



REALIZING RWANDA'S VISION FOR HEALTH: Accessible, Accountable, Affordable, and Reliable Health Systems

REPUBLIC OF RWANDA



MINISTRY OF HEALTH



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Realizing Rwanda's Vision for Health: Accessible, Accountable, Affordable, and Reliable Health Systems

RWANDA HEALTH SYSTEMS STRENGTHENING
(RHSS) PROJECT, 2014-2019

This report is made possible by the support of the American people through the United States Agency for International Development (USAID). The contents of this report are the sole responsibility of Management Sciences for Health (MSH) and do not necessarily reflect the views of USAID or the United States Government.

The Rwanda Health Systems Strengthening (RHSS) Project (2014-2019) represents the US Agency for International Development's (USAID) continued commitment to supporting Rwanda on its journey to sustainable improvements in the health of its 12 million people. The overall goal of the RHSS Project is to improve population health outcomes by strengthening the performance of the health system at the national and decentralized levels and increasing the resilience of the health sector to respond to new health challenges, such as decreasing outside funding to the health sector or the recurrent emergence of Ebola in the sub-region. Implemented by Management Sciences for Health (MSH) and its partners, the project supports implementation of Rwanda's Health Sector Strategic Plans and contributes to Rwanda's Vision 2020 for a health system that guarantees universal and equitable access to quality health care for all people in Rwanda.

The RHSS Project is implemented in partnership with Banyan Global, Jembi Health Systems, Tulane University School of Public Health and Tropical Medicine, and the University of Rwanda School of Public Health.

Front & back cover photos: Todd Shapera





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ACRONYMS

BPR	<i>Banque Populaire du Rwanda</i>
CBHI	Community-Based Health Insurance
CHW	community health worker
DHMT	district health management team
DCA	Development Credit Authority
eIDSR	electronic infectious disease surveillance and response system
ESR	epidemic surveillance and response
HSS-MAG	Health Sector Staff Mutual Assistance Group
IHSSP	Integrated Health Systems Strengthening Project
LDP	Leadership Development Program
M&E	monitoring and evaluation
MOH	Ministry of Health
MPC	medical procedure coding
MSH	Management Sciences for Health
PBF	performance-based financing
QOC	quality of care
RBC	Rwanda Biomedical Center
RHSS	Rwanda Health Systems Strengthening Project
R-HMIS	Rwanda Health Management Information System
RSSB	Rwanda Social Security Board
WHO	World Health Organization
WISN	workload indicators of staffing need



THEN

NOW

2016	12	Number of districts with fully functional District Health Management Teams	24	2018
2014	76%	Population covered by Community-Based Health Insurance (CBHI)	83%	2018
2014	0%	CBHI structures fully implementing the Mutuelle Membership Management System, 3MS	100%	2019
2014	1.02	Primary health care utilization rate (annual outpatient department visits per capita)	1.36	2018
2014	5	Number of hospitals applying standards for quality improvement	43	2019
2014	4	Hospitals that have achieved accreditation Level I or above, from a total of 43	25	2018
2014	48%	Public hospitals and districts with dynamic data dashboards for key indicators in DHIS-2	89%	2019
2014	55%	Percent of facilities with data accuracy within $\pm 5\%$	83%	2018
2014	73%	Percent of facilities with data use score greater than 80%	88%	2018

EXECUTIVE SUMMARY

Over the past two decades, Rwanda has realized impressive declines in preventable child and maternal mortality, serving as an example of what is possible through committed, collective action. Between 2000 and 2015, the country achieved the highest average annual reduction in both the under-five mortality rate and the maternal mortality ratio in the world.¹ Underpinning this progress is a series of ambitious health system reforms designed to move resources and decision making closer to the communities where health services are provided. Rwanda decentralized its health system—the national level is responsible for setting standards and monitoring performance, whereas the provinces, districts, and health facilities provide equitable, responsive, and quality services to the communities they serve.

The \$25 million, five-year (2014-2019) RHSS Project, led by Management Sciences for Health (MSH), advanced the US Government's commitment to inclusive growth, results and accountability, and resilience and partnership along Rwanda's journey to self-reliance. The RHSS Project collaborated closely with the Ministry of Health (MOH), local partners, and health system leaders and managers to strengthen capacity through extensive technical support across five strategic areas: effective leadership and governance, sustainable health financing and private sector engagement, improved quality of care (QOC), evidence-based decision making, and a mobilized, skilled workforce. The RHSS Project built on the work initiated during USAID's Integrated Health Systems Strengthening Project (IHSSP; 2009-2014).

EFFECTIVE LEADERSHIP AND GOVERNANCE

The RHSS Project identified and addressed barriers to effective, decentralized decision making and implementation of policies, as well as gaps in institutional and individual capacities. Better health system performance was achieved at district level through inspired and inspiring leadership; sound management; and consistent, transparent governance. Rational systems and processes support effective, transparent work planning and resource allocation. Managers at every level employ skills to motivate staff, improve service quality, and correctly implement interventions that are proven to work.

SUSTAINABLE HEALTH FINANCING AND PRIVATE SECTOR ENGAGEMENT

The RHSS Project promoted availability of comprehensive, effective financial management systems at facility levels and within community health worker (CHW) cooperatives. The

¹ <http://minaloc.gov.rw/index.php?id=337>

project was essential in fostering relationships between public and private sector partners and developing appropriate facility income-generating models to increase domestic resources for health. RHSS supported the effective use of USAID's Development Credit Authority, helping to mobilize domestic financing for health care and increase access to specialized services. Through analyses of the true cost of facility-based care, the project built the evidence base to set service fees that can sustain health facilities and enhance sustainability of the Rwandan Community-Based Health Insurance (CBHI) program.

QUALITY IMPROVEMENT

Rwanda's country-led hospital accreditation system has driven impressive improvement in QOC. Initiated in 2014 in five hospitals under IHSSP, RHSS has contributed to scaling up use of quality standards to all of Rwanda's 43 public hospitals at both provincial and district levels and supported development and dissemination of primary health care standards for the country's 502 health centers.

EVIDENCE-BASED DECISION MAKING

Harmonized data collection systems have enabled sound decision making and advanced the effective use of evidence across Rwanda's health system. The RHSS Project leveraged digital health platforms for e-learning and helped institutionalize innovative monitoring and evaluation (M&E) tools and platforms that have improved data quality and use at central and decentralized levels to inform policies and programs, automate processes, and improve resilience. The RHSS Project supported operational research at district level, expanding local capacity for research and managing research grants. The project also helped establish a strong surveillance system to detect and respond to emerging disease threats.

MOBILIZED SKILLED WORKFORCE

Using evidence-based planning tools and analyzing health workforce turnover, the RHSS Project promoted the implementation of strategies to recruit and retain a skilled and motivated health workforce. Thanks to the MOH and the RHSS Project, all public district hospitals in Rwanda are calculating adequate staffing levels to ensure quality care and better meet the health needs of populations in their catchment areas. Through the special Health Sector Staff Mutual Assistance Group (HSS-MAG) Initiative, staff in all public facilities have access to a new savings and loan scheme that provides access to credit at very low interest rates, incentivizing them to remain public health sector employees.

LEADERSHIP AND GOVERNANCE

After almost two decades of progressively taking on responsibilities for the health sector, district leaders are demonstrating stronger ownership of health initiatives.

Assuming their new roles as operational decision makers for their local health systems, district health units and district health management teams (DHMTs) are functioning more strategically and efficiently than ever before.

With technical support from the RHSS Project, each of the country's 30 districts have updated their district health strategy plans and annual integrated health action plans—both of which are informed by data from the Rwanda Health Management Information System (R-HMIS) and other information systems. These district plans incorporate important national strategies and frameworks, including the Fourth Health Sector Strategic Plan (2018-2024) to which the RHSS Project contributed technical guidance.

Each year, the RHSS Project assessed the levels of functionality of all district health units and management teams, based on a review of staff, training, infrastructure, equipment, policies, and their fulfillment of key functions, such as planning and M&E, coordination, supervision, health promotion, and hygiene and sanitation.

By 2018, 24 of the 30 districts achieved scores exceeding the satisfactory functionality score of 75%, an improvement from 2016 and 2017 when only 12 and 19 districts, respectively, achieved scores above 75%.



SUSTAINABLE HEALTH FINANCING AND PRIVATE SECTOR ENGAGEMENT

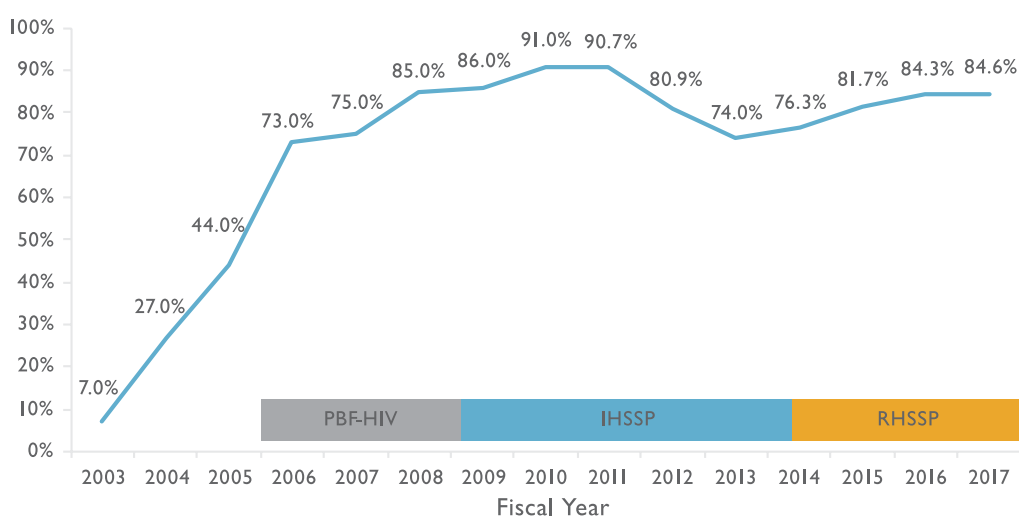
COMMUNITY-BASED HEALTH INSURANCE

Following a public awareness campaign, by 2018 nearly 85% of Rwandans were covered by affordable community-based health insurance.

CBHI, or *Mutuelle de Santé*, ensures access to affordable public health services, promotes a culture of prevention, and reduces out-of-pocket payments when people receive health services. Premiums are based on income; and the lowest income families receive coverage fully subsidized by the government.

When enrollment rates decreased from an all-time high of 90.7% in 2011/2012 to 76% in FY 2014/2015, following the transition of CBHI's management from the MOH to the Rwanda Social Security Board [RSSB] and the introduction of graduated premiums, the RHSS Project, among other actions, launched a high-profile, celebrity-powered awareness campaign to promote CBHI re-enrollment. The campaign emphasized the importance of preventive health care and continued financial protection from unexpected health care costs. As a result, CBHI enrollment recovered to 84.6% in FY 2017/2018 (Figure 1).

Figure 1: Community-based health insurance: Coverage rate between 2009-2017



Note: The USAID Performance-based Financing-HIV (PBF-HIV) Project was implemented by MSH between 2005-2009.



“We are farmers, but we can afford to pay the required 3000 Rwandan francs per year because we know that Mutuelle de Santé allows us to access health care, even in situations where we don’t have enough money for some services.”

—Raissa Iradukunda

Photo: Irene V. Nambii/ MSH

Since 2012, the average number of times a person visits a health facility for outpatient care has steadily increased, from 0.79 times per year to 1.36 times in 2018. This increase in visits to health facilities—combined with the increasing coverage of CBHI—suggests that barriers to accessing care are decreasing.

The RHSS Project helped facilitate a smooth transition to RSSB by supporting automated membership management and strengthening M&E and evaluation of program performance. With automated membership management, CBHI members can easily pay their premiums through mobile phone applications, and service providers can quickly confirm clients’ eligibility.

To move away from unwieldy Excel performance reports from nearly 500 CBHI offices and strengthen data quality and analyses, the RHSS Project developed a fully functional, web-based M&E system, built on Rwanda’s health reporting system, DHIS 2.

With higher quality, real-time information, the RSSB can more effectively prioritize the coverage of high-impact interventions and financial protection for women and children, while engaging private sector health providers to offer more choices in health care.

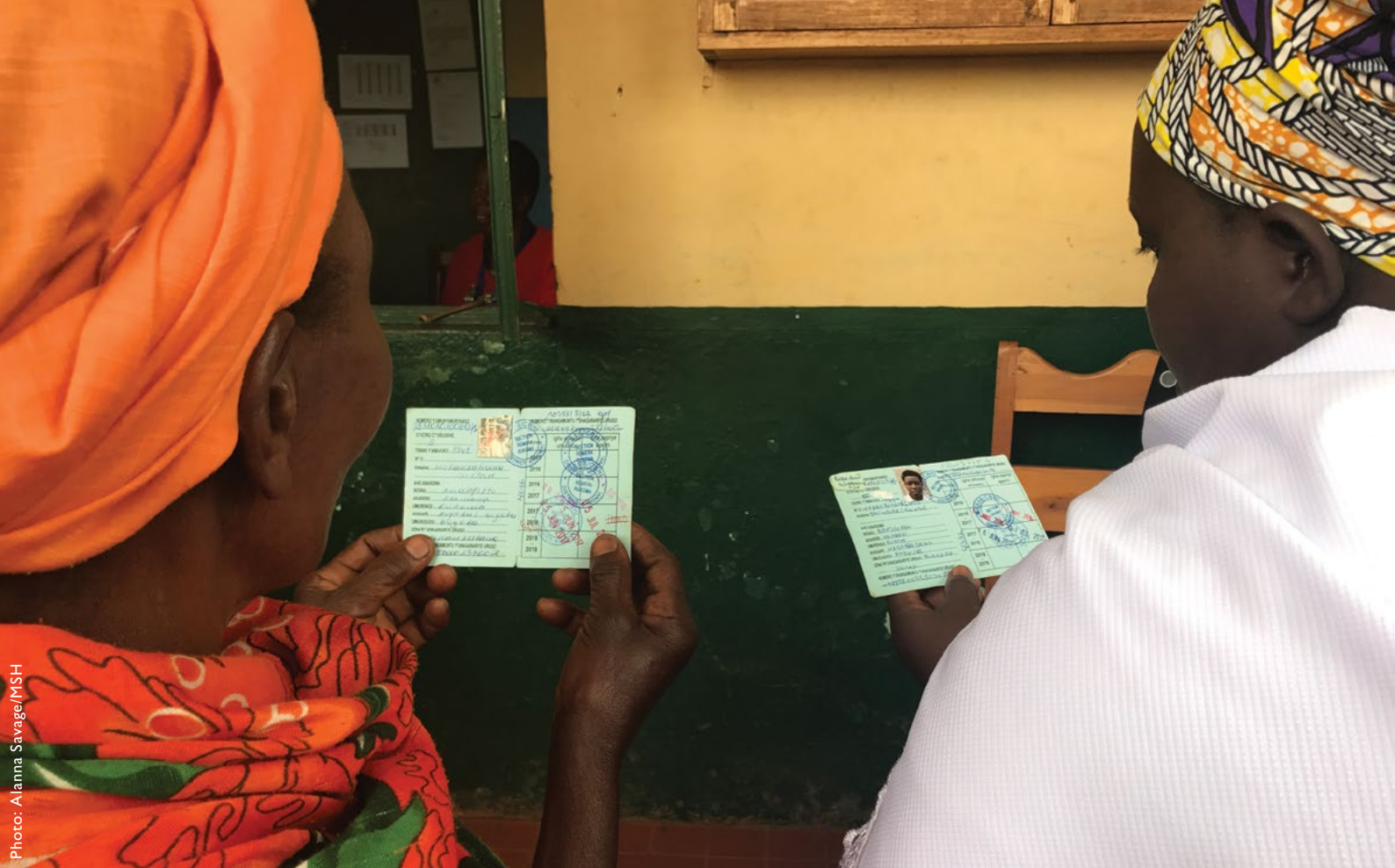


Photo: Alanna Savage/MSH

FINANCING THE PRIVATE HEALTH SECTOR

The RHSS Project supported the effective use of USAID’s Development Credit Authority (DCA), establishing risk-sharing agreements with the *Banque Populaire du Rwanda* (BPR) and mobilizing local private capital for health.

In Rwanda, financial institutions have been reluctant to lend to health care businesses because of their perceived high risk and concerns about collateral. Moreover, financial institutions have little experience in providing tailored financing solutions to the health sector. These limitations, in practice, mean that the private sector struggles to add and expand services and make quality improvements.

In 2016, USAID/Rwanda structured a DCA portfolio guarantee with BPR. The DCA guarantee shares risk with the bank, incentivizing it to lend to the private health and water treatment, purification, and sanitation sectors and to new borrowers.

By 2017, the RHSS Project had trained BPR’s credit and risk management staff in administering the guarantee and BPR was lending to the health sector. A total of \$820,000 in loans were guaranteed by USAID’s DCA, money that has been used to upgrade private health facilities and expand access to quality care.

DEFINED HEALTH SERVICE PACKAGES FOR ALL FACILITIES

Updated and new packages of care for public and private health facilities support the allocation of resources across the health system and provide a clear guide to facilities on which services they provide and which they should refer to higher-level facilities.

The MOH, in collaboration with RHSS, reviewed and updated service packages for public health facilities and developed new service packages for private health facilities at all levels, based on community needs. Referring to standardized service packages, health leaders and managers can now determine the distribution of funding, human resources, supplies, and equipment among health facilities for effective delivery and efficient patient referrals to higher-level facilities.

UNIFORM MEDICAL PROCEDURE CODING SYSTEM

Health providers and insurance agencies can now use a uniform medical nomenclature and coding system to more efficiently issue requests for payment and process medical claims.

DCA GUARANTEE BOOSTS FINANCING FOR HEALTH

“We asked ourselves, ‘How can we use our skills to contribute to the well being of Rwandans for years to come?’”

—Jean Baptiste Impamugamahanga

Jean Baptiste Impamugamahanga and his team at Medical Business Company (MBC), a private health care business in Rwanda, began a savings fund with the goal of opening a full-service hospital in the center of Kigali. With backing from USAID’s DCA, MBC was approved for a loan of over \$180,000 from the BPR. Paired with their own equity investment from savings, they were able to establish a new hospital with 70 beds and 62 staff, including specialists in gynecology, pediatrics, dentistry, and surgery.

As part of the initiative to standardize the types and quality of services Rwandan health facilities deliver, the RHSS Project worked with the MOH to harmonize medical procedure nomenclature and codes with international standards. This laid the foundation for many important reforms within the health sector, including widespread implementation of electronic medical record systems, interoperability between providers' billing and health insurance claim systems, and establishment of set service fees.

The Rwanda medical procedure coding (MPC) system is a hybrid of several coding systems, but it is based largely on the Australian medical benefit scheme's (MBS) codes—the most comprehensive, best aligned, and cost-effective system assessed by the team. Where the MBS lacked codes for certain procedures, the team incorporated codes from other systems or assigned locally defined codes.

TRUE COST OF HEALTH SERVICES

The Government of Rwanda has standardized public and private health service fees, thanks to the RHSS Project's analyses of the true cost of facility-based care.

The RHSS Project, together with MOH staff, carried out costing studies to determine the cost of health service packages at public and private sector facilities, as well as packages of care delivered by CHWs. The MOH used the data from these studies to better plan for health sector costs and to set service fees for all public and private health sector institutions.²

COMMUNITY HEALTH WORKER COOPERATIVES

With assistance from the RHSS Project, 475 business cooperatives have been established and strengthened—engaging nearly 60,000 CHWs in income generating activities so they can improve their livelihood while bringing essential health care and information to the communities they serve.

Cooperatives that operate businesses, such as pig farming, poultry, agriculture, and rental properties—provide financial support to volunteer CHWs so they can continue to provide health education, referrals, and preventive and curative health and social services to their communities.

² Private sector medical tariffs, Republic of Rwanda MoH, Dec 2016: <http://moh.gov.rw/index.php?id=516>



SUSTAINING COMMUNITY HEALTH WORKERS THROUGH ECONOMIC EMPOWERMENT

CHWs Virginia Mukantazinda and Edith Mukaneza are not solely volunteers providing crucial health services, they are also entrepreneurs.

Thanks to Rwanda's performance-based financing (PBF) program, Virginia, Edith, and 102 other members of a CHW cooperative in the Southern Province of Rwanda, opened a savings account. Next, they combined these savings with 14 other CHW cooperatives in Huye district to create a union known as "Agira Gitereka" (House of Milk). Together they built a milk processing facility worth over 100 million Rwandan francs, with milk curdling machines that are used to make cheese.

"The income we generated from our cooperatives, we invested it in other business; our lifestyle has improved, and we gain a lot from collaborating with other CHWs, especially when it comes to new ideas, whether in community health services or financial gains," explains Virginia.

QUALITY IMPROVEMENT

STANDARDS-DRIVEN ACCREDITATION PROGRAM

Initially implemented in 5 hospitals, Rwanda's public health system is institutionalizing standards for quality care in the country's 43 provincial and district hospitals and 502 primary health centers.

Established in 2013 with support from the RHSS Project, Rwanda's national health care accreditation program defines expectations of quality care across all of its public health facilities and requires periodic self-assessments and independent compliance surveys to inform continuous quality improvements. By working toward and achieving accreditation, health facilities indicate to the MOH and the general public that they deliver health care of a certain measurable quality, thereby protecting their clients from health risks and establishing a favorable reputation that would attract new and returning clients.

“As a clinician, I understand the risk areas involved in this profession. Accreditation is a process that promotes the delivery of quality health care services because it gives health workers a good indication of the kind of services they offer and in which areas they must improve.”

—Dr. Justin Bayisenga, Surgeon and Certified Accreditation Surveyor



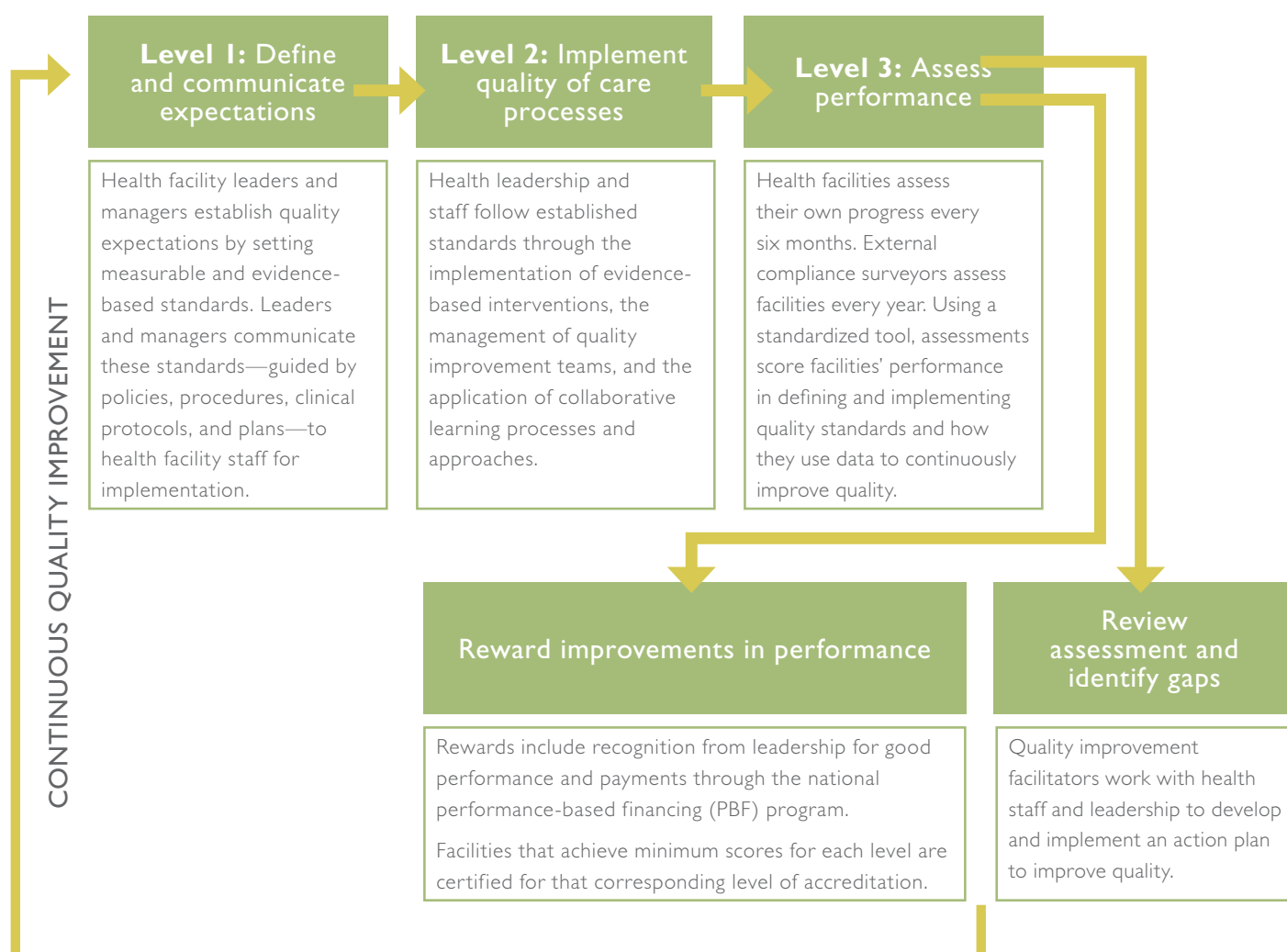
Photo: Irene V. Nambir/MSH

Based on international standards developed by the Joint Commission International, Rwanda's accreditation program is organized according to key risk areas, (Figure 2) which guide hospitals in establishing expectations for quality of services and strategies to reduce risk.

Each health facility works toward achieving three progressive levels of accreditation:

- » **Level 1:** Definition and communication of quality standards through policies, procedures, and protocols;
- » **Level 2:** Implementation of quality standards; and
- » **Level 3:** Measurement of compliance to standards and continuous quality improvement, based on periodic assessments.

Figure 2: Accreditation process



Every six months, hospitals assess their own progress toward the quality standards, while an external team of trained and certified accreditation surveyors conduct an annual assessment using software developed by the RHSS Project on a tablet or smartphone (Figure 3). After each assessment, surveyors present the results to hospital personnel, detailing their findings for each risk area and agreeing on a plan to improve performance.

Since beginning the program, hospitals have been progressively performing better on their accreditation assessments and achieving higher standards of care.

The program's success is contingent on two types of incentives for health workers: recognition from leaders and payments for good performance. The integration of Rwanda's PBF and accreditation programs contributed to hospitals' notable acceleration in Level 1 achievement, from 6 hospitals in 2017 to 25 hospitals in 2018, as indicated in Figure 4.

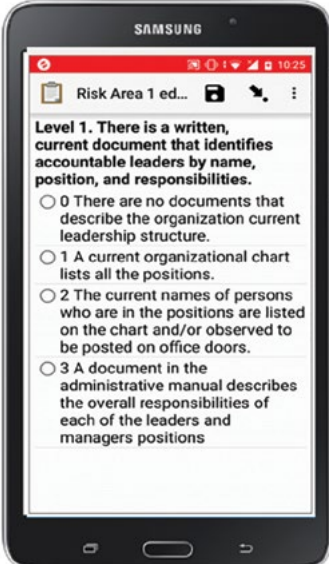
Figure 3: Example of standard and rubric as seen on smartphones thanks to software designed with support from the RHSS Project

STANDARD #11 Reduction of health care-associated infections

The hospital has an active program to reduce the risks of health care associated infections.

RISK LINK
Infections contribute to increased length of stay, cost, morbidity, and mortality. Patients with vascular and urinary catheters, intubated patients, and post surgical patients are at particular risk developing an infection.

LEVELS OF EFFORT
Level 0: A systematic approach to infection prevention and control is not in place.
Level 1: An infection prevention and control plan with measurable quality goals is in place that guides the implementation of the program.
Level 2: Risks of health care associated infections are identified for patients, staff, and visitors and measures taken to reduce the risks.
Level 3: The infection prevention and control program is evaluated for effectiveness in reducing the incidence of health care associated infections, through monitoring infection rates.



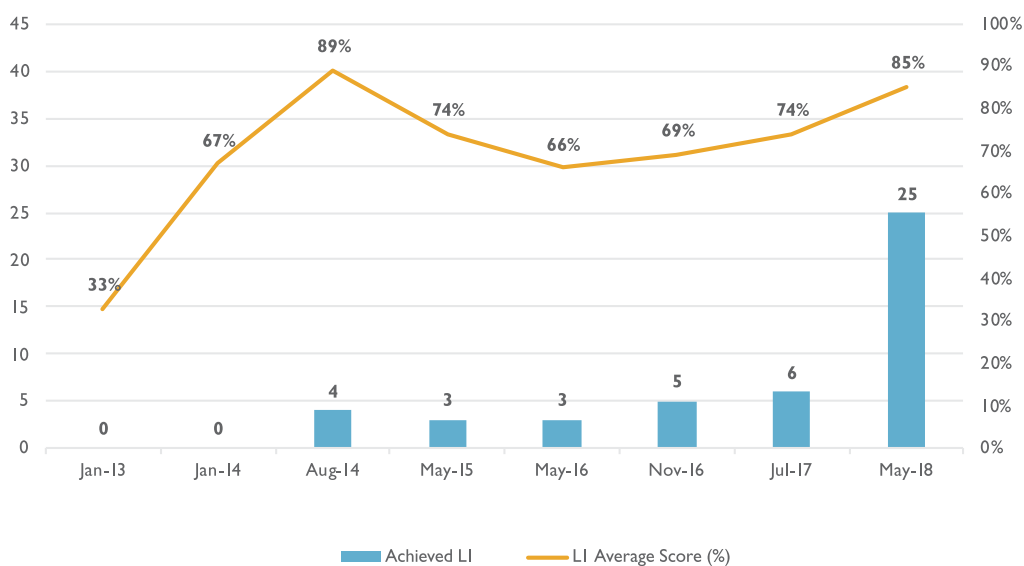
The smartphone screen displays the following content:

- Level 1. There is a written, current document that identifies accountable leaders by name, position, and responsibilities.**
- 0 There are no documents that describe the organization current leadership structure.
- 1 A current organizational chart lists all the positions.
- 2 The current names of persons who are in the positions are listed on the chart and/or observed to be posted on office doors.
- 3 A document in the administrative manual describes the overall responsibilities of each of the leaders and managers positions



Following the success of the hospital accreditation program, in 2018, the MOH and RHSS disseminated the first iteration of primary health care standards to 502 public health centers. District hospitals will then supervise and provide technical support to their affiliated health centers using these standards.

Figure 4: Level I achievement and average scores for all hospitals





MAKING C-SECTIONS SAFER

“Because of the accreditation program, I work with an objective and not just out of routine as I did before. I always ask myself, What can I do to contribute to the quality of care at Bushenge? If there is an infection risk, I ask myself, What can I do to help?”

—Noëlla Benemariya,
Environmental Health Officer at Bushenge Hospital

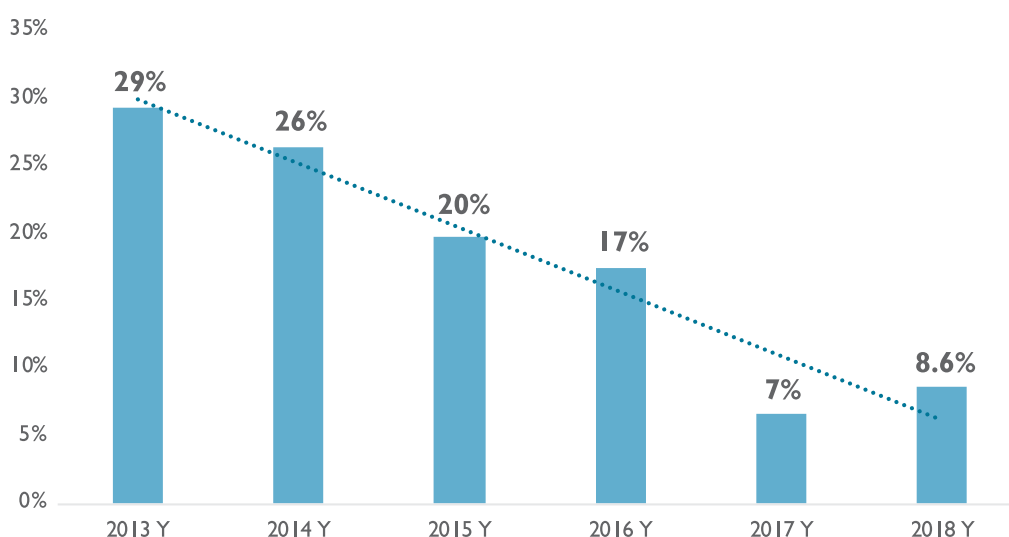
By addressing key areas for risk reduction, the accreditation program promotes simple, cost-effective quality improvement techniques that create a safer environment and ultimately reduce the number of women developing infections after Cesarean delivery. After five years of implementing these quality standards, Bushenge Hospital reduced the rate of post-Cesarean infections from 8% in 2014 to less than 1% in 2019.

To ensure sustainability of the program, the Rwandan government is working to establish an independent accreditation institution to lead the program and oversee objective performance assessments. A big step forward in this process was the contracting out of the most recent round of hospital surveys to an independent, national nonprofit organization.

Adhering to lifesaving quality standards has contributed to real health outcomes for women and newborns.

For example, implementation of quality newborn care standards helped Kibungo Referral Hospital reduce the rate of newborn asphyxia from 29% in 2013 to less than 9% in 2018 (Figure 5).

Figure 5: Neonatal asphyxia trends



Performance assessment results have revealed that the hospitals where leadership owns the accreditation program have performed consistently well. For instance, the director of Kibungo Referral Hospital closely oversees quality improvement in the hospital. Kibungo is the only hospital to have achieved Level 3, and it continues to consistently provide among the highest levels of quality care across all public hospitals in the country.

After participating in an experiential leadership program, two hospitals achieved their respective targets in decreasing patient waiting times, increasing women’s attendance at antenatal and postnatal care visits, reducing neonatal asphyxia, and improving patient-centered care, among other outcomes.

Participating in MSH's Leadership Development Program Plus (LDP+), which provides health care teams with tools and skills to improve leadership and management systems and address workplace challenges, health staff and managers from these hospitals formed "improvement teams" to master leadership and management skills, practice cohesive communication, address priority challenges, overcome obstacles, and achieve measurable results toward a shared vision.

Between March and October 2018, seven of the eight improvement teams achieved their targets of 75% achievement, and three exceeded 100% achievement (Table 1).

Table 1: Results observed following participation in leadership development program, Masaka and Kibagabaga hospitals, 2018

MASAKA HOSPITAL				
Improvement team	Measurable result	Baseline May 2018	October 2018	% of Achievement
Maternity team I	To increase the percentage of women receiving postnatal care services in Masaka catchment population from 52.8% to 80%	52%	98%	>100%
Laboratory	To increase the percentage of patients who receive their results within the recommended turnaround time from 48% to 70%	48%	73%	>100%
KIBAGABAGA HOSPITAL				
Maternity team I	To reduce the number of women contracting surgical-site infections within 30 days post C-section from 2.6% to 1.5% from May to November 2018	2.60%	0	>100%



MATERNITY TEAM TAKES THE LEAD ON REDUCING NEONATAL MORTALITY

Reducing asphyxia, one of the largest causes of death among newborns during childbirth, was recognized as a key priority as the Kibagabaga maternity team began the Leadership Development Program Plus (LDP+). The RHSS Project collaborated with the Ministry of Health to launch the Leadership, Development Program Plus (LDP+) course in Kibagabaga and Masaka hospitals to strengthen the leadership, management, and technical skills of health workers in their roles as health managers and providers.

Together, they set clear targets and action steps to achieve their desired result, for example, reinforcing verbal communication between midwives and the surgical team to assist in timely decision-making, closely monitoring mother's and baby's vital signs during labor, auditing asphyxia cases, and acknowledging successes and lessons during hospital staff meetings.

With the support of hospital leadership and each team member's commitment, the team reduced the neonatal asphyxia rate from 5.4% to 3.6%. "Now the hospital staff take the lead and responsibility of managing and addressing challenges that come up and motivate others where necessary," says Dr. Avite Mutaganzwa, Director General of Kibagabaga Hospital.

EVIDENCE-BASED DECISION MAKING

HEALTH INFORMATION SYSTEMS AND DATA

To facilitate evidence-based decision making, more health management institutions and facilities are using M&E tools and platforms to capture, analyze, and report better quality health data.

The MOH and the RHSS Project institutionalized M&E tools and platforms—including the knowledge management platform, geographical information systems, modules, and user dashboards in the HMIS—to improve data use and quality at central and decentralized levels.

The availability and use of harmonized information systems across health facilities, coupled with capacity building, resulted in improved data quality, collection and use. Data use scores improved from 68% in 2011 to 88% in 2017. Data quality at health facilities is also improving; overall discrepancies in data did not exceed 5% for 83% of all facilities, compared to 55% of facilities in 2014.

Table 2: Information systems supported by the RHSS Project

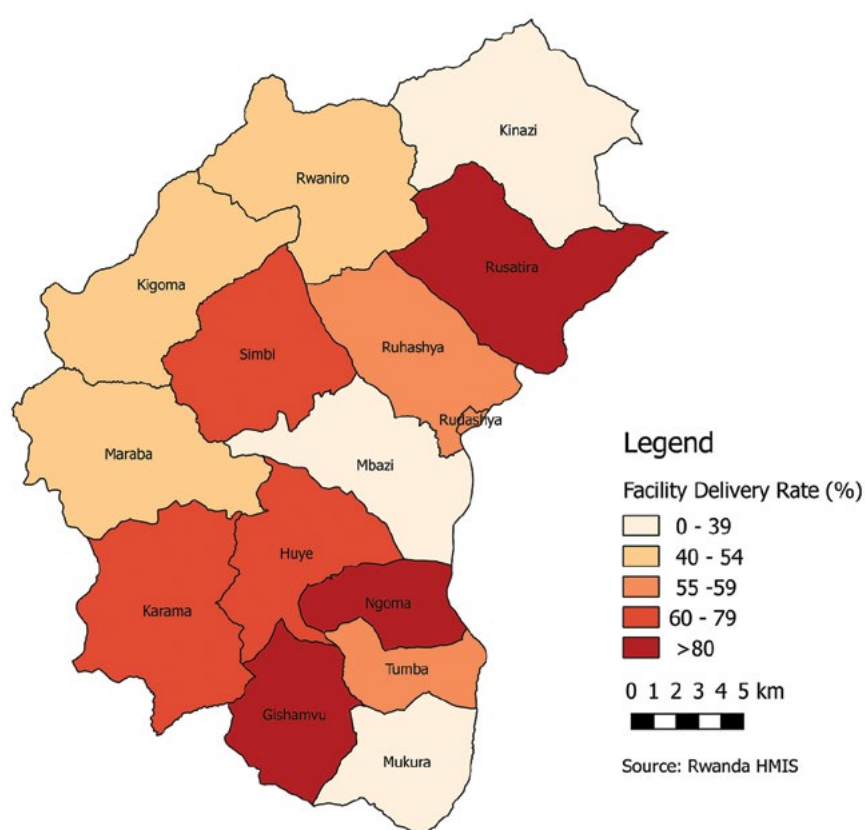
SYSTEM	FUNCTION
R-HMIS	Routine reporting of most health data from public and private health facilities
eTB	National case-based surveillance of tuberculosis (TB) patients that tracks each patient and every contact with health providers
eIDSR	Weekly aggregate and immediate case-based epidemic disease surveillance reported by all health facilities that detects different types of outbreaks and automatically alerts health authorities; also includes lab testing data and has a contact tracing module for outbreak investigation
CBHI M&E	Collects key performance indicators monthly from all CBHI branch and health facility (section) offices; also includes an invoice tracker that helps monitor bottlenecks in medical claims processing
Health data warehouse	A one-stop shop for health sector key performance indicators; developed to automatically synchronize data from multiple data sources and display thematic dashboards, such as family planning, deliveries, antenatal care, disease morbidity, and financial management
PBF system	System that collects data on selected service outputs and quality assessment scores from all public health facilities and CHW cooperatives to calculate PBF payments and prepare bank payment orders

GEOGRAPHIC INFORMATION SYSTEMS

District and national staff are equipped to use geographic data to better understand the distribution of health facilities and trends in health outcomes.

The RHSS Project trained MOH staff, data managers, and M&E officers from all districts in QGIS software—an open-source cross-platform geographic information system application that enables the analysis of geospatial data. National and district decision makers are using the geographic information module in DHIS-2 to prioritize public health issues, plan distribution of health workers, and make investments in infrastructure, equipment, and supplies.

Figure 6: Map of district facility delivery rates produced by Huye District Data Managers during training in 2015



ELECTRONIC INFORMATION SYSTEM TO MONITOR AND RESPOND TO INFECTIOUS DISEASES

With support from the RHSS Project and other partners, Rwanda became the first country in Africa to create a comprehensive electronic information system, using a routine health-data reporting platform, to monitor and respond to disease outbreaks.

The electronic infectious disease surveillance and response (eIDSR) system is now fully integrated into Rwanda's data system, DHIS 2. Disease surveillance is now a routine practice across all public health facilities in Rwanda.

Staff at district hospitals and health centers enter data into eIDSR for 24 diseases (Figure 7). Once the number of cases for a specific disease reaches a certain threshold, the system automatically alerts users at district hospitals, health centers, and the epidemic surveillance and response (ESR) team of the Rwanda Biomedical Center (RBC) of a potential disease outbreak.



When an outbreak is detected, district focal points investigate suspected cases and confirm whether they are one of the 24 diseases under surveillance and initiate outbreak response as required. The RBC and ESR share situation reports with the MOH and other authorities as appropriate and publish a weekly surveillance report on the RBC website.

Figure 7: Suspected cases of epidemic prone diseases reported in eIDSR (2015-2018)

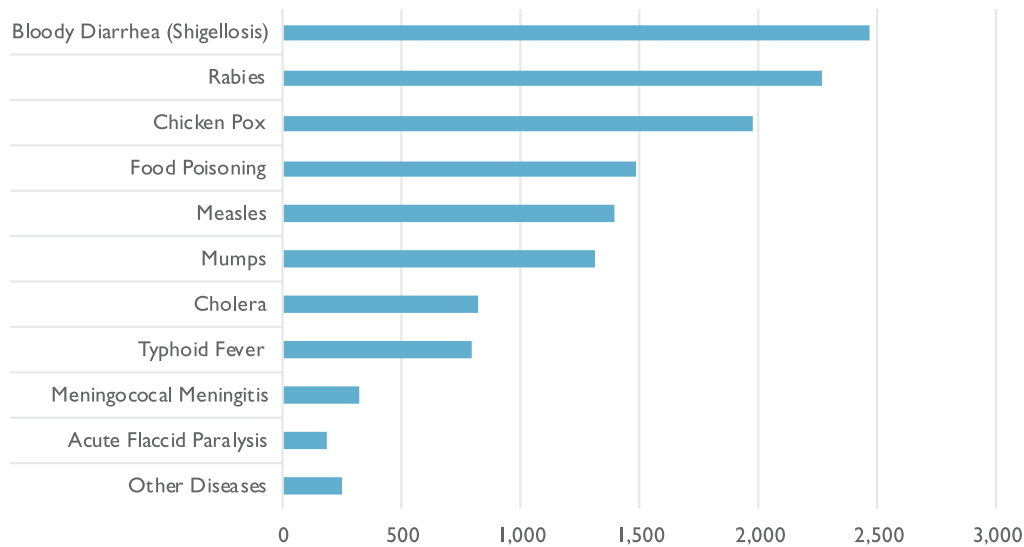


Figure 8: eIDSR dashboard

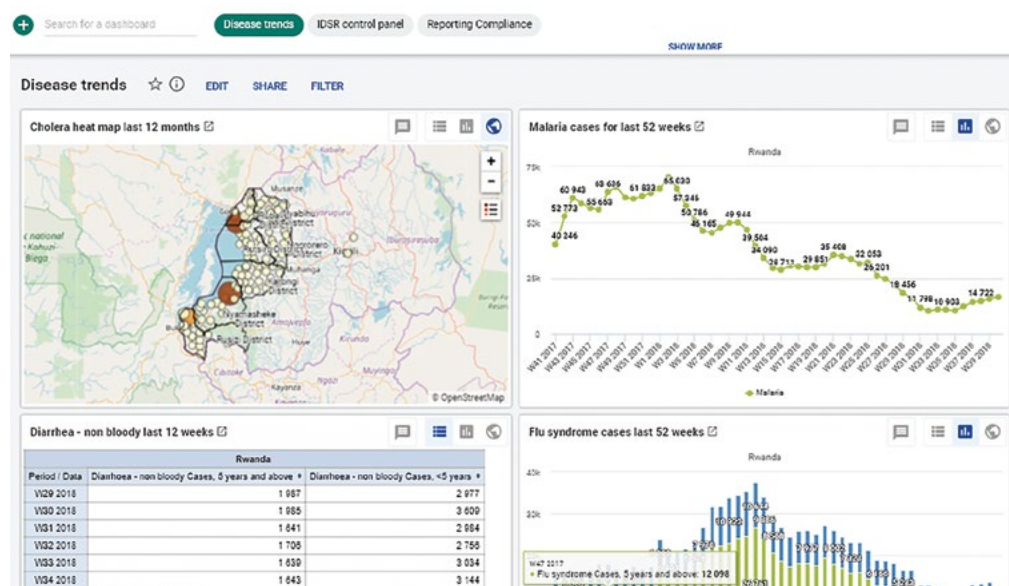




Photo: Todd Shapera

In 2018, the Ebola outbreak in the northern province of Kivu in the Democratic Republic of the Congo posed a dangerous threat to the surrounding region, so RHSS and ESR worked with WHO to create a special surveillance form to capture cases of viral hemorrhagic fever that crossed the border.

In its current form, eIDSR is designed for clinical providers based within health facilities, but additional investment from MSH contributed to building a community module that uses mobile phones to allow designated community members to send SMS reports on unusual events, such as serious, unexplained illness, death of a group of people, and clusters of death or illness among animals from unknown causes. Serving as an early warning system, these community reports immediately alert decision makers so they can act quickly to prevent the spread of disease.

DISTRICT OPERATIONAL RESEARCH CHALLENGE FUND

Launched and administered with support from the RHSS Project, the District Operational Research Challenge Fund aims to build and grow the capacity of MOH's district hospital staff and young health researchers to research and implement sustainable public health programs. This multi-donor initiative was led by the MOH's Planning Directorate and RBC's Medical Research Center, with funding from USAID, Enabel, and the Swiss Development Corporation.

The first cohort was selected out of 180 submitted proposals and included 13 studies on a range of family planning and maternal and newborn health topics. By December 2018, all but one of the studies were completed, with many aiming for publication in national or regional journals. The MOH is committed to diversifying and enlarging the funding base and continuing the program, which was fully transitioned to RBC's Medical Research Center.

CONTINUOUS EDUCATION THROUGH E-LEARNING PLATFORMS AND KNOWLEDGE PRODUCTS


Health sector staff now have access to a library of knowledge products and an e-learning platform to aid continuous learning and professional development.

The RHSS Project developed a variety of knowledge products for data analysis and publication. These included the MOH's annual statistical booklets (2014, 2015, and 2016) and a completely redesigned website for the MOH. The RHSS Project strengthened the skills of partners, MOH, and RBC staff at the central level for developing research and policy briefs and operational research methods.

Key to continuing education, the health sector's new e-learning platform (Figure 9) now offers courses on DHIS 2, operational research, medical procedure coding (MDC), and leadership and management, many of which RHSS developed or adapted from in-person training materials. The RHSS Project facilitated workshops on developing content for these courses, resulting in a roster of over a dozen courses. As of 2019, 653 users are enrolled, 45 of whom are course creators.

Figure 9: e-Learning portal screen shot





“With the WISN tool, we now know what the gaps are how to fill them. In some departments we still need staff, but we will solve these issues.”

—Dr. William Namanya, Director General of Kibungo Hospital.

SKILLED AND MOTIVATED WORKFORCE

BETTER INFORMATION FOR BALANCING STAFFING AND WORKLOADS

Using an evidence-based workforce planning tool, all public district hospitals in Rwanda are calculating adequate staffing levels to ensure quality care and to better meet the health needs of populations in their catchment areas.

In 2011, the MOH and WHO conducted an assessment of the health workforce, confirming the uneven distribution of health workers across health facilities and regions. In response to these findings, the MOH, WHO, and the RHSS Project introduced WHO’s Workload Indicators of Staffing Needs (WISN) tool in all public district and provincial hospitals in the country. WISN is a rigorous, evidence-based management software application that calculates staffing requirements according to estimated workloads per health facility.

Using WISN, managers systematically defined each cadre's service and support activities and the amount of time to perform each. Based on this information and the average number of clients who visit the hospital daily, they calculated the required number of staff per cadre to adequately deliver quality health services in each department. As illustrated in Table 3, hospitals compared their WISN calculations to statutory staff-level requirements outlined in each service package and actual staff levels.

Among the 43 hospitals assessed, all categories of health workers, except nurses, are understaffed with workload pressures ranging from 30% to 70%, well above the acceptable upper limit of 10%. Taking into account that, in all hospitals, nurses perform pharmaceutical services and other tasks outside their job descriptions, the nurses' workload pressure is identified as an issue as well.

Referring to these results, the MOH is reviewing hospitals' organizational structures, developed in 2016, and strategizing how to improve staffing levels of health facilities, especially hospitals.

Table 3: WISN results for all 43 public district and provincial hospitals

STAFF CATEGORY	SUM OF EXISTING STAFF (A)	SUM OF CALCULATED REQUIREMENT (B)	SUM OF STAFFING GAP (B-A)	WISN RATIO (A/B)	WORK PRESSURE (1-RATIO × 100%)
Anesthetists	175	305	130	0.6	40
Dentists	98	134	36	0.7	30
General practitioners	490	689	199	0.7	30
Laboratory technicians	351	643	292	0.5	50
Midwives	684	987	303	0.7	30
Nurses	2,497	2,139	-358	1.2	-20
Pediatricians	26	47	21	0.5	50
Physicians (internists)	41	82	41	0.5	50
Surgeons	12	26	14	0.5	50
Gynecologists/Obstetricians	32	96	64	0.3	70

KEY INFORMATION FOR STRENGTHENING HUMAN RESOURCES FOR HEALTH

In 2017, the University of Rwanda's School of Public Health and the RHSS Project studied the state of human resources in Rwanda, revealing important insights into health worker satisfaction and retention.

Data from six hospitals provide insight into Rwanda's health worker transition and turnover rates and recommendations for addressing challenges associated with human resources for health. Like other middle-income countries, uneven distribution of health workers particularly affects public facilities in rural areas.

KEY FINDINGS



Among the professional categories, medical doctors had the highest turnover rate, followed by nurses and midwives (almost similar rates) and lab technicians.

MAIN REASONS FOR STAFF TURNOVER

1. Moved to private practice, a nongovernmental organization, or another position in a health-related field
2. Transferred to another public facility or took management position in government
3. Moved to an urban environment or obtained work outside Rwanda
4. Experienced poor-working relations with supervisors or family problems or retired
5. Lost income due to reduction of rural bonuses for health workers

PRIORITY RECOMMENDATIONS

- » Establish public-private partnership to accommodate health workers posted at rural facilities
- » Provide professional insurance to cover professional risks and improve health worker safety
- » Improve the work environment and other motivating factors
- » Implement horizontal and vertical promotion
- » Strengthen the human resource management system in health facilities
- » Increase opportunities to develop skills and build capacity of health workers
- » Implement savings and loan programs
- » Review and modify the licensing process of nurses and midwives
- » Provide sufficient career guidance and establish clear career pathways to encourage health workers to stay in their posts or in the public health sector



RETENTION STRATEGY: SAVINGS AND LOAN PROGRAM

For the first time, public health sector staff can access low-interest loans to help them plan for future purchases, family needs, and potential emergencies.

According to the 2017 human resources for health assessment, health professionals reported a lack of access to credit at reasonable interest rates from commercial banks to build a home, purchase essential items for their families, or cover emergency expenses.

Inspired by a long-running staff savings and loan group created across University of Rwanda institutions, MSH led a feasibility study to establish a similar scheme for all individuals working in the health sector. After this study, RHSS Project staff constructed a financial model and developed program guidelines and technological requirements for selecting micro-finance software. This technical guidance resulted in the establishment of the sector-wide staff savings and loan program, the Health Sector Staff-Mutual Assistance Group (HSS-MAG).

Through the HSS-MAG Initiative, a new savings and loan scheme provides staff at public facilities access to credit at very low interest rates, incentivizing them to remain public health sector employees. More than 11,000 health staff from most public health institutions and facilities across the country enrolled in the program and were saving more than 1 billion RWF (\$1.2 million) combined.



WAY FORWARD: ADVANCING ON THE PATH TO SELF-RELIANCE

As the results achieved with support from the RHSS Project have shown, Rwanda has made impressive strides in improving health system performance and increasing the resilience of the health sector to respond to new challenges.

Rwanda now has a homegrown accreditation system and the foundations for an independent, national health accreditation agency to oversee continuous quality improvement, in-country capacity of surveyors, quality improvement committees within each institution, and the institutionalization of quality improvement staffing into the new health facility structure.

The automation of CBHI provides real-time metrics to monitor performance of each CBHI section to project costs and revenues and improve efficiency. Similarly, the development of the Rwanda MPC system of nomenclature and codes, together with functional requirements for an automated claims management system, are helping create a foundation for more efficient and timely insurance claim payments. Costing health services determines the true cost of services and sets the stage for negotiating

provider payment mechanisms, premiums, and tariffs that will sustain the sector. Hospital business planning and CHW cooperative best practice guidelines generate domestic revenues, fostering self-reliance.

Private health providers have access to commercial loans from a local bank through USAID's DCA program, thereby increasing domestic financing of health care and increasing access to specialized services.

Local facilitators can support and adapt the LDP approach to help hospitals assess, plan, and monitor quality improvement initiatives. Districts have updated evidence-based health strategy plans to serve as a roadmap for priority interventions to improve the health of their citizens. Provincial and district administrations are engaged in supporting health.

The first cohort of the District Operational Research Challenge Fund established partnerships and systems for building research capacity and managing research grants. The MOH is committed to diversifying and enlarging the funding base and continuing the program, which was fully transitioned to RBC's Medical Research Center.

The project's continuing investments in DHIS 2 have resulted in a robust platform and skilled system administrators and implementers within both RBC and MOH who can adapt and enhance the system according to their needs. Similarly, the e-learning platform is well established and course developers trained by the project have created (or are developing) 45 different courses for over 600 enrolled users. This has transformed the MOH's approach to capacity building in the sector as they hope to realize significant savings on continuous professional development for health workers at all levels of the health system.

HSS-MAG has been established as a sector-wide employee savings and loan program to improve staff retention. WISN standards have been updated and can be locally facilitated across all facilities to improve workload.

As the RHSS Project comes to an end, the priority for health system leaders and managers must be to protect and expand the gains that have been made on the journey to self-reliance. They must forge ahead and build on strengthened health leadership and management, improve the quality of health care, increase the sustainability of health financing, and generate additional evidence for better decision making by a skilled health workforce. By optimizing the performance of these and other important areas, Rwanda will build a high-quality health care system that is accessible, accountable, affordable, and reliable for the people who need it most.





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