an understanding of who will provide functional supervision.

Building the Knowledge Base: Monitoring & Evaluation and the HRH Effort Index

BACKGROUND

Accurate and timely information for decision-making and advocacy is a key system component in strengthening HRH toward achieving the goals of AIDS-Free Generation, EPCMD, and FP2020. However, indicators used to measure efforts and progress in HRH have been limited and often unreliable, especially in countries with weak or no monitoring and evaluation (M&E) plans and/or HRIS. Such limitations prevent or severely constrain country, donor, and program initiatives to identify and address gaps in HRH and to track progress over time. The skilled health professionals density ratio (SHPDR), which measures the number of physicians, nurses, and midwives per 10,000 population (Campbell et al. 2013; WHO 2006) and the health worker reach index, which incorporates the SHPDR and measures of access to and actual use of services provided by health workers (Save the Children 2011) are two indicators that have increasingly been used to measure progress in improving the health workforce. Yet both indicators are limited by variable data quality and by the fact that they exclude certain cadres of health workers, such as auxiliary and community health workers. These limitations hinder the measures' utility in understanding the relationships between HRH inputs, service use, and health outcomes. Capacity*Plus* helped to bridge these gaps by developing a more robust measurement approach to assessing the complex framework for HRH—the HRH Effort Index—and by increasing capacity for M&E of HRH at the country level through improved measurement approaches and M&E skills.

STRATEGY AND APPROACHES

Capacity*Plus* developed the HRH Indicator Compendium, which provides a summary of standardized indicators in the areas of global leadership; health workforce policy, planning, and management; health workforce development; and health workforce performance support. HRH stakeholders can use the Compendium to identify indicators to monitor the HRH situation in their countries. The Compendium details how the varied indicators (e.g., rates, ratios, and indices) can be calculated.

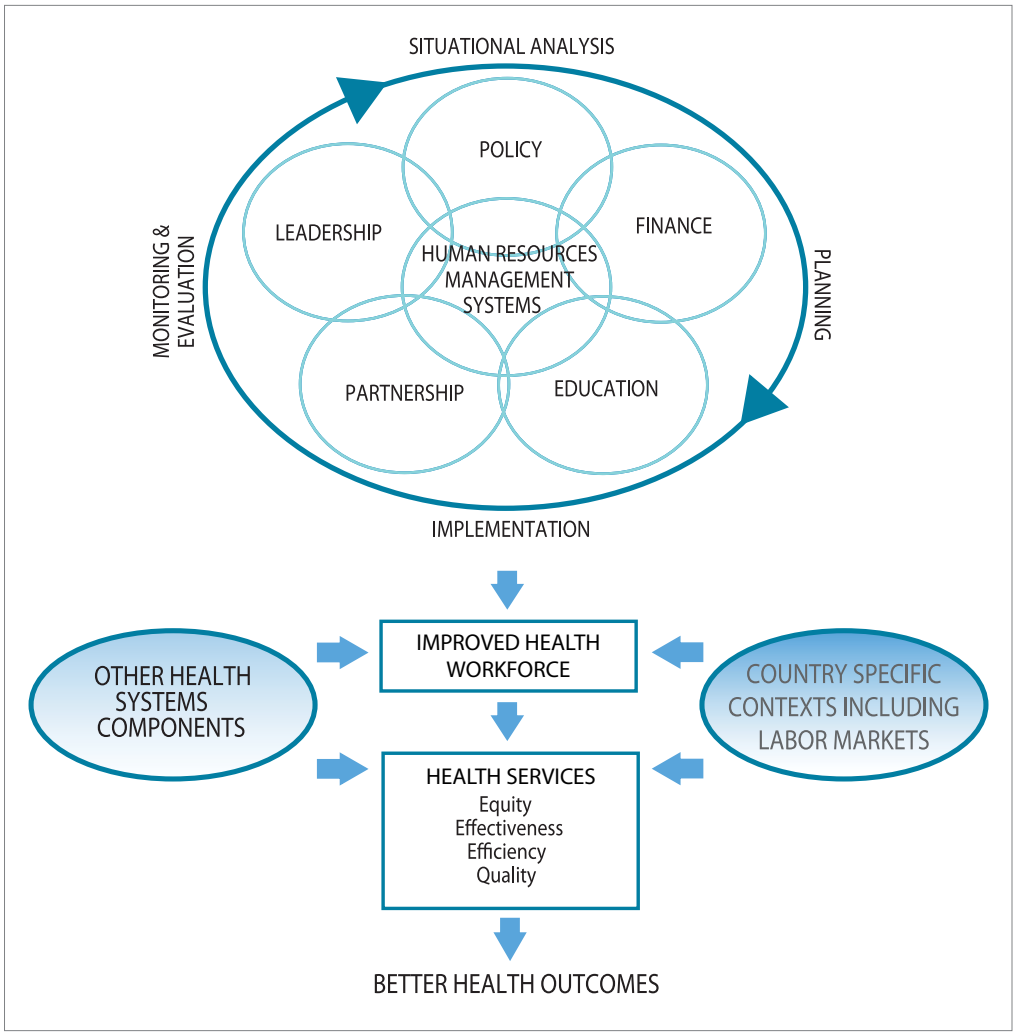
To complement the Compendium, Capacity*Plus* developed M&E Guidelines for HRH, which address the need for a conceptual framework for any HRH intervention. The guidelines steer the reader through the domains of interest (e.g., from overarching policies to the health facility level) and the logical steps (from inputs and processes to outputs and outcomes) to ensure that a solid M&E plan is formulated (including indicators and data collection methods) to measure progress and results of HRH interventions.

The project also published an eLearning course, An Introduction to Monitoring and Evaluation of Human Resources for Health, on the HRH Global Resource Center to provide stakeholders with the essentials on M&E of HRH and inform them about tools and resources to develop M&E systems and plans.

To better inform HRH investments and support more equitable health systems, the project developed the HRH Effort Index (modeled after the Family Planning Effort Index), using the HRH Action Framework as a conceptual guide and inputs from an international advisory group (including USAID and the WHO), reviews of the relevant literature, and interviews with HRH experts in Mali, Nigeria, Uganda, and the Dominican Republic. The Index guides key informants through a self-administered survey tool covering 50 items across seven HRH dimensions adapted from the HRH Action Framework (see Figure 12): leadership and advocacy; policy and governance; finances; education and training; distribution, recruitment, and retention; human

resources management; and monitoring, evaluation, and information systems. The informant answers by scoring their assessment of the extent to which each item has been developed and/or supported, based on a scale of 1 to 10 (see example in Table 6).

Figure 12: HRH Action Framework



Individual responses are averaged per dimension and also to produce an overall "index" of HRH effort. The main application of the Index is through a survey to experts from different sectors (e.g., public, private, NGO, FBO) and institutions (e.g., MOH, professional associations, professional schools, academia) gauging efforts at the national level. However, other applications can include surveys at subnational (e.g., province, county) levels and group or consensus meetings, where stakeholders score and discuss each item, dimension, and the overall score as a way to identify strong and weak areas of HRH investment and effort, with evident buy-in and capacity-building potential. User feedback from a pilot test of the Index in Kenya and Nigeria in 2014 informed final revisions to the tool, which was subsequently applied in several countries through a variety of modalities: individually for national (Burkina Faso, Dominican Republic, Mali, and Ghana) and subnational (Dominican Republic) scopes, and collectively through a consensus meeting of stakeholders (Mali).

Capacity*Plus* also conducted several evaluations of innovative HRH investments that generated much-needed evidence. These used a variety of methods including a pre- and post-intervention design in the pilot of an mHealth family planning in-service training application among

health workers in Senegal to foster retention of training content. The evaluation demonstrated improved knowledge of FP side effects ten months after the training. In Nigeria, the project obtained and analyzed existing data available from the community health and midwifery associations to assess the effectiveness of support to preservice education institutions and students in increasing the number of newly qualified health workers, and complemented these results with additional primary data collection at schools that received support, among key PSE stakeholders involved in the processes, and with scholarship recipients. In Uganda, the project linked HRIS data with client record systems such as DHIS 2 to elucidate the association between increases in the health workforce and changes in service delivery. Where baseline values were lacking, the project innovated by conducting retrospective or reconstructive evaluations (e.g., effects of HRM policy and practice interventions among Kenyan FBOs). The results of most of these evaluations have been published (see Annex B).

Table 6: Example of HRH Effort Index Items and Scoring in Leadership and Advocacy Dimension

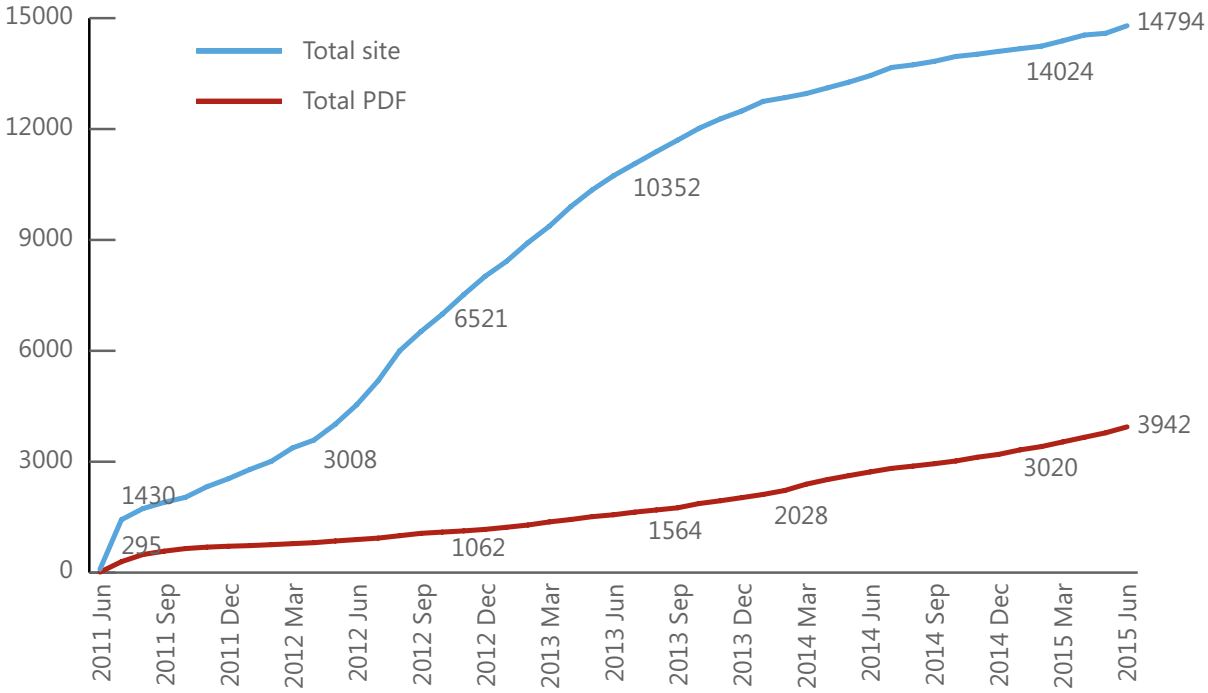
#	DIMENSION AND ITEM	CIRCLE YOUR RATING: Extremely weak/No national effort									Extremely strong/High level national effort	I don't know
I. LEADERSHIP and ADVOCACY (5 items)												
1.	**Human resources for health (HRH) prominence within the Ministry of Health** Extent to which there is a permanent HRH office or post within the Ministry of Health that develops and monitors HRH policies and strategies, that is well placed within the government, and staffed by adequately skilled personnel.	1	2	3	**4**	5	6	7	8	9	10	○
2.	**Political support for HRH** Extent to which elected officials in the country prioritize meeting HRH needs to strengthen the workforce by passing laws and regulations and sponsoring actions and policies aimed at improving the health workforce.	1	2	3	4	5	6	**7**	8	9	10	○
3.	**Influence of HRH leaders or champions** Extent to which the country has one or more clearly influential leaders or champions who successfully advocate for HRH needs (e.g., increasing funding for HRH) at high levels, promote HRH in the country by making positive public statements about HRH, and/or support actions and policies aimed at improving the health workforce.	1	2	3	4	5	6	7	**8**	9	10	○

HIGHLIGHTS OF RESULTS

Building Country Capacity in Monitoring and Evaluation

CapacityPlus's M&E tools have been accessed by and disseminated to a wide range of users around the world. For example, the interactive online version of the HRH Indicator Compendium has been visited 14,794 times (an average rate of 308 times per month) and the PDF downloaded 3,942 times since the tool's launch in June 2011 (Figure 13).

Figure 13: Number of Visits to the Online and PDF HRH Indicator Compendium (June 2011–June 2015)



Similarly, in the four months after the release of the HRH M&E eLearning course, the number of users grew more than 100 times, after which it continued to grow at a slower pace of about 20 users per month, with users coming from 116 countries. As of June 2015, the course had been visited by 1,303 users, with 158 certificates issued.

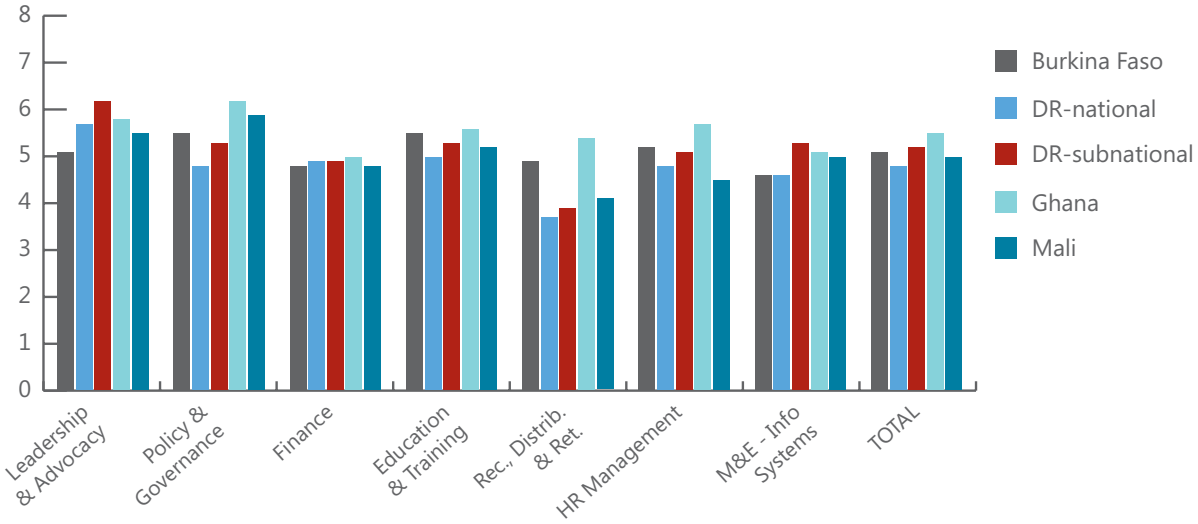
Applying the HRH Effort Index

The pilot test of the Index in Kenya and Nigeria in May-June 2014 included 49 HRH and health systems experts from ministries, professional councils, training institutions, NGOs, and FBOs. This initial application resulted in differences in total scoring between the two countries (Kenya=5.7 and Nigeria=4.2) as well as variations in scoring by individual dimensions. The project subsequently applied the finalized HRH Effort Index in four countries: Burkina Faso, the Dominican Republic (nationally and in three subnational regions), Mali, and Ghana, among 19, 16, 27, and 20 respondents, respectively. Respondents came from government, FBOs, multilateral and bilateral organizations, NGOs, professional associations and councils, health facilities, and academic institutions. Figure 14 presents the results.

While all countries consistently scored in the mid-range across the various criteria related to national HRH efforts, the lowest scores were given to the "Recruitment, Distribution and Retention" dimension, followed by financing of HRH (which was also consistent with the pilot test results in Kenya and Nigeria). When looking deeper into the items scored in these dimensions, the two most critical were the lack of an effective distribution strategy for human resources serving rural and remote populations and insufficient efforts on incentives to encourage retention of workers, especially in rural areas. In the finance dimension, insufficient funding for HRH from domestic budgets, to support tuition to students or to produce adequate numbers of health workers, also received lower scores. More refined analyses can be made within and across countries to understand these differences better.

In Mali, Capacity*Plus* convened a workshop in mid-2015 to disseminate the findings from the individual scoring and ask high-level technical experts and members of the HRH stakeholder leadership group to jointly re-evaluate and reach a consensus score for each of the individual elements within each domain of the survey tool. The 43 experts collectively scored many elements similarly or less favorably than the average of the individual application. More importantly, the exercise led to in-depth discussions about strengths and weaknesses in Mali's multisectorial efforts to improve HRH and participants proposed recommendations across all the domains—such as discussing how the government can better control quality at private health professional educational institutions, reduce ghost workers, and better apply the national career plan to improve health worker retention in difficult areas. Participants appreciated the rapid assessment nature of the exercise and suggested that the HRH Directorate at the Mali Ministry of Public Health and Hygiene and the stakeholder leadership group use the findings in their evaluation of the Mali 2009–2015 HRH strategic plan and incorporate the emerging recommendations into the next strategic planning cycle.

Figure 14: HRH Effort Index Scores by Dimension, Burkina Faso, Dominican Republic (National and Subnational), Ghana, and Mali



Hospital in Gao, Mali. Photo by Trevor Snapp for IntraHealth International

LESSONS LEARNED AND RECOMMENDATIONS

- To generate new knowledge from project interventions, robust impact evaluation designs are needed. Interventions should set up systems to gather baseline information, link activities to health outputs and outcomes, include comparison or control groups where feasible, and measure effects after sufficient time has elapsed to observe demonstrable results. A sufficient M&E budget should accompany these efforts.
- To be effective, building M&E capacity requires that more emphasis be placed on following up with users of tools and workshop participants to support them and ensure that new knowledge and skills are applied in real-life scenarios or translated into sound M&E plans.
- The HRH Effort Index is an important tool to generate additional information about HRH efforts across many domains at the country level to inform policy and advocacy. Despite some limitations of scoring based on informants' perceptions, indices have proven useful to provide additional information in areas of difficult measurement. The Index's application over time should provide more data to assess whether it can effectively measure progress and results in the HRH area. If proven successful, the WHO might consider its wider use for general assessments of the "state of HRH" in relation to health systems strengthening across countries and regions.
- The HRH Effort Index is particularly well suited as a rapid assessment exercise to encourage diverse country stakeholders to identify collectively the strengths and weaknesses in efforts to improve HRH and come together to propose recommendations. Further applications of the workshop process should be encouraged to learn more about their long-term effects.

Advancing Gender Equality in Health Systems

BACKGROUND

Gender equality and nondiscrimination promote the achievement of health workers' greatest potential, which can have a positive impact on the provision of high-quality health care. When all health workers, whether male or female, can access education, training, and leadership opportunities, the quantity and quality of the health workforce improves. Giving all health workers an equal chance of being employed, fairly paid, and supported through life events such as childbearing may contribute to improved morale, productivity, and retention—in turn contributing to high-quality health services and the achievement of national and international health goals. Further, promoting gender equality within the health workforce has the potential to transform gender norms within the populations health workers serve, by promoting nondiscrimination, nonviolence, and equality through the health services they provide.

Gender equality in health systems also requires that health workers be able and willing to provide high-quality care for victims of gender-based violence (GBV). In many countries and communities, GBV is not recognized as a health problem. Health workers who encounter clients who have experienced GBV may dismiss their injuries, may not ask appropriate questions in a sensitive way about the origin of their injuries, and may not refer clients to available GBV services. Further, all clients, men and women, should be able to receive care for every health problem in a way that is gender-appropriate.

STRATEGY AND APPROACHES

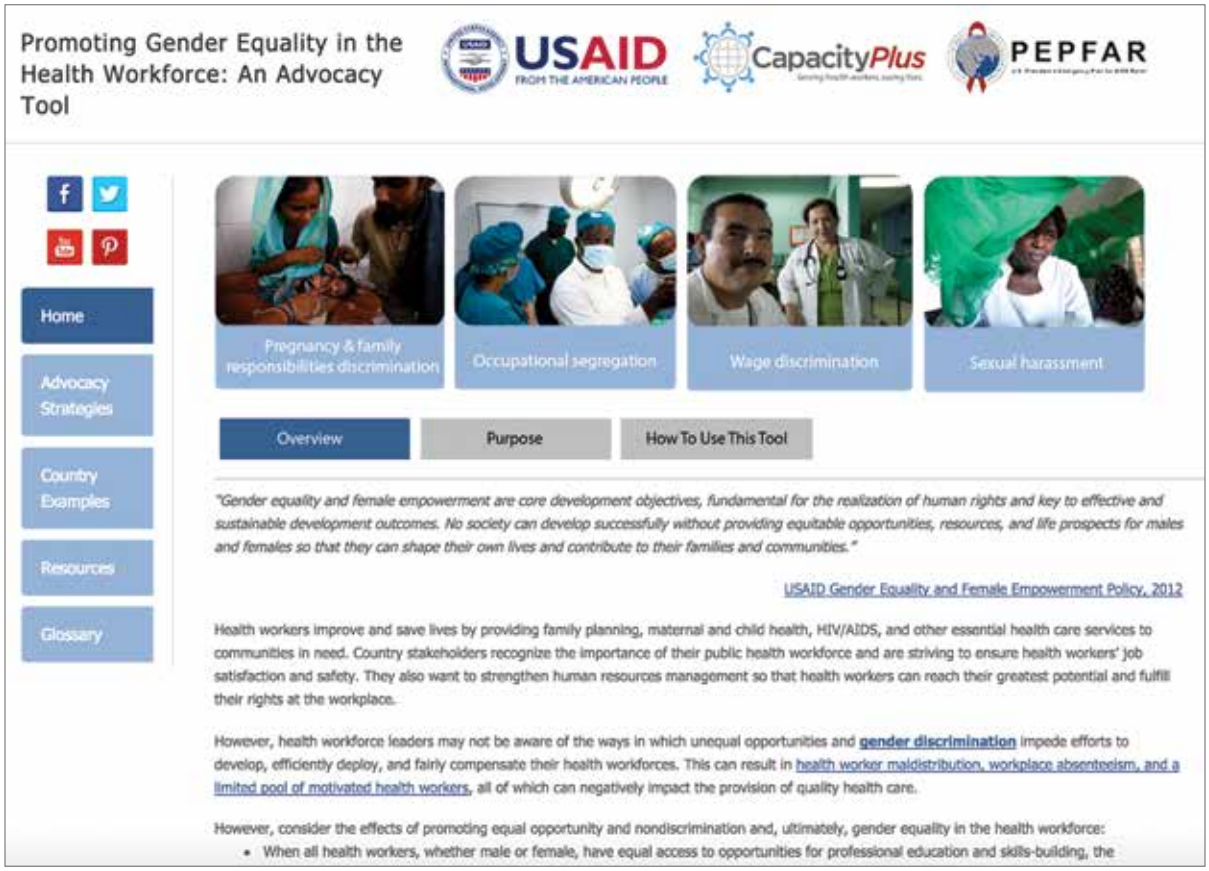
Capacity*Plus* addressed the challenges of gender inequalities and discrimination in the health workforce and health systems by: 1) developing learning tools to promote gender-transformative principles among health workers and health system leaders; 2) building the capacity of stakeholders to use these tools for advocacy, policy-making, and the implementation of gender-transformative interventions to promote equal opportunity and nondiscrimination in the workplace, health professional education systems, and clinical care; and 3) training health workers to better recognize, treat, and refer clients who have experienced GBV. The tools include:

- A gender and health systems strengthening eLearning course that supports learners to understand how gender norms drive health behavior and decision-making and the provision and utilization of care, and presents evidence-based ways to improve health and social outcomes by addressing gender barriers. The course contributes to the aims of the USAID Gender Equality and Female Empowerment Policy and is designed to build the capacity of USAID field-based health officers, foreign service nationals, and US government partners to promote gender equality and women's empowerment in health systems strengthening (HSS) efforts in order to improve health and social outcomes. The course is also a mechanism to disseminate some of the USAID Interagency Gender Working Group's core gender analysis and integration concepts.
- An advocacy tool to address gender discrimination in health workforce development that outlines recommended combinations of gender-transformative interventions to counter various forms of gender discrimination in learning environments, and provides advocacy strategies for stakeholders to develop plans to create, implement, and enforce conducive environments, equal opportunity, and nondiscrimination policies. The tool draws from a technical report and brief published earlier in the project on strengthening the health worker pipeline through gender-transformative strategies.

- A companion advocacy tool to promote gender equality in the health workforce (see Figure 15) that provides users with approaches to understand and examine common gender discrimination types—pregnancy and family responsibilities discrimination, occupational segregation, wage and responsibility discrimination, and sexual harassment—along with recommended gender-transformative interventions and strategies for the health workforce and within health systems.

In addition, the project updated sexual and gender-based violence (SGBV) curricula for health workers and trainers in Kenya and Mali. The curricula mainstreamed gender-transformative approaches, identified and filled health workforce skills gaps, and integrated new SGBV policy and service protocols to help these countries' health systems to better respond to children, adolescents, and women who have experienced sexual violence.

Figure 15: Screenshot of Gender Equality in the Health Workforce Advocacy Tool

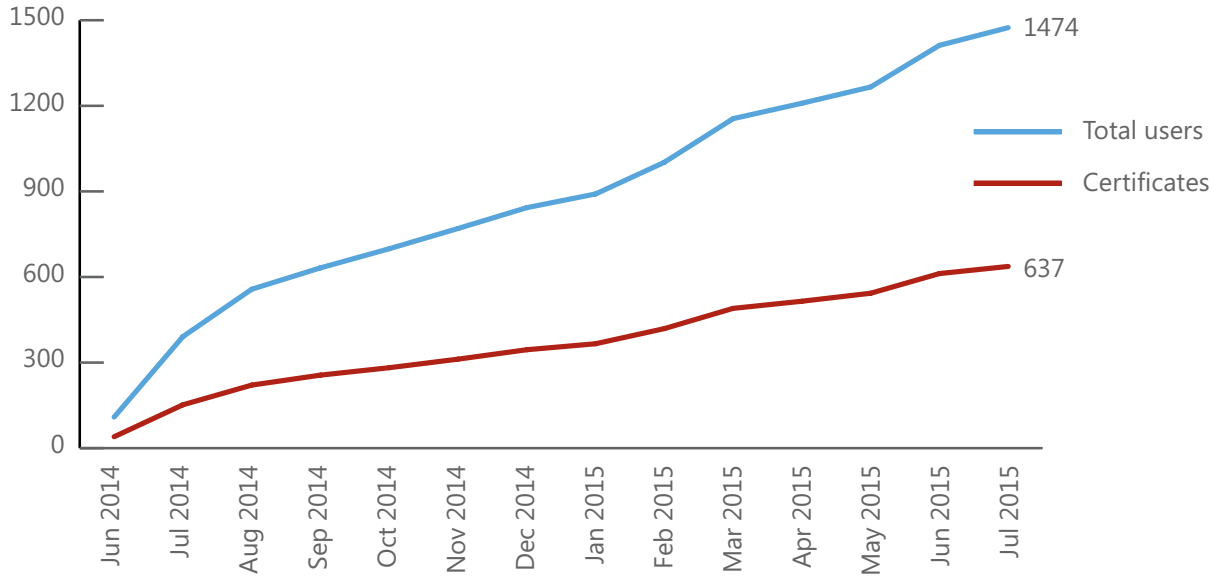


HIGHLIGHTS OF RESULTS

Global Participation in Gender HSS eLearning Course

Since its June 2014 release, 1,474 learners from 57 countries have used the course and 637 (43%) have earned a certificate of course completion (see Figure 16), of whom 54% are female. In 2014, the project also led 22 participants from ten countries in a two-week study group to enhance learners' understanding of the course content through moderated discussions. The first study group of its kind for the Global Health eLearning Center, the course had more than 98% of participants coming from outside the US. A year later, a survey among a subgroup of certificate earners (71) found that 99% "gained from the course" and felt "more knowledge-able/empowered about gender and health systems" and 63% had been able to "make any positive gender-related changes in their personal lives and work."

Figure 16: Gender and HSS eLearning Course Users and Certificates Earned Over Time



Fostering Action through Pilot Application of Advocacy Tools at the Country Level

Capacity*Plus* field-tested the gender equality advocacy tools through a capacity-building workshop with 51 health workforce, gender, and PSE stakeholders in Cross River State, Nigeria in 2014. The workshop discussions enabled the stakeholders to identify and prioritize gender-related challenges—including learning and working environments that may promote sexual harassment and GBV, caregiver responsibilities discrimination affecting midwife deployment and retention, and occupational segregation and wage discrimination—while working on a draft advocacy action plan. Workshop participants then nominated representatives to form a state-level Gender HRH Working Group, which met in May 2015 to further refine and pursue advocacy goals to advance gender equality in the health workforce and at health professional education institutions, including promoting efforts alongside the state's forthcoming gender policy.

In August 2015, a sex-disaggregated analysis of the Capacity-*Plus*-supported Cross River State Ministry of Health workforce registry (customized from iHRIS Manage) was undertaken to develop a more robust evidence base on gender issues in the health workforce and better inform decision-making for how to promote and achieve gender equality. Preliminary results indicated that of the 3,626 health worker records that had a sex variable, 64% of health workers were female and 36% were male. Analyzing the age distribution of the Cross River State health workforce and disaggregating the results by sex revealed an important aspect of the female and male health worker life cycles. Figure 17 shows the number of men and women in the health workforce by age category. The proportion of females to males is 3.7 to 1 in the 26-35 age

The Gender and HSS course learners from international nongovernmental organizations (INGOs) and government expressed how they planned to apply what they learned in their respective academic, programmatic, and clinical settings:

"I will use the knowledge acquired [from the course] to empower women in rural communities to raise their voice toward demanding reproductive health right[s]." *—Male INGO worker, Tanzania*

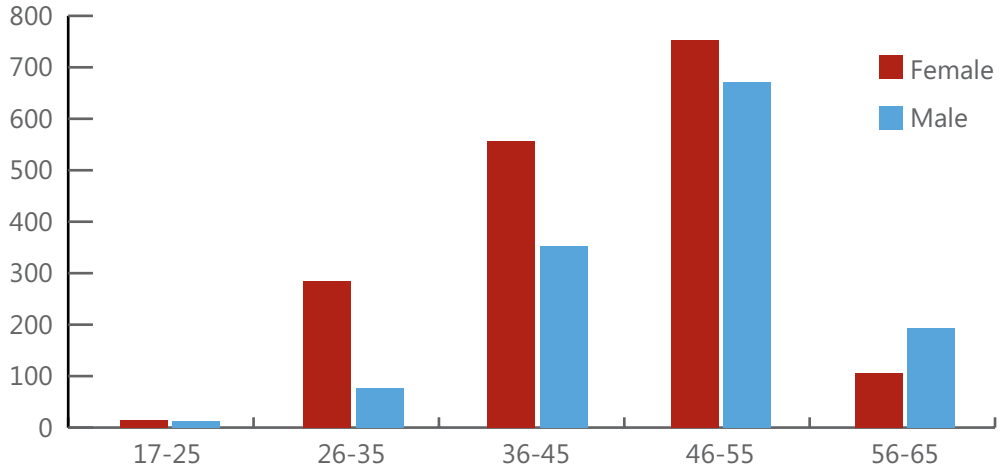
"I intend to advocate for gender equality in regards to health-related issues like signing consent for cesarean section, family planning, and even hospital-seeking services." *—Female INGO worker, Somalia*

"I will engage my colleagues in a conversation that addresses the issues of gender and reproductive health as they affect the victims of trafficking, so that [they] receive psychosocial supports from our shelter, and gender is streamlined in the policy." *—Female national government employee, Nigeria*

"[I will] undertake a retrospective analysis of reported data on activities based on sex disaggregation, and share the analysis with the project team." *—Male INGO worker, Burundi*

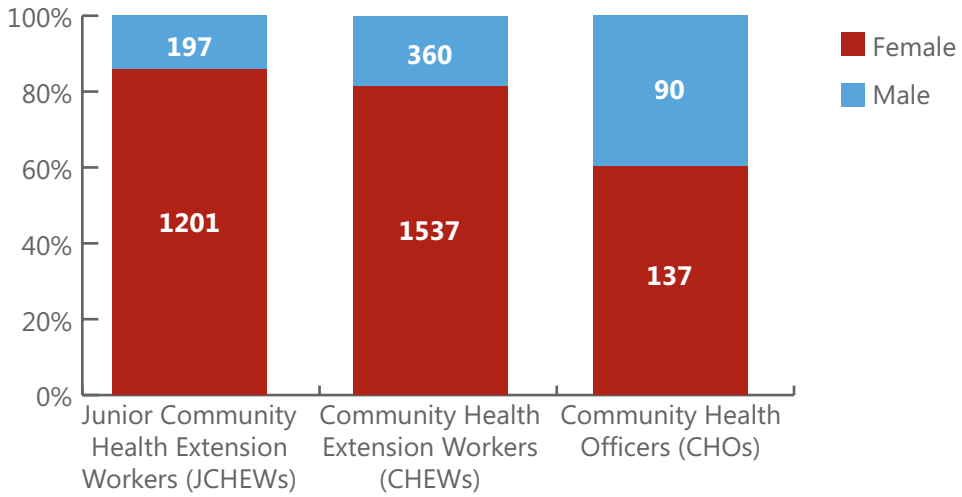
category, but 1.6:1 for health workers aged 36 to 45, and 1:1 for health workers aged 46 to 55. For those aged 56 to 65, this ratio is reversed, with almost twice as many male health workers (1.8) as females. This finding may imply that while many women start off their careers as health workers, there is attrition, with fewer women likely to remain in the profession until retirement. Alternatively, as these data represent only the current health workforce, this finding may imply that in recent decades there has been an influx of female health workers to the labor market, which would represent great potential in terms of achieving Nigeria's health goals.

Figure 17: Distribution of the Health Workforce in Cross River State, Nigeria by Sex and Age, 2015 (N=3,020)



An analysis of data from the Community Health Practitioners Registration Board of Nigeria showed the sex distribution of Cross River State's three types of community health practitioners. As displayed in Figure 18, from left to right in order of the amount of training time that is required, it can be noted that while all professions have a majority of female health workers, the community health officer position that requires the longest period of study and practica has the largest proportion of men, indicating that there may be challenges that women face to complete additional training within the community health practitioner profession.

Figure 18: Distribution of Community Health Practitioners in Cross River State, Nigeria by Sex and Title, 2015 (N=3,558)



Source: Community Health Practitioners Registration Board of Nigeria. Data as of July 15, 2015. National health workforce registry.

Gao Nursing School, Mali. Photo by Trevor Snapp for IntraHealth International

Improving Training on and Management of Sexual and Gender-Based Violence

Kenya: With approximately 160,000 children and youth living with HIV in Kenya and an estimated adult prevalence of 5.3%, the government is seeking to reduce HIV risk factors, including those associated with SGBV. At the request of the USAID Office of HIV/AIDS Gender Technical Working Group and in collaboration with the USAID FUNZOKenya project, Capacity*Plus* integrated PEPFAR's technical considerations for clinical management of children and adolescents who have experienced sexual violence into USAID's APHIA*Plus* service delivery project in Kamili zone. The projects worked with the MOH's Reproductive and Maternal Health Services Unit (RMHSU) to develop a new module focused on children and adolescents for the revised national curriculum on SGBV, including supplemental training and performance support materials. Sections in the module and wider curriculum address HIV counseling and testing (as well as pregnancy testing and counseling), plus post-exposure prophylaxis, referrals, and forensic examinations. The revised national SGBV curriculum (2015) seeks to advance the MOH's mandate to train health workers on management of survivors of sexual violence.

Additionally, a training needs assessment conducted before testing of the new children- and adolescents-focused module among trainers and providers identified shortages of key equipment (e.g., forensic kits), deficiencies in performance support mechanisms for staff, and the existence of inherent biases against adolescents by a number of providers. Findings from this assessment assisted the Ministry in incorporating health workers' attitudinal aspects into the curriculum as well as taking corrective actions to ensure that appropriate equipment to address SGBV exists in health facilities.

Mali: The armed conflict in northern Mali has displaced about 180,000 people; the United Nations' working group on violence found 2,383 cases of violence against women in 2012 and 3,330 in 2013 (UNFPA Mali 2015). In response to the crisis, in collaboration with USAID/Mali, Capacity*Plus* provided technical leadership to draft national health worker training materials in SGBV. National stakeholders from the Ministry of Health and Public Hygiene; Ministry for the Promotion of Women, Children, and the Family; Ministry of Solidarity, Humanitarian Affairs and Reconstruction in the North; health facilities; and NGOs validated and finalized training materials, including a reference manual, facilitator guide, and participant workbook and job aids. To further support victims of SGBV in Gao region, Capacity*Plus* supported local NGO *Groupe de Recherche d'Etude de Formation Femme-Action* (GREFFA) to conduct informational sessions on SGBV and identify victims of SGBV. In June 2015, the Ministry of Health and Public Hygiene, with technical and financial assistance from Capacity*Plus*, organized a national training of 18 trainers in case management of SGBV and targeted regional participants from the health direc-

Students at the School of Health Technology, Keffi, Nasarawa State, Nigeria. Photo by Uko Gabriel Chukwudi for IntraHealth International

torates and hospitals. In collaboration with the Gao Nursing School, the project also organized an orientation session on SGBV case management for 30 teachers and trainers. This intervention constitutes the first step in the introduction of these national curricula into preservice education institutions in Mali.

LESSONS LEARNED AND RECOMMENDATIONS

- The gender and health systems strengthening eLearning course proved an effective way to introduce a complex topic to a broad audience. Because gender discrimination and inequalities are context-specific, providing learners with case studies and examples is essential to illustrate gender dynamics. Additional course study groups could be offered—for example, in East and Southern Africa or among francophone countries—to create virtual communities of practice that can share experiences and support each other to promote gender equality.
- A functional, robust HRIS, such as the iHRIS-supported Cross River State health workforce registry, is key to monitor health workers longitudinally and promote sex-disaggregated analyses by cadre, location, and age to reveal where attention can be focused to address discrimination and promote equal opportunity. Similarly, student, graduate, and faculty tracking systems are important to identify where there may be gender challenges in health professional education systems.
- Gender advocacy action plans may need to differ from traditional development approaches. For example, many small "quick win" steps may need to be adapted as the strategy evolves. Further support is needed to develop compelling and timely data-driven gender advocacy messages, link them to specific "asks" to policy-makers, and hold policy-makers accountable for implementation.
- In countries with cultural and societal challenges to addressing SGBV (e.g., Mali) the rollout of SGBV curricula should be accompanied by community mobilization to include political leaders, traditional and religious leaders, health systems leaders, women's groups, youth groups, and a pool of health worker champions who are trained and identified as being supportive of SGBV victims and can motivate and inspire other health workers.

Highlights of PEPFAR-Specific Initiatives

In addition to other HIV-focused work, Capacity*Plus* supported a number of PEPFAR-specific initiatives, described throughout the Results and Lessons Learned section of this report and also summarized here.

HEALTH MANAGEMENT INFORMATION SYSTEMS (HMIS)

The project made HRH contributions to the global effort to create an Open Health Information Exchange (OpenHIE) that enables large-scale health information interoperability, including consistent health records for patients across multiple encounters in diverse locations. Capacity*Plus* developed a key component, the Health Worker Registry, piloted it in Rwanda, and generalized it for application in other countries with support from a global community of contributors (see page 31). Botswana, Namibia, Nigeria, Rwanda, and Zimbabwe are implementing registries; Capacity*Plus* provided direct technical assistance to local IT organizations in Rwanda and Nigeria for implementation and scale-up. Working with the global Health Worker Registry community, Capacity*Plus* developed a new profile of international standards for Care Services Discovery (CSD). The CSD profile provides standards for different eHealth and mHealth systems to exchange information through national registries to support sharing of information on providers, facilities, organizations, and resources. In addition, the project finalized an HRIS Assessment Framework and Business Case to encourage country diagnostics and further investment in health workforce information systems that support PEPFAR's HRIS-related indicators.

MEASUREMENT OF HEALTH WORKFORCE FOR HIV

Capacity*Plus* supported PEPFAR to better measure and improve the quality of its projected results under its global production of 140,000 new health workers indicator. This included developing a set of standard operating procedures and tools to facilitate reporting, targeting, and data review, and developing a dynamic pivot chart tool to compare projected country contributions against the high and low targets set for the country by PEPFAR. Through the PEPFAR M&E and HRH technical working groups, the project also:

- Supported use of national HRIS data to identify health workforce gaps and opportunities to scale up HIV service delivery, including creating a tool to help the PMTCT/Pediatric AIDS technical working group understand the potential supply of health workers available for pediatric HIV testing and treatment services in countries that are part of the Accelerating Children's HIV/AIDS Treatment (ACT) Initiative to be used toward achieving PEPFAR's goal of doubling the number of children on treatment in two years
- Developed a tool to identify the availability of the WHO HRH Minimum Data Set in national implementations of iHRIS (implemented in Liberia, Nigeria, and Uganda) to allow analysis of the data set across multiple countries.

MEDICAL EDUCATION PARTNERSHIP INITIATIVE (MEPI)

MEPI supports 13 medical schools in 12 African countries with the aims of increasing the capacity and quality of African medical education, improving retention of graduates, and promoting regionally relevant research through locally led programs. Capacity*Plus*'s support focused on collaborating with schools, the MEPI Coordinating Center, and MEPI technical working groups to accelerate progress in eLearning, community-based education, and graduate tracking. Key achievements included:

- Finalization and implementation of eLearning strategic plans by schools in ten countries. At some schools, eLearning has become incorporated into the standard infrastructure and approaches for instruction.
- Building capacity to evaluate and continuously improve community-based medical education (CBE) programs in seven countries, including producing a compendium of approaches

and tools for evaluating CBE programs and supporting 11 schools to systematically review their CBE programs.

- Testing, finalizing, and implementing MEPI Connect, an open source graduate tracking software system (based on iHRIS) at schools in nine countries. This included assisting each school to establish an implementation team and stakeholder leadership group, and conducting biweekly community calls to provide peer-to-peer technical and governance support for schools implementing the software.

NURSING EDUCATION PARTNERSHIP INITIATIVE (NEPI)

NEPI aims to strengthen nursing and midwifery education systems to increase access to quality health care in sub-Saharan Africa. Capacity*Plus*'s contributions to NEPI included:

- Conducting and disseminating the results of comprehensive capacity assessments of seven nursing and midwifery schools in the Democratic Republic of the Congo (DRC) and Ethiopia, along with costing studies of the nursing and midwifery programs at two colleges of health sciences in Ethiopia and two institutes of medical sciences in the DRC (using a costing study methodology and instruments that can be applied in other countries).
- Validating a competency framework for nursing and midwifery educators and assessing faculty development needs in South Africa's nursing schools and providing recommendations for developing a nursing and midwifery educator capacity-building program.

GENDER AND HIV

Capacity*Plus* applied its expertise to integrate PEPFAR's technical considerations for clinical management of children and adolescents who have experienced sexual violence into a revision of the national curriculum on GBV and an ongoing USAID service delivery program in Kenya (see page 55).

ORPHANS AND VULNERABLE CHILDREN (OVC)

Capacity*Plus* played a leadership role in launching the Global Social Service Workforce Alliance, which focuses on bringing more attention and support to the workforce responsible for the care and protection of children and other vulnerable populations. Capacity*Plus* also advanced social service workforce strengthening by coordinating a series of 19 webinars; conducting situational analyses of paraprofessional social work training programs in Ethiopia, Nigeria, and Tanzania; and developing a report on the composition of the social service workforce in sub-Saharan Africa (see pages 40-44).

PLANNING FOR HEALTH WORKER TRANSITION

This effort supported PEPFAR country teams and their local stakeholders to plan transition of health workforce support to national governments and other local entities. Along with USAID, Capacity*Plus* developed the Interactive Health Care Worker Transition Resource, launched in December 2013, which to date has been used by teams from at least 11 PEPFAR-supported countries.

Global Leadership and Knowledge Sharing

Capacity*Plus* played a leadership role in HRH advocacy, knowledge sharing, and strategy development through its strong collaborations with global alliances and multilateral, regional, and national organizations to advance the expansion and use of the HRH evidence base for decision-making and progress, and through its own knowledge management and communications platforms.

Driving and Supporting Global Momentum on HRH

With the Global Health Workforce Alliance (GHWA)—a partnership of national governments, civil society, international agencies, financing institutions, and others united to address the health workforce crisis—Capacity*Plus* contributed significantly to the design and implementation of the Second Global Forum on HRH (January 25–29, 2011, Bangkok, Thailand) and served on the organizing committee of the Third Global Forum on HRH (November 9–14, 2013, Recife, Brazil). With lead partner IntraHealth, the project guided development and implementation of one of the Third Forum's themes, Empowerment and Incentives: Harnessing Health Workers' Voice, Rights, and Responsibilities in Moving toward Universal Health Coverage. The forum resulted in 57 new country commitments for HRH intended to accelerate progress toward universal health coverage. Capacity*Plus* also worked with GHWA as core members of six out of eight working groups developing a post-2015 global HRH strategy.

Contributing to Global Coalitions and Technical Working Groups

The project contributed leadership and technical expertise to over a dozen global coalitions, working groups, and partnerships advocating and developing frameworks, guidance, and tools to support countries to strengthen key components of HRH systems. Capacity*Plus*'s technical input into these global efforts synergized with and informed the project's collaborations with country stakeholders to test and refine approaches in areas such as retention, preservice education, and health workforce information systems. Accomplishments included:

- Launch and growth of global coalitions supporting professionalization and strengthening of the social service and supply chain workforces: the Global Social Service Workforce Alliance and People that Deliver (see pages 40-44).
- Launch of the WHO's global policy recommendations on health worker retention in rural and remote areas, which contributed to Capacity*Plus*'s development of the Rapid Retention Survey Toolkit and (with the WHO) iHRIS Retain software for costing packages of retention interventions.
- Completion of the WHO's recommendations for optimizing health worker roles to improve access to key maternal and newborn health interventions through task shifting, with implications for improved birth spacing and FP integration with other health services. Capacity*Plus*'s role included technical inputs, contributing to the working

Regional Advocacy: African Parliamentarians Prioritize HRH as a Focus Area

Capacity*Plus* provided critical HRH expertise to the Africa office of Partners in Population and Development (PPD) to expand its ability to incorporate health workforce issues into its advocacy on family planning and reproductive health with African governments. As a result of this collaboration, in 2013 the steering committee of the Network of African Parliamentary Committees on Health (NEAPACOH), which includes members of parliament from almost every African country, declared HRH as one of its main areas of focus for the next two years. Technical support given by Capacity*Plus* and PPD directly influenced NEAPACOH's decision to emphasize HRH. Capacity*Plus* presented at three of NEAPACOH's meetings, focusing on: 1) the critical role of health workers in expanding access to FP services; 2) how FP use and child and maternal mortality rates vary in countries facing similar health workforce constraints, exploring reasons why some countries are doing better than others through more efficient use of available resources; and 3) cost-effectiveness of HRH and the role of HRH in the post-2015 era.

group's dissemination strategy for the recommendations, and coalition-building to encourage country implementation.

- Significant technical and financial contributions to the WHO guidance document on transforming and scaling up health professionals' education and training, and revision of the international standards for basic medical education.
- Finalization of the USAID-led in-service training framework and guidelines.
- Publication by the WHO, in collaboration with the World Bank, of How to Conduct a Discrete Choice Experiment for Health Workforce Recruitment and Retention in Remote and Rural Areas: A User Guide.
- Field-testing of the WHO country assessment tool on the sources and use of HRH data by the Health Workforce Information Reference Group (HIRG), enabling countries to better make evidence-based decisions in their efforts to strengthen the health workforce.
- Development of an eHealth strategy and regional health information systems policy for the Economic Community of West African States (ECOWAS), including core eHealth indicators.

Leadership in Knowledge Management and Dissemination

HRH Global Resource Center: Capacity*Plus* continued to support and expand the HRH Global Resource Center—the world's largest digital library on HRH launched under the Capacity Project. The Global Resource Center's collection includes nearly 5,000 resources on a wide range of topics, from community health workers to supply chain management. The site receives roughly 18,000 monthly visits from 198 countries and territories. A large portion of traffic originates in Africa, with Ethiopia, Kenya, Nigeria, South Africa, Tanzania, and Uganda falling within the top 15 locations for users. Uganda integrated the HRH Global Resource Center with its HRIS reports and Ministry of Health resources portal. The Global Resource Center includes 344 resources specific to FP and 494 on HIV/AIDS. Each FP resource averages more than 2,100 downloads while HIV/AIDS resources average nearly 4,000 downloads. Capacity*Plus* published seven eLearning courses through the HRH Global Resource Center, which have attracted more than 3,300 enrolled users from 135 countries; 590 eLearning certificates have been awarded.

Strategic Communications: The Capacity*Plus* website served as the primary vehicle for sharing project resources, accessed by more than 85,000 visitors from 211 countries and territories. To reach key audiences, the project also published a monthly eNewsletter—which reached 4,232 subscribers by 2015, an average 37% increase per year—and engaged in social media, with 4,568 followers on Twitter and 3,245 likes on Facebook (as of August 2015). Over 60 health workers from 12 countries participated in the project's advocacy communications video initiative, "I'm a Health Worker," to highlight how Capacity*Plus* placed the health worker at the center of its efforts to address global HRH challenges. The project also produced "That's Improvement!": Uganda Focuses on Health Workers, a short video and related stories about the country's efforts to strengthen FP and HIV/AIDS services with support from Capacity*Plus* and the USAID/Uganda-funded Uganda Capacity Program. Capacity*Plus* disseminated its results, lessons learned, and technical expertise through publishing and participation in conferences and other events. The project published 21 articles in peer-reviewed journals and 16 technical briefs (see Annex B) as well as blog posts and other content in over 50 external outlets. Project staff gave 135 external presentations, talks, and workshops, and participated in 68 conferences focused on HRH, family planning, HIV/AIDS, and specialized areas such as informatics and the social service and supply chain workforces.

Clinic worker in Tanzania. Photo by Trevor Snapp for IntraHealth International

Looking Ahead

Despite the progress made, in order for the goals of AIDS-Free Generation, EPCMD, and FP2020 to be achieved, millions more people will need access to competent, motivated health workers in their communities. Based on the experiences and lessons learned from implementation of Capacity*Plus*, the project offers several considerations for future action:

- A robust array of proven tools and approaches now exist to address the most important health workforce-related barriers to achieving global health goals. The main challenge now is to spur governments and their partners to act. National and regional advocacy is essential to encourage governments and their partners to operationalize their national HRH plans. Fortunately, new advocacy partners such as the African Platform for Universal Health Coverage and the Network of African Parliamentary Committees on Health are emerging alongside existing groups such as the Asia-Pacific Action Alliance on HRH. Further work is needed with such advocacy partners to develop evidence-based advocacy messages, build national and regional coalitions, and increase the capacity of their organizations and staff for HRH advocacy.

- To have enough health workers to meet global goals for improved health outcomes, the production of health workers will need to increase in most countries. In addition to applying the scale-up methodologies and tools developed by Capacity*Plus* and others, even greater cost efficiencies need to be developed so schools with limited budgets can train more workers. Some of these potential efficiencies include open copyright curricula and school blueprints. Every year, schools duplicate the work of other schools and spend millions of dollars developing curricula or blueprints for new facilities. Health professional schools can be assisted to save money and improve the quality of education by making available high-quality open copyright curricula for each major health worker cadre (physicians, nurses, midwives, pharmacists) and open copyright blueprints for designing cost-effective school buildings in low-resource settings.
- Most donor funding and much domestic government funding is still organized to support control of specific diseases. To increase investment in HRH, a global research agenda should be supported and promoted to generate evidence that convincingly demonstrates the links between health workforce investments and increased coverage and utilization and improved quality of services; better health outcomes related to HIV/AIDS, FP/RH, and MNCH; and the socioeconomic and gender equality benefits of such HRH investments.
- High rates of health worker absenteeism continue to reduce access to essential MNCH, FP, and HIV/AIDS services and must be addressed. Possible interventions include removing ghost workers from payrolls, introducing fingerprint timesheet systems (such as the low-cost system integrated with iHRIS in the Democratic Republic of the Congo), and empowering communities to report the presence or absence of health workers via mobile phone.
- Most national HRH units are insufficiently funded and staffed to properly meet health goals. In addition to greater investment in these units, the continued development of a cadre of professional national and subnational HR managers with the mindset, skills, and resources to be champions and supporters of motivated, high-performing health workers and high quality health care must be a priority.
- To maximize the productivity of every health worker, further investment is needed in the power and interoperability of open source information and communications technology solutions to address all aspects of health labor markets, including policy and planning; education, hiring, induction, and payment; in-service training; continuing professional development; and point-of-care decision-making and referral support.
- Gender-related challenges such as sexual harassment and discrimination drive many women out of the health market and reduce the productivity of others. The gender attitudes of health workers also directly affect patients and prevent many women from receiving the family planning, maternity, and HIV/AIDS services they need. Country-level efforts must be revitalized to advocate for safe, gender-equal, and enabling workplace and service delivery environments.
- Poor governance threatens both the achievement and the sustainability of country and global health goals. Even the most state-of-the-art clinic will cease to function in a few months unless health workers show up for work, drugs are delivered by supply chain workers, finances are managed by accountants, and leadership makes quality decisions. As health worker wages comprise, on average, 42% of Ministry of Health budgets, the health workforce can be an effective entry point for improving health sector governance.

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ANNEX A: Funding Overview

Funding Type	Total Obligation
I. Core	**$29,890,962**
GH/PRH/POP	$13,385,516
GH/OHA	$16,488,946
GH/HIDN	$16,500
I. Field Support	**$30,190,486**
Africa Bureau *FP/RH 292,000*	$292,000
Angola *HIV/AIDS 250,000*	$250,000
Botswana *HIV/AIDS 1,700,000*	$1,700,000
Democratic Republic of the Congo *HIV/AIDS 1,400,000*	$1,400,000
Dominican Republic *HIV/AIDS 2,811,519*	$2,811,519
Ghana *FP/RH 250,000*	$250,000
Haiti *HIV/AIDS 137,145*	$137,145
India *FP/RH 250,000; MCH 500,000*	$750,000
Kenya *HIV/AIDS 250,000*	$250,000
Latin America Bureau *HIV/AIDS 915,970*	$915,970
Liberia *MCH 50,000*	$50,000
Malawi *HIV/AIDS 900,000*	$900,000
Mali *FP/RH 2,500,000; MCH 2,170,000; Nutrition 100,000*	$4,520,000
Mozambique *HIV/AIDS 1,369,445*	$1,369,445
Namibia *HIV/AIDS 4,170,800*	$4,170,800
Nigeria *FP/RH 100,000; HIV/AIDS 10,003,530; MCH 100,000*	$10,203,530
Tanzania *HIV/AIDS 220,077*	$220,077
II. Total	**$60,081,448**

ANNEX B: Selected Capacity*Plus* Publications

JOURNAL ARTICLES

Being Mission Driven Is Not Enough: Improved Human Resources for Health Policies and their Effects on the Christian Health Association of Kenya
Journal of Public Health in Developing Countries, Publication Pending

Successful mLearning Pilot in Senegal: Delivering Family Planning Refresher Training Using Interactive Voice Response and SMS
Global Health: Science and Practice, June 2015

Evaluating Community-Based Medical Education Programmes in Africa: A Workshop Report
African Journal of Health Professions Education, May 2015

Identifying Approaches and Tools for Evaluating Community-Based Medical Education Programmes in Africa
African Journal of Health Professions Education, May 2015

Graduate Tracking Systems for the Medical Schools in Africa: Processes for Developing an Implementation Framework
Academic Medicine, August 2014

Community-Based Education Programs in Africa: Faculty Experience within the Medical Education Partnership Initiative (MEPI) Network
Academic Medicine, August 2014

Assessing the Relevance, Efficiency, and Sustainability of HIV/AIDS In-Service Training in Nigeria
Human Resources for Health, April 2014

Applying the Workload Indicators of Staffing Need (WISN) Method in Namibia: Challenges and Implications for Human Resources for Health Policy
Human Resources for Health, December 2013

Evaluation of Spaced Education as a Learning Methodology for In-Service Training of Health Workers in Ethiopia
Knowledge Management & E-Learning: An International Journal, October 2013

Net Costs of Health Worker Rural Incentive Packages: An Example from the Lao People's Democratic Republic
Medical Care, September 2013

Differences in Preferences for Rural Job Postings between Nursing Students and Practicing Nurses: Evidence from a Discrete Choice Experiment in Lao People's Democratic Republic
Human Resources for Health, May 2013

Community Health Workers for Universal Health Care Coverage: From Fragmentation to Synergy
Bulletin of the World Health Organization, March 2013

Early Implementation of WHO Recommendations for the Retention of Health Workers in Remote and Rural Areas
Bulletin of the World Health Organization, March 2013

Leveraging Information Technology to Bridge the Health Workforce Gap
Bulletin of the World Health Organization, March 2013

Measuring the Success of the HRH Global Resource Center
Knowledge Management for Development, September 2012

Increasing Community Health Worker Productivity and Effectiveness: A Review of the Influence of the Work Environment
Human Resources for Health, September 2012

JOURNAL ARTICLES (CONT.)

Preferences for Working in Rural Clinics among Trainee Health Professionals in Uganda: A Discrete Choice Experiment
BMC Health Services Research, July 2012

Workplace Violence and Gender Discrimination in Rwanda's Health Workforce: Increasing Safety and Gender Equality
Human Resources for Health, July 2011

Overcoming the Hurdle of Implementation: Putting Human Resources for Health Tools into Action
Revista Peruana de Medicina Experimental y Salud Pública, July 2011

Occupational Segregation, Gender Essentialism, and Male Primacy as Major Barriers to Equity in HIV/AIDS Caregiving: Findings from Lesotho
International Journal for Equity in Health, June 2011

Retaining Hospital Workers: A Rapid Methodology to Determine Incentive Packages
World Hospitals and Health Services, December 2010

TECHNICAL BRIEFS

Partnering with African Faith-Based Organizations for a Strong Health Workforce
October 2014 (#16)

Using Evidence for Human Resources for Health Decision-Making: An Example from Uganda on Health Workforce Recruitment and Retention
September 2014 (#15)

Health Professional School Leadership and Health Sector Reform, Performance, and Practice
September 2014 (#14)

Establishing and Using Data Standards in Health Workforce Information Systems
May 2014 (#13)

Applying the HRH Action Framework to Develop Sustainable Excellence in the Health Supply Chain Workforce
October 2013 (#12)

Exploring Contraceptive Use Differentials in Sub-Saharan Africa through a Health Workforce Lens
June 2013 (#11)

Health Informatics Education and Training Programs: Important Factors to Consider
May 2013 (#10)

Scaling Up Health Worker Production: The Bottlenecks and Best Buys Approach
February 2013 (#9)

Innovative Financing Options for the Preservice Education of Health Professionals
February 2013 (#8)

Strengthening the Health Worker Pipeline through Gender-Transformative Strategies
December 2012 (#7)

Keeping Up to Date: Continuing Professional Development for Health Workers in Developing Countries
September 2012 (#6)

Integrating Family Planning and HIV/AIDS Services: Health Workforce Considerations
September 2012 (#5)

Ensuring a Positive Practice Environment: Occupational Safety and Health for Health Worker Productivity
August 2012 (#4)

Holding Health Workers Accountable: Governance Approaches to Reducing Absenteeism
May 2012 (#3)

West Africa's Regional Approach to Strengthening Health Workforce Information
April 2012 (#2)

Population Growth and the Global Health Workforce Crisis
November 2011 (#1)

*Health worker in Dokolo, Uganda. Photo by Carol Bales for Capacity*Plus *and IntraHealth International*

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