Strengthening health systems
Evidence-informed approaches and lessons learned from Rwanda

This booklet is a product of the Ministry of Health in Rwanda in collaboration with the ‘Institutional Support to Ministry of Health – Phase IV’ (Minisanté IV) Program through support from the Belgian Development Agency. The book capitalizes on the work done within the BTC-Rwanda partnership and reflects on different components such as health system strengthening, maternal health, mental health, urban health, health technologies and ecological interventions, decentralization and aid modalities reflections. It is also a reflection on the value of results achieved and the progress made through the whole institutional support process while providing an appreciation of the relevance, efficiency, effectiveness, sustainability and impact of planned interventions. In addition, this book is seen as an intensive sharing and learning opportunity in order to draw useful lessons for other similar interventions, new policies and strategies in other countries and future partnerships in Rwanda.
Strengthening health systems

Evidence-informed approaches and lessons learned from Rwanda

‘Institutional Support to Ministry of Health – Phase IV’ (Minisanté IV) Program
Capitalization and Knowledge Management: generating lessons from program implementation and translating them into concrete actions at managerial and technical levels for increased ownership, evidence-based policy development and sharing of good practices

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Preface

In the last decades Rwanda has focused strongly on strengthening the health system that was disrupted in 1994 due to the genocide. Due to loss of lives and structure the Rwandan government has closely collaborated with donors and partners to build up specific development sectors.

Health is one of the three priorities of the Indicative Cooperation Program between Belgium and Rwanda. Belgium’s development cooperation support to Rwanda’s health sector is channeled through the Belgian Development Agency (BTC). In 2009, Belgium committed to supporting the Rwandan health sector for twelve years with particular emphasis on Primary Health Care.

From August 2010 to June 2015, the Ministry of Health, in collaboration with the Belgium Development Cooperation (BTC), implemented the “Institutional Support Program to the Ministry of Health – Phase IV” (Minisanté IV) Program at central level (MoH and RBC) and also in three specific districts recommended by the MoH (Rulindo, Gakenke and Bugesera).

The Minisanté IV programme support, amounting to €12.6 Million from 2010-2015, was aligned to the Health Sector Strategic Plan II (and later HSSP III). It aimed at supporting central and decentralized health sector strengthening priority interventions to assure quality of health services through better planning, coordination, management and monitoring and evaluation, based on evidence generated by research.

The strategic orientations of the Minisanté IV program were structured around the strengthening of three important dimensions:

- The local health system (district) as the operational unit;
- The national health system (Ministry of Health) as the policy and strategy defining unit for the whole sector;
- The interactions between both levels.

This was done through five strategic or “focus areas” collaboratively identified and approved after the 2012 mid-term review, which include:

- Strengthening of integrated district management teams in management, coordination, planning and M&E;
- Improvement of quality of care and service accessibility in Rwanda;

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• Improvement of the population’s mental health according to the strategic plan and integrated model of health care;
• Increasing the quality of healthcare technology management and maintenance system;
• Systematic management and development of knowledge through action research.

This book was realized following a series of operational research activities. These activities involved training, writing and content development workshops that started in 2013 supported by the University of Rwanda’s School of Public Health and later, in 2014, by the Royal Tropical Institute of The Netherlands (KIT).

The book capitalizes on the work done within the BTC-Rwanda partnership and reflects on the different components such as: health system strengthening, maternal health, mental health, urban health, health technologies and ecological interventions, decentralization and aid modalities reflections.

It is also a comprehensive reflection on the value of results achieved and the progress made through the whole institutional support process while providing an appreciation of the relevance, efficiency, effectiveness, sustainability and impact of planned interventions. In addition, this book is seen as an intensive sharing and learning opportunity in order to draw useful lessons for other similar interventions, new policies and strategies in other countries and future partnerships in Rwanda.

The process of reflective action has been a very fruitful, innovative approach for all stakeholders at every level. It is expected to be replicated at a larger scale with all interested district health authorities and the Ministry of Health as well as in the future health program to be implemented within the Rwanda-Belgium partnership.

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Acknowledgements

This book is a product of the Ministry of Health in Rwanda in collaboration with the ‘Institutional Support to Ministry of Health – Phase IV’ (Minisanté IV) Program through support from the Belgian Development Agency.

The Belgian Development Agency would like to thank the Honorable Minister of Health, Dr. Agnes Binagwaho for her exemplary leadership and guidance during the implementation of this challenging set up of institutional strengthening and for this opportunity to share the achievements and lessons learnt from Minisanté IV Program.

Our appreciation also goes out to all organizations, institutions and individuals, from every level of implementation, who worked so hard to achieve such success in implementing the Minisanté IV Program.

Sincere gratitude and thanks go out to all writers and contributors from concerned institutions at central and decentralized levels who kindly dedicated their time to write different chapters in this book. The results of the present book will enable various implementers to undertake recommended actions.

Special thanks go to the Royal Tropical Institute of the Netherlands (KIT) and its partners for all their help in preparing and conducting the capitalization workshops and for developing the booklet. The productive and interesting discussions and very friendly and constructive atmosphere throughout the writing process were much appreciated.

We also extend our gratitude to all central administrative authorities who granted the authorization for carrying out field surveys and answered questionnaires; the School of Public Health and local administrative authorities in the local entities targeted by the different studies for their support during data collection. Finally, we would like to thank Jon Stacey for the English editing of the book.

The two partners (Government of Rwanda and Belgium through BTC) will continue to work hand in hand to make sure the interventions are maintained in a sustainable way. The Government of Rwanda and the Ministry of Health are highly appreciative of the continued support from its development partners including the Kingdom of Belgium and are committed to continue the collaboration in health sector development projects.
Introduction

Rwanda is a largely mountainous and landlocked country of 26,338 km² in the Great Lakes region of Central Africa. It has a moderate climate with an average temperature of 18°C. There are two rainy seasons and two dry seasons throughout the farming year. Annual rainfall varies from 700 to 2000 mm according to region. The country consists of four provinces and Kigali City, which are subdivided in 30 districts. Each district is divided into sectors, which are further divided into cells and villages. As of 2015, the National Institute of Statistics of Rwanda estimates Rwanda's population to be 11,262,564. The annual population growth rate is 2.5% and the total fertility rate is 4.2 down from 4.6 in 2010 and 6.1 in 2005 (RDHS 2015). Annual food crop growth is steady at 5.7%.

Rwanda is committed to the international and regional agreements for which it is a signatory such as the MDGs and is on track for achieving most of the targets set for 2015. New global objectives will be determined for the next period after 2015 and Rwanda will continue to use these international goals to guide its development efforts. Other important international policies and commitments guiding Rwanda health policy are the Abuja Declaration, the African Health Strategy (2007–2015), the Paris Declaration (2005), the Accra Agenda for Action (2008) and more recently and the Rio Political Declaration on Social Determinants of Health (October 2011).

Rwanda currently has four provinces and the City of Kigali (the capital city), with 30 administrative districts and 416 administrative sectors. In the health sector, there are eight national referral hospitals and five provincial hospitals whose service package is currently being upgraded from that of District Hospitals, 35 District Hospitals, 478 Health Centres and 252 health posts. Rwanda is well known for recent improvements in its health sector and for providing access to health care to all its population. According to the RDHS 2015, under-5 mortality has decreased steadily to 50 per 1,000 live births compared with 76 per 1,000 live births in DHS 2010 and 152 per 1,000 live births in DHS 2005. Infant mortality has also decreased to 32 per 1,000 live births (DHS 2015) compared to 50 per 1,000 live births in DHS 2010 and 86 per 1,000 live births in DHS 2005. 91% of deliveries were assisted and occurred in health facilities compared with 69% in 2010 and 30% in 2005. Almost all pregnant women receive antenatal care at least once during pregnancy. Maternal mortality has decreased to 210 per 100,000 live births (DHS 2015) compared with 476 per 100,000 live births in DHS 2010 and 750 per 100,000 live births in DHS 2005.

All measures of nutrition are improving among children less than 5 years. According to the RDHS 2015, prevalence of stunting (sign of chronic malnutrition) in children under 5 years decreased to 37.9%, down from 44% in 2010 and 51 % in 2005; wasting, (sign
Poverty reduction remains a high priority for the Government of Rwanda. The most recent and most important instrument in the context of poverty reduction is the Economic Development and Poverty Reduction Strategy 2 (EDPRS II). It is the reference work for the country’s medium-term strategic planning to achieve economic growth, poverty reduction and human development. The strategy follows the successful implementation of EDPRS I (2008-2012), which managed to achieve high growth (8.2%), poverty reduction and a reduction in inequality. This resulted in more than a million people being lifted out of poverty and made important strides towards the achievement of Vision 2020 and the Millennium Development Goals (MDGs). EDPRS II aims to transform Rwanda into a middle-income economy. This will be achieved by accelerating growth to an average of 11.5% between 2013 and 2018 and reducing the poverty rate from 44.9% to 30% over the same period.4

These targets are set to be achieved through four thematic areas: economic transformation, rural development, productivity and youth employment, and accountable governance.

The EDPRS priorities are contained in three flagship government programs, namely:

- sustainable growth for jobs and exports;
- Vision 2020 Umurenge (highly decentralized and integrated rural development Program, with the objective of accelerating the reduction of extreme poverty); and
- Good governance.

Efforts have been made to develop the service sector and stimulate investment in the industrial sector and currently, the Rwandan economy is dominated by service sector. According to recent findings of the EICV 2013-2014, the service sector accounts for the largest share of Rwanda’s Gross Domestic Product (GDP) (5%), followed by agriculture with 35 percent and industry with 15 percent.

Average GDP Growth during the 2002-2014 period was 8% and the GDP per capita has gradually increased over the last decade and was $718 in 2014 compared to $245 in 2004 and $547 in 2009. The percentage of people living below the poverty line decreased by 5.8% to 39.1% in 2013-14 down from 44.9% in 2010-11, and 56.7% in 2005-06. In 2013-14, net primary school and secondary school attendance were respectively at 87.9% and 23%. The percentage of people with an improved water source was 74.2%, while it was 83.4% for people with improved sanitation and 19.8% for people having access to electricity for lighting (EICV 2013-2014).3

Rwanda is well known for recent improvements in its health sector and for providing access to health care to all its population. Life expectancy at birth in Rwanda has increased tremendously in the last 10 years. Current life expectancy at birth was 64.0 years in 2013, up from 55.2 years in 2005 (World Bank Report 2013).4

The reasons for this are a change in the organization of the health system, with the introduction of a community-based health insurance (CBHI) scheme, whereby the poorest people do not pay anything for the services received; and there is a well-functioning national network of thousands of community health workers (CHWs) at the village level. There are hundreds of health centers, all with basic equipment and a full cupboard of essential medicines. Each of Rwanda’s 42 districts has a hospital, with a team of doctors and nurses offering a standardized complementary package of basic medical and surgical care services.5

The Third National Health Sector Strategic Plan 2012–2018 (HSSP III) includes the following five overall priorities:

- achieve MDGs 1 (nutrition), 4 (child), 5 (maternal and child health) and 6 (disease control) by 2015;
- improve accessibility to health services (financial, geographical, community health);
- improve the quality of health provision (quality assurance, training, medical equipment, supervision);
- reinforce institutional strengthening (especially for district health services, District Health Units); and
- Improve the quantity and quality of human resources for health (planning, quality, management).

HSSP III is guided by the same overall vision and goal as its predecessor, HSSP II, as shown in Figure 0.1.5

![Figure 0.1: Conceptual framework of HSSP III](Yellow areas refer to areas supported by the Ministérité de la Santé IV program)
Belgian–Rwandan partnership in health

Since 1962, the year of its independence, Rwanda has been a partner country for Belgian cooperation. Health is one of the three focus sectors of the Indicative Cooperation Program between Belgium and Rwanda, and Belgium has committed to supporting the health sector for 12 years, with a particular emphasis on primary health care. The interventions of Belgian Technical Cooperation (BTC) contribute to the provision of primary health care through the construction and rehabilitation of infrastructure and through institutional strengthening of the central level and of decentralized entities.

The ‘Institutional Support to the Ministry of Health – Phase 4’ (Minisanté IV) Program is the continuation of the focalization process in the health sector; it represents focused and well-defined interventions around five areas: planning and monitoring and evaluation (M&E), quality of health services, mental health, biomedical maintenance and knowledge management. These five areas are fully aligned with the priorities of HSSP III described above and greatly contribute to the institutional strengthening process at both central and decentralized levels of the health system. Minisanté IV is based on a ‘double anchorage’ approach: this means that interventions at the decentralized level feed into policy development at the central level, and, in turn, policies developed at the central level can be tested or monitored closely at the decentralized level. This meets the priority objective of strengthening primary health care.

The central-level units supported by Minisanté IV include Ministry of Health units (Directorate-General of Planning, Health Information Systems and M&E plus the Directorate-General of Clinical Services), two divisions of the Rwanda Biomedical Centre (RBC – Medical Technology and Infrastructure, and Mental Health), as well as the University of Rwanda School of Public Health (UR-SPH). The Program also supports three rural districts, as agreed with the Ministry of Health: Bugesera, Gakenke and Rulindo.

The strategic orientation of the Program is based on strengthening three important dimensions:

- the local health system (district) as the operational unit;
- the national health system (Ministry of Health — the sector) as the unit defining policy and strategy for the whole sector; and
- the interactions between the two levels.

This strategic orientation guides the Program’s two specific objectives:

- Objective 1: the local health system is strengthened through a better functionality of its institutions and their overall interactions.
- Objective 2: the central level ensures the quality of the health sector through better planning, coordination, management and M&E, based on evidence generated by research.

The development of the local health system focuses on six areas:

- strengthening of the local management teams;
- promotion of human resources;
- equitable access to health services;
- transparent and efficient use of resources;
- development of quality services; and
- Knowledge management.

The strengthening of the central level focuses on:

- development of integrated planning of sound quality;
- development of appropriate management, coordination and communication;
- development of human resources;
- strengthening of financial management; and
- Improvement of M&E tools.

Focalization and capitalization

Within the Minisanté IV Program, two approaches stand out: focalization and capitalization. In March 2012, the Program underwent a mid-term review. One of the recommendations to the Program was to specify the concrete results to achieve by 2014 at both central and district levels and to focus on a limited number of strategic areas, such as present sector priorities. This process of focalization required the identification of key entry points in the health system to provide targeted technical and strategic support. Five identified focus areas were approved by the Ministry of Health. Units at the central level and the three rural districts thus developed action plans. These plans were aligned with HSSP III priorities at both central and district levels.

In the districts, there was particular attention to assist the development of the five-year District Development Plan and to ensure that the operational plan to be funded through Minisanté IV was closely aligned with district priorities.

Capitalization means generating lessons learned from Program implementation and translating them into concrete actions at managerial and technical levels. These lessons learned can be relevant for ownership, evidence-based policy development and sharing of good practices. Scientific support can be one approach providing minimum implementation conditions. Action research is one way to do this but it requires time and expertise to be identified at the onset of the Program. The Minisanté IV Program included action research and lessons learned as knowledge generation processes (described below). Capitalization improved towards the end of the Program, and the analysis of best practices presented in this book was taken into account to help formulate future health Programs in Rwanda.
Gakenke, Rulindo and Bugesera districts

The Minisanté IV Program focused on three districts: Gakenke, Rulindo and Bugesera. Rulindo is one of 30 districts in Rwanda. It comprises 17 sectors, 71 cells and 494 villages (Imidugudu). Rulindo District has a population of 288,452 inhabitants. The global vision of the Rulindo District Health Strategic Plan, supported by Minisanté IV as one of the district partners, is to ensure the well-being of the population by increasing production and reducing poverty within an environment of good governance. Through a Memorandum of Understanding (MoU) first signed with Rutongo District Hospital in March 2011 and then with Rulindo District in December 2011, the Minisanté IV Program has provided institutional support to Rulindo District and its two districts hospitals, Kinahira and Rutongo, with their 19 Health Centres and two health posts in their catchment areas.

Gakenke District is one of five districts making up the Northern Province after administrative reform in 2006. Gakenke District has a population of 381,550 inhabitants. The district health system comprises two District Hospitals, Nemba and Ruli, with 21 Health Centres (Nemba District Hospitals covering 13 Health Centres, and Ruli covering eight Health Centres). Since July 2011, BTC – through the Ministry of Health – has helped to strengthen the district health system with both financial and technical support to the District and its decentralized health care facilities. The District and its decentralized health structures implemented all the activities under the program.

Bugesera District is one of seven districts in the Eastern Province of Rwanda. It is located in the southeast of the province, covering an area of 1337 km2. It borders the Republic of Burundi (Kirundo Province) to the south, Ngoma District to the east, Kigali City and Rwamagana District to the north. The district includes 15 administrative sectors, subdivided into 72 cells and 581 villages with a population of 361,914.

Bugesera District has one District Hospital, 15 Health Centres, one prison dispensary and 10 health posts. All 15 sectors have Health Centres, constructed by the government and development partners. All district residents are mobilized to subscribe to CBHI, which is available at a CBHI section in each Health Centre. The approved interventions aimed to support and reinforce the Bugesera district health system between January 2011 and March 2014 by improving the functionality of decentralized health care entities.

Capitalization

In 2014, knowledge was systematically managed and developed at central level: action research was performed in the three districts and the evidences generated at local level were supposed to inform policy development. The School of Public Health in Rwanda and later, the Royal Tropical Institute of Amsterdam assisted the districts and central units to perform action research and capitalization of relevant experiences.

Part one shows the need for improving the quality of care of health services for women and children but with a strong community involvement. In the first chapter Utumatwisha Abdallah, Uwihanganye Patrick, Sibomana James, Fundi Frederick and Kalisa Rukundo Ina present a case study about antenatal care as a prerequisite to reduce maternal and child health mortality. Despite the recommendations of WHO insisting that the first antenatal care visit is the cornerstone of ANC services and the first step to fulfill the recommended four standards of antenatal care visits, a great number of pregnant women still do not turn up timely for the first ANC in Rulindo District. The chapter presents an assessment that has highlighted a gap in the health care providers’ capacity, the health center organization and poor data monitoring. The authors recommend investing more in sensitization of the community through community health workers, good organization of health centers and improved monitoring and evaluation of antenatal care data.

In the second chapter Mathieu Niyonkuru, Jean Baptiste Habimana, Avite Mutaganzwa, Vesteine Mukagatesi, Innocent Hakizimana, Théogène Mbonayezu, Sophie Mukandikumana and Janvière Uwamahoro describe the prevalence and causes of neonatal death. Gakenke is among the five Northern Province districts with a neonatal mortality rate of 34 per 1000 live births and the chapter discusses what are the causes of neonatal deaths in Gakenke District, and what lessons can be learned for all Rwandan District Hospitals. The authors recommend that the referral systems be strengthened as well as sensitization of the community about the potential negative impact of traditional medicine on maternal and child health.

In the third chapter, Victor Ndaruhurstse, Alfred Rutagengwa, Prince Rwaburindi, Edith Musabyimana, Bernard Ngabo Rwabugiri, Judith Mukumurigo and Ina Kalisa Rukundo discuss a strategy to reduce postnatal deaths. Postnatal care is one of the major interventions recommended by the WHO for the reduction of maternal and newborn deaths worldwide. Currently, the existing Rwandan policies have emphasized components such as health facility deliveries by skilled birth attendants, four antenatal care visits, emergency obstetrical and neonatal care, maternal, child and neonatal death audits and verbal autopsy as well as utilization of postnatal care services. This study shows the importance of postnatal care in reducing postnatal (maternal and neonatal) deaths in Bugesera District. This can be complemented with health promotion programs to increase community awareness on the benefits of quality health care services, and efforts should be made to improve access to primary health care services, especially for rural and remote communities.

In the second part of the book, specific interventions targeting health systems strengthening are presented. In the fourth chapter Achour Ait Mohand, Yvonne Kiyiteshonga, Nancy Claire Misago, Jeanne D’ Arc Dusabeyezu and Jean Damascene Iyamuremye present the process of decentralization and integration of mental health services into primary health care. Rwanda faces an exceptionally large burden of mental health disorders. The authors describe the results, immediate outcomes and lessons
Strengthening Health Systems

Executive summary

In chapter ten, Gervais Baziga, Mechtilde Kamukunzi, Alypio Nyandwi, Donatien Buyanana and Parfait Uwaliraye feature the role of the administrative district in the governance and management of decentralized health systems. Decentralization has been effective in terms of improving the provision of services in all sectors and making districts more accountable, but the central government has to continuously empower the decentralized administrative entities and strengthen the legal framework for the decentralized health sector.

In the last chapter Gilbert Biraro, Fidèle Nsengimana, Vincent Tihon, and Daniel Ngamije underline the innovative approach of focalization and integration of the Minisanté IV Program as an example of effective project management in the Ministry of Health. The establishment of a Single Project Implementation Unit by the Government of Rwanda, in each ministerial department or government agency allowed for better coordination of interventions and financial support from different partners, such as the Belgian Development Agency. This innovative management structure offers the opportunity for better-coordinated oversight of the implementation of interventions across different projects, alignment of program planning and procedures with national policies and strategies at both decentralized and central levels, and increased ownership and leadership by the line ministry.

References


learned from the decentralization and integration of mental health services and they present recommendations to scale up this process.

In the fifth chapter, Félicien Rusagara and Jean Baptiste Habimana present the case study of improved health care waste management. Inadequate and inappropriate handling of health care waste may have serious public health consequences and a significant impact on the environment. The authors recommend that despite their limited financial capacities, health facilities should pay attention to the importance of waste handling in their annual planning and budgeting and involve all stakeholders.

Régis Kazindu, Alexis Maniraho and Sankaran Narayanan describe in the sixth chapter, the need for a maintenance policy for medical equipment at all health care delivery levels. The appropriate management of medical equipment is of great contribution to improving health care service delivery. Managing medical equipment is complex but is essential for good patient care. The maintenance of biomedical equipment and infrastructure requires a maintenance policy with available budget to ensure the availability of spares and accessories. Continuous capacity building for technical personnel is also needed.

Martin Niyitegeka, Edith Musabyimana and Ina Kalisa Rukundo present in the seventh chapter, a case of how to improve financial accessibility to health care. They present the lessons learned from introducing community-based health insurance in Bugesera District. Strengthening community mobilization and undertaking timely awareness-raising activities and empowering of local leaders and community health officers are some of them.

In chapter eight, Hope Tumukunde, Blaise Uthagaze, and Erick Vladescu Ayirwanda discuss the case of medicalization of urban Health Centres in the City of Kigali. New challenges like non-communicable diseases, infectious diseases and other typical urban problems such as road traffic accidents, violence-related injuries, mental health disorders, substance abuse and exposure to air pollution, need other capacities than are currently offered. How can these services be made available, affordable and accessible to the general population?

Jean-Marie Sinari, Patrick Uwihanganye, Gad Sibomanana, Frederick Fundi and Jean D’Amour Manirafasha present, in chapter nine, a case on how to strengthen district health systems through improved health data management. They argue that policy makers and decision-makers at all levels of the health system must know there is a need for guidelines and skills on data management for improved planning, M&E and evidence-based decision-making. Health data generated from health centers, community health workers and other local leaders will inform evidence-based decisions for emerging health issues at administrative sector.
Part one: Towards a good quality of care for women and children

In this part, the importance of an integrated approach at central health system level (policy and institutional framework) as well as local level is described. This is needed to ensure sustainable and scalable interventions to improve the quality of care for women and children. The need for community involvement and sensitization becomes clear in all three chapters. The lessons learned for this part are:

The quality of antenatal care services in health centers can be improved by efforts at all levels of the health system including strengthening national policies and locally adapted guidelines, interventions; service delivery; integration with other programs; reduction of access barriers; community sensitization; and effective data use.

The quality of neonatal care and the reduction of neonatal mortality in health facilities can be improved through increased attention to and investment in the quality and quantity of staff and equipment, community involvement and a good referral system.

The quality of postnatal care and reduction of neonatal mortality can be improved at central level by establishing national guidelines from the Ministry of Health to health providers, standardizing registers for recording postnatal care and training health care providers on focused postnatal care. Health facilities should create specialized postnatal care units known by mothers; increase the availability and provision of postnatal and essential newborn care services to promote the use of postnatal care and to reduce Neonatal Mortality through increasing women’s awareness of its importance.
First antenatal care visit as a prerequisite to reduce maternal and child health mortality: a case study from Rulindo District, Rwanda

Abdallah Utumatwishima, Patrick Uwihanganye, Frederick Fundi and Ina Kalisa Rukundo

Key messages
The importance of antenatal care (ANC), especially the first of the four recommended visits, should become more widely known among expectant mothers. The Ministry of Health needs to make a greater effort to sensitize the community through Community Health Workers (CHWs), improved organization of Health Centres and monitoring and evaluation of ANC data by District Hospitals in charge of Health Centres in Rulindo District.

Background
In Africa, the rate of ANC coverage is a success story, since over two thirds of pregnant women (69%) have at least one ANC contact. However, to achieve the full life-saving potential that ANC promises for women and babies, four visits providing essential evidence-based interventions are very much required. Essential interventions in ANC include identification and management of obstetric complications such as pre-eclampsia, tetanus toxoid immunization, intermittent preventive treatment for malaria during pregnancy, and identification and management of infections including HIV, syphilis and other sexually transmitted infections. ANC is also an opportunity to promote the use of skilled attendance at birth and healthy behaviours such as breastfeeding, early postnatal care, and planning for optimal pregnancy spacing. Many of these opportunities continue to be missed, even though over two thirds of pregnant women have at least one antenatal visit.

In 2013, 289,000 maternal deaths occurred worldwide, with almost all of these deaths occurring in low- and middle-income countries. It is also estimated that 6.6 million children died before their fifth birthday in 2012 and that 44% of these deaths took place during the neonatal period. Experts have estimated that maternal deaths can be reduced by at least 50% with proper ANC. However, ANC must be sought early in the...
pregnancy, preferably in the first trimester, to be effective. Almost all women attend at least one ANC during the course of pregnancy but around a half of them attend the first ANC after 16 weeks. 44 percent of women had four or more ANC visits while 56% of women made their first visit before the fourth month of pregnancy.4 This proportion has risen from 38% in 2010. There is no variation in this proportion between urban and rural women. In Rwanda, the percentage of women receiving antenatal care from a skilled provider has increased slightly between 2000 (92 percent) and 2014-15 (99 percent).6 Moreover, maternal mortality is still very high at 210 per 100,000 live births.6 It is, therefore, important to focus on the content and quality of care rather than attendance only, as suggested by the World Health Organization (WHO) and UNICEF.6

Nevertheless, research on the quality of ANC is still very limited in Rwanda. In low-income settings, existing studies rely more on population-based surveys such as the Demographic and Health Survey (DHS), which provide some information on the quality of ANC received by mothers, but not from the point of provision7. Yet the availability of ANC interventions is a prerequisite to receive good-quality care. For instance, ANC has been identified as one of the key strategies to reduce the high maternal and child mortality rates8.

Despite the recommendations of WHO, which insist that the first ANC visit is the cornerstone of clinical ANC services and the first step to fulfill the recommended standard of four ANC visits, a great number of pregnant women still do not turn up on time for the first ANC visit in Rulindo District. Only 36.2% of pregnant women in the district achieve four ANC visits, while the national target is 50% by 2015 (HSSP/EDPRSII) and 65% in 2018 (HSSPIII).8 It is then necessary to assess whether health facilities have all available inputs such as drugs, laboratory tests and skilled health workers that they actually provide the recommended interventions.7

The key question of this case study is: What are the lessons learned from the assessment of the ANC services in Rulindo District, and how can they help to improve the quality of ANC services in Rwanda?

The specific objectives of the study were to determine the training level of health care providers for safe and accurate delivery of ANC services, the level of laboratory capacity of the health facilities to respond to the needs of expectant women in ANC services, and the quality level of the Health Centres as assessed by their direct supervisors.

**Description of the study**

This study was implemented in Rulindo District, one of the 30 districts that make up Rwanda. Rulindo is located in the Northern Province of Rwanda, comprising 17 administrative sectors and 17 Health Centres that offer primary health care. The population of Rulindo as per the 2012 Rwanda National Census is estimated at 288,452.

This study used three types of data sources:

- A prospective health facility assessment conducted in 2013 in all Health Centres: The assessment included general characteristics of the Health Centre, self-reported availability of laboratory tests and trained health providers in focalized ANC and evaluations of the quality of ANC services provided by health providers within the health facility.

- A retrospective analysis of ANC registers of primary health facilities in Rulindo District: Information was extracted from all pregnant women who came for ANC at all Health Centres between January and June 2013. This period was selected because a standardized ANC register developed by the Rwandan Ministry of Health started being used in all Health Centres in the district. Information on socio-demographic and pregnancy-related characteristics was collected, and the content of the first ANC visit for 5,119 pregnant women was assessed.

- Analysis of the results of a Health Centre quality assessment performed by external supervisors from the Rulindo District Hospitals as part of a performance-based finance (PBF) approach.

**Health system in Rwanda**

The health care system is the complete network of agencies, facilities and all providers of health care in a specified geographic area.10 The success of Rwanda’s health sector is because the government works as one in pursuit of an integrated and community-driven development process.11

The health care system in Rwanda starts from the community level, to Health Centres, District Hospitals and referral-level hospitals.11 According to the 2010 Rwanda Demographic Health Survey, 94% of total ANC services are provided at Health Centres.12

**Quality of care measurement in Rwanda**

Rwanda is one of the pioneers of Performance Based Financing (PBF) or pay for performance mechanism for health care providers to improve the quality of care by financing health outputs rather than inputs. PBF is one of several strategies introduced to strengthen the Rwandan health system, which was considered, according to the 2000 World Health Report rankings, one of the weakest health care systems in the world.13 PBF intends to increase the quality of care in terms of the quantity and quality of services such as curative consultation, prenatal consultation, family planning, growth monitoring, immunization and assisted deliveries.13 With this approach, a Health Centre can provide quality service delivery and may attract more patients to the health facility from a less
well-performing health facility. For this reason the performance of Health Centres has also been included in this study.

The following items were considered in a PBF assessment for Health Centres: number of pregnant women (Primigravida) who received impregnated treated nets (ITNs); number of pregnant women who completed the four ANC visits; number of pregnant women who received the second, third, fourth and fifth anti-tetanus vaccine; general Health Centre organization; hygiene and sanitation; curative consultation and hospitalization; deliveries; prenatal consultations; family planning; vaccination; HIV performance indicators (reduction in the number of children born with HIV from infected mothers); tuberculosis performance indicators (preventive measures to control tuberculosis and the reduction in the number of new tuberculosis cases in the catchment area); laboratory services; pharmacy management; finance management; supervision of community health workers; and data management.\(^{14}\)

One of the underlying assumptions of the study was that a Health Centre with high marks in the above areas would be the preferred destination for pregnant women seeking ANC, while women would not attend a Health Centre with low marks. Apart from a Health Centre’s performance, the availability of ANC services, the content of the ANC services provided, and the availability of qualified health providers and laboratory screening tests were also considered key determinants for seeking prenatal services at a given Health Centre.\(^{14}\)

### Recording of ANC services received by pregnant women

All the services offered to pregnant women attending the Health Centre must be accurately recorded in the register. This is the first principle after completing the socio-demographic and obstetric background of the pregnant woman. The study assumes that having received the services indicated in the register, women would feel at ease going to the Health Centre. The records of ANC services received by pregnant women were used to analyse the performance of the Health Centre against the national ANC guidelines that prescribe the key services that should be provided.

### Assessment of ANC service delivery

Several frameworks to assess the quality of ANC services exist for high-income settings but are not easily applicable to low-income settings.\(^7\) Kyei et al. (2012) developed a framework for Zambian health facilities. As this framework was tested in a similar low-income country setting, it has also been used for this study. However, it has been adapted to the context of Rulindo District in Rwanda to assess the quality of the first ANC visit at Health Centres. While in Zambia the framework was used in all phases of the pregnancy, it was used only in the first trimester of pregnancy in this study.

### Table 1.1: WHO quality of care dimensions

<table>
<thead>
<tr>
<th>WHO quality of care dimension</th>
<th>Process attributes</th>
<th>Minimum requirements for optimum level</th>
<th>Minimum requirements for adequate level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to care</td>
<td>ANC days per week</td>
<td>3+</td>
<td>At least once a week</td>
</tr>
<tr>
<td>Responsiveness and appropriateness</td>
<td>ANC outreach, folate/iron supplement, voluntary counselling and testing (VCT) for HIV, pre-eclampsia screening</td>
<td>Not necessarily required; the rest are mandatory</td>
<td></td>
</tr>
<tr>
<td>Continuity of care</td>
<td>Prevention of Mother-to-Child Transmission (PMTCT) service, delivery service, postnatal service, routine family planning information, prevention of mother-to-child transmission of HIV (PMTCT) service, delivery service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient safety</td>
<td>Trained nurses in focalized ANC, basic emergency obstetric care (EmOC)</td>
<td>At least 3 nurses trained in focalized ANC are needed; at least 1 trained in EmOC</td>
<td>At least 1 trained nurse in focalized ANC</td>
</tr>
<tr>
<td>Effectiveness and efficiency</td>
<td>Screening tests: Haemoglobin, syphilis, urine protein, urine sugar, blood group +/- Rhesus factor</td>
<td>Any 3+ tests (including urine protein)</td>
<td>At least 1 test</td>
</tr>
<tr>
<td></td>
<td>ANC function tests: Folate/iron supplement, tetanus vaccine, Voluntary Counseling and Testing (VCT) for HIV, PMTCT of HIV, long-lasting impregnated nets (LLINs) for malaria prevention, deworming*</td>
<td>All 6 ANC function tests must be offered</td>
<td>At least 3 function tests</td>
</tr>
</tbody>
</table>

Note: *Deworming is given from the second trimester of pregnancy, to minimize its teratogenic effect to the foetus. In the assessment, the deworming part was not evaluated because the study was interested in the first three months of pregnancy at the standard first ANC visit.

Table 1.1 shows the WHO quality of care dimensions such as access to care, responsiveness and appropriateness, continuity of care, patient safety, effectiveness and efficiency. The framework differentiates between the optimum and an adequate level of service delivery. In this assessment of the first ANC visit, the following interventions and services were analysed:

- more than three days ANC per week (access to care);
- folate/iron supplementation, VCT for HIV, pre-eclampsia screening (responsiveness and appropriateness);
- PMTCT service, delivery service, postnatal service, routine family planning information (continuity of care);
- at least three trained nurses in focalized ANC, and basic EmOC (patient safety);
• existence of three screening tests (HB, syphilis, urine sugar, blood group + Rhesus factor); and
• five ANC functions offered: folate/iron supplementation, tetanus vaccination, VCT for HIV, PMTCT of HIV, and LLINs for malaria prevention (effectiveness and efficiency).

Results

The results of the assessment consider the retrospective analysis of pregnant women's ANC files, analysis of health facility services (guided by Kyei's framework), and the results of the quality assessment conducted by the external supervisors from the District Hospitals in Rulindo.

In Rwanda, ANC is one of the components of the minimum package of activities provided at Health Center level. All Health Centres reported having the capacity to provide folate/iron supplementation, tetanus vaccination, VCT for HIV, PMTCT of HIV, and LLINs for malaria – the five key ANC interventions according to the framework. To ensure the continuity of care, all Health Centres also reported the availability of PMTCT services, delivery services, postnatal services and routine family planning information. The majority of screening tests were commonly available, enabling all Health Centres to diagnose anaemia and syphilis and detect pre-eclampsia (hypertensive complication of pregnancies). However, only 82.35% of the Health Centres can detect diabetes in pregnancy by testing the urine sugar. All 17 Health Centres in Rulindo District provide ANC at least once per week.

Based on the Kyei framework, the performance of health care provision for the first ANC in Rulindo District is still low. No Health Centre is fulfilling all the requirements to be classified as reaching the optimum level of service provision. Some 41% of the Health Centres reach the adequate level of service provision, but 59% of them are classified as meeting neither the optimum nor the adequate level of service provision.

After assessing the level of service provision of Health Centres, the quality was assessed by comparing what the Health Centre is offering and what is recorded in registers as proof that the services were provided. Table 1.2 highlights the interventions provided, and those received by expectant mothers.

Tetanus vaccinations, middle upper arm circumference (MUAC) measurement and haemoglobin tests were offered to 100% of pregnant women who accessed the ANC services in their first three months of pregnancy. But despite the availability of the services at the Health Centre, only 83.15% of women were tested for syphilis, 80% received the full course of iron/folate supplementation tablets, 86.75% received counselling on VCT, and only 81.72% were offered LLINs to prevent malaria.

Table 1.2: Level of service provision vis-à-vis the services received by pregnant women

<table>
<thead>
<tr>
<th>Interventions provided</th>
<th>Interventions received</th>
<th>Expectant mothers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Centres (%)</td>
<td>Expectant mothers (%)</td>
<td></td>
</tr>
<tr>
<td>Folate/iron supplementation</td>
<td>100</td>
<td>Folate/iron supplementation given</td>
</tr>
<tr>
<td>Tetanus vaccination</td>
<td>100</td>
<td>Tetanus vaccination received</td>
</tr>
<tr>
<td>VCT for HIV</td>
<td>100</td>
<td>VCT for HIV offered</td>
</tr>
<tr>
<td>PMTCT of HIV</td>
<td>100</td>
<td>LLINs received</td>
</tr>
<tr>
<td>LLINs distribution</td>
<td>100</td>
<td>MUAC measured</td>
</tr>
<tr>
<td>Screening tests</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haemoglobin</td>
<td>100</td>
<td>Haemoglobin tested</td>
</tr>
<tr>
<td>Syphilis</td>
<td>100</td>
<td>Syphilis tested</td>
</tr>
<tr>
<td>Urine protein</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Urine sugar</td>
<td>82.35</td>
<td></td>
</tr>
<tr>
<td>Blood group + Rhesus</td>
<td>94.12</td>
<td></td>
</tr>
</tbody>
</table>
is considered offering a good-quality service with a mark of 85% or above. Below 85%, service delivery is ranked as poor. In this assessment, regarding ANC service delivery, 29% of the Health Centres were classified as offering poor service delivery, while 71% were providing good first ANC service delivery for pregnant women.

**Discussion**

The study aimed to assess the service delivery of the first ANC visit in Rulindo District primary health care facilities. It combined information from heads of primary health facilities (health facility assessment), content of care as recorded in ANC registers, and the results of the external assessment of Health Centre’s quality of service delivery.

Drawing on two datasets with detailed provider and user information, the Rwandan 2010 DHS demonstrated that although ANC attendance in Rwanda was high, insufficient provision of important antenatal screening tests and interventions were limiting the level of ANC delivered, which was reflected in the high proportion of women not receiving good-quality ANC.

The big challenge identified is that all the Health Centres report having all the means to provide the ANC deliverables, but some are given to far less than 100% of pregnant women. This may explain why many pregnant women lose interest in going to health facilities for a first ANC visit if no service is delivered. This is exactly the same conclusion reached by Okutu (2006) on access to and utilization of ANC services in Uganda: women in that study were aware of the need for ANC services, but the vexing challenge remained that the availability of facilities does not necessarily translate into optimal utilization because of poor service delivery. This discrepancy between availability and delivery of services defeats the objective of focused ANC, which hinges on early detection and treatment of complications. Besides early detection and treatment of pre-eclampsia, screening for syphilis with treatment for HIV-positive pregnant women and screening for HIV infection to implement PMTCT are effective interventions that are recommended for low-resource settings.

Based on the framework from Zambia, the Health Centres of Rulindo District did not achieve high scores in terms of optimal or adequate service delivery – just like in Zambia, where the study found very few health facilities achieving the optimum level, even if it was done at national level. In Rulindo District, the framework assessment has shown that no Health Centre can be classified as providing the optimum level of care, and 59% are providing inadequate care. Based on the quality evaluation of Health Centres by District Hospitals, 29% are providing poor ANC services. This evaluation from the District Hospitals has shown some positives, since more than half of the Health Centres provide a good quality of care. However, comparing the findings from all three sources of information, the level of service delivery is questionable and could partially explain why women hesitate to attend Health Centres for their first ANC visit. In a community survey on the use of ANC services and the quality of delivery care in Entebbe in Uganda, women have been found to prefer to attend Health Centres providing a good quality of care.

**Conclusions**

Overall, using a framework capturing different dimensions of quality, no Health Centre in Rulindo District provides an optimum level of ANC services. Some 41% of the Health Centres provide an adequate level of ANC services, while the majority (59%) were not meeting any of the criteria to achieve a good score. This reflects very well why a great number of pregnant women did not receive ANC services even if they were available at the Health Centres. If the district intends to improve the quality of ANC services, efforts should focus on improving both the level of service provision and the correct provision of available ANC interventions.

**Recommendations**

Rulindo health facilities are recommended to improve the availability of ANC services by increasing the number of days each week that facilities offer ANC services; to encourage accountability when it comes to providing all available interventions to pregnant women; to improve internal assessment to discover gaps in ANC services early; and to sensitize the community on the benefits of seeking the first ANC in the first three months of pregnancy, to maximize the likelihood of having a healthy pregnancy and a healthy delivery outcome.

The district health management team (DHMT) and District Hospitals must improve the supervision of Health Centres, especially the ANC services, and the quality assessment must be results oriented and must match the services received by health care clients, to mobilize budget to train more nurses in focalized ANC management and to assist the Health Centres to raise awareness in the community of the importance of the first ANC visit.

Given the challenges outlined above, the following efforts are needed to strengthen ANC and achieve better maternal and newborn health:

- Establish or strengthen national policies: A national policy and locally adapted guidelines must be in place to protect the rights of all women. There is a need for evidence-based guidelines at the national level detailing the essential minimum components of ANC, in line with the country epidemiological profile and country priorities and based on WHO guidelines and recommendations.
- Strengthen the quality of ANC services:
  - training should be reviewed to incorporate focalized ANC protocols and new competences;
  - every day service delivery;
– supplies and logistics are an important aspect of effective ANC, including regular availability of laboratory testing kits and essential drugs and equipment; and
– quality improvement of approaches to ensure that women return after their first ANC visit.

• Improve integration with other programs to maximize opportunities for pregnant women.
• Reduce barriers to accessing care, and reach out to women without access.
• Sensitize the community about the importance of ANC through community health workers.
• Use data effectively to monitor and improve ANC coverage.

References

Key messages
Neonatal mortality can be reduced through increased attention to and investment in the quality and quantity of staff and equipment, community involvement and a good referral system. This will contribute to improving the care for neonates in health facilities in Gakenke District.

Solutions addressing the specific causes of neonatal mortality in Gakenke District should focus on pregnant and lactating women but should also include traditional healers to ensure that these women attend health facilities at an early stage in their pregnancy.

Background
Worldwide, it is estimated that 4 million out of 130 million infants born each year are dying in the first 28 days of life. More than one quarter of those neonatal deaths occur in the first 24 hours, and three quarters occur in the first week of life.1

Overall, 1.7 million neonatal deaths and 1.4 million stillbirths occur in 25 countries with a neonatal mortality rate greater than or equal to 30 deaths per 1000 live births. These countries with high neonatal mortality also have a low coverage of health care.2 More than 99% of neonatal deaths arise in low- and middle-income countries. In low-income countries the neonatal mortality rate is 32 per 1000 live births, and in middle-income countries 22 per 1000 live births. The highest rates of neonatal mortality are generally in sub-Saharan Africa, which accounts for 38% of global neonatal deaths and had the highest newborn death rate of 34 deaths per 1000 live births in 2011. This is followed by South Asia (32 per 1000 live births) and Latin America and the Caribbean (10 per 1000 live births). However, in high-income countries the neonatal mortality is decreasing (3 per 1000 live births).3
Among central African countries, Rwanda has a neonatal mortality rate of 20 per 1000 live births, compared to Uganda (23 per 1000 live births) and Madagascar and Senegal (24 per 1000 live births). Mali has a high neonatal mortality rate (40 per 1000 live births), as does the Democratic Republic of Congo (38 per 1000 live births).4

Overall neonatal mortality in Rufiji District in the Republic of Tanzania, which was 32.4 per 1000 live births, is similar to the neonatal mortality rate of 32.0 per 1000 live births reported by the 2004-2005 Tanzania Demography and Health Survey.5

In Rwanda, child mortality indicators seem to be on a downward trend. Neonatal mortality was most recently reported as 20 deaths per 1000 live births in the RDHS 2015. This rate is higher than the post-neonatal mortality rate (12 deaths per 1000 live births) during the same period. The infant mortality was at 32 per 1000 live births while under-5 mortality in Rwanda is 50 deaths per 1000 live births.6

**Causes of neonatal mortality**

The causes of neonatal mortality identified in other research differ from one country to another. Some causes are related to the infant and others to the mother. Globally, the main direct causes of neonatal death are estimated to be pre-term birth (28%), severe infections (26%) and asphyxia (23%). Neonatal tetanus accounts for a smaller proportion of deaths (7%) but is easily preventable. Low birth weight and maternal complications in labour are also both significant indirect causes of death.

Preventing deaths in newborn babies has not been a focus of child survival or safe motherhood programs. While these challenges are largely being neglected, 450 newborn children die every hour, mainly from preventable causes, which is unconscionable in the 21st century.7

This situation is different in developing countries, where the three major causes of neonatal deaths are infections, including sepsis/pneumonia, tetanus and diarrhea (36%), pre-term birth (28%) and birth asphyxia (23%). There is some variation between countries depending on their care configurations.

Since causes of neonatal death vary by country and depend on the availability and quality of health care, understanding neonatal mortality in relation to these factors is crucial. Almost 3 million of the babies that die each year can be saved with low-tech, low-cost care.7

A lack of protocol and systemized training in neonatal resuscitation to reduce neonatal mortality secondary to birth asphyxia is common across sub-Saharan Africa. Case studies from China and India reveal that 90% of newborns with asphyxia require only drying, warming and stimulation for complete revival.8

**Neonatal mortality in Rwanda**

Neonatal mortality has gradually decreased in Rwanda when we compare DHS results over the past decade. According to most recent Rwandan Demographic and Health Survey (RDHS), the national neonatal mortality rate was 20 deaths per 1000 live births in 2015. The Southern Province and Western Provinces had the highest rate (25 per 1000 live births), followed by Northern Province, in which Gakenke District is located (23 per 1000 live births), Eastern (22 per 1000 live births each) and the City of Kigali (12 per 1000 live births).6

Gakenke has the highest neonatal mortality rate among the five Northern Province districts at 34 per 1000 live births. 89% of the deliveries are assisted by medical staff, 5.4% by women relatives and 1.8% by none.9

Regarding this situation, the district health unit of Gakenke District and its partners decided to carry out a descriptive cross-sectional study to determine the prevalence of neonatal mortality at health facilities and its causes, using the files of neonates who died between July 2012 and June 2013.

The central question of this case study is: What is the prevalence and what are the causes of neonatal death in Gakenke District, and what lessons can be learned for all Rwandan District Hospitals?

**Description of the study**

We carried out a descriptive cross-sectional study with a sample of 135 neonates. Data were collected from 20 health centers and two District Hospitals in Gakenke District, one of the 30 districts of Rwanda, during September 2013.

To carry out this study, data were collected and analyzed using the medical files of neonates who died, to check the quality of care they received, the availability of staff and equipment, and the functioning of the referral system from the community to the district health facilities and from the health facilities to the upper level of specialized care in Rwanda.

The variables collected were related to delivery method, the socio-economic situation of the mothers, and the organization of the health system (from households to the community health workers, from the community to the Health Centre and from the Health Centre to the District Hospitals), which has offered neonatology services since 2009 based on norms, guidelines and standards from the Rwandan Ministry of Health. Also, the availability of equipment in neonatology and maternity services was taken into account based on the number and quality according to the national standards for equipment and material required by the Ministry of Health.
Neonatal mortality in Gakenke District

The study results show that the neonatal mortality rate in Gakenke District is 34.1 deaths per 1000 live births. The rate differs in the catchment areas of the two District Hospitals in Gakenke District: Nemba District Hospitals has higher mortality (37.7 per 1000 live births), whereas Ruli District Hospitals has lower mortality (28.9 per 1000 live births).

When we look at the data according to the neonate’s sex, the majority of neonatal deaths were male (52.6%). Most of these children (90.4%) were born at health facilities – 61.5% in District Hospitals and 28.9% in health centers – and a small proportion of them (9.6%) at home.

By analyzing the characteristics of the mothers who experienced neonatal deaths during the study period, it was found that just over half (53.3%) were primiparous (giving birth for the first time). Of these women, 90.4% had completed only primary education, 77% were married, and 97.8% were farmers.

Availability and quality of staff in district health facilities

Regarding the skills of staff involved in the management of newborn care in Gakenke district health facilities/neonatology units, the study results show that around 40% of them have been trained in emergency obstetric and neonatal care (EmOC) and focalized antenatal care (ANC). In each category of training, Ruli District Hospitals has a slightly higher number of trained staff than Nemba District Hospitals.

When looking at data regarding the level of the staff working in the district health facilities, differences between the two health facilities can be observed. Overall, the majority (77.8%) of staff who are working in maternity/neonatology has completed their six years of secondary studies (A2 level). The better-trained A1 nurses are a minority in both hospitals, but Ruli has more A1 level staff active in maternity than Nemba (28.6% versus 15.4%).

Availability of medical equipment in district health facilities

The study findings show that the equipment in neonatology/maternity units is generally insufficient. This situation is even more obvious in Ruli District Hospitals, based on the norms and standards of the Ministry of Health. The availability of equipment was identified and assessed by, by an inventory and compared to the standard service package for health facilities at different levels of service delivery developed and used by the Ministry of Health (December 2011 version).

Causes of neonatal mortality

In Gakenke district health facilities the following characteristics of neonatal deaths were recorded: 37.7% premature, 47.8% low birth weight (below 2.5 kilograms), and 50.4% did not cry at birth. Just over half (54.1%) had an Appearance, Pulsation, Grimace, Activity and Respiration (APGAR) score below 6/10. APGAR is the system used in Rwanda for monitoring babies for signs of life.

The causes of neonatal death indicate that asphyxia was the most common cause of death (45.2%), followed by prematurity (30.4%), congenital malformations (8.9%), neonatal infections (8.9%) and other causes (6.7%).

The results of our study reveal certain factors that contributed to neonatal mortality: 30.8% of neonatal deaths are related to inadequate support from health personnel (material, training), 24.4% to the late referral of mothers or newborns from the community to a Health Centre or from a Health Centre to a District Hospitals, and 44.9% to the late transfer of the mother to delivery services. According to the audit team, 69.6% of deaths were avoidable and 30.4% unavoidable (e.g. congenital malformation). The assessment of whether deaths were avoidable was based on the following criteria: diagnostics, timely referral to the District Hospitals without delay in community and health centers, respect of protocols, and appropriate treatment and assistance for the neonatal cases at District Hospitals.

In general the findings show us that the neonatal mortality rate in Gakenke District is still high, with asphyxia, prematurity and congenital malformations as the principal causes.

Our study found that negative factors include insufficient quality and quantity of staff working in neonatology and maternity services and a high turnover of staff in rural health facilities because of a preference to work in urban health facilities. Due to insufficient staff, neonates in hospital do not always receive care according to guidelines (e.g. fewer visits per day). The Ministry of Health offers an e-learning program to upgrade staff at district health facilities (health centers and District Hospitals). Nurses with secondary studies are trained by the Ministry of Health to upgrade them from A2 to A1 level with a mandatory total study period of 30 days outside the Health Centre. Medical doctors are
also obliged to undergo training externally; this has a negative impact on the provision of care for mothers, newborns and other babies at health facilities. Another factor of concern is the insufficient availability of modern equipment in district health facilities for the provision of appropriate care to newborns.

Discussion

In this study carried out in Gakenke district health facilities on neonatal mortality, we have found that the neonatal mortality rate in Gakenke District during our study was 34 deaths per 1000 live births, which is lower than the rate found by the 2010 DHS in the Northern Province (39 per 1000 live births) but still high. The rate in Nemba (37.7 per 1000 live births) was close to the 2010 DHS figure, but Ruli had 28.9 deaths per 1000 live births.9

The difference in neonatal mortality in Ruli and Nemba could be explained by the difference in the quality of care provided in these two settings. The study showed that Ruli has more trained personnel in ANC (24.4%), emergency obstetric and neonatal care (EmONC) (20.9%) and focalized ANC (24.4%) than Nemba (respectively, 18%, 19.3% and 16%). Also Ruli has more qualified maternity personnel (28.6%) than Nemba (15.4%). As we know, the quality of service is related to the level of the staff and continued training. A study undertaken in Pakistan has shown that improving the quality of care could reduce neonatal mortality.10 A meta-analysis study has shown that substandard care, inadequate training, low staff competence and a lack of resources, including equipment and medication, are all factors that contribute to neonatal deaths.10

The lack of available modern, essential equipment in rural District Hospitals and Health Centres such as those in Gakenke District is still a major problem which can contribute to inadequate care provision to hospital patients in general and neonates in particular. Delays in referring pregnant women and neonates for health care during and after delivery have to be improved in Gakenke District, because often they attend the district health facilities too late and their recovery is complicated because they arrive in a critical condition.

Regarding the characteristics of women whose children died in Gakenke district health facilities during the period of our study, just over half of them (53.3%) were primiparous. The majority of them had primary-level education (90.4%), were married (77%) and were farmers (97.8%). According to data from the 2015 RDHS, neonatal mortality was associated with mothers’ low socio-economic level.9

The study identified the causes of neonatal mortality in Gakenke district health facilities as asphyxia, prematurity, congenital malformation and neonatal infections. These results have led to the same conclusion as other studies, which stipulate that in developing countries infections, prematurity, asphyxia, sepsis and congenital malformation are the main causes of neonatal mortality.11

Regarding the reasons behind these causes, we highlight that people in Gakenke District have a long-standing habit of visiting traditional healers and using traditional medicines when they are sick or giving birth, which can have an impact on the health of neonates before and after delivery. This is notable in maternity wards of district health facilities, where pregnant women deliver babies that are in poor health after consuming traditional medicines. Other hampering factors are the geographical barriers (mountains) and the long distances to travel to reach a district health facility.

Conclusions

After the 2010 DHS, Gakenke was classified as the district with the highest neonatal mortality. In a meeting held with the District team we looked for strategies to reduce the mortality rate and contribute to the achievement of MDG 4.

We asked ourselves, what is the prevalence and what are the causes of neonatal death in Gakenke District, and what are the lessons to be learned for all Rwandan District Hospitals?

The neonatal mortality rate and its causes have been identified in this study. We learned that the community in Gakenke District visit traditional healers before attending district health facilities, and this has a negative impact on women and their babies in the pre-term and post-partum period.

Lessons learned from the study

- More insight into the prevalence of neonatal mortality and its specific causes is required to ensure that proposed solutions address the real causes.
- The causes of neonatal mortality can differ from one health facility to another depending on the quality of care provided.
- The availability of trained medical/nursing staff and modern equipment contributes to the quality of care provided to pregnant and lactating women and infants in hospitals.
- A data quality audit has to be performed regularly to ensure that health facilities and decision-makers are using realistic and accurate data.
- District Hospitals need a sufficient budget to ensure that medical staff receives the necessary training to provide a high quality of care to mothers and neonates, especially those hospitalized in their health institutions.
- Pregnant and lactating women have to be referred to health facilities as soon as possible to avoid complications which can cause maternal and/or neonatal death.
- In Gakenke District the community needs to be sensitized about the potential negative impact of traditional medicine on maternal and child health, because this could play a significant role in reducing neonatal mortality.
Strengthening Health Systems

Prevalence and causes of neonatal death in Gakenke District

- Closer collaboration between traditional healers and the staff of district health facilities is needed.
- District health facilities have to involve traditional medicine to improve the quality of care for deliveries and children’s disease management.

Recommendations

For the Ministry of Health Minisanté IV program
- Equip health facilities with at least the minimum equipment and material required according to the guidelines established.

For the District and its health partners
- Improve the referral system by educating people to attend a health facility as soon as they are sick; pregnant women in particular should attend a health facility before uterine contractions occur.
- Organize training for the staff in maternity and neonatal services on emergency obstetrical and neonatal care (EmONC) and ANC.
- Organize post-training follow-up to ensure that staff use their training correctly.
- Organize biannual coordination meetings to discuss maternal and child health indicators to ensure that outcomes are shared with all stakeholders at the district level.
- The health facilities have to decide whether to refer to the District Hospitals every pregnant woman with delivery difficulties, to avoid complications for the woman and their baby during and after delivery.
- Involve the community in helping to reduce neonatal mortality by sensitizing pregnant women’s families and organizing transportation groups to avoid delays in getting pregnant women to a Health Centre.

References

3 A strategy to reduce postnatal deaths: the case of Bugesera District

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Key messages
Postnatal care could be considered one of the strategies to reduce neonatal mortality, because neonatal mortality contributes to almost 50% of infant mortality. Therefore, the Ministry of Health should issue national guidelines of postnatal care to health providers, standardize registers for recording postnatal care and train health care providers on focalized postnatal care. Health facilities, for their part, are called on to create a specialized postnatal care unit that will be known by mothers, to increase the availability and the provision of postnatal care and to promote the use of postnatal care by increasing women's awareness of its importance.

Background
The postnatal period is defined by the World Health Organisation (WHO) as the period from one hour after delivery of the placenta to six weeks after birth. Postnatal care helps to identify complications, promote healthy behaviours, ensure the establishment of successful infant feeding, link the mother to family planning services and the baby to child health care, and foster the development of good relationships between the mother and the infant. A lack of care in this critical period may result in death or disability as well as missed opportunities to promote healthy behaviours affecting women, newborns and children. In fact, postnatal care has long been neglected or fragmented, and related data are either unavailable or show low-level coverage in a large number of countries. As a significant proportion of maternal and newborn deaths take place within the 48 hours following delivery, safe motherhood programs have recently placed special emphasis on the importance of postnatal check-ups.

A child’s risk of dying is highest in the neonatal period, the first 28 days of life. Safe childbirth and effective neonatal care are essential to prevent these deaths. Also 44% of child deaths under the age of five take place during the neonatal period. Pre-term birth, intrapartum-related complications (birth asphyxia or lack of breathing at birth) and infections cause most neonatal deaths. According to the WHO, approximately, 3 million babies die every year within the first 28 days of life. During this period, close to
half of all deaths take place in the first 24 hours of life, and 75% occur in the first week. Sub-Saharan Africa has the highest rates of neonatal mortality in the world and has shown the slowest progress in reducing newborn deaths, especially deaths in the first week of life.3

Based on the 2010 Demographic Health Survey (DHS) in Rwanda, neonatal mortality declined from 37 deaths per 1000 live births in 2005 to 27 per 1000 live births in 2010.3 However, efforts are continuing to reduce what is still a high neonatal mortality rate. According to the Rwandan annual health statistics for 2013, neonatal and child death audits started in all District Hospitals in January 2011. Health facilities audited 923 neonatal deaths in 2011, 2632 cases in 2012, and 2889 in 2013, which represented 91% of all reported cases in weekly neonatal death surveillance.6 The global community has also paid greater attention to women’s and children’s health. Millennium Development Goal (MDG) 4 aims to reduce the 1990 mortality rate among children under five years of age by two thirds. Child mortality is also closely linked to MDG 5: to improve maternal health.5

The results of a study done in Brazil have shown that poorer women, those with a lower level of education, single mothers, adolescents, multiparae, smokers, women who delivered vaginally and those who were not assisted by a physician were less likely to attend postnatal care.7 Postnatal visits were also less frequent among women who relied on the public sector than among private patients (72.4% and 96%, respectively, x2 p < 0.001), and this difference was not explained either by maternal characteristics or by health care utilization patterns.1

In Rwanda, postnatal care has been made available in all health facilities, including in Bugesera District. Despite this tremendous effort, there is evidence that service utilization is still very low, especially in Bugesera. The last DHS 2015 revealed that 10.9% of women who gave birth in Bugesera District had a postnatal check-up in the first two days after delivery, compared to 43% of women nationally.1 However, there is a large disparity between postnatal care and other maternal and child health programs. Compared to other maternal and child health programs, postnatal care has the lowest utilization rate, yet it is a crucial component of safe motherhood and neonatal health.9

Many factors may affect, directly or indirectly, the decision of whether to seek postnatal care. These include geographical, economic and socio-cultural barriers, the characteristics of health services, as well as the quality of care.10 Specifically, women who did not experience problems themselves or with their babies during delivery tend to think they do not need postnatal care;11 health care providers fail to give women proper advice in postnatal care;13 and the geographical inaccessibility of the health facility, which can be measured by distance, travel time, means of transportation and any other physical barriers, could hinder the client from accessing postnatal care services.12

Postnatal care is one of the major interventions recommended by WHO for the reduction of maternal and newborn deaths worldwide. Currently, the existing Rwandan policies have emphasized components such as skilled birth attendance, antenatal care, emergency obstetrical and neonatal care (EmONC), maternal, child and neonatal death audits and verbal autopsy.7 However, national guidelines/protocols/standards on postnatal care services are still missing. In addition, the available information on postnatal care services relies more on population surveys such as the DHS, which provides some information on the level and timing of utilization of postnatal care services but not on the content of care received by mothers. Yet analysis of health facility registers coupled with health facility assessment can provide valuable information to improve postnatal care service provision. To our knowledge, no study has ever been undertaken in Rwanda on postnatal care service use at the point of provision.

Despite tremendous efforts made by the Government of Rwanda to put in place postnatal care services at all health facilities, the key question of the study we implemented from December 2013 to March 2014 is: Why do women deliver at a health facility and then be discharged without any postnatal check-up, and what lessons can be learned?

Description of the study

Study design, sample size and sampling procedure

This case study is based on a retrospective study carried out in Bugesera District. All 15 Health Centres in the district offer a maternal and child health care package and were, therefore, included in the study. The sampling frame consisted of women who gave birth in Bugesera Health Centres between January and June 2013 (using the delivery registers). According to the 2010 DHS, 66.1% of women who gave birth delivered in a health facility in Bugesera District,1 and 26 percent of them had a postnatal check-up within six weeks after delivery. The sample size was calculated according to postnatal care coverage of 26% in Bugesera District. With an accuracy of 5% and a confidence level of 95%, a minimum of 292 women was required. In addition to the women who gave birth in that period, all 15 heads of the Health Centres were interviewed about their perceptions about the low use of postnatal care services.

Selection of study participants

After calculating the required sample size, the selection of women was done as follows: we extracted the total number of deliveries in all Health Centres in Bugesera District and the number of deliveries at each Health Centre from the health management information system. Next, we calculated the proportion of deliveries at each Health Centre relative to the total. Then, these proportions were applied to the number of deliveries per Health Centre to determine the number of women to be selected for the study. Finally, within each health center, women were selected based on the sampling interval. In total, 358 women were selected, which is more than the minimum statistical requirement of 292 women. Given that women were selected with unequal probability, sampling weights
were calculated as the inverse of the probability of selection. Data on postnatal care (timing and content of care) and socio-demographic and pregnancy/delivery-related data were extracted from maternity and postnatal care registers.

**Defining content and timing of care in pregnancy**

The definitions of the timing and content of postnatal care used in this study are based on WHO recommendations on postnatal care for the mother and newborn.13

**Outcome variables**

‘First postnatal care visit attendance’ was defined in this study as one postnatal visit provided to mother and baby within the first 42 days (six weeks) of birth (13; 1). The date of delivery and the date of postnatal care visit were recorded in the women’s file. These two dates were used to calculate the timing of the first postnatal check-up. For our analysis, we used the options Yes=1, and No=0 to determine whether the mother received a postnatal check-up.

**Independent variables**

The independent variables in this study were chosen based on existing literature on maternal health care services. They include the age of the mother (coded as <20, 20-34, >=35 years old), place of residence, travel time to the health facility (coded as <=30 min and >30 min), living in the health facility’s catchment area, parity (coded as primiparous and multiparous), number of living children (coded as 0, 1–2, 3–4 and 5 or more), history of miscarriage/c-section, gestational age at birth (coded as >=38 weeks ‘Early Term’, 39–40 weeks ‘Full Term’, 41 weeks ‘Late Term’ and 42 weeks ‘Post Term’), outcome of the baby at delivery (existence of congenital malformation at birth, weight at birth) and birth attendance (recorded as skilled attendant or unskilled attendant). Doctors, nurses and midwives were classified as skilled attendants, while relatives, friends and neighbours were classified as unskilled attendants.

**Statistical analysis**

This study reports the following outcome variable: postnatal care visit within 42 days of birth. The association between our outcome variable and the independent variables were tested by a Chi-square test.2 The Fisher’s exact test was used whenever the number of cells in the column was less than 10. A P-value of less than 0.05 was considered statistically significant.

**Limitations**

The assessment of the content of care provided to mothers and their babies was limited by the availability of the information recorded in the postnatal care registers. Also, there was no information on whether the clinical assessment was done correctly, as no direct observation was done. Moreover, although interviews were held with the heads of health facilities, discussions with other key informants such as the mothers themselves would have provided more information on barriers to access and their perceived quality of care.

**Results**

**Descriptive summary of participants: characteristics of mothers, Bugesera District 2013**

In total, 358 of the 4823 women who delivered between January and June 2013 were included in our study. We observed that the majority of our mothers were aged 20–34 years. Although the great majority of them lived in the health facility’s catchment area, about 60% travelled more than 30 minutes by foot (one way). More than two thirds of the mothers are multiparous and gave birth prematurely. The great majority of them had no history of obstetric risks. Most of the babies were born alive; however, about 10% of them had a low birth weight, and less than 2% confirmed congenital malformation.

**Use of postnatal care services during the first visit, Bugesera District 2013**

Only 62% of the 358 women selected received a postnatal check-up, and 38% of mothers who delivered in health facilities did not receive postnatal care services. Among those who received postnatal care services, less than 8% received care within three days after giving birth, while for the great majority it was between four and 10 days after birth.

With regard to the postnatal care services provided to mothers and their babies by health professionals, the study shows that nearly all mother-baby pairs received an exhaustive clinical assessment in the postnatal period. Although all mothers received counselling on family planning and breastfeeding practices, about 17% did not receive counselling on nutrition, and 8% did not receive counselling on danger signs for newborns and mothers.

**Capacity of health facilities to provide postnatal care services, Bugesera District 2013**

Though postnatal care has been made available to be offered at health-centre level, currently only one health facility (7% of the total) possesses a designated postnatal unit, and none has national postnatal care guidelines. As for the screening tests available, the majority of health facilities can provide most relevant tests. However, only one health facility provides a blood group and Rhesus factor test due to financial limitations (these are expensive and have to be paid for by the client). We also observed that, on average, health facilities employed five nurses trained in EmOC and neonatal care, including offering a postnatal care package. We also found that about 45% of health facilities still offer postnatal care service less than three times per week, and this constitutes a barrier to woman wishing to access postnatal care on any day and at any time. These results highlight the need to increase the availability and the provision of postnatal care services to all work days to make it easier for women to return for postnatal care as they might come for other services such as consultations.
Factors associated with postnatal care utilization in Bugesera District as perceived by heads of health facilities

Interviews with the heads of the health facilities highlighted that the great majority of them think that the long distances involved in reaching a health facility and mothers’ lack of knowledge about postnatal care services are the main factors that limit service utilization. Most of the women in the study choose not to return for postnatal care, especially when they have delivered normally. The heads of the health facilities also reported that several women mentioned that it is too early for them to go out to access postnatal care services because they feel tired. However, about 40% of the heads of the health facilities also said that some factors are related to a low opinion of postnatal care at all levels (health facility and central level). The interviews further highlighted that the low opinion of postnatal care among providers is one of the barriers to the use of postnatal care services. They also cited the lack of standardized registers, national guidelines and trained health workers in focalized postnatal care service as other factors that may prevent the use of postnatal care services.

Discussion

This case study aims to contribute to the understanding of the importance of postnatal care as a strategy to reduce postnatal deaths in Bugesera District among both health providers and beneficiaries. Postnatal care can help to identify possible post-partum complications and promote healthy behaviours for both health providers and beneficiaries. This will not be possible, however, as long as postnatal care is not considered a priority at all levels of the health system in Rwanda by health care decision-makers, providers and end users.

The results of the study showed that 62% of all women who gave birth attended postnatal care services in Bugesera District within six weeks after birth — most of them between four and 10 days. The main question to address in this case study was why women deliver in health facilities, yet use of postnatal care services, specifically the first check-up, still remains very low. It seems crucial to address the level of knowledge among lactating mothers about returning for postnatal care, as this was cited by more than 90% of the heads of health facilities in Bugesera as one of the factors associated with the low use of postnatal care services. In addition, geographical inaccessibility was also identified as a barrier to use. In Indonesia and Nigeria, for instance, infants born to mothers who considered that a long distance to a health facility was a ‘major problem’ were less likely to receive postnatal care. However, in our case, although the heads of Bugesera health facilities also mentioned that long distances prevented women from accessing postnatal care, we did not find any significant association. Finally, we found that about 45% of health facilities still offer postnatal care less than three times per week. These results highlight the need to increase the availability of postnatal care services.

Different factors found in this case study contribute to the perceived low use of postnatal care services in Bugesera:

- The fact that postnatal care services are not offered every day constitutes a barrier to mothers willing to attend any time they are free; it should be made easier for them to come any day and not wait for a fixed day.
- If women do not feel sick, they tend to think they do not need postnatal care: this has been confirmed by the heads of health facilities, who said that especially women who delivered normally do not return for postnatal care. A cross-sectional study that took place in Palestine also showed that use of postnatal care is higher among women who had experienced problems during their delivery, had a cesarean section or had an instrumental vaginal delivery than among women who had a spontaneous vaginal delivery.
- There is an urgent need for health care providers to sensitize the community on the importance of postnatal care services and on complications that may arise during the postnatal period. This case study showed that health care providers do not take time to educate women about postnatal care or are not clear enough in asking them to return and stating exactly when. A lack of advice from health care providers to women in postnatal care surely influences negatively the use of the service: a study in Palestine showed that women who had not been told by their doctor/nurse to return for postnatal care did not do so after delivery.
- Our study demonstrated that 60% of women walk more than 30 minutes to reach a health facility. This constitutes a great barrier for them to return for postnatal care unless they experience serious problems during the postnatal period. Ikamari (2004) brought to light that the geographical inaccessibility of health facilities measured by distance, travel time, means of transportation and any other physical barriers could hinder the client from receiving postnatal care services and that long distances to health services often impact their use.

Conclusions

Although efforts have been made to provide postnatal care services, with the intention of preventing possible postnatal complications for either mothers or babies, coverage is still low. This study shows the importance of postnatal care in reducing postnatal (maternal and neonatal) deaths in Bugesera District. This intervention should be complemented with health promotion programs to increase community awareness on the benefits of good-quality health care services, and efforts should be made to improve access to primary health care services, especially for rural and remote communities. Therefore, postnatal care services should also be provided every day if women have to receive their first postnatal check-up within 24 hours of delivery. Furthermore, strengthening the skills
of health providers and the current capacity of health facilities to provide postnatal care by using standardized registers and national guidelines could improve the provision of quality postnatal care in Bugesera District.

**Recommendations**

Based on the results from this study, the research team recommends the following:

**For the Ministry of Health**
- Issue national guidelines of postnatal care to health providers.
- Use standardized registers to record postnatal care.
- Train health providers on focalized postnatal care.

**For health facilities**
- Increase the availability of postnatal care to more than one day per week.
- Promote the use of postnatal care by increasing women’s awareness of its importance.

**References**

In this second part specific interventions for strengthening health systems are presented. The chapters reflect on the decentralization process of mental health care, the strengthening of waste management, the management of health care technology, community based health insurance and urbanization and its effect on health systems. Lessons learned from this part are described here:

Based on national mental health policy, mental health care has been decentralized in general hospitals and integrated into primary health care. Strong leadership, vision and accountability mechanisms are vital to the successful implementation of mental health policy. To improve mental health of the population, psychiatric nurses at District Hospitals should be empowered and community mental health should be promoted.

Challenges in waste management need to be addressed through joint efforts and activities by health staff, local authorities, the Ministry of Health and partners. Health facilities should draw up a comprehensive plan from a well-researched situation analysis, train their staff and implement their plans. District authorities should also pay attention to waste issues in their usual role of coordination and work hand in hand with the Ministry of Health and other partners.

It is essential to manage health care technology effectively to improve the delivery of quality health care services. The Ministry of Health should develop a policy for medical equipment at central and hospital level. Hospitals should plan for the establishment of a maintenance workshop in compliance with WHO standards, ensure the availability of tools and spare parts and improve management of technical staff.

Community-based health insurance is a way to improve access to health care in rural areas. Coverage can be improved through community mobilization before the payment period for to ensure timely payment of premiums, to ensure continued access to health care and prevent self-medication and consultation of traditional healers. Local authorities could also enhance the capacity of people to pay their contribution by encouraging income-generating activities, family planning and savings.

In an urban environment health services should be physically accessible, affordable, appropriate and acceptable to facilitate a healthy and safe lifestyle. The presence of doctors and an increased number of services delivered in urban Health Centres would improve access to health services and ensure a healthier population.
4 Decentralization and integration of mental health care into primary health care: A case study of Rwanda

Achour Ait Mohand, Yvonne Kayiteshonga, Nancy Claire Misago, Jeanne D’Arc Dusabeyezu, Jean Damasene Iyamuremye

Key messages

Rwanda faces an exceptionally large burden of mental health disorders, which led the government to take steps to deal with mental health issues in a context of limited resources. Decentralizing mental health care in general hospitals and integrating mental health care into primary health is a way to increase the accessibility and improve the quality of mental health services.

Strong leadership, vision and accountability mechanisms are vital to the successful implementation of mental health policy.

Mental health, a serious health challenge in the world

Mental health is described by the WHO as a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.1 This definition clearly extends the concept of mental health, which is not understood in a restrictive way as the absence of mental disorders.2 In this meaning, mental health is an integral and essential part of general health and the foundation for well-being and effective functioning for an individual and for a community.3

The burden of mental ill health is one of the most serious health challenges in the world.2 Up to 10% of the world’s adult population, about 450 million people, suffer from mental and behavioural disorders. One out of four people will develop one or more of these disorders during their lifetime.4 Mental and substance use disorders were the leading global cause of all non-fatal burden of disease in 2010 and accounted for 7.4% of the total burden of the world’s health problems as measured in disability-adjusted life years (DALYs); they are estimated to increase to 15% by 2020. Overall, mental and substance use disorders were the fifth leading disorder category of global DALYs in 2010. These
disorders were responsible for more of the global burden than HIV/AIDS, tuberculosis, diabetes or transport injuries.¹ In addition, five of the 10 leading causes of disability and premature death worldwide are psychiatric conditions.⁶

However, despite the large contribution of mental disorders to the global burden of disease, mental health is still a neglected topic in most parts of the world, particularly in low- and middle-income countries where, due to significant barriers and resistance, progress in mental health service development has been described as slow.⁷ Barriers include insufficient funding for mental health services, mental health resources centralized in or near big cities and in large institutions, resistance to decentralization of mental health services, challenges in integrating mental health care in primary care health settings, and the general shortage of public health perspectives in mental health leadership.⁸ In addition, WHO points to a large shortage and limited types of health workers trained and supervised in mental health, inequities in their distribution, and inefficiencies in their use, especially in low- and middle-income countries.⁹ As a consequence, the gap between the need for treatment and its provision is still large, although effective treatments are increasingly available and economically advantaged.¹⁰

Between 76% and 85% of people with severe mental disorders receive no treatment for their disorder in low- and middle-income countries.¹¹ Recently, a study assessing the accessibility of mental health services for people with schizophrenic disorders in 50 low- and middle-income countries shows that two thirds of the people affected with schizophrenic disorders, the most important of the severe mental disorders, are not receiving treatment, and that the magnitude of the treatment gap is 89% in lower-income countries.¹²

In its 2001 World Health Report, WHO recommended to country members to establish national mental health policies involving communities and to develop mental health legislation. These policies should draw attention to the necessity to provide mental health care near communities, develop human resources in mental health and promote collaboration with other sectors.²

**Mental health disorders in Rwanda**

Rwanda faces an exceptionally large burden of mental health disorders.¹⁵ As demonstrated by research, the impact on mental health is one of the most significant consequences of armed conflicts. In the case of Rwanda, much of the country’s burden of mental disorders can be linked to the genocide against the Tutsi in 1994¹⁶, which resulted in the deaths of more than a million people, thousands of orphans¹⁷ and untold additional disability and suffering. Furthermore, after the genocide, the Rwandan health system was in a state of almost total collapse; health infrastructure and human capital were almost completely destroyed. The consequences in terms of the health of the population were particularly devastating.¹⁸

To date, mental health problems are the leading cause of disability in Rwanda. The top five leading causes of years lived with disability include two mental health disorders: depressive disorder and anxiety disorders. The percentage change of leading causes of DALYs from 1990 to 2010 shows an increase of four main neuropsychiatric disorders: interpersonal violence, anxiety disorders, major depression and epilepsy. In addition, alcohol use is one of the three leading risk factors accounting for the most disease burden in Rwanda.¹⁹

Rates of major depression and post-traumatic stress disorder (PTSD) remain high and have been reported at levels that far exceed international averages.²⁰ In 2009, a national survey estimated that more than 26.1% of adults suffer from PTSD. In addition, a large number of participants who satisfied diagnostic criteria for PTSD were affected with one or more psychiatric comorbidities such as major depression (68.4%), substance dependence (7.6%) or somatic symptoms such as back pain (74.1%) and headache (72.1%).²¹ In 1999, the prevalence of major depression was estimated to be 15.5% by a study conducted in a rural area which also emphasized that depressive symptoms were strongly associated with functional impairment in performing most daily tasks.²²

Drug abuse, particularly among young people, is a new mental health challenge in Rwanda.²³ A study conducted by the Ministry of Youth in 2012 among 2479 youth aged between 14 and 35 years estimated that 52.5% of the respondents had used one or more substances at least once in their life and that the median age of onset was as low as 11 years. Furthermore, 7.46% of the total sample was alcohol dependent, while 2.54% were found to be dependent on cannabis.²⁴

Neurology cases are still treated by mental health services, and epilepsy remains the leading cause of consultation in mental health services in the country.²⁵ In 2005, a study conducted by the Ministry of Health estimated the prevalence of epilepsy to be 4.9%. The study also found significant discrimination against people living with epilepsy, and a low level of knowledge about the condition among the participants.²⁶

In view of the magnitude of mental health disorders, any improvement in the population’s health requires their prevention and treatment to be considered a public health priority.

**Mental health, a priority area of intervention for Rwanda’s health system**

In terms of the development of mental health care, there was almost no government responsibility in this area and no national policy until 1995. New challenges emerging in the post-genocide period, mainly linked to trauma issues and their complexities, have highlighted mental health issues in general and led to the development of the first national mental health policy.
By 2005, mental health was clearly identified within the overall health sector policy as a priority area of intervention. This policy recommends the integration of mental health services into all national health system structures, including at the community level, to provide a community dimension to mental health care in Rwanda. In 2014, when this policy was reviewed; mental health was included among the general policy objectives of improving the demand, access and quality of health services. Mental health is also one of the main programs identified in the third phase of the Health Sector Strategic Plan (HSSP III) which is running from July 2012 to June 2018 and whose main task is to operationalize the Economic Development and Poverty Reduction Strategy in the health sector in order to attain national priorities, including the Millennium Development Goals.

Over the last 20 years, although poverty levels remain high, Rwanda has made remarkable improvements in the health status of its population related to life expectancy, infant and child mortality, immunization; family planning, HIV, malaria and infrastructure, among others. The country has also taken steps to provide accessible and equitable services for all people living with mental health problems.

In our case study the questions are: What are the results, immediate outcomes and lessons learned from the decentralization of mental health services? What are the opportunities to scale up this process?

What has been achieved?

Developing and launching a national mental health policy
Mental health policies and plans are essential tools for coordinating mental health services; when well formulated, they can have a significant impact on the mental health of populations. In light of the large global burden of mental illness emerging in the post-genocide period in Rwanda, there was a clear need for a national mental health care policy. The first national mental health policy was developed in 1995 and reviewed in 2011 using an intensely participatory and consultative process.

The revised mental health policy includes a problem statement, specific objectives and the priority intervention areas (see Box 1 for a summary of the main intervention areas). In general, the values and principles developed in the policy promote human rights, community-based approaches and intersectoral collaboration. The policy highlights the need for mental health legislation that upholds the rights of people with mental health problems and that establishes a legal framework in mental health care practice. A proper analysis of the document found that the principles of primary health care are emphasized: promotion, prevention and rehabilitation are widely addressed in the document; the policy calls for accessibility issues to be addressed through the integration of mental health services into general care at all levels of the health system, and for universal health coverage through Community-based health insurance scheme “mutuelles de santé”; the policy advocates for community participation and involvement in care; and it promotes intra- and intersectoral collaboration, including with non-governmental organizations.

The policy also recommends improving the availability and accessibility of essential psychotropic medicines, promoting the quality of mental health care and strengthening the capacity of health professionals at all levels. As neurological disorders (especially epilepsy) and substance abuse disorders are handled together with mental disorders in mental health units, these problems are considered in the policy. Finally, the policy addresses the need for research and evaluation to improve services.

Box 1: Key interventions of the national mental health policy (2011)

- Decentralization and integration of mental health care into primary health care, and promotion of community-based approaches
- Integration of mental health care into community-based health insurance (CBHI), and support for the availability of psychotropic medicines
- Improving the quality of mental health care
- Sensitizing on mental health issues and fighting stigma
- Developing human resources in mental health
- Promoting human rights and drafting a mental health law
- Development of specific programs according to the epidemiological context: PTSD, drug abuse, epilepsy and child and adolescent mental health

In terms of organization and development of mental health care, the policy requested the creation of a Mental Health Division within the Rwanda Biomedical Center in the Ministry of Health, whose main mission will be to implement the national mental health policy under the guidance of the Health Sector Strategic Plan. This revised mental health policy is currently running and implemented through the Mental Health Division.

Decentralising mental health care in Rwanda’s health care system
According to recent public health studies, there is evidence that community treatment models are the most effective way to deal with mental health disorders, particularly in cases of long-term mental health care for people with severe mental disorders, in that they can reduce the number of relapses and hospital admissions and shorten average length of stay.

The United Nations General Assembly and WHO stated in 1991 that mental health care should be shifted from hospital- to community-based treatment. WHO and the World Organization of Family Doctors (Wonca) have advocated for the integration of mental health services within the framework of primary health care and demonstrated that integrating mental health services into primary care generates good health outcomes at reasonable costs.
Rwanda’s health care system is organized along the principles of primary health care. Health Centres are the first point of contact for patients. They also coordinate all outreach and prevention activities held at the community level, carried out by Community Health Workers (CHWs). Community-level and Health Centres are attached to the District Hospitals, a general hospital, which is the next level of care. To address the need for continuity of care, health services are organized by catchment area, so each District Hospitals covers a geographical area. There are 38 District Hospitals in 30 administrative districts. The Ministry of Health has also established provincial hospitals, one in each province of the country. At the top of the health care system (tertiary care), there are two national referral and teaching hospitals, and recently three District Hospitals were upgraded to referral hospitals.

In contrast to the period before 1994, when mental health care provision was mostly designed through and around the only psychiatric hospital in the country, the framework supporting mental health interventions after the genocide period in Rwanda established a national mental health response delivered through a decentralized and integrated mental health care system.

Mental health services are now effectively decentralized across the country. Each of the country’s 38 District Hospitals has its own mental health unit, which delivers a comprehensive mental health care package according to the national standards defining the basic package of health services to be provided at various levels of the general health care system. Within this framework, each mental health unit provides both inpatient and outpatient mental health care, including analysis and diagnosis, treatment and follow-up, rehabilitative measures, counselling and interaction with families. If necessary, the patient will be referred to mental health referral settings. Eleven mental health units located at District Hospitals have beds dedicated to patients receiving mental health care (between three and 12 beds), whereas the remaining District Hospitals are using mainly internal medicine or surgery beds for inpatient mental health care. These wards have layouts that allow good observation and mental and physical care. Mental health units are also essential for inpatient treatment of acute episodes and liaison with other medical services.

Mental health units are staffed by a permanent team comprising one or two psychiatric nurses and one psychologist providing a broad range of mental health services under the supervision of a physician trained in mental health care. There are no psychiatrists in any of these facilities. In 2014, there were 66 psychiatric nurses and 41 psychologists working in mental health units in District Hospitals. Each mental health team receives on-site formative supervision and participates in regular case review sessions led by a mental health team from the national referral structures.

Recently, general nurses working in Health Centres (at least one per Health Centre) and CHWs (at least one per village) were trained to ensure an integrated mental health care component in Health Centres and at community level. CHWs serve as an important link between the community and health providers. They are community volunteers with responsibility for identifying the community’s health needs and taking appropriate measures.

There are two mental health referral structures in Rwanda, both in Kigali: the Neuropsychiatric Hospital of Ndera (which also has a neurology department) and the Mental Health Department of Kigali Teaching Hospital which is an ambulatory treatment facility. Recently a specific psychiatric unit was created in Kigali aiming to treat people with addictions, and a rehabilitation centre for people suffering from substance abuse disorders will be launched in the coming months in Huye District (South Province). In 2014, there were six psychiatrists in the country. Although child mental health was described as a major concern in the national mental health policy, there is currently only one specific unit for children and adolescents based at the Neuropsychiatric Hospital of Ndera.

The mental health care system in Rwanda represents a balance between community-based and hospital-based care. In this regard, a stepped-care approach is provided: from Health Centres in rural areas, to District Hospitals and then mental health referral settings in Kigali. Consequently, patients are treated as near as possible to their home and then receive hospital treatment only after community treatment has failed.

**Integrating mental health care into general care**

The Health Sector Strategic Plan emphasized the necessity to integrate mental health services into primary care, and the mental health policy specified its framework. Rwanda’s health sector policy has decentralized the provision of health services to districts, and mental health is a component of the health care package in all levels of the health system. This process leads to the availability of mental health care services at the community level, in Health Centres and District Hospitals.

The inclusion of mental health as part of the basic health care package was essential for ensuring that psychiatric nurses were recruited in district hospitals; health workers received training; essential psychotropic medicines were available at primary care level and that mental health indicators were integrated in all monitoring and evaluation systems of care (at national and local levels) included planning, quality of care, performance-based financing, management and data collection (HMIS), etc.

Depending on the skills of the professionals in place, their mission statement, areas of responsibility and tasks are defined for each level. Referral schemes have been established between these levels and mental health referral settings for early identification of new mental health cases, monitoring of longer-term cases, and treatment of physical health problems of people with mental disorders.

Topics part of the training included the situation of mental health in the world and epidemiology; the national mental health context; diagnose and treat mental disorders; conduct an interview with the patients; principles of counselling and management of
Strengthening Health Systems

Decentralization and integration of mental health care into primary health care

There has been evidence for a few years that non-specialist health workers can safely and effectively deliver treatments for mental disorders within a functioning primary health care system. In Rwanda's mental health system a mix of specialists and non-specialists deliver mental health services at all health system levels. At District Hospitals psychiatric nurses and psychologists provide a broad range of mental health services under the supervision of a physician trained in mental health care. To reinforce the integration of mental health care into the service package of District Hospitals, general practitioners and general nurses are trained to improve inpatient and outpatient mental health care. In addition, the whole team should be able to take charge of mental health patients in inpatient care. At Health Centres at least one general nurse is trained to deal with common mental health disorders. To reinforce community support, CHWs, who are in charge of community-based health care across the country, are trained to fight stigma, detect mental health problems and orient families and patients throughout the mental health care system.

Tools have been developed to facilitate follow-up and referral between the different levels of care. Guidelines and protocols are used at each level to help teams during diagnosis and treatment. Figure 4.1 shows the human resources working at each level of the mental health care system.

A specific list of essential psychotropic medicines has been established for each level of the health system. These psychotropic medicines are part of the national list of essential medicines, including medicines selected with due regard to relevance to public health, evidence on efficacy and safety, and comparative cost-effectiveness. Rwandan legislation and regulations allow primary health care workers (general and psychiatric nurses) to prescribe and dispense psychotropic medications according to the national list.

To improve the quality of mental health care, a collaborative system has been set up in which each level supports the next. In this model, specialists play a role in capacity-building, supervision and quality assurance. District Hospitals’ mental health units are supervised by a team from the national level; therefore, the mental health team receives on-site formative supervision and participates in case review sessions led by a team comprising one psychiatrist or one general practitioner and one psychologist and one mental health nurse from the national referral structures. In turn, mental health nurses from District Hospitals’ mental health units supervise Health Centres. Figure 4.2 shows the district-level supervision system.

Figure 4.1: Human resources available at each level of the health pyramid

Figure 4.2: Supervision system performed at district level
Mental health units in District Hospitals work together with the social services in the hospital and with the district authorities to promote the psychosocial rehabilitation of patients with mental illness. Trained health professionals and psychiatric nurses provide regular outreach activities in the community and in schools on issues related to mental health and drug abuse. Some activities are carried out in collaboration with local non-governmental organizations and administrative authorities.

The budget that funds mental health activities is included in the budget of the health facilities at each level of the health system.

At central level, there is a Mental Health Division within Rwanda Biomedical Centre that is composed of three units: development of psychiatric care unit; promotion of mental health and community interventions unit as well as prevention and treatment of substance use disorders unit. Its mission is to implement the mental health policy through a strategic plan under the guidance of the health sector strategic plan. In this context, the Mental Health Division coordinates initiatives and design Programs to promote mental health and to develop mental health care at national level. The Mental Health Division plays a key role in the integration of norms, standards and indicators for mental health in all ongoing Programs of the Ministry of Health; human resources, health financing, planning, essential medicines, monitoring and evaluation, quality of care, community health, CBHI, performance based financing, etc. This framework is updated and supported regularly by the Mental Health Division team. The Mental Health Division also plays a major role in the coordination of consultative process and dialogue with stakeholders regarding the design and the implementation of certain national and cross-cutting Programs for example strategies to fight against drug abuse, drafting a mental health law, psychological support for victims of genocide, etc. This expertise and role of coordination are essential in the process of decentralization and integration of mental health care at the local level and support the health system in general.

Reinforcing accessibility and equity
Decentralization of mental health care allowed essential mental health care to be made available locally so that people do not have to travel long distances. This includes outpatient and inpatient care and rehabilitative care. Thus, geographic accessibility was increased, and the number of transfers to mental health referral structures reduced. According to data from the health management information system in 2013, all mental health units received 26,757 new mental health cases and performed 135,413 outpatient consultations and 1158 hospitalizations, with only 639 transfers to mental health referral structures. The number of outpatient mental health consultations at district level rose from 19,000 in 2008 to 135,413 in 2013.

Accessibility was also increased by integrating mental health care into the community-based health insurance (CBHI) scheme, (mutuelles de santé) which allows mentally ill people, similar to other patients, to pay at most a 10% co-payment for psychotropic medicines and services. Ninety per cent of mental health service costs are met by CBHI. The figure is 100% for those on the lowest incomes. The CBHI program established in 1999 by the Government of Rwanda is a key component of the national strategy to provide universal health care. An external evaluation held in 2012 shows that the scheme has increased the use of health care services and protected households from catastrophic health spending.41

Setting up mental health care services in areas where they did not exist before and integrating mental health into the CBHI scheme allowed better access to appropriate mental health assessment and treatment of physical health conditions and has probably contributed to ensure equity among different population groups. This is particularly the case with the decentralization of mental health services to rural areas and the actions developed to treat those with mental disorders, particularly those with the lowest income.

People-centred care and strengthening the health system
People-centered care articulates a type of care, which is focused on and organised around given groups of people within the context of their communities, rather than on the disease alone.42 WHO emphasises that putting people at the centre of health services is a core aspect of primary health care; furthermore, despite certain experiences, people centred care needs to be considered as necessary in low- and middle-income countries where resources are scarce.43

By focusing on different levels of the health system, training non-specialist professionals and promoting people-centred care, mental health interventions in Rwanda are in line with the WHO primary health care principles that promote continuous and comprehensive health care, performed as near as possible to communities. These principles are also outlined in Rwanda’s Health Sector Strategic Plan.

Table 4.1: Mental health activities in District Hospitals

<table>
<thead>
<tr>
<th>Year</th>
<th>2008</th>
<th>2009</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units</td>
<td>23</td>
<td>(27/32)</td>
<td>43</td>
<td>43</td>
</tr>
<tr>
<td>New outpatient cases</td>
<td>-</td>
<td>-</td>
<td>28,461</td>
<td>26,757</td>
</tr>
<tr>
<td>Outpatient consultations (old and new cases)</td>
<td>19,000</td>
<td>31,520</td>
<td>12,9387</td>
<td>135,413</td>
</tr>
<tr>
<td>Inpatient mental health care</td>
<td>-</td>
<td>2240</td>
<td>1518</td>
<td>1158</td>
</tr>
<tr>
<td>Transfers</td>
<td>-</td>
<td>640</td>
<td>-</td>
<td>639</td>
</tr>
</tbody>
</table>
Decentralization and integration of mental health care into primary health care

Patient care plans are personalized for each individual’s unique situation, and health care is provided as close to home as possible. Mental disorders are managed from a biopsychosocial and holistic perspective. Affected individuals are seen not only in terms of their disorders but also in terms of their history and current life circumstances. Families are considered key care partners, and community groups are engaged to raise awareness about the extent of mental disorders in the country and to dispel common misunderstandings about their causes and treatment options. As mentioned above, tools have been introduced to facilitate follow-up and referral between the different levels of care, and at each level (except the village level) a supervision system has been set up to ensure follow-up and quality of care.

Using psychiatric nurses at District Hospitals and non-specialists such as primary care physicians and CHWs to deal with common mental health disorders has probably contributed to cover the enormous treatment gaps and improve the relationship between providers and patients. Using non-specialist health professionals and promoting community interventions also contributes to strengthen the health system.

Reinforcing quality of care and providing specialized mental health care

Rwanda lacks staff with an educational background in psychiatry. In 2013, the University of Rwanda launched a third-cycle specialization in psychiatry to increase the pool of trained psychiatrists in the country. Specialists can ensure quality of care and expand health care provision.

Challenges

Many steps have been taken to improve mental health care, but certain challenges remain: funds for mental health care are limited; the number of qualified mental health professionals does not meet the burden of disease; and stigma is still threatening people with mental disorders. Future steps will focus on:

- continuing to strengthen the implementation of the third-cycle specialization in psychiatry in collaboration with the University of Rwanda, to reinforce the quality of mental health care;
- complete outpatient mental health care provision by introducing support modalities which are currently still non-existent or embryonic: psychiatric emergencies, day care, child psychiatry, specialized services for people suffering from addictions etc.;
- further integrating mental health into general care, especially regarding the management of certain mental and neurological disorders such as epilepsy;
- implementing the mental health law (draft available); and
- launching specialized mental health services at the new referral hospitals and provincial hospitals.

Key lessons learned

- Political commitment and the establishment of a national mental health policy and implementation plan contributed to the success of the decentralisation and integration of mental health care.
- Some of the key strategies of the plan included:
  - the inclusion of mental health as part of the basic health care package and establishing mental health units in all district hospitals across the country;
  - support for existing programs and introduction of psychiatric nurse practitioners in district hospitals to provide community mental health care;
  - the development of primary care programs comprising a mix of specialists and non-specialist mental health professionals (including general nurses, general medical practitioners, psychologists, and other allied health providers such as Community Health Workers, NGOs, etc.) to provide shared mental health care;
  - training health professionals, establishing a cascade supervision system and launching a specialisation Program in psychiatry to improve quality of care;
  - integrating mental health care and psychotropic medicine into the community-based health insurance scheme to improve accessibility and reinforce equity.
- The establishment of mental health units and having at least two psychiatric nurses in each district hospital has led to numerous improvements: transfers to the psychiatric hospital have been reduced; outpatient services have increased; and community-based mental health awareness Programs aiming at the prevention and promotion of mental health are launched.
- General nurses and general medical practitioners can be trained to provide effective people centred mental health care including prescription of psychotropic medications.

References

5 Improved Health Care Waste Management: Successes and Challenges from Rural Health Facilities in Gakenke District

Félicien Rusagara and Jean Baptiste Habimana

Key messages

Safe waste management depends on skilled health personnel: “Since action to improve waste management has to take place throughout a health-care facility (notably managers, medical staff producing the waste, porters and waste handlers), training all these categories of personnel is equally important”.¹

Inadequate and inappropriate handling of health care waste may have serious public health consequences and a significant impact on the environment. Hence, there is need for everyone including policymakers, health care providers and district authorities to participate in keeping the environment clean. Policymakers are responsible for ensuring that policies and guidelines about waste management are adequate for the local situation and disseminated to all health facilities, and that necessary follow-up is done. Improved waste management requires adequate allocation of resources. Despite their limited financial capacities, health facilities should pay attention to the importance of waste handling in their annual planning and budgeting.

Background

The waste produced in the course of health care activities carries a higher potential for infection and injury than any other type of waste¹. Inadequate and inappropriate handling of health care waste may have serious public health consequences and a significant impact on the environment. Hence, wherever waste is generated, safe and reliable methods for its handling are essential for infection control and prevention of negative public health impacts (HIV, hepatitis B and C etc.).

Improper handling of health care waste is one of the key causes for nosocomial infections. Analysis by the World Health Organization (WHO) in 2013 found that health care-associated infections are more frequent in resource-limited settings than in developed
countries. According to WHO, the prevalence of health care-associated infections in developed countries varies between 3.5% and 12%, compared to between 5.7% and 19.1% in low- and middle-income countries. Rwanda is also facing the problem of nosocomial infections, even though there are no specific data. WHO has proposed ways to prevent nosocomial infections, which include improving the hygiene and safe waste management in health facilities.

Rwanda, like other developing countries, still faces the problem of appropriate management of its health care waste. The main reason for this relates to the increased generation of health care waste due to the multiplication and expansion of health care facilities, ongoing immunization campaigns for measles, tuberculosis and tetanus and the use of disposable syringes and needles to avoid HIV transmission. Therefore, this waste poses potential health risks to health workers, the environment and the community at large. For instance, HIV is a source of nosocomial infection in all health care facilities.

National efforts for the efficient management of health care waste include policies, measures and procedures for hygiene at health facilities, injection safety and waste management. Health structures and facilities are supposed to implement these policies and guidelines to ensure hygiene and the safety of both health care providers and clients.

In the framework of the Minisanté IV program, a study was carried out to assess waste management in two District Hospitals and 20 Health Centres in Gakenke District from August 2014 to September 2014. The key question of the study is: How effective is the management in two District Hospitals and 20 Health Centres in Gakenke District from August 2014 to September 2014. The study was conducted among the following staff members at the health facilities:

- at the District Hospitals: the director, the environmental health officer, the head of the internal medicine department, the head of paediatrics, the head of maternity, the head of the operating department, the laboratory manager and the head of the pharmacy; and
- at the Health Centres: the titulaire, the in-charge of hygiene, the manager responsible for minor surgery and injections, the laboratory manager, the in-charge of the maternal and child health department (antenatal care, immunization, postnatal care) and the manager responsible for maternity.

The target group for the two District Hospitals in Gakenke comprised 16 people, and 120 people from the 20 Health Centres were interviewed – thus a total of 136 participants.

Three techniques were used during the data collection phase: interviews with selected District Hospitals and Health Centre staff using a structured questionnaire, observation of health care staff in their respective department using a checklist on waste management, and observation of overall hygiene within health facilities.

Design of the study

Gakenke District is one of the five districts in the Northern Province of Rwanda. It has an area of 704 km² and a total population of 334,236 people, meaning a density of 484 habitants per km². The district is divided into 19 sectors, 97 cells, 617 villages and 81,367 households with an average of 4.4 members per family.

Gakenke District is characterized by a cold climate and high mountains. According to the Demographic and Health Survey (DHS) of 2010, about half (53%) of its population lives more than 5 km from a health facility and requires an hour’s travel to seek health care.

In terms of health facilities, Gakenke District has two District Hospitals (Nemba and Ruli), 20 Health Centres and eight health posts established to facilitate the population’s access to health services. All health facilities were included in our study except the health posts, which only provide preventive and curative care. There is no hospitalization, and all complicated cases have to be transferred to Health Centres.

The existence of waste management documents and their use by health facilities

Currently national policy and guidelines on health care waste management include the 2009 National Policy on Injection Safety, Prevention of Transmission of Nosocomial Infections and Health Care Waste Management, Ministerial Guidelines on Sorting, Transportation, Treatment and Final Disposal of Medical Waste from Site of Generation to Site of Final Disposal, and the Checklist for Hospital Hygiene.

The waste management assessment conducted in Gakenke District showed that 71.4% of facility managers are aware of any Ministry of Health policy or guidelines regarding waste management or hygiene and that 60% of them have copies in their office/department. However, only 21.4% of the health facilities have waste management plans. The other 78.6% explain that there is no need to have a separate waste management plan when they have national guidelines to follow and hygiene activities are integrated into the general action plan of the health facility.

Practices used by Gakenke health facilities in all phases of waste management

Waste collection and transportation

The study revealed that departments producing most of the waste in the District Hospitals are: the internal medicine department (33.3%), maternity (33.3%) and the operating...
department (33.3%). At the Health Centres, waste is produced mostly in maternity (51.3%), minor surgery (28.2%) and the laboratory (12.8%).

Waste collection is mostly done by cleaners (91.1%) and hired companies (8.9%) on a daily basis from the point of generation to treatment/disposal (91.3%). Facilities sometimes store the waste before treatment or disposal (75%), in a specific room (51.9%) or in the store for hygiene materials (37%).

Waste is collected and transported using dustbins and safety boxes, for which security is assured at the rate of 63.6% for safety boxes and 31.8% for waste bins. This is because some of the staff are not trained on waste segregation and safety, on the one hand, and because the waste bins used do not always meet the standard criteria. Moreover, when waste is transported in bags, only 9.1% of them are correctly tied.

### Waste collectors’ safety

In most health facilities in Gakenke District it was observed that waste handlers are equipped with appropriate materials and clothing, as presented in Table 5.1.

| Table 5.1: Observed protective equipment and clothing for waste collectors |
|---|---|---|
| | No. (total no. = 22) | % |
| Special work clothes (eg. Uniforms) | 21 | 95.5 |
| Apron (sarubeti) | 16 | 72.7 |
| Heavy-duty gloves | 14 | 63.6 |
| Boots | 22 | 100.0 |
| Goggles for incinerator/burner operator | 10 | 47.6 |
| Masks | 15 | 68.2 |

Central and intermediate waste storage before treatment or disposal

Hazardous waste can be temporarily stored in a room before it is transported for disposal or treatment. This practice was observed in health facilities in Gakenke District, even though the rooms used do not always meet the required standards set by WHO. Figure 5.1 shows the situation regarding the interim storage of health care waste.

Waste treatment and disposal

Table 5.2 shows how well infectious sharp waste is managed during collection and transportation within and outside health facilities in Gakenke District.

| Table 5.2: Infectious sharp waste management (number of respondents=95) |
|---|---|---|
| | No. | % |
| Infectious sharps are always put in safety boxes after use | 91 | 94.7 |
| Safety boxes are always kept near where the provider is working | 88 | 92.6 |
| Safety boxes are always closed and sealed when they reach the fill line | 82 | 86.3 |
| Full safety boxes are kept in a secure space away from patients and the public | 81 | 85.2 |

All health facilities in Gakenke are mostly using thermal processes for sharp infectious waste treatment. A large number of facilities use burners and a low-heat thermal process with burners, whereas an incinerator using very high temperatures to destroy infectious waste, especially waste from safety boxes, is available only at one of the two District Hospitals.

In terms of waste disposal, pits are the most commonly used approach at all facilities. Waste pits are used to bury ashes from burners and the incinerator as well as placenta and other liquid waste. The quality and the security of both burners and waste pits differ from one facility to another.

To ensure security around the burner, all facilities have posted warning signs, and the area is secured at 60% of all facilities, whereas 65% of all burners and their surroundings are always clean.
**General hygiene in health facilities**

Findings from the waste management assessment showed sufficient hygiene within all health facilities. In nearly half of the facilities (42.9%) there was some waste littered inside the facility.

It was rarely (9.5% of facilities) observed that waste bins were overflowing in patient care or treatment areas. However, the hygiene of the surroundings of 13 out of 22 health facilities needs to be improved — for example, by ensuring hygiene in the gardens and grounds.

**Availability, quality and adequacy of hygiene materials/equipment within health facilities**

For effective management of health care waste, the facility needs to have enough appropriate materials and equipment. The materials needed include waste containers and hygiene supplies, while equipment refers to clothes and tools for waste handlers as well as some infrastructure such as burners, incinerators and waste pits.

In Gakenke District the Health Centres and hospitals are trying their best to ensure that every department/service has enough waste containers (bins and safety boxes), hygiene supplies and other equipment for waste treatment and/or disposal. Therefore, as discovered by the assessment, the quality and quantity of materials and equipment differ by facility.

**Table 5.3: Availability of hygiene materials/equipment within health facilities**

<table>
<thead>
<tr>
<th>Item</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Containers for different categories of waste are available at all points (N=126)</td>
<td>108</td>
<td>85.7</td>
</tr>
<tr>
<td>Specific waste bins are available for: (N=128)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infectious sharps</td>
<td>124</td>
<td>96.9</td>
</tr>
<tr>
<td>Infectious non-sharps</td>
<td>108</td>
<td>85.0</td>
</tr>
<tr>
<td>Non-infectious waste</td>
<td>113</td>
<td>89.0</td>
</tr>
<tr>
<td>Staff have enough material to deal with health care waste (waste bins, gloves etc.)</td>
<td>61</td>
<td>47.7</td>
</tr>
<tr>
<td>Stock-out of safety boxes?</td>
<td>10</td>
<td>7.8</td>
</tr>
<tr>
<td>All dustbins are opened by foot</td>
<td>10</td>
<td>7.8</td>
</tr>
</tbody>
</table>

**Level of awareness/training on safety and hygiene for health facility staff and waste handlers**

Staff and waste handlers in each health facility should be trained in waste management. Various topics are covered by the training such as awareness of risks related to waste, waste management procedures and the protection of waste workers. In Gakenke District, 59.7% of health staff interviewed reported having received any training related to waste management, while 66.6% of waste handlers had received specific training. Only half of the staff operating the burner/incinerator had received appropriate training. For general training, the main topics covered are waste flow, waste segregation and personal protection.

**Discussion**

Generally, health facilities in Gakenke have made remarkable progress regarding hygiene and health care waste. A large number of them are aware of national policies and guidelines about sorting, transporting and disposing of waste. However, it was also observed that only five out of 22 health facilities have individual waste management plans as recommended by WHO.
Waste is collected daily from its point of generation within each health facility. Facilities use different types of waste containers for different types of waste generated in each department. The level of waste segregation was also observed to be satisfactory.

All these tremendous steps were achieved with the contribution of the MINISANTÉ IV program, which has been supporting Gakenke District since 2011. The support consisted of activities aiming to improve hygiene and the District Hospitals accreditation process among others. Hygiene activities include water supply, rainwater collection at Health Centres and the construction of latrines, waste pits and burners. The program also provided technical support to the hospital accreditation process by helping to draw up policies and procedures in different areas including infection prevention and control, which includes waste management. Nevertheless, there are still some challenges to overcome to improve the management of health care waste within facilities in rural settings:

- As shown by our findings, the majority of health facilities do not have waste management plans. Yet it is important to have a facility-based waste management plan. Waste management activities must be well planned. According to WHO (2013), “Health-care waste-management operations at local, regional and national levels should be organized and planned, A good plan is a good basis to explain what needs to be done and to coordinate the roles of the many people involved”.¹

- The required quality of waste containers, especially for bins, is not yet being met. For example, all waste bins should be opened by foot to minimize the risk of infection for health providers and waste handlers. Among other reasons given by facilities for this issue is that there is insufficient budget to purchase good-quality materials and tools because they are expensive.

- Waste is incinerated at only one health facility, while the others have to transport waste to be incinerated there. As there is a gap in national guidelines regarding the transportation of waste outside facilities, the way it is currently done does not guarantee the safety of the staff involved or the environment.

- Facilities still need to be sufficiently capacitated to deal with pharmaceutical waste. Though all the health facilities visited have a specific room or place to store all expired drugs and products, they said they had not done anything about expired pharmaceutical products for over three years. The reason behind is that drug management was recently transferred to the district pharmacy, which is not yet able to accomplish the task.

- Wastewater is a big issue at one of the District Hospitals assessed. Both technical and financial support is needed to solve the problem, which presents a high risk of water-borne diseases to the surrounding community.

**Conclusion**

“Protection of the health of staff, patients and the general public is the fundamental reason for implementing a system of health-care waste management”.¹

This is why the Ministry of Health, health facilities and other partners have to undertake joint efforts to establish and implement related policies and guidelines. The aim of the assessment of waste management in Gakenke District was to find out how effective the implementation of guidelines and policies about hygiene and waste management are in the district, and how infection prevention and control can be improved.

Health facility leaders and staff are aware of policies and guidelines about waste management, but their implementation is not yet effective. Within the district, waste is collected daily in each facility department and put into different types of waste containers according to the types of waste. The collected waste is handled by specific staff for treatment and disposal using burning, incineration and burial in waste pits. During the assessment, it was observed that not all the personnel generating or dealing with waste had been trained.

The main challenges faced by health facilities in waste management include financial limitations to procure enough appropriate materials and equipment, and non-optimal waste segregation due to a lack of training for some of the health staff. In particular, health facilities need to be supported both technically and financially to handle wastewater and expired pharmaceutical products.

All these challenges need to be addressed through joint efforts and activities by health staff, local authorities, the Ministry of Health and partners. In fact, facilities should draw up a comprehensive plan from a well-researched situation analysis, train their staff and implement their plans. District authorities should also pay attention to waste issues in their usual role of coordination and work hand in hand with the Ministry of Health and partners to fill the identified gaps in terms of policies, guidelines and financial issues.

After all, hygiene conditions in facilities are essential to prevent health care-associated infections and, therefore, need to be improved to the optimal level.

**Recommendations**

- Integrate a chapter on waste transportation into guidelines to clearly support hospitals whose safety boxes must be incinerated away from their site.
- Train all health staff and waste handlers on health care waste management.
- Integrate training into public education on the risks of health care waste.
- Allocate sufficient funding to health care waste management at health-facility level.
6  Assessment of Technical Units in District Hospitals

Régis Kazindu, Alexis Maniraho and Sankaran Narayanan

Key messages

The appropriate management of medical equipment is of great importance for improving health care service delivery. Managing medical equipment is complex but is essential for good patient care. The maintenance of medical equipment and infrastructure requires a maintenance policy with available budgets to ensure the availability of spares and accessories.

Background

Today’s health care delivery increasingly depends on the developments made in medical technology. This encompasses the use of electrical, electronic, mechanical and communication/information technology equipment in the daily routine of a health care system. Medical equipment is very important in health care, as it is being used in diagnosis, treatment and monitoring of the patients.

The recent growth in the biomedical equipment technology has produced a large number of complex medical devices in Rwanda’s health facilities, which has changed the traditional way the health care system functions. As a result of this development, there is now a growing direct interface between patients and equipment. To increase confidence in the use of these technological devices and ensure the safety of both patients and users/medical staff, the establishment of a medical technology and infrastructure unit is required to train, manage and support all users.

The technical and maintenance team within a hospital is generally responsible for inspecting and managing the maintenance of medical and non-medical equipment, ensuring that breakdowns and accidents are avoided during diagnosis and treatment. The work of the technical team in hospitals includes preventive maintenance and corrective and unscheduled work conducted at the request of users. Preventive maintenance is conducted to keep the equipment in a good and safe condition, while corrective maintenance is the work done when equipment has broken down, to fix it and return it to good working order. A well-designed maintenance program is mandatory for the safe and efficient use of equipment.¹

References

There is no biomedical engineering workshop space, but there is land where a new workshop could be constructed.

The hospital has only one technician, who holds a diploma (A1) in Biomedical Engineering. It also needs an electrical technician, a biomedical technician, a plumber and a civil engineering technician. The technician does not have a useful tool box.³

Nemba

Nemba District Hospitals belongs to the Catholic Church Diocese of Ruhengeri. It is one of the two hospitals located in Gakenke District in the Northern Province. It provides health care services to more than 232,966 people in Gakenke District, and to 13 Health Centres and eight Health Centres in Burera and Rulindo districts, to which the hospital provides technical guidance and supervision.⁴

The hospital has a small workshop, which does not meet all the standard requirements, and needs support to extend the existing workshop with the standard tool boxes and space required.

The hospital technical team comprises one mechanical engineer with a Bachelor’s degree, one biomedical technician with an ordinary diploma in Biomedical Engineering, and one electrician with an A3 qualification in electrical engineering.

Nyamata

Nyamata Hospital was built in 2002 as a District Hospital by ADEPR (Pentecostal Church) in collaboration with PMU Inter Life and the Government of Rwanda. It is located in southeast Rwanda, in Nyamata sector in Bugesera District, 32 km along the main road between Kigali and Bujumbura via Kirundo. It provides health care services to a population of more than 363,000 people. The hospital currently treats 80% of its patients from Bugesera District and 20% from other districts. It boasts a total of 171 staff, including 11 general practitioners, and has 164 beds.⁷

There is a biomedical engineering workshop under construction, and the hospital needs assistance to finish the workshop with standard tools and equipment to carry out maintenance, service and repair.

The hospital has only one technician, who is studying Biomedical Engineering at the Integrated Polytechnic Regional Centre (IPRC) in Kigali; it also needs an electrical technician, a biomedical technician, a plumber and an air-conditioning technician.

Rutongo

Rutongo District Hospital is located in Rulindo District in the Northern Province, Area Masoro, bordering the Jabana sector in Gasabo District, 25 km from Kigali and 9 km from Nyacyonga, the centre of the large deviation in the road between Kigali and Gatuna. It provides health care services to a population of more than 118,337 people in six sectors
in Rulindo District, who receive primary health care at eight Health Centres to which the hospital provides technical guidance and supervision.

Rutongo District Hospital is one of the oldest hospitals in Rwanda. It was built in 1938 by SOMUKI (a Belgian mining company) for its staff and as a referral hospital for all Belgians who were working in Rwanda at the time. In 1986 the hospital was given to the Ministry of Health and became a District Hospital.9

The hospital does not have a maintenance workshop. It will soon be shifted to Remera Mbogo, where the new hospital is ready. There is land where a maintenance workshop could be built.

The hospital has only one technician, who is in charge of medical equipment, electricity, plumbing and other technical work in the hospital. He is also a Biomedical Engineering student at IPRC in Kigali.

Kinihira Provincial Hospital is located in Kinihira sector, Rulindo District, in the Northern Province, 18 km from the national road between Kigali and Musanze and 26 km from the district office. The hospital has been providing health care services to a population of more than 157,050 people across eight sectors since 2013. They receive primary health care at eight Health Centres, to which the hospital provides technical guidance and supervision. Kinihira Provincial Hospital is one of the pledges His Excellence Paul Kagame, the President of the Republic, promised the population in 2003.2

The hospital does not have a workshop, but there is a plan to change the space planned for a kitchen into a maintenance workshop.

The hospital has three staff in its technical team: one with a Bachelor’s degree in Electrical Engineering, one with an A1 qualification in Mechanical Engineering, and one technician with an A2 in Construction.

Discussion

Innovations in medical technology have led to a new generation of sophisticated medical equipment that requires more frequent maintenance and technical expertise to repair. Much of the maintenance carried out in District Hospitals is done where the equipment is installed, as there is no workshop space allocated or available in the hospitals. The biomedical technicians have no space to keep tools, spare parts and equipment that is being repaired.

The challenges faced by the medical equipment technical teams in hospitals include management of the equipment’s life cycle, poor health facility management, a lack of a trained technical team and a lack of technical documentation; they cope with this situation in their own ways.

Conclusions and recommendations

To improve the quality of the care they offer, hospitals should plan for the establishment of a maintenance workshop, ensure the availability of tools and spare parts and improve the management of technical staff.

Standard maintenance workshop

The maintenance of equipment in hospitals is mostly carried out where the equipment is installed, especially for large equipment such as x-ray machines. A second option is to transport the equipment to the maintenance workshop, which should comply with the following space requirements:

- an office;
- space for different repairs with appropriate benches;
- a store room for spares and bulk consumable items;
- a changing room;
- cleaning/draining areas with a sink;
- a shower and toilet;
- shaded outside working areas for handling larger items and raw materials, or for dirty jobs; and
- secure outside storage areas for gas bottles, decommissioned equipment for disposal etc.

Availability of spare parts and tools

Various different toolkits and spare parts should be available for the separate maintenance disciplines in hospitals such as biomedical, electrical, mechanical, refrigeration etc. The hospital should plan and allocate sufficient budgets for the purchase of the required spare parts and maintenance materials. This cost will be relevant over the entire lifetime of the equipment. The spare parts and tools should be kept in a store and managed by someone trained in store management or someone from the maintenance team.

Management of technical staff

Hospitals need to recruit sufficient staff, with the necessary skills, for their maintenance team, to try to ensure the good physical condition of their equipment.
Below is a proposal for the number of different types of technical staff required in each District Hospitals:

<table>
<thead>
<tr>
<th>Position required</th>
<th>Number of staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomedical Engineer</td>
<td>1</td>
</tr>
<tr>
<td>Electromechanical Engineer</td>
<td>1</td>
</tr>
<tr>
<td>Biomedical Technician</td>
<td>2</td>
</tr>
<tr>
<td>Electromechanical Technician</td>
<td>2</td>
</tr>
</tbody>
</table>

To deliver quality health care services, it is essential to manage health care technology effectively; we recommend the following steps to achieve this objective:

- A maintenance policy for medical equipment should be developed and implemented at central level as well as at hospital level.
- All biomedical equipment maintenance workshops should comply with the WHO layout standards.\(^{10}\)
- The maintenance unit should have its own budget for procuring tools, spare parts and consumables to ensure that health care technology is used effectively and safely throughout its life.
- Continuous capacity-building for technical personnel is needed, and a Bachelor’s degree program in Biomedical Engineering should be established in Rwanda.

References


It is difficult to find suitable technical staff and to provide them with the correct biomedical training so that they can deal with medical equipment, because there is no biomedical program in Rwanda. The hospitals have developed innovative strategies to obtain sufficient maintenance staff such as electricians, electronic and electromechanical engineers and technicians and train them in biomedical engineering.

Job descriptions are crucial tools for hospital managers to make the best use of the staff available, to plan for further training and to recruit suitable people. They are equally important for each worker, as they are a guideline for the work expected of them, the skills required, and possible ways to achieve promotion.
Improving financial accessibility to health care: lessons learned from community-based health insurance in Bugesera District

Martin Niyitegeka, Edith Musabyimana and Ina Kalisa Rukundo

Key messages

Community-based health insurance (CBHI) and community mobilization are ways to improve access to health care in rural areas. In Bugesera District, to improve access to health care and strengthen the health system, it is recommended that local authorities and health facility managers change their strategies for community mobilization on CBHI. They could start community mobilization before the payment period for premiums (from January to June each year) to ensure timely payment of premiums, to ensure continued access to health care and prevent self-medication and consultation of traditional healers. Local authorities could also enhance the capacity of people to pay their contribution by encouraging income-generating activities, family planning and savings.

Background

A population that is healthy is better able to contribute to the socio-economic development of the country. Yet nearly half of the world's population does not have access to basic health care. Since the 1990s health insurance has been one of the solutions promoted in developing countries to improve access to care, since it avoids direct payment for care by patients and allocates financial risks to all insured people. Many mutual health insurance schemes have been developed in sub-Saharan Africa, and in recent years some African countries have been implementing national health insurance systems. But in countries that choose to promote health insurance, there is still a need to check whether they really reach the most vulnerable people in terms of financial access to health care: those who are poor. A lack of money still causes problems at two levels: at the time of joining the insurance scheme and when the insured need to use health services.

In Rwanda, CBHI has been identified as a privileged channel to increase financial accessibility to health services in both rural settings and in the informal sector. The aim is
to improve the affordability of health care and reduce poverty levels among the Rwandan population. Over 90% of Rwandans are working in the informal sector. Despite a Gross Domestic Product (GDP) growth rate of 4–6% per year, 45% of the population lives below the poverty threshold.

The implementation of CBHI has increased the accessibility of the majority of the Rwandan population to modern healthcare. During the CBHI year 2011-2012, 90.7% of the Rwandan population was covered under CBHI. This achievement was due to the commitment and leadership of Rwandan authorities at all levels. Before the beginning of the CBHI year 2012/13, MoH/HFU organized a sensitization campaign in each district and met with different opinion leaders such as religious representatives, presidents of cooperatives, members of civil society organizations, focal points of CBHI partners, Vice Mayors of social affairs, executive secretaries of sectors and all CBHI staff at district level. The expected output of these sensitization strategies was the achievement of at least 90% coverage rate by the end of March 2013. Along with sensitization strategies MoH/HFU also organized quarterly CBHI national auto evaluation workshops with CBHI District Directors: during these evaluations many strategies were planned to improve the CBHI management and CBHI enrolment. More over the Ministry of Health in collaboration with the Ministry of Local Government organized different Joint meetings to discuss and develop strategies to increase the rate. The year 2013-2014 ended with 74%. The Government of Rwanda continued to improve the situation by developing a CBHI system in all districts of the country. As shown by the table below, in 2004, 27% of the population was covered; this figure rose to 73% in 2006 and 86% in 2009.

<table>
<thead>
<tr>
<th>Year</th>
<th>% Adherence</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>7%</td>
</tr>
<tr>
<td>2004</td>
<td>27%</td>
</tr>
<tr>
<td>2005</td>
<td>44%</td>
</tr>
<tr>
<td>2006</td>
<td>73%</td>
</tr>
<tr>
<td>2007</td>
<td>75%</td>
</tr>
<tr>
<td>2008</td>
<td>85%</td>
</tr>
<tr>
<td>2009</td>
<td>86%</td>
</tr>
<tr>
<td>2010</td>
<td>91%</td>
</tr>
</tbody>
</table>

Contributions are determined according to the socio-economic category of the population, which is determined every two years. As shown in Table 1, there are three CBHI categories based on household income levels. In this so-called Ubudehe approach, there are six categories of the population (from the very poor to the rich).

In Rwanda the CBHI package covers:

- curative care (consultations, monitoring chronic diseases, nutritional rehabilitation);
- preventive care (vaccinations, growth monitoring of children under five years of age, antenatal care, family planning);

Based on these challenges, the government decided to review the CBHI policy, and a new policy was set up in 2011 with the following principles:

- The CBHI year runs from 1 July to 30 June. Members can choose to pay the full amount of their contribution or instalments. The contribution period runs from January to June for coverage starting on 1 July. The last instalment must be deposited by 30 June.
- Former beneficiaries can access health care without this observation period, except for those who pay their contribution after 31 July.

### Table 7.1: The CBHI categories and membership fees

<table>
<thead>
<tr>
<th>CBHI group</th>
<th>Premium contribution per person per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1: Indigents (Ubudehe categories 1 and 2)</td>
<td>RWF2000 (EUR2.5), fully supported by the government; this group is exempt from paying</td>
</tr>
<tr>
<td>Group 2: People who can afford to pay (Ubudehe categories 3 and 4)</td>
<td>RWF3000 (EUR3.75) paid by members themselves</td>
</tr>
<tr>
<td>Group 3: People who are wealthy (Ubudehe categories 5 and 6)</td>
<td>RWF7000 (EUR8.75) paid by members themselves</td>
</tr>
</tbody>
</table>

Contributions are determined according to the socio-economic category of the population, which is determined every two years. As shown in Table 1, there are three CBHI categories based on household income levels. In this so-called Ubudehe approach, there are six categories of the population (from the very poor to the rich).
Improving financial accessibility to health care: lessons learned from community-based health insurance

In Bugesera District, CBHI coverage was 91% in June 2009. After the introduction of the new policy, coverage decreased from 90% in 2011 to 74% in 2013 and further to 72% in 2014. In addition, the contributions from members were paid too late, and the CBHI could not cover all their bills for the fiscal year 2012-2013. Based on the experience from 2012-2013, the team from Bugesera District decided to make a study tour to Karongi District, the district with the highest coverage, in June 2013 to share experiences and lessons learned. After the study tour, most of the lessons learned were applied in Bugesera District. CBHI staff and executive secretaries at administrative sectors were trained on the principles of CBHI management. Moreover, mobilization strategies used were discussed with the local leaders and community health workers and adjusted. Focal points were elected at all levels in the district to monitor the CBHI; supervision and sensitization on CBHI was carried out by local leaders and health facility managers. District reports show the changes in coverage rates for the fiscal years 2012-2013 and 2013-2014, as presented in Figure 7.1.

**Figure 7.1: Evolution of CBHI coverage in Bugesera District, 2012-2013 and 2013-2014**

![Coverage rate in %](image)

Figure 7.1 shows that there was an improvement in the coverage rate from July to December 2013 compared to the same period in 2012. This illustrates the effect of community mobilization on CBHI undertaken by local leaders and health staff, regular follow-up visits, supportive supervision of CBHI sections at sector level and staff training done from July to December 2013. However, the progress was not maintained to the end of the two fiscal years, which means that the major contributions to CBHI from the community were collected between July and December of each year and that many contributions cannot be expected after December. The figure also shows that coverage was stationary from January to June for both years.

After all these efforts, coverage had not yet reached the expected level, and the Ministry of Health and the local government wished to increase CBHI coverage from 72% in 2014 to 100% in 2015 to ensure continuous access to health care for the population of Bugesera District.

Meanwhile, district authorities and CBHI managers raised the following concerns:

- Do local leaders, health care providers and CBHI staff understand the advantages of CBHI and the inconveniences of not being a member?
- What are the barriers to membership of CBHI, and what are the best strategies to increase coverage for the coming years?

To respond to these issues, a situational analysis of CBHI in Bugesera District was initiated by Bugesera District and carried out by the District Health Team between January 2013 and June 2014. This case study will respond to the following key question: *What are the opportunities and barriers for CBHI coverage in Bugesera District, and what lessons can be learned?*

The focus of this study was on assessing the knowledge of the sector and cell authorities, Health Centre providers and CBHI section staff on the benefits of CBHI. Also, the study explored whether they are aware of the disadvantages for non-members and aimed to obtain their points of view on the factors limiting membership to CBHI and strategies for improvement.

**Description of the study**

**Study design and characteristics of participants**

A retrospective descriptive study was conducted through interviews with key informants including local leaders, health care providers and CBHI staff. The aim of the interviews was to assess their knowledge on the advantages of CBHI and inconveniences for non-members, but also to obtain their point of view on the limiting factors and strategies for improving CBHI coverage. Two interview guides were developed and used to collect the data: one for executive secretaries at administrative sectors and cells, another one for health care providers at Health Centre level and CBHI section staff.

In each administrative area there is a Health Centre and a CBHI section office; therefore, the interviews took place in four places (administrative sector, cell, Health Centre and section) to compare their views on CBHI. The choice of sites was mainly based on CBHI coverage by section. We selected a total of 10 sectors, including three with...
increasing CBHI coverage, three where a decrease had been observed, and four others where coverage had not changed over the previous two years. In total, 41 people were interviewed from 10 out of the 15 sectors in the district, including 24 health care providers and 17 executive secretaries of sectors and cells.

Following constraints in time and budget related to the closing of the MINISANTÉ IV program planned for March 2015, this study presents some limitations in terms of the number and type of stakeholders that could be consulted. The factors preventing people from joining CBHI presented in this study are only from interviews with local authorities, health care providers and the CBHI section staff. Therefore, they may not fully reflect the point of view of the total population.

Table 7.2: Characteristics of participants (N=41)

<table>
<thead>
<tr>
<th>Variables</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Institution</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health care providers</td>
<td>17</td>
<td>41.5</td>
</tr>
<tr>
<td>Health Centre</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBHI staff</td>
<td>7</td>
<td>17.1</td>
</tr>
<tr>
<td>Local leaders of sectors</td>
<td>11</td>
<td>26.8</td>
</tr>
<tr>
<td>Local leaders of cells</td>
<td>6</td>
<td>14.6</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>26</td>
<td>63.4</td>
</tr>
<tr>
<td>Female</td>
<td>15</td>
<td>36.6</td>
</tr>
<tr>
<td><strong>Qualifications</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>24</td>
<td>58.5</td>
</tr>
<tr>
<td>A1</td>
<td>7</td>
<td>17.1</td>
</tr>
<tr>
<td>A0</td>
<td>10</td>
<td>24.4</td>
</tr>
<tr>
<td><strong>Position</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section manager</td>
<td>4</td>
<td>9.8</td>
</tr>
<tr>
<td>Health Centre in-charge</td>
<td>5</td>
<td>12.2</td>
</tr>
<tr>
<td>Nurse/midwife</td>
<td>10</td>
<td>24.4</td>
</tr>
<tr>
<td>Accountant</td>
<td>3</td>
<td>7.3</td>
</tr>
<tr>
<td>Invoice auditor</td>
<td>1</td>
<td>2.4</td>
</tr>
<tr>
<td>Environmental health in-charge</td>
<td>1</td>
<td>2.4</td>
</tr>
<tr>
<td>Executive secretary, sector level</td>
<td>6</td>
<td>14.6</td>
</tr>
<tr>
<td>Social affairs in-charge</td>
<td>3</td>
<td>7.3</td>
</tr>
<tr>
<td>Executive secretary, cell level</td>
<td>6</td>
<td>14.6</td>
</tr>
<tr>
<td>President of management committee</td>
<td>1</td>
<td>2.4</td>
</tr>
<tr>
<td>President of health committee</td>
<td>1</td>
<td>2.4</td>
</tr>
<tr>
<td><strong>Professional experience</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 1 year</td>
<td>4</td>
<td>9.8</td>
</tr>
<tr>
<td>1-4 years</td>
<td>23</td>
<td>56.1</td>
</tr>
<tr>
<td>5-8 years</td>
<td>14</td>
<td>34.1</td>
</tr>
</tbody>
</table>

Table 7.2 shows that the majority of our participants were health care providers, followed by local leaders at sector level. In terms of gender, 63.4% of the participants were male; regarding qualifications, over 60% had achieved A2 level. It should be noted that 56.1% of the participants had professional experience ranging from one to four years, while 34.1% had between five and eight years of experience in their posts.

**Results**

**Opinions of local leaders and health care providers on advantages, disadvantages, barriers and improvement strategies for CBHI**

Table 7.3 presents the opinions expressed in interviews by the selected local leaders and health care providers on the advantages and disadvantages of CBHI, and also on barriers to membership and strategies for improvement.

The data in Table 7.3 shows that health care providers and local leaders are very knowledgeable about the advantages of joining CBHI and the disadvantages of not being a member. The advantages mentioned by most of the participants are: easy financial access to health care, reduced health care costs, mutual solidarity and an improved financial situation due to household savings and good health.

Among the disadvantages of not joining CBHI are: expensive health care is limiting financial access, and self-medication and consulting traditional healers can be very dangerous. Participants also cited social problems because non-members become a burden on the community, and there may be family conflicts due to differences of opinion about CBHI among couples.

The main reasons for not joining the CBHI scheme are: incapacity to pay contributions due to insufficient production caused by a long dry season, socio-economic categorization of people not done well, and large family size; ignorance; resistance to change; insufficient and late sensitization; and migration (providers mentioned that many Burundians in their catchment area do not have access to CBHI).

Among the strategies proposed by the interviewees to improve coverage of CBHI are: strengthening community mobilization on CBHI and starting awareness-raising activities on time (before the end of June each year); promotion of enrolment through **tontines** ("Ibimina") and empowering local leaders and community health officers to raise awareness on CBHI; and strengthening collaboration between Health Centre staff and CBHI section staff. Health care providers’ expectations of local leaders are mainly: to strengthen commitment to CBHI and start awareness-raising activities on time (before the end of the fiscal year); to improve the socio-economic categorization of the population; to decentralize management of **tontines**; and to follow up to ensure proper management of membership fees.
The health care providers also said that their role in supporting and improving CBHI is to participate in mobilization; involve local leaders and empower community health workers in mobilization; avoid overbilling; and improve customer care as well as the quality of health care services.

The CHBI section staff mentioned that, in addition to community mobilization to join CBHI, their specific role is to manage membership fees and revenues collected; ensure proper verification of invoices; work closely with local leaders to prevent membership card fraud; ensure effective collaboration between CBHI and Health Centre staff; ensure good-quality customer care; validate membership cards on time; and pay medical bills regularly.

Opportunities and challenges for CBHI
A number of opportunities and challenges have been observed:

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>The government of Rwanda gives regular support to the CBHI</td>
<td>No computerized system</td>
</tr>
<tr>
<td>CBHI members receive timely, quality health care from all levels from the Health Centre to King Faysal hospital</td>
<td>Lack of CBHI infrastructure at section and district level (offices, electricity etc.)</td>
</tr>
<tr>
<td>Because of the patient roaming system, CBHI members can access health care anywhere across the country</td>
<td>Fraud and abuse by people who are not CBHI members</td>
</tr>
<tr>
<td>Out-of-date socio-economic categorization data</td>
<td>Over-billing and over-prescription in some health facilities</td>
</tr>
</tbody>
</table>

Discussion

When comparing the CBHI coverage rates for the fiscal years 2012-2013 and 2013-2014, we discovered an improvement in coverage from July to December 2013 but that the progress was not maintained to the end of the two fiscal years. This means that most of the members joined CBHI during the first six months of the fiscal year (July to December). When the community is well mobilized to contribute during that period, good results can be expected if all stakeholders are involved. In Bugesera District the sensitization started late, when the contributions were already due, and people were not prepared to contribute on time. According to Dror and Jacquier (1999), when sensitization systems are efficient and well adapted, they encourage the population to join CBHI in large numbers.9
The health care providers and local leaders interviewed stated that the main advantages of CBHI were the financial accessibility to health care and mutual solidarity. This is in line with one of the key characteristics of a well-functioning health system, which is “protecting people against the financial consequences of ill-health.”

The main reasons for not joining the CBHI scheme found during the study are: incapacity to pay contributions due to insufficient production caused by a long dry season or a large family, ignorance of the scheme, sensitization started too late or insufficient sensitization. The lack of money to pay for membership, the first reason for not joining CBHI is also cited by other studies such as surveys implemented in the district of Nouna in Burkina Faso, in the Kissidougou district in Guinea Conakry, in the Thies region of Senegal, in the district of Nkoranza in Ghana, and in Burundi and Uganda. Based on a study done in Burkina Faso, similar influencing factors were reported by Dagenais (2013): capacity of households to contribute to CBHI; period of payment of contributions; education level; number of family members; payment method (full or partial payment); lack or insufficient information or sensitization on CBHI; and insufficient involvement of community leaders.

Therefore, it is essential to sensitize the population early to pay their contribution in multiple instalments from January to June – as described in the ministerial instruction on CBHI in Rwanda – and to motivate people to pay during the period of agricultural production, since most of the population of Bugesera make their living from agriculture.

Another observation is that since membership is family based, it is important to mobilize all family members to pay their contribution before the end of the fiscal year to ensure continued access to health care and prevent self-medication and consultation of traditional healers. Also, institutional support is important to make loans accessible to poor households. To facilitate this process, the local authorities may motivate tontines or people to obtain loans from savings and credit cooperatives, because those who have been granted a loan were more able to continue their CBHI membership.

In addition, people need to be supported to spend the little money they have more economically, because sometimes they spend their money on less important things when their income is not sufficient to allow them to afford to do so.

The Bugesera District Health Team has learned from this study that strategies for community mobilization should be strengthened. Also, local leaders should become more involved, take more responsibility for sensitization on the importance of CBHI and follow up on the tontines to ensure proper management of community contributions. They should also enhance people’s capacity to pay their contributions by encouraging income-generating activities, family planning and savings.

Conclusions

Based on the results of the case study, the local authorities, health care providers (Health Centre staff) and the CBHI section in Bugesera District are well aware of the health advantages of membership and the inconveniences for people who are members of the scheme.

The main reasons for not joining CBHI are common in Bugesera, Rwanda and in other developing countries. They include insufficient capacity to pay contributions, the method and timing of payment and insufficient community mobilization by local leaders and other stakeholders. As strategies to improve coverage of CBHI, the study participants suggested strengthening community mobilization and undertaking timely awareness-raising activities; empowering local leaders and community health officers to mobilize the population; promoting enrolment via tontines; paying the contributions of the poorest households on time (in July); and strengthening family planning and saving for CBHI.

Recommendations

As a result, we make the following recommendations:

For the District and sector authorities

- Raise the population’s awareness on the merits and benefits of joining CBHI before the new fiscal year.
- Motivate people to pay their contribution for the next fiscal year between January and June.
- Make local leaders responsible for community mobilization and producing a monthly report on the progress of CBHI in their catchment area.
- Encourage and support income-generating activities in the community.
- Make it easier for poor households to access loans to join CBHI.
- Revitalize CBHI management committees, and report regularly on the management of the schemes.

For the Ministry of Health and the Ministry of Finance Management

- Plan a budget to cover the gap in health care services, because CBHI cannot cover all health costs, since contributions are based on the capacity to pay — not on the real cost of health services.
Strengthening Health Systems

Key messages

Health care services in the City of Kigali should adjust their services in response to existing and new, emerging health challenges due to urbanization. These include non-communicable diseases (NCDs) (e.g. heart disease, high blood pressure, diabetes and obesity), infectious diseases and other typical urban problems such as road traffic accidents, violence-related injuries, mental health disorders, substance abuse and exposure to air pollution and second-hand smoke.

To facilitate a healthy and safe lifestyle in an urban environment, health services should be physically accessible, affordable, appropriate and acceptable. The presence of doctors and an increased number of services delivered in urban Health Centres would improve access to health services and ensure a healthier population.

Background

Kigali is being confronted by an influx of immigrants from rural areas causing a rapid growth of the urban population and urban sprawl. This has resulted in a concomitant rise in the slum population and urban poverty. Kigali’s population grew from 6000 at independence in 1962 to 600,000 by 2000 and to 1,132,686 in 2012. This is an average density of 1556 inhabitants per km². Two thirds (65%) of the country’s population now live in urban areas, and Kigali is currently witnessing growth of 4% per year, as against 2.6% for the rest of the country.¹ Statistics indicate that the population of Kigali is expected to double by 2020 to around 2 million inhabitants and to reach 4.2 million by 2040.²

The urban health care system is facing existing health problems and new, emerging challenges due to urbanization: infectious diseases exacerbated by poor living conditions; chronic NCDs; conditions fuelled by tobacco use; unhealthy diets and physical inactivity; harmful use of alcohol; injuries, road accidents, violence and crime; and mental health

References

problems. These are the results of a complex interaction of various determinants of health, including insufficient infrastructure and services that particularly impact the health of poor people and slum-dwellers. Most of the existing structures for primary health care provision (Health Centres) within the City of Kigali are not well oriented towards dealing with most NCDs, road traffic injuries, environmental health, mental health disorders and disaster preparedness.

Another particular trait of Kigali relates to mental health problems. Following the historical legacy of genocide, there is a high concentration of people affected by diverse mental illnesses such as epilepsy, post-traumatic stress disorders and psychic, psychosomatic and other neurologic diseases.

This epidemiological transition puts pressure on urban local health systems to improve the service package of their Health Centres with regard to infrastructure, health care professionals, medical equipment and diagnostic tools, to provide a high quality of primary health care as a response to the community’s needs.

The objective of this study is to highlight the importance of increasing the package of services to improve the quality of health care and address the emerging and existing health risks associated with urbanization, by medicalizing Health Centres in Kigali.

**Description of the study**

This study is based on three approaches: (i) a situation analysis of the City of Kigali’s urban health systems to describe the organization of health care systems and available resources in terms of infrastructure, human and financial resources and technology; (ii) a review of literature and a gaps analysis of urban health in Kigali; and (iii) an analysis of currently available data on urban health problems in Kigali.

**Urban health facilities**

The City of Kigali has eight hospitals, including five referral hospitals and three District Hospitals, 35 public and aggregated Health Centres with four new, modern health facilities. Five sectors have two Health Centres each, one sector has three, and eight sectors have no Health Centres.

The total population of the three districts is 1,135,428, of which the majority (878,668) have a community-based health insurance policy. Those with insurance first need to consult one of the 35 Health Centres available in Kigali prior to being referred, when necessary, to a District Hospitals for advanced health services such as diagnostics, laboratory tests, x-rays, ultrasound etc.

**Table 8.1: District-specific health care context in the City of Kigali**

<table>
<thead>
<tr>
<th>Item</th>
<th>Kicukiro District</th>
<th>Nyarugenge District</th>
<th>Gasabo District</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>319,661</td>
<td>284,860</td>
<td>530,907</td>
</tr>
<tr>
<td>Administrative sectors</td>
<td>10</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Operational Health Centres</td>
<td>9</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>Sectors without Health Centres</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name and population</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kigarama: 44,610</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kagarama: 14,054</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rwezamenyo: 16,888</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gitega: 28,870</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kimihurura: 20,704</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gatsata: 36,897</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kimironko: 59,312</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gisozi: 44,075</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The 265,410 people living in eight sectors (Kigarama, Kagarama, Rwezamenyo, Gitega, Kimihurura, Gatsata, Kimironko and Gisozi) do not have a Health Centre in their sectors and have to visit the nearest Health Centre in another sector, which has led to congestion.

**Results**

**Availability of human resources for health**

In 2014, the health facilities across Rwanda had 17,950 health staff including 709 doctors, 8,898 Nurses and 692 Midwives. The ratio of doctors to population was 1 doctor per 15,510 inhabitants, a slight improvement from 2013 where there was 1 doctor per 15,806 inhabitants. There was 1 nurse per 1,236 inhabitants and 1 Midwife per 15,891 inhabitants. While there was increase in numbers of most staff categories, the number of nutritionists and public health workers remained the same and the number of clinical psychologists and mental health professionals declined. This situation has improved since 2010, when the worst-off district had nearly 66,749 inhabitants per midwife. The number of nurses, paramedics, pharmacists and midwives has increased most significantly.

The staff at Health Centres include nurses, midwives, laboratory technicians, paramedics, social workers, environmental health officers and administrative staff. At referral hospitals they include, nurses, midwives, paramedics, interns, general practitioners, residents and specialist doctors.

Even if most of the population attends Health Centres, there are no doctors at that level, and this leads to many referrals to District Hospitals. Some District Hospitals organize doctors’ visits to affiliated Health Centres – for example, once or twice a week for Human Immunodeficiency Virus (HIV) patients. It would be better if they could also see other cases such as patients with chronic conditions (high blood pressure, diabetes, asthma etc.). This would not only limit the number of referrals but also be an opportunity for Health Centre nurses to learn from doctors.
Outpatient care
In 2014, health facilities received a total of 12,155,380 new cases. Among them 10,106,261 (83.14%) were patients seen in health centers, 529,461 (4.36%) in district and provincial hospitals, 92,993 (0.77%) in referral hospitals, 701,125 (5.77%) were treated by CHWs practicing community-based integrated management of child hood illness (C-IMCI), while 534,741(4.40%) attended private facilities.1

Urban health risk factors
As shown in the table below, the most frequent causes of outpatient visits in health centers for all age groups, are acute respiratory infections, malaria and intestinal parasites. Other causes of morbidity represent a significant proportion of new cases (14%).2 Acute respiratory infections, pneumonia, intestinal parasites and diarrhoea were the most common diseases among children under five who were seen at Health Centres for outpatient visits.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Cause of outpatient visit</th>
<th>New OPD cases</th>
<th>% of total OPD cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Acute respiratory infections</td>
<td>2,051,749</td>
<td>25%</td>
</tr>
<tr>
<td>2</td>
<td>Malaria</td>
<td>1,594,708</td>
<td>20%</td>
</tr>
<tr>
<td>3</td>
<td>Intestinal parasites</td>
<td>655,416</td>
<td>8%</td>
</tr>
<tr>
<td>4</td>
<td>Respiratory infections acute other</td>
<td>552,908</td>
<td>7%</td>
</tr>
<tr>
<td>5</td>
<td>Physical traumas and fractures</td>
<td>490,928</td>
<td>6%</td>
</tr>
<tr>
<td>6</td>
<td>Gastro-intestinal disease</td>
<td>386,303</td>
<td>5%</td>
</tr>
<tr>
<td>7</td>
<td>Teeth and gum diseases</td>
<td>374,607</td>
<td>5%</td>
</tr>
<tr>
<td>8</td>
<td>Skin infection</td>
<td>356,812</td>
<td>4%</td>
</tr>
<tr>
<td>9</td>
<td>Eye problems</td>
<td>286,332</td>
<td>4%</td>
</tr>
<tr>
<td>10</td>
<td>Diarrhea</td>
<td>260,033</td>
<td>3%</td>
</tr>
<tr>
<td>11</td>
<td>Other causes of morbidity</td>
<td>1,102,970</td>
<td>14%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>8,112,766</td>
<td></td>
</tr>
</tbody>
</table>

Source: National HMIS database, 20144

In urban areas a higher prevalence of diseases such as HIV/AIDS, sexually transmitted infections, asthma, tuberculosis, mental illness and other NCDs (e.g. hypertension and diabetes) is observed.

According to the 2010 Rwandan Demographic and Health Survey (RDHS), the prevalence of HIV in the City of Kigali is 7.3%, which is significantly (three times) higher than the average in rural areas (2.3%).1 Kigali hosts approximately 32% of people living with HIV in the country. Data from the 2010 Behavioral and Biological Surveillance Survey indicate an HIV prevalence of 56% among sex workers in Kigali, which has a significant impact on HIV prevention, care, treatment and support efforts in the city.1

Discussion
According to national health policy, there should be one Health Centre in each administrative sector. To ensure the most efficient health care coverage possible, given the limited availability of resources, norms were established in 1997. The norms recommend that each Health Centre should cover 20,000 people; however, most of the Health Centres in Kigali serve 30,000-40,000 inhabitants, without taking into account the rapid population growth. There are still eight sectors in the city without a Health Centre, which has led to congestion of patients at nearby Health Centres. Also, the lack of primary health facilities and District Hospitals (e.g. Nyarugenge District) forces a large number of patients to directly use the national referral hospital, the Centre Hospitalier Universitaire de Kigali (CHUK – University Teaching Hospital). This causes congestion at the national referral hospital and prevents it from fulfilling its intended specialized and referral role. Obviously there is a need to increase the number of health facilities, in particular in the sectors that are not currently covered.

The STEPS study survey conducted in Rwanda in 2012-13 revealed that the main health risk factors were: tobacco use (12.9%); unhealthy diet (only 0.3% fruit consumption per day, 0.9% vegetable consumption per day, and 99.1% with fewer than five servings of fruits and/or vegetables per day); physical inactivity (21.4% were engaged in a low level of physical activity); harmful alcohol consumption (23.5% were engaged in heavy episodic drinking, 41.3% were currently drinking); injury (89.8% of drivers and passengers were not using a seat belt, 74.0% of motorcycle or motor-scooter riders were not always using a helmet, 5.3% have been involved in a road crash in the 12 past months, and 34.4% have been seriously injured); and obesity (mean body mass index 22.3, 16.1% overweight and 2.7% obese).2

Based on Rwanda’s Health Management Information System (HMIS) data, in term of overall number of visits (1.725.481 visits) for new and old cases, the Injuries and oral health and eye health are the leading cause of consultation of NCDs with around 83% the overall NCDs visits. The service for chronic conditions such as cardiovascular disease, chronic respiratory diseases and Diabetes accounts all together for only 17% of the overall visits.3

This puts pressure on urban health systems to develop strategies to deal with the existing and emerging health challenges and improve the Health Centre service package with regard to infrastructure, health care professionals, medical equipment and diagnostic tools, to provide high-quality primary health care as a response to the population’s needs.
As there are both supply- and demand-side barriers to utilization of primary health care services, a more interesting option to offer a more comprehensive and integrated service at first-level urban Health Centres includes increasing the Minimum Package of Activities (MPA) and the progressive presence of doctors from District Hospitals once or twice a week to see patients. Such Health Centres should be referred to as medicalized Health Centres. The present MPA of Health Centres could be augmented with the progressive introduction of new services, such as the management of chronic diseases (diabetes, high blood pressure, asthma, Chronic Obstructive Pulmonary Diseases, oral health care, ambulatory intervention for mental health problems, observation hospitalization for uncomplicated cases, palliative health care, selection and treatment of some emergencies etc.).

<table>
<thead>
<tr>
<th>Health facility</th>
<th>Minimum package of services provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health post</td>
<td>Outreach activities (i.e. immunization, family planning, growth monitoring, antenatal care) and referral</td>
</tr>
<tr>
<td>Dispensary</td>
<td>Primary health care, outpatient and referral</td>
</tr>
<tr>
<td>Health Centre</td>
<td>Prevention activities, primary health care, inpatient, referral and maternity</td>
</tr>
<tr>
<td>District Hospitals</td>
<td>Inpatient/outpatient services, surgery, laboratory, gynaecology, obstetrics and radiology</td>
</tr>
<tr>
<td>National referral</td>
<td>Advanced inpatient/outpatient services, surgery, laboratory, gynaecology, obstetrics, radiology and specialized services including ophthalmology, dermatology, ear, nose and throat, stomatology and physiotherapy</td>
</tr>
</tbody>
</table>

Table 8.3: Minimum package of activities at different health facility levels

Conclusions and recommendations

To move forward, it is important to have an agreement on the medicalization of selected urban Health Centres – in other words, the MPA that will be offered and the availability of medical staff.

This will require enlarging the MPA, representing a decentralization of certain activities currently covered by District Hospitals. The presence of a medical doctor will allow for a number of services to be offered at Health Centre level, hence the concept of ‘medicalized Health Centres’. This must necessarily be accompanied by a significant improvement in the diagnostic capacity at Health Centre level, with, for example, some laboratory and imaging equipment as well as consideration for human resources. In fact, the presence of laboratory equipment, ultrasound and conventional radiology, for example, would be extremely useful tools to ensure diagnosis and treatment at primary health care level.

The capacities of staff at medicalized Health Centres should be strengthened through capacity development of existing personnel and the introduction of health technicians (midwives, laboratory technicians, mental health specialists, dental health specialists etc.) and eventually generalist doctors. These doctors could be linked to the District Hospitals medical team for support and continuous capacity development.

Regular supervision by District Hospitals and, where necessary, the national referral hospital could be performed to guarantee the quality of health care services. This approach would lead to a significant improvement in the quality of services at the first level of care, with continuous and integrated care, more effective and closer to the population, with improved dialogue and empathy and a reduction in patients’ travel costs and other expenses. Accessibility to improved health services could be increased in the short term and at limited additional cost. In a second phase, additional services could be further decentralized, such as obstetric care and emergency services that would require infrastructural investments such as operating theatres.

In the longer term, one could envisage the possibility of specialist doctors from the District Hospitals offering their services periodically at new Health Centres (through specialist consultations services – for example, an ophthalmologist could work twice a month in these primary centres). This could contribute significantly to increasing patients’ access to quality health care and reduce the excessive demand at secondary level.

The context and realities of the City of Kigali call for appropriate decision-making in line with the organization of health services on the scale of a capital city. Thus, these findings and recommendations on medicalized Health Centres need to be validated at the internal Ministry of Health senior management meeting.

References
Part three
Strengthening health system management

In this third part examples are presented how district health systems were improved by national and district level coordinated efforts and most of all strengthened partner ownership and improved alignment with health-sector priorities. The integration of the Minisanté IV Program into the Ministry of Health helped to improve the management of planned interventions, including by accelerating the implementation of activities and improving cumulative budget execution. Lessons learned are:

At the sector, the lowest level of the administrative structure in the health system pyramid, there is a need for guidelines and skills on data management for improved planning, monitoring and evaluation and evidence-based decision-making. If all relevant decision-makers at village and administrative sector level and at administrative entities use health data generated from Health Centres, it will provide support to making evidence-based decisions for emerging health issues at administrative sector level.

In the framework of health sector decentralization, the establishment and functioning of district health management teams and board of directors have contributed to a coordinated approach to implementing national policies and guidelines and to monitor health indicator trends to inform evidence-based district planning. It is important that the central government continuously empowers the decentralized administrative entities and strengthens the legal framework.

The decision to integrate the Minisanté IV program into the Single Project Implementation Unit of the Ministry of Health in July 2012 was a wise and timely decision. It added value to the program, strengthened partner ownership and improved alignment with health-sector priorities, especially in supporting the procurement process. It also increased the visibility of the program in the health sector.
Key messages
Policy makers and decision-makers at all levels of the health system must know that at the sector, the lowest level of the administrative structure in the health system pyramid, there is a need for guidelines and skills on data management for improved planning, M&E and evidence-based decision-making. If all relevant decision-makers at village and administrative sector level and at administrative entities (sector councils, the community-based health insurance scheme, boards of directors, Health Centres, management boards, performance-based financing steering committee) use the health data generated from Health Centres, it will provide support to making evidence-based decisions for emerging health issues at administrative sector level. At community level this implies that village and cell leaders need to know that they have to complement community health workers in health reporting and the use of health data results. In the process of decentralization of health care, it is not only important to inform the sector level but also to train them in the skills to perform proper M&E.

Background
Many countries worldwide, including Rwanda, have introduced decentralized policies to improve access to and the quality of health care and community participation. Rwanda has put in place a strategy to enhance country development, Vision 2020. According to this strategy, decentralization is one of the instruments to effectively achieve its objectives. At administrative sector level the use of basic health data is key to achieving the Vision 2020 objectives. The administrative sector is the decision-making body for health at community level, comprising the in-charge of social affairs at sector level, the executive secretary of the sector, and the sector council, whose members are the head of the Health Centre and other representatives from the administrative cells, the lowest community entities, civil society and the private sector.

Over the last 10 years the health care system in Rwanda has expanded its coverage and increased the number of health professionals in public, private and partner institutions.
Policies have been implemented in the areas of health decentralization, health system strengthening, human resources in health, community health and strategic planning at all levels. Another important area of development concerns health management information systems (HMISs), particularly the improvement of data management. The development of more equitable, efficient and effective district health systems requires rationalization of the structure and funding of health systems and the use of more local data, reflecting realistic needs and achievements.

Many opportunities are found at administrative sector level, such as the political will in different existing coordinating boards, including the PBF steering committee at sector level, CBHI, the Health Centre management board and the Joint Development Action Forum, which gathers together all health-sector development partners at administrative sector level. According to the local data generated by administrative health facilities, both public and private facilities still require strong strategies to meet the health goals of a sustainable district health system and ensure a better future.

Following the implementation of the health decentralization policy, the degree to which health goals are achieved is largely dependent on how the district health system is organized and managed at administrative sector level. The accountability and effectiveness of health outcomes at administrative sector level should be based on locally generated data from Health Centres. To this effect, Rulindo District, with the support of BTC, organized an explorative study between July and September 2014 with the aim of assessing the factors influencing health data management at administrative sector level, understanding the role of health data management in an integrated health system at community level, exploring the overall views and perceptions of the health sector, district authorities and community leaders about health data in Rulindo District, and exploring how health data management can be improved in the context of M&E.

The contribution of data management to health system strengthening in Rulindo District is crucial because it should raise awareness about realistic data use in the planning process and M&E and about involving all health care stakeholders to ensure that timely decisions are made. This makes the administrative sector, Health Centre, CHWs and elected authorities all decision-makers; they need to be able to react to a given health situation with appropriate local information.

Some of the challenges observed, however, concern data not being used in time and some serious health outcomes (e.g. under-5 infant mortality, some epidemics and an increase in the number of malaria cases etc.) being identified rather late during the PBF assessment and coordination meetings in Rulindo District. For example, during a workshop conducted in May 2014, participants involved in health data (data managers, CHW coordinators of all the Health Centres in Rulindo District, M&E officers from District Hospitals and District Health Unit staff) expressed some problems related to health data management, including data quality and use, insufficient sector involvement, insufficient data quality auditing, insufficient training in data management, available but unexplored data, and the person in charge of health at the sector level not being aware of available data sources. It seems that there are significant problems in using health data in a way that could lead Rulindo District to strengthen its health system through a better understanding of health problems and decision-making by community leaders.

The problems cited above are present at district level. However, it is unclear what kind of problems related to health data management exist at the administrative sector, cell and community levels. To understand health data management problems, it is important to understand the flow of health data from the community to the Ministry of Health.

The CHWs collect specific indicators using rapidSMS (a daily text message sent by a CHW about maternal and child health, especially home deliveries and maternal deaths occurring in the community) and Système d’Information Sanitaire Communautaire (SISCOM, a monthly report of CHW activities) and transmit them to the community health coordinator at the health centre, who puts together data from different CHWs around the health centre’s catchment area to be transmitted electronically via HMIS. Clinical data collected at health centres is entered directly by data managers into the HMIS before printing a hard copy for verification purposes and sending a copy to the M&E officer at the district hospital.

This suggests a need for the district to improve its health data management. The key question of this case study is: What is the role of the administrative sector in decentralized health data management, and what has been its contribution to health systems strengthening in Rulindo District?

Description of the study

Collaboration with the Minisanté IV technical staff was established, and relevant documents from Rulindo District were shared and reviewed. To achieve the objectives of this study, different methods were used. All key actors in health M&E and decision-makers from nine out of 18 administrative sectors in Rulindo District (Masoro, Murambi, Shyorongi, Cyinzuzi, Rukozo, Cyungo, Ngoma, Buyoga and Kinihira) were randomly selected using a simple random sampling technique. The level of involvement of the administrative sector authorities in data collection, analysis, reporting, feedback and use of data in the decision-making process was assessed. A secondary data analysis of the existing HMIS and SISCOM, coupled with community field visits, was also conducted. The aim of these field visits was to report on the monthly increase in under-5 mortality and the number of pregnant women delivering at home. Data were collected between July and September 2014 by the district health team and validated during an evaluation meeting.

Regarding the design, study population and types of participants, we collected data from the district headquarters, District Hospitals, administrative sectors and Health Centres. Data were collected through a mix of structured, closed interviews and open-
end interviews. When conducting our assessment, the following categories of study participants were included:

- Rulindo District Headquarters: the mayor of the district, the vice-mayor in charge of social affairs, the executive secretary, the director of the health unit and the Rulindo District M&E officer;
- those working in Rutongo and Kinihira District Hospitals: the District Hospitals directors, the M&E officers, the CHW coordinators and the data managers;
- for the lowest level, the main pillars of the study: the administrative sectors (members of the sector council/social commission of the sector council, the executive secretary of the sector, the in-charge of social affairs and the in-charge of population identification and census), Health Centre committee board members, heads of Health Centres, data managers at Health Centres, the CHW coordinator and the in-charge of antenatal care/family planning and maternity; and
- the community was represented at cell level: the executive secretary of the cell, the CHW coordinator and a representative of the cell council, the decision-making body at this level.

Data collection, management and analysis
A consultant recruited from the University of Rwanda’s School of Public Health developed the study questionnaire and was in charge of the overall coordination and follow-up of the data collection activities. A pool of eight experienced interviewers and two supervisors were recruited. Two teams of four interviewers were created, with one supervisor leading each team.

Two days of training were conducted, followed by one day for the piloting phase. For each sector, supervisors ensured that all participants had been contacted and interviewed. A total of 183 participants were interviewed. Hence, supervisors played a key role in ensuring the quality of data throughout the fieldwork.

Results
The results of the study are presented for two sub-groups, covering those working in the health care sector (all participants concerned with health data — i.e. from Health Centres, hospitals, data managers and CHWs) and those not working in the health care sector (those working at local administration level such as cell, sector and district administration staff as well as decision-makers on cell or sector councils). In total, 38.3% of the participants were working in the health care sector, and 61.7% were from the cell, sector and district administration.

Almost half of those working in the health care sector (48.6%) claimed to have been trained in health data management. However, when it came to asking whether the role of the administrative sector in health care is documented, a slightly higher proportion of those not working in the health care sector (68.1%) than those working in health care (52.9%) said that the sector does have a reference support document. Additionally, a higher proportion of those working in health care (38.6%) than those not working in health care (25.7%) did not know if the role of the administrative sector in health care is mentioned in any document. We also asked whether its role in health data management was stipulated in any document, and findings show that a higher proportion of the study participants working for the district administration (52.2%) than those working in health care (35.7%) reported that the sector’s involvement was stipulated in a document. A higher proportion of those working in health care (52.9%) than those working in the district administration (37.2%) did not know if there were any guidelines for administrative sector.

Health data management
The roles of the administrative sector in health care were well known (91.8%) by the participants, in contrast to the role of the sector in health data management, which they did not always know. Regarding the reference document used in health data management, 54.1% said that there is no guideline document or that they did not know if there was any. Slightly fewer than half (45.9%) of the study population gave a positive response to this question.

Those working in the health care sector stressed that the administrative sector mainly plays a role in putting together reports based on data emanating from Health Centres, CHWs and local leaders. These reports are filed before a copy is sent to the district level. Participants not working in the health sector also confirmed this. However, they also added that the sector is responsible for monitoring health data, checking their reliability and using them to formulate and implement recommendations to improve the population’s health.

Data discrepancy
Given the similarities of some indicators reported by the main health information systems, one participant in three (31.1%) reported having experienced data discrepancies (‘similar indicators from different databases including HMIS, SISCOM and Rapid SMS provide different information at the same period of reporting and by the same reporter within a district’).

Based on the study findings, both categories of participants expressed the major reason for these discrepancies as inadequate understanding of the tools or indicators used in health data management among most health centre staff and CHWs.

The study participants provided the following suggestions to address data issues:

- Ensure a common understanding of tools used by those involved in collecting data.
- Provide regular information/education sessions to health workers for them to understand the use and value of health data.
- Deliver clear guidelines on health data management at sector level, and provide the necessary tools for all those in charge of data to be able to do their work appropriately.
Strengthening district health systems through health data management

According to the participants, the role of the sector in health care includes (among others):

- Sector's involvement in health care.
- Administration (37.2%) did not know if there were any guidelines for the administrative sector.
- Those working in the health care sector (52.9%) than those working in the district administration (93.8%) provided a positive response about its general role in promoting positive health behaviours (e.g. hygiene, adequate nutrition for children, deliveries at health facilities, membership of the CBHI scheme etc.).

Knowledge about the administrative role of the sector level in health care
According to the study participants, the role of the administrative sector in health care is well known; a slightly higher proportion of those working for the district administration (93.8%) than those working in the health care sector (88.6%) provided a positive response about its general role in promoting positive health behaviours (e.g. hygiene, adequate nutrition for children, deliveries at health facilities, membership of the CBHI scheme etc.).

Participants not working in the health care sector
For participants not working in the health care sector, findings show that the sector's role in health care includes, among others, implementing the government's health policies at the lower administrative level, and increasing the population's awareness on membership of the CBHI scheme, on hygiene programs, child immunization, family planning and malaria.

Just over half (52.2%) of the study participants working for the district administration and 35.7% of those working in the health care sector reported that the sector's involvement was stipulated in guidelines for the administrative sector. A higher proportion of those working in the health care sector (52.9%) than those working in the district administration (37.2%) did not know if there were any guidelines for the administrative sector's involvement in health care.

According to the participants, the role of the sector in health care includes (among others):

- Implementing the government's health policies at the lower administrative level;
- Increasing the population's awareness of membership of CBHI, hygiene programs, child immunization, family planning, a balanced diet, HIV, sexually transmitted infections, malaria and maternal and child health;
- Monitoring the Health Centres and health posts in its catchment area; and
- Motivating the population to seek medical support when needed and to cultivate food that is rich in protein.

Participants working in the health care sector
For participants working in health, the role of the sector is primarily to coordinate health care activities, including monitoring diseases, knowing the population's health status and monitoring health information.

Relationship between Health Centres and the administrative sector on health data management
When exploring the relationship between Health Centres and the administrative sector level regarding health data management, the majority of people working in the health care sector and in the district administration agreed that it mainly concerned data exchange and sharing reports (working in health: 40.0%; not working in health: 25.7%).

We were also interested to know in which way the administrative sector is involved in health data management and explored who was in charge of health data monitoring, coordination, supervision and auditing. The majority of the study participants from the health care sector and the district administration believed that all these roles are the responsibility of one position, the in-charge of social affairs and welfare at administrative sector level. However, in reality a data audit needs to be performed by an independent person who is not directly related to the data or to the administrative sector's day-to-day activities.

Our findings show that one out of six of the study participants from the health care sector and the district administration were not aware of the existing health information systems in the district, but the majority (82.9% from health care and 83.2% from district administration) claimed they knew about the existing health information systems in Rulindo District. Findings show that 29.2% of those working in the district administration have no idea about any existing health information systems, while for those working in health, that proportion is much lower (18.6%). We also noticed that a larger proportion of participants from the health care sector than the administrative sector cited all four health information systems existing in Rulindo District. The health information system most commonly mentioned by those working in health was Rapid SMS; for those working for the district administration, it was SISCOM, followed by Rapid SMS.

Using health data for planning and decision-making at administrative sector level
During the interviews we asked how the health data are used in planning and decision-making. Those working in the health care sector stated that health data are mainly used by sectors to put in place sector targets for health, but also to assess the population's health status and help to solve health problems emerging from the data. Additionally, they said that health data are used to respond quickly if there is an abnormal increase in a given health condition. According to a participant from Rutongo District Hospitals,
“The data results are used when an epidemic appears; a high number of malnutrition cases or hygiene issues.”

It was also understood that health data were used when there is a need to sensitize the population on a specific health problem that emerges from the data (e.g. child mortality) or to solve health problems noticed in the data. Study participants also mentioned that health data are used to perform planning for the education sector (e.g. planning schools for the future based on the number of newborns) as well as to take health-related decisions. However, a large number of them did not know what the administrative sector uses health data for.

If the sector does use health data for planning, people working in the health care sector and those not working in health did not have the same level of understanding of the planning and decision-making processes at the sector level. If health data are really used in planning and decision-making processes, feedback to those collecting data would be very useful to show not only the areas in need of improvement but also how the data collected are used to improve health outcomes.

Discussion

The administrative sector demonstrated its involvement in data management for planning and regular evaluation of progress against the targets of Millennium Development Goals (MDGs) 4 (reduce child mortality) and 5 (improve maternal health). This had an impact on health data by contributing to reducing maternal and child mortality related to home deliveries. For example, the 2013 report noted that there were no cases of maternal death, against four in 2012, and the number of home deliveries decreased from 41 in 2012 to 16 in 2013, while the proportion of assisted deliveries increased from 56% to 63%, even though the target was 70%.

This exploratory study is relevant in understanding whether the administrative sector plays a key role in strengthening the district health system. Furthermore, as the Government of Rwanda is striving for universal health coverage, exploring the role of the administrative sector helps to assess the success of the decentralization process. It is equally important to note that the administrative sector is not involved in some steps of data management, analysis, reporting and health planning. Improved data use could lead to a better understanding of health problems and improved decision-making in planning and problem resolution by community leaders. Increased supportive supervision and evaluation from the District Health Unit or district hospital could strengthen the lower level, which deals with the communities.

Conclusion

Our study’s main question was: What is the role of the administrative sector in decentralized health data management, and what has been its contribution to health systems strengthening in Rulindo District?

The study participants had differing perceptions of the role of the administrative sector in health data management, but most mentioned the receipt and filing of reports from different sources. However, the health care component, and particularly health data management, seems to be lost among the many other responsibilities of the in-charge of social affairs at the administrative sector level. We also found that study participants had different levels of knowledge about the use of health data in planning and decision-making at the administrative sector, suggesting a need to provide regular feedback to all stakeholders about the use of health data and to consider the involvement of all stakeholders in the planning and decision-making processes.

Recommendations

The study makes the following recommendations for the District and the Ministry of Health to improve data management at sector level:

- Provide in-service training for those intended to use health data but also all those in charge of health care in the sector, both on the tools to be used and on health indicators.
- Provide tools for health data management.
- Provide means of transport for district M&E staff to be able to visit sectors and Health Centres.
- Recruit a competent person to be in charge of data at sector level; this person will need to collaborate with health facilities, local leaders and CHWs.
- Administrative sectors need to perform regular visits to Health Centres to check the accuracy of the health data they provide.
- Encourage data sharing among leaders and decision-makers.
- Create synergy and collaboration among those in charge of health care activities in the administrative sector.
- Revise the collaboration between the administrative sector and Health Centres in relation to data exchange, analysis and decision-making.
- Develop a capacity-building plan on data analysis, data management tools and other aspects of health data management for CHWs, village leaders and administrative sector staff.
10 The role of the administrative district in the governance and management of decentralized health systems in Rwanda

Gervais Baziga, Mecthilde Kamukunzi, Alypio Nyandwi, Donatien Bajyanama, and Parfait Uwaliraye

Key messages

In Rwanda, a decentralization process started in 2000 for all sectors. There is compelling evidence that decentralization has been effective in terms of improving the provision of services in all sectors, including health, and making districts more accountable, but the central government has to continuously empower the decentralized administrative entities and strengthen the legal framework for the decentralized health sector.

Background

Health systems in Africa are undergoing considerable changes, often in a context of ongoing health-sector reforms. In most countries, the decentralization of health services is crucial to these reforms. Decentralization has been identified as an appropriate way of ensuring the provision of quality care services closer to the population.

In Rwanda, the adoption and implementation of a decentralization policy started in 2000, with the aim of promoting good governance, service delivery and national development and of being a cornerstone of the fight against poverty by increasing people’s participation in the planning and management of the development process. The decentralization policy was applied in all sectors, including the health sector. Strategies covering service delivery and performance, citizen participation and good governance have been implemented to strengthen decentralized health services at different levels of the health system: district level, hospital level and health-centre level. The implementation of the decentralization policy could not have been effective without proper guidance and accompanying measures.

The Government of Rwanda decided that the implementation of the decentralization strategy should be carried out in phases. The first phase (2001-2005) aimed at

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The role of the administrative district in the governance and management of decentralized health systems

The management of health personnel and financial resources has been decentralized to the district level, with the Ministry of Health bearing responsibility for policy development, capacity-building, monitoring and evaluation (M&E) and resource mobilization.

The DHMT operates at the administrative level and oversees the implementation of district health activities in terms of planning and monitoring. It guides resource allocation according to set priorities. The coordination of medical aspects in the district is the responsibility of the District Hospitals, which is coordinated by a District Hospitals Board of Directors (BoD), which reports to the administrative district.

The BoDs were established in 2007 by a ministerial instruction, to ensure the management of hospital resources, to approve the hospitals' plans and to ensure proper follow-up of the implementation of policy decisions. The DHMTs were put in place a bit later in 2011 through guidelines from the Ministry of Health determining and providing guidance on the management roles and responsibilities of decentralized health systems. The DHMTs were set up based on a need for collaboration to improve service delivery to the community, particularly after the creation of a district pharmacy unit and CBHI. By mandate, the District Hospitals oversees medical service provision, the implementation of CBHI, and the district pharmacy for the provision of drugs and consumables. The implementation of the DHMT guidelines was followed by the creation of a district health M&E position to support the district in monitoring health activities.

In the beginning, the Ministry of Health also conducted mentorship in districts to strengthen DHMTs and ensure the implementation of the guidelines and continuous empowerment of districts in the management of decentralized health services. The objective of this mentorship was to improve the effectiveness and efficiency of district-based health structures by building strong coordination and monitoring mechanisms at district level. During mentoring, the DHMT members were instructed on their roles and responsibilities, sensitized to ensure planning and monitoring of health activities at decentralized levels and reminded to advise the district local government in all aspects related to health.

During the mentorship sessions, the Ministry of Health recognized that the majority of districts complied with the guidelines and were consistent and effective in their way of managing the decentralized health programs. However, some other districts showed poor compliance with the guidelines regarding the functionality of the DHMT; therefore, an assessment was initiated to analyse why this was the case. The assessment was carried out in 10 districts and 11 District Hospitals, located in all provinces and Kigali City, from May to October 2014. This case study is aiming to answer the following question: What is the performance of the DHMT and of hospital BoDs in the management of health services in a decentralized health system, and which lessons can be learned?
Description of the study

Qualitative study was conducted among DHMT and District Hospitals BoD members as well as administrative district officials (Mayor, District Executive Secretary, Executive Secretary of the District Council). The assessment was conducted by the Rwanda Ministry of Health with the support of the School of Public Health, University of Rwanda. Prior to the interviews, verbal consent was requested, as well as permission to record the interviews. If the interviewee agreed to be interviewed but refused recording, only interview notes were taken.

The assessment was conducted in 10 purposively selected districts located in four provinces and the City of Kigali. Districts were selected according to the extent to which the DHMT was operational, as well as the setting (rural and urban). Within these selected districts, District Hospitals were conveniently selected based on the number of District Hospitals in each district. The assessment consisted of desk review of available documentation (policy documents, reports, laws, regulation, guidelines etc.), focus group discussions and in-depth interviews. If the interviewee agreed to be interviewed but refused recording, only interview notes were taken.

The main aspects assessed were:

- perception of the DHMT and hospital BoD by its members vis-à-vis its composition, performance and contribution to the performance of decentralized health systems;
- issues hindering its performance; and
- collaboration with other decentralized institutions.

After the data collection, interviews and focus group discussion were transcribed, and thematic analysis was done.

Results

Status of the DHMT at the time of the assessment

The assessment was conducted three years after the DHMT guidelines were issued. At the time of the assessment, the Ministry of Health mentorship report indicated that 77% of districts had operational DHMTs. According to the guidelines, DHMT members were generally appointed by the district, and should meet at least once a quarter.

In the districts assessed, members were appointed by the districts, and districts which started implementing the DHMT guidelines in 2011 had convened at least two DHMT meetings. In all districts with a functioning DHMT, the assessment found the presence of the minutes of the previous meetings showing action taken, recommendations to be followed up and the persons responsible. Generally the DHU is responsible for organizing meetings, taking minutes and following up the implementation of decisions made. A DHMT is considered functional if it holds meetings at least quarterly, with approved minutes, an implementation plan for recommendations from the meeting, and a person responsible for monitoring the progress of the implementation of action taken in the meeting.

Before the restructuring of administrative districts in July 2014, the DHU had only two members of staff: one in charge of district health and another in charge of M&E. With the restructuring, the DHU was empowered and staffed with four personnel, including a District Director of Public Health, a Health Promotion and Disease Prevention Officer, a Hygiene and Sanitation Officer and an Officer in charge of CBHI.

Strengths, contribution and achievements of the DHMTs

The results of the assessment show that the majority of the respondents felt that the DHMT has been playing a key role in the coordination of planning and management of decentralized health services, in health-sector resource allocation across the district and in staff management at district level. Respondents said that the key success of the DHMT is linked to the fact that district authorities and technicians are gathered around the same table and take proper decisions to improve health services in the district.

The main contribution of the DHMT includes but is not limited to: improved planning and management, coordination, supervision of health services, regulation, participation, financing and resource allocation, and implementation of standards and norms. In terms of planning, the DHMT contributed in the review and approval of district health strategies, annual operational plans and budgets, and allocation of annual resources. The DHMTs are also consulted on setting the district's health-sector priorities.

One of the respondents said: “Before the establishment of the DHMT, the district priorities in the health sector were mainly given by the Director of the DHU in a way he/she wants or understands without asking for advice from anybody else. Nowadays the decisions are taken with the agreement of all the DHMT members. So, we provide the major lines to follow.”

According to respondents, the main contribution of the DHMT is the stimulation of collaboration between different health units and stakeholders (DHU, District Hospitals, CBHI and district pharmacy agents and development partners). Before the establishment of the DHMT, the collaboration between the above-mentioned units and stakeholders was limited. The DHMT has now become a forum for discussion between district political authorities and a multidisciplinary team of technicians involved in the health sector. They meet and discuss health-related issues hindering the district's health system, and propose solutions as well as ways to implement them to improve the health services. The most frequently discussed issues are related to financial and human resource allocation and management, coordination and collaboration between various units (pharmacy, CBHI, hospitals and Health Centres), customer care and the quality of service delivery.
For the districts assessed, DHMTs’ main contributions were in solving different issues related to managing drugs and delays in payments between different decentralized health entities. For example, they played a key role in solving problems related to CBHI through regular follow-ups to ensure payment of CBHI premiums.

One DHMT member said, “We solve all CBHI-related issues in the DHMT, and now we are able to pay health facilities by the 5th of the month.”

Another DHMT member said, “The CBHI did not pay the debts to the Health Centres, and the Health Centres did not pay the pharmacy either, and then the pharmacy complained to the DHMT. Solutions were found, and now issues are fixed without taking a long time.”

According to a Vice Mayor for Social Affairs in an operational DHMT, “The DHMT is a long-term solution to health issues in the district in terms of coordination.”

Synergy between different health units and stakeholders has been highlighted among the key strengths of the DHMT. The example cited was the collaboration of different health entities in the organization of various campaigns, including the mobilization of the population to join the CBHI scheme, health promotion for hygiene and sanitation, nutrition, maternal and child health etc.

One member of DHMT said, “All decisions aiming at promoting health are taken during DHMT meetings. For instance, there was a hygiene problem in some trade centres, and the DHMT, together with the hygiene and sanitation committee at district level, decided to visit these centres and sensitize them about this issue, and the situation has been improved.”

The assessment revealed that the DHMT is a key structure to coordinate, plan, manage and resolve conflicts at district level. It was observed that many activities have been implemented by DHMTs and hospital BoDs and that supervision, management and coordination are being undertaken more effectively than before the existence of the decentralized health bodies.

The District Hospitals BoDs are well established and more recognized at district level, mainly because they have a legal framework. Hospitals are well managed, and effective planning has been put in place as recommended by the BoDs.

The assessment has shown that the contribution of DHMTs and hospital BoDs to the management of decentralized health services was considered to be a process accompanied by achievements and challenges.

Discussion

The establishment and functioning of DHMTs has brought about an efficient link between the decentralized health technical team and district executive committee, which enabled the implementation of health-related decisions.

The DHMTs have contributed to a coordinated approach to implementing national policies and guidelines in the health sector and to monitoring health indicator trends to inform evidence-based district planning.

An important challenge raised was financial constraints to implement some activities. However, the most pertinent challenge is the legal framework of the DHMT. A budget cannot be allocated to a structure without a legal framework. A legal framework should take into account the existing structures at the district level and define clearly the mandate for DHMTs. Is the DHMT expected to be the supreme decision-making body dealing with decentralized health services at the district level, or should it be considered the consultative entity? To advise district authorities?

Both scenarios are possible. However, different supreme bodies have been established, and there is a need to discuss this first with the Ministry of Local Government and plan together how the DHMT structure may be strengthened. The other scenario could be to assign to the DHMT the mandate of being a technical advisory board supporting the district authorities and organizations to take appropriate decisions related to health.

Conclusion and recommendations

DHMTs and hospital BoDs are efficient entities to coordinate and manage decentralized health services. A well-functioning DHMT is required for the re-engineering of the district health systems. This strategy requires strong leadership, a strengthening of the current DHMT and a greater emphasis on coordination, planning and monitoring of health-related activities, community participation and empowerment. A dynamic district health system that is able to monitor and respond to foreseen and unforeseen challenges is required.

There are differences in the level of performance of different DHMTs and hospital BoDs, though it is satisfactory in the majority of districts. The main challenge is linked to the lack of a legal framework and clear terms of references. Several DHMT tasks are being performed by other boards or committees, and these overlaps are limiting the success of DHMTs.

A legal framework is a very important tool to facilitate this process, and the Ministry of Health and the Ministry of Local Government are recommended to develop and put in place a legal framework for DHMTs. This would help to establish clear roles.
and responsibilities for DHMTs in the coordination and management of the existing decentralized health committees and health systems.

This framework should take into account the existing structures at the decentralized level and define clearly the mandate for DHMTs and other entities at district level. Where possible, committees with similar or linked tasks should be merged to have fewer but stronger committees coordinated by the DHMTs, which can efficiently manage decentralized health services. A further study is recommended on the functionality and performance of the DHMTs in the coordination and management of decentralized health committees and health systems at the district level.

References

11 An Innovative Approach for Effective Project Management in the Ministry of Health: Case Study of the Institutional Support Program to the Ministry of Health Phase IV (Minisanté IV)

Gilbert Biraro Gilbert, Fidèle Nsengimana, Vincent Tihon and Daniel Ngamije

Key messages
The establishment of a Single Project Implementation Unit (SPIU) by the Government of Rwanda, in each ministerial department or government agency allows for better coordination of interventions and financial support from different partners, such as the Belgian Development Agency (BTC).

This innovative management structure offers the opportunity for better coordinated oversight of the implementation of interventions across different projects, alignment of program planning and procedures with national policies and strategies at both decentralized and central levels, and increased ownership and leadership by the line ministry.

The integration of the BTC-funded Institutional Support Program to the Ministry of Health Phase IV (Minisanté IV) into the Ministry of Health SPIU in July 2012 (based on March 2012 mid-term review recommendations) helped to improve the management of planned interventions, including accelerating the implementation of activities and improving cumulative budget execution.

Background
In Rwanda, specific donors are allocated to support specific development sectors (e.g. health, education, agriculture etc.) based on the ‘division of labour’ mechanisms set up by the Ministry of Local Government (MINALOC). Different development partners prefer different funding mechanisms to channel support intended for health-sector interventions. For example, BTC’s bilateral cooperation has gradually progressed towards more programmatic and sector-wide approaches, leaving behind the project approach
An innovative approach for effective project management in the ministry of health

The SPIU was established to respond to the need for a single body to effectively coordinate the management and implementation of publicly or privately funded projects in the health sector and those funded by multilateral and bilateral development partners to achieve Ministry of Health priorities.

When the Cabinet adopted the SPIU principle, five projects – four funded by the Global Fund (HIV/AIDS, tuberculosis (TB) and two for malaria) and one funded by the World Bank (East Africa Public Health Laboratory Networking Project) – were already managed by the World Bank and Global Fund Project Management Unit (PMU) under the former National AIDS Control Commission (CNLS). Both donors were looking forward to the Cabinet’s endorsement of the structure.

After the adoption of the SPIU principle, the Ministry of Health held a series of meetings with other key development partners, especially bilateral organizations (CDC, BTC, GIZ and Swiss Cooperation) to explain the new approach. USAID and the Global Alliance on Vaccination and Immunization (GAVI) assessed the SPIU to ascertain the robustness of the system, identify risks and formulate mitigation measures before approval of new projects. The assessments produced a satisfactory report.

The BTC-funded Minisanté IV program was integrated into the Ministry of Health SPIU in July 2012 (based on March 2012 mid-term review recommendations). Since July 2014 the administrative and financial management of the Ministry of Health SPIU has been under the authority of the RBC.1

The Ministry of Health SPIU structure, which is dynamic, is designed to accommodate: (i) the specificity of the health sector in general, and the particularities of Ministry of Health programs – i.e. alignment of the programs with Ministry of Health priorities; (ii) alignment with the Ministry of Public Service and Labour (MIFOTRA) model structure, as per Cabinet approval (all positions in the Ministry of Health SPIU are aligned by rank with MIFOTRA positions). For the purpose of creating an efficient structure, HIV, TB and malaria program managers at the SPIU are interacting with officers (paid project staff) within the RBC, instead of duplicating similar positions within the SPIU; and (iii) donor requirements (independent of the current structure, some donors require the recruitment of additional staff for specific assignments – e.g. the World Bank requires a ‘Best Practices Officer’; the Global Fund requires a ‘Civil Society Organizations Officer’; the CDC requires a ‘Business Official’ etc.).

The overall management of the SPIU is the responsibility of the SPIU Coordinator, who reports to the Deputy Director-General of RBC (formerly to the Permanent Secretary of the Ministry of Health).

(operations are implemented via a co-management model to foster ownership and encourage use of national systems). The Global Fund to Fight AIDS, Tuberculosis and Malaria and USAID/Centers for Disease Control (CDC) prefer a project-based approach and are now transitioning towards results-based ‘sector budget’ support (with operations implemented using a combination of donor and national systems). The German Development Agency (GIZ), while still supporting the health sector, prefers a project-support model based on German national systems to coordinate and operationalize planned activities.

Based on the Rome Declaration on Aid Harmonization (25 February 2003), the Paris Declaration on Aid Effectiveness (28 February – 2 March 2005) and the Rwanda Aid Policy (as endorsed by the Cabinet on 26 July 2006), Rwanda acknowledges the crucial role of its development partners in achieving its Economic Development and Poverty Reduction Strategy and Vision 2020 targets and accountability to its citizens and development partners, and is hence committed to setting up and ensuring efficient systems for the management of external funding.

Thus, in its session of 11 February 2011 the Rwandan Cabinet adopted the principle of the creation of an SPIU in public institutions. Thereafter, the Ministry of Health SPIU was established by Ministerial Instruction No. 20/52 of 10 March 11 with a mandate to ensure comprehensive coordination and management of funds used by sub-recipients during the implementation of, mostly, externally funded projects.

The principle of the SPIU was motivated by seeking to address key challenges in the management and implementation of public projects, funded through sector budget support or project support, identified by the Ministry of Finance and Economic Planning’s Central Public Investments and External Finance Bureau (former CEPEX) in 2009.

These challenges included:

- increased transaction costs in project implementation;
- delays in starting project implementation due to staff recruitment;
- high staff turnover before the completion of the project;
- reporting issues due to the multiplicity of projects;
- difficulties in budget coordination across multiple projects under the same institutions;
- increased number of bank accounts affecting financial reporting and accountability;
- and
- difficulties in coordinating development partners due to time-consuming, and an increased number of, appraisal and evaluation requirements for individual projects under the same institution.

An SPIU is an entity set up in, and by, a budget agency (which is a public entity such as a ministry or an administrative district) to effectively and efficiently coordinate the overall mobilization of external resources and facilitate implementation of results-oriented management. It performs strict evidence-based monitoring and evaluation (M&E) of internally and externally funded new projects and programs in the health sector.

The SPIU was established to respond to the need for a single body to effectively coordinate the management and implementation of publicly or privately funded projects in the health sector and those funded by multilateral and bilateral development partners to achieve Ministry of Health priorities.
The coordination of the SPIU is assisted by five operational units (planning and M&E, finance and administration, procurement, internal audit, legal affairs) and a pool of Technical Assistants who are provided by the funding from development partners. Each unit is headed by a Head of Unit (supported by a team of project officers, sector specialists, budget controllers etc., with titles depending on the unit) who mainly ensures that project activities are aligned with national priorities and programs, harmonization of interventions, targets and unit costs across projects and donors and that there are no duplications across projects and donors. Their responsibilities also include interacting on a daily basis with sub-recipients/implementing institutions, donors and project coordination mechanisms or steering committees.2

Projects under the SPIU are grouped into three programs, according to Ministry of Health policy and strategic documents, with a focus on HIV/AIDS, TB, malaria and health system strengthening. The Ministry of Health SPIU signs a Memorandum of Understanding (MoU) with project implementers or sub-recipients, which execute the budget and activities planned in individual project operational plans and report back to the SPIU on a quarterly basis.2

Functions, responsibilities and obligations of the Ministry of Health-SPIU

The tasks of the Ministry of Health SPIU focus on administrative, financial, planning, M&E, procurement, audit and information and communication technology (ICT) functions. It carries out financial and human resources management, consolidates reliable project financial statements, and produces and disseminates project implementation progress and completion reports.

The SPIU is mandated by the Ministry of Health (as the principal recipient of all external funding destined for the health sector) to undertake the daily management of all internally/externally funded or mixed health-sector projects for which funds are directly transferred to a specific bank account (held by RBC or Ministry of Finance) at the National Bank of Rwanda (BNR) for the implementation of activities by sub-recipients.

The SPIU ensures effective, efficient and rational management of funds allocated to health-sector projects by complying with agreed operational plans and budgeted action plans. It provides regular technical support to project sub-recipients in the fields of M&E, implementation of action plans, procurement and capacity development, to achieve the projects’ intended objectives.

Current SPIU portfolio

Several multilateral donors have entrusted the management of their health-sector programs and/or projects to the SPIU, with prior approval (‘no objection’) limited to agreed key decisions, and applying an ex post review and audit principle to other decisions. Other international development partners such as BTC and the UK Department for International Development (DFID) are co-managing their projects and programs together with the SPIU.

As of March 2015, the SPIU portfolio comprises the following 19 projects funded by different multilateral and bilateral organizations:4

- Global Fund: three projects (HIV, TB, malaria);
- World Bank: two projects (laboratory networking and sexual and gender-based violence);
- CDC: seven projects;
- the Capacity Development Pooled Fund (CDPF) funded by BTC, GIZ, Swiss Cooperation and DFID: one human resources for health strengthening project;
- the 12 Plus Project (reproductive health project) funded by DFID and the Nike Foundation: one girls’ empowerment project;
- BTC: one project (Minisanté IV);
- GAVI: one health system strengthening project;
- Academic Medical Centre/Netherlands: one project on malaria pre-elimination for Ruhuha District;
- Children Investment Fund Foundation: one project on the prevention of stunting; and
- International Development Research Centre (IDRC): one project to understand violence against children in Rwanda.

Description of the problem

Ministry of Health project management structure before the establishment of the SPIU

Before 2006 the Ministry of Health was implementing projects through different PMUs, depending on the status of the grant agreement requirements between the Ministry of Health and the donor or development partner and according to the project design. Since 2003 the Ministry of Health had been implementing the Global Fund and World Bank grants based on the approach and structures of separate PMUs.

In 2006 the World Bank and the Global Fund welcomed and supported the idea of merging the management of the projects they were funding, so their separate PMUs merged into one. The idea was later welcomed and supported by DFID in 2008.
This approach had presented more limitations than advantages. Among others, the involvement of multiple PMUs could lead to delays in starting projects due to their different approval and ratification processes and long recruitment processes. Each and every PMU was also supposed to open its own bank account for the project, and budget control was carried out across multiple projects. High staff turnover due to the use of short-term contracts was also observed; this could lead to delays in project implementation and a lack of institutional memory.

Another management challenge was the coordination of sub-recipients, which had to report to many small PMUs and attend a number of meetings at the same time. With this situation, priorities could not be set, and it was hard to ensure follow-up with so many actors involved.

For these reasons, an innovative approach to health-related project management had to be applied if the above-mentioned problems were to be addressed.

**Minisanté IV before integration into SPIU**

The Minisanté IV program commenced in August 2010. It was originally aligned with the Health Sector Strategic Plan II (2009–2012) and later with Health Sector Strategic Plan III (2012–2018).

The management modalities of Minisanté IV operated in a classic ‘co-management’ model set-up of a Ministry of Health Director of Intervention working closely with a BTC Technical Assistant designated as Co-Manager (Délégué à la Cogestion – DELCO). This co-management model was dysfunctional, with frequent changes of Directors of Intervention slowing down the implementation of planned activities.

Furthermore, considering the delay between the project formulation (2008) and its actual onset (2010) and taking into account the fast-changing environment and its wide scope, implementation was slow until March 2012, when the Ministry of Health, in agreement with the Minisanté IV project team, requested a mid-term review after 19 months of program implementation.

The general purpose of the mid-term review was to assess the project’s achievements and progress, identify constraints and successes and provide recommendations towards effective implementation according to the needs and priorities of the current context.²

Among others, the specific objectives of the mid-term review included proposing measures to improve project implementation, quality and reporting and, as necessary, proposing changes to the strategic orientation of the project (including the number of expected results¹³ and allocation of the remaining budget) in view of the next health program to be implemented under the 2011–2014 Indicative Cooperation Program.²

While the review noted that the project was highly relevant, findings included the fact that project implementation had been fraught with difficulties, including irregular joint management meetings with the Ministry of Health in the lead; conflicts between Technical Assistants due to some overlaps between the Terms of Reference for Co-Managers and Senior Technical Assistants; delays in developing (too complex) contracting modalities; a lack of continuity in Technical Assistant support at district level; bureaucracy and unclear procedures for interactions (regarding Minisanté IV interventions) between the District Executive Secretary, the procurement team and the Director of Health, on the one side, and the District Medical team led by the Hospital Director on the other; scientific support considered unsatisfactory by Minisanté IV and the Program for Support to the Strategic Health Development Plan of the City of Kigali (PAPSDK); as well as a lack of consensus on the project’s objectives. To some extent, the Steering Committee failed to identify and/or correct in time some of these constraints affecting smooth implementation.

Minisanté IV was being implemented in a rapidly changing, highly dynamic sector and socio-economic environment. To some extent, it had been slowing down the speed of change (or had been unable to keep up with it). This required a fundamental change in the next phase, in terms of organization and in terms of results orientation. The main finding was that Minisanté IV had not clearly identified which results it was going to achieve by the end of the program. It was more reactive than proactive and lacked focus. Because of the lack of strategic focus and clearly defined results, the activities were not results oriented and could not be ‘measured’ by specific indicators (only sector-wide indicators are reported, many of which the program did not contribute to, directly or indirectly).²

A set of similar recommendations was thus given to some of the parties concerned (BTC Headquarters and Country Office, Government of Rwanda/Ministry of Health, Minisanté IV Steering Committee). They included:

- integrating/facilitating the integration of the administrative management for the Minisanté IV program into the SPIU by July 2012;
- reviewing the organization of the Minisanté IV program to fill some key positions which were missing;
- limiting the number of national program directors to one (one Director of Intervention);
- clarifying the functions/Terms of Reference of Minisanté IV Co-Managers and Senior Technical Advisors; and
- continuing to ensure the Ministry of Health’s ownership and leadership of the program.

The review also suggested that the Minisanté IV program should specify concrete results to be achieved by 2014 both at central and district level and should focus on a limited number of strategic areas,⁴ such as present sectoral priorities (i.e. capacity-building of District Health Management Teams in management, planning and M&E; quality of care;
mental health; support to and capacity-building of the national biomedical technology maintenance center and training in maintenance/biomedical engineering; support to a Master of Science program in hospital management; training of psychiatrists; support to provincial hospitals etc.).

**Rationale for integrating Minisanté IV into the Ministry of Health-SPIU**

Although Minisanté IV was designed as a sector support program, its implementation follows a stringent project modality, with donor-specific financial and administrative procedures and with transaction costs at all levels. Examples are the contractual arrangements between the project and districts; the reporting requirements; the inter-project coordination structures; and the concept of the scientific support as implemented now. The current coordination structure of Belgian health support also implies high transaction costs – for example, in terms of time spent on meetings.

As the key role of the SPIU is to ensure integrated and consistent management of projects in the health sector, its mandate includes providing technical assistance to institutions, technical units and project beneficiaries during the project planning and fundraising process, and ensuring harmonization and complementarily of interventions and budgets across different projects, including Minisanté IV. The integration of Minisanté IV was very suitable, since it was seen as an added value to the program to strengthen partner ownership and alignment, especially in supporting the procurement process.

The integration of Minisanté IV into the Ministry of Health-SPIU aimed to increase national ownership by strengthening operational leadership; improve the project’s alignment with national structures and systems; make use of the expertise and experience of the SPIU, in particular regarding procurement and infrastructure development; and gain in efficiency through more rational use of existing resources.

In addition to integrating Minisanté IV into the SPIU, the mid-term review also recommended that the program should focus on specific areas of intervention, rather than spreading its resources through the various ministerial units and directorates. A participatory process of priority setting and consensus building took place in 2012 after the review and culminated in the approval by the Steering Committee in November 2012 of the following five focus areas:

- improving capacity in planning, management and M&E;
- strengthening the quality of health services in Rwanda;
- improving the mental health of the Rwandan population;
- improving the quality of health care technology management; and
- managing and developing knowledge systematically at central level: research is performed in the three districts, and the evidence generated at local level feeds into the development of policies.

As seen in the SPIU organizational chart shown below (before June 2015) the Minisanté IV program staff (project officer, accountants, procurement officer, administrative assistant, program officers at district level etc.) is affiliated to the SPIU through a ‘co-management’ model whereby the SPIU Coordinator is also the Minisanté IV Director of Intervention. For all programmatic and financial operations, the Director of Intervention works closely with a Co-Manager (also known as Délégué à la Cogestion – DELCO) who is a BTC Technical Assistant. The contracts for Minisanté IV program staff are signed by the RBC Deputy Director-General (formerly the Permanent Secretary of the Ministry of Health), as they are for all other SPIU staff, and the Minisanté IV personnel files are all managed through the SPIU Human Resources and Administration Office (requests for leave, recruitment etc.). The program follows both BTC project procedures manuals and the SPIU procedures manual for all financial, programmatic, procurement and internal audit procedures and reporting structure.

In addition to the BTC Co-Manager, two international Technical Assistants work within the RBC, the implementing agency of the Ministry of Health, in the Mental Health and Medical Technology and Infrastructure divisions, respectively. Additional technical staff are also provided to units or divisions that request technical assistance. Before Minisanté IV was integrated into the SPIU, staff contracts were signed by the Permanent Secretary of the Ministry of Health, while the programmatic and financial operations followed both Ministry of Health and BTC management procedures.

**Description of the study**

The study was carried out over six months from October 2014 to March 2015, mainly through critical analysis of Minisanté IV program documents, including the Technical and Financial File, the 2012 mid-term review report, annual and quarterly financial reports, reports from implementing institutions etc.

This case study will try to answer the following key questions: How did the creation of an SPIU lead to better management of health-sector support programs such as Minisanté IV? How is Minisanté IV functioning, and how did its integration into the Ministry of Health SPIU contribute to improved project management?
An innovative approach for effective project management in the ministry of health

Figure 11.1: Placement of Minisanté IV staff within the current Ministry of Health SPIU organizational structure

Results

Effectiveness

Procurement:

By implementing Global Fund and World Bank operational plans, the procurement team in the SPIU had acquired expertise in terms of working with the sometimes stringent procurement procedures of bilateral development partners, conducting a large number of tenders concurrently and managing contract tenders with huge sums involved. The integration of Minisanté IV into the SPIU helped to improve the management of tender processes. Because the slow tendering processes in the districts often led to low budget execution and delays in implementing program activities, the SPIU was given the mandate by the Minisanté IV Steering Committee to implement ‘pooled procurement’ for some tenders on behalf of the districts. A total of 50 files (31 goods and supplies, 13 works and 6 service files) were regrouped into 22 tenders, to ensure efficiency and economies of scale, particularly for infrastructure and medical equipment. Nevertheless, districts were still in charge of assessing their needs and contributing to the technical specifications of works and goods (medical equipment etc.) that were procured by the SPIU with technical assistance from the RBC Medical Technology and Infrastructure division. This in a way reduced the involvement of districts in cash management for some of their interventions, but this was identified by all parties as the best way forward to improve efficiency (i.e. joint tenders for similar equipment across districts) and ensure effective implementation of the program, given the limited time remaining. Capacity-building was also conducted through training for procurement staff at district level and their respective hospitals.

Finance and budget execution:

The integration of the Minisanté IV finance team into the SPIU strengthened the financial management of Minisanté IV operations by making use of the SPIU’s existing strong contacts with the BTC Country Office, Ministry of Health implementing units and directorates as well as the different mechanisms of dealing with project sub-recipients. This made it easier to follow up all financial transactions and produce periodic financial statements, leading to improved accounting mechanisms.

Most importantly, it became easier to conduct in-depth internal and external audits through the SPIU internal audit procedure, which already had expertise in conducting and facilitating both internal and external audits for other development partners.

The integration into the Ministry of Health SPIU and the implied reinforcement in human resources allowed the Minisanté IV program to accelerate the implementation of activities and perform a cumulative budget execution of 62% by the end of 2013, compared with 39% at the end of 2012. By the end of 2014, the budget execution rate was 86%.
Program monitoring, reporting and documentation:
Due to the structure of the SPIU, the integration of Minisanté IV implied that the program had to have a dedicated Project Officer within the SPIU and three District Project Officers to interact closely with the Minisanté IV Director of Interventions and DELCO, central and decentralized levels, as well as identified internal focal persons including the Minisanté IV International Technical Assistants and support teams, for the effective implementation of action plans as approved by the Steering Committee. In addition, the Project Officers ensured technical support during the elaboration of action plans, needs assessments, assigning unit costs to defined activities, elaboration of the results framework, and other project documents as required, including periodic project implementation progress (and completion) reports.

The use of the functions of the SPIU such as organizing and conducting quarterly implementation progress review workshops and M&E field visits aimed at discussing the progress of planned activities with each of the sub-recipients having had a positive impact on achieving targets. Capacity-building in leadership, procurement management and data use has been crucial to consolidate both decentralization and the district health system.

Efficiency
The interventions planned for Minisanté IV were efficiently implemented following its full integration into the Ministry of Health SPIU, which was already managing seven different donor-funded projects. This was achieved by developing synergies and synchronizing opportunities in terms of a comprehensive and well-informed planning process focused on real needs and avoiding duplication of activities while using the most accurate unit costs.

Finance
The technical expertise at the SPIU and the grouping of tenders contributed to a significant reduction in delays in implementation, and thus indirectly reduced costs. Large-scale tenders are initiated through a rigorous mechanism that takes into account all internal controls. Most of the planning is based on inputs costs and is calculated according to existing government and donor norms, rules and ceiling costs.

Procurement expertise
The Minisanté IV program recruited one Procurement Specialist to support and add to the pool of technical expertise of the SPIU procurement unit, which manages numerous tenders (e.g. 50 in 2013: 31 goods and supplies, 13 works and six service files). Delays in tender processes at district level prompted the Minisanté IV Steering Committee to decide in November 2014 that the SPIU should conduct pooled procurement for 22 tenders on behalf of districts. In our view, the construction of the planned infrastructure (maternity departments, operating theatres and other buildings) would have wasted a huge amount of time and money without the readily available expertise provided by the SPIU procurement team in terms of construction plans, technical specifications, unit costs etc.

The expertise of the International Technical Assistants in the fields of public health, biomedical engineering and mental health has been highly appreciated, particularly in regard to capacity-building for key staff, developing strategic plans for the health sector, biomedical equipment management guidelines and the mental health law, and providing technical support during mentorship and formative supervision.

Accountability and transparency
In addition, the SPIU’s operating procedures allow it to ensure and maintain a high level of accountability, transparency and results-oriented delivery in the management of health-sector projects including the Minisanté IV program. The SPIU team of Project or M&E Officers and budget controllers work in close collaboration with project implementers to ensure targets are achieved both for programmatic indicators and in terms of budget absorption. In case of delayed activities, they collectively develop catch-up plans with timelines and responsibilities assigned and ensure accelerated implementation.

In terms of following up funds transferred to sub-recipients or project implementers, the internal auditors in the SPIU are responsible for auditing these funds down to the level of all implementing institutions and supporting them to collect and compile all necessary supporting documents during external audit reviews conducted by Rwanda’s Office of the Auditor General of State Finances or selected private audit firms. They develop, update and execute annual internal audit plans and programs and ensure that technical and external financial audits of funded projects take place regularly as agreed. When external audit reports are produced, the SPIU team ensures that any recommendations made are followed and corrective measures taken.

Internal audit reports are presented to senior management at the Ministry of Health and the RBC during regular meetings chaired by the Minister for Health. Strategic project orientations and remedial actions are discussed, and teams are tasked to implement them with clear deadlines and follow-up dates. An external audit of Minisanté IV gave an unqualified report in 2014. During its implementation period, the program has had two different independent audits, with all reports successful. The final evaluation of Minisanté IV was completed and results disseminated in a ceremony with all stakeholders held on 31 March 2015.
M&E/indicators

Minisanté IV was implemented as an institutional support program for the Ministry of Health; its specific objectives were to strengthen interactions between institutions at both central and district level, and the five focus areas identified after the 2012 mid-term review were streamlined with Health Sector Strategic Plan III priorities. The program did not, therefore, feel the need to have its own M&E plan but, rather, decided to focus on contributing to achieving the indicators set out in Health Sector Strategic Plans II and III. Ideally, since the program is a Ministry of Health institutional support program, it should be evaluated based on the achievements of the health sector as a whole. However, the extent to which related indicators have been achieved cannot be attributed to Minisanté IV only, since it is a national and comprehensive approach with technical and financial inputs from other development partners all under the oversight of the Ministry of Health.

Performance in the five focus areas

The Minisanté IV program has been involved in institutional and management capacity development in the following areas:

 Capacity-building of District Health Management Teams in management, planning and M&E: The SPIU organized training on procurement procedures, financial and hospital management and customer care for Boards of Directors of mutual health insurance schemes and pharmacies, district and hospital staff, and provided salary support and training for 30 District M&E Officers in updated templates and information systems. As a result, M&E at district level has been significantly strengthened, as shown by the assessment done by the SPH in June 2013 which acknowledged the contribution of District M&E Officers to strengthening the district health system, supporting the development of the District Health Management Team concept and guidelines, providing logistical support for mentorship by central level agents, mid-year evaluations and training, and drawing up District Development Plans. Districts are progressing towards more autonomous and responsible planning, implementation and M&E with the support of the central level.

 Strengthening the quality of health services in Rwanda: In September 2012, the Ministry of Health embarked on a process of hospital accreditation whereby all District Hospitals and later Health Centres, will be benchmarked against agreed norms and standards. A considerable amount of work has been done to update norms and standards of care with the support of Minisanté IV. District Hospitals accreditation committees have been put in place. In the urban setting of Kigali, four urban Health Centres were built under a Rwandan-Belgian program supporting the City of Kigali, but they needed to be medicalized. This process entails defining an adequate package of care and services for this level of facility, and Minisanté IV embarked on supporting the coordination of all stakeholders to provide this package of care in the new, modern Health Centres. The establishment of an urban health concept including a functional interhospital network of Kigali hospitals is another initiative supported by the Minisanté IV program. Other activities undertaken include training for health care providers on the accreditation policy and the expected roles at district level; training on emergency obstetric and neonatal care; and the rehabilitation and extension of key infrastructure such as maternity departments, operating theatres and neonatal units — all geared towards reducing maternal and child health.

 Improving the mental health of the Rwandan population: Due to the support of Minisanté IV, all facilities at all levels currently offer a mental health care package. It is now totally integrated into the complementary and minimum package of activities and the community health package. The decentralized health facilities are now capable of providing the appropriate care, and fewer referrals are made to specialized mental health care facilities at central level. For the Ministry of Health to be able to cater for the mental health service needs of all Rwandans, a ‘sandwich’ program to increase the number of specialist mental health practitioners (MMed Psychiatry program) is now running, with the first cohort of five students having returned to complete their second year in Rwanda. Other major achievements by the Mental Health division include: support to national policy development on drugs and substance abuse; training of District Hospitals and Health Centre staff (doctors and nurses) in mental health interventions; training of CHWIs; sensitization of the community on mental health issues; strengthening referral systems from community to district to hospital and tertiary structures; management of psycho-social emergencies during the annual national Genocide Commemoration Week etc. There is now less need for central-level intervention at the district level during Genocide Commemoration Week, since the district-level facilities have now been trained and are capable of handling any emergency situation. A draft law to regulate the mental health practice and protect patients’ rights has been developed and is currently being validated.

 Improving the quality of health care technology management and medical maintenance: An international Technical Assistant/Biomedical Engineer was recruited by Minisanté IV in August 2013 to provide strategic support to the Medical Technology and Infrastructure division. Initial activities included situation analysis, on-site visits, development of policies on donations of medical equipment as well as on scrapping equipment, support to a web-based medical equipment inventory, and standardization of technical specifications and users’ manuals. Other achievements supported by Minisanté IV include providing critical medical equipment to five District Hospitals, assistance in providing technical specifications for planned equipment, routine curative and preventive maintenance of equipment, and capacity-building initiatives for central and district-level maintenance staff. An in-depth study on the biomedical equipment procurement and maintenance system in the public sector in Rwanda will be performed with the support of Minisanté IV and will provide clear strategies and recommendations for an effective and efficient system adapted to the local context.
Managing and developing knowledge systematically at central level:
Research is performed in the three districts, and the evidence generated at local level feeds into the development of policies. Generally the UR/SPH was responsible for knowledge management. It has been an active partner in assisting the Ministry of Health and the Minisanté IV program to provide continuous technical support that fosters a reflexive, analytical and participatory approach, and training sessions for all actors involved.

The central and district-level teams received training on operational research, and after the training the three districts managed to develop and implement their respective research proposals. Three priority topics have been selected in the three districts allocated to Minisanté IV, with technical and mentoring support from the UR/SPH. A comprehensive approach was used, starting with problem identification from existing data, and including training on protocol development, data collection and data analysis, field work and report writing. All three districts actually owned the process and are expected to present their findings in 2015.6

A capacity-building and documentation process is ongoing (with different themes from all central and district level actors), aimed at collecting, documenting and sharing lessons learned and best practices from implementing Minisanté IV interventions. The overall aim of the process is to interpret the findings to inform the Ministry of Health, RBC and partners by producing knowledge products such as policy briefs, reports, booklets or (peer-reviewed) articles in international journals.

The UR/SPH piloted the full assessment of District M&E Officers that provided valuable information on the relevance of the positions and the performance of the staff recruited (District M&E Officers). Some 90% of respondents agreed that the position of District M&E Officer was relevant; the main reasons for this opinion included: they are required to strengthen the currently understaffed District Health Unit (comprising just one District Health Officer); the health M&E position is key to ensure a link between the district administrative and health facilities; they allow health indicators to be tracked and facilitate reporting; and they provide reliable and timely data for planning and informed decision-making. The assessment has been used as an advocacy tool with MINALOC and MIFOTRA to institutionalize the M&E positions at district level.

Challenges in the integration of Minisanté IV
Tender contract management poses problems of timely execution despite good communication with successful bidders. Involving more than one institution in setting technical specifications for products, furniture, machines and sophisticated equipment delays the tender process and negatively affects the speed and cost of supply. Once more than one institution is involved, there is no full control over the schedule for tender proceedings.

Some activities (surveys, large-scale works etc.) and official requirements are very complex, yet there is only a short implementation period (some activities require a time-frame which is beyond the program implementation period).

Ownership and stewardship of project activities is not yet optimal at district level: some delays remain in implementing action plans and documenting successes and weaknesses.

Lessons learned
The creation of the SPIU is a good example of how coordinating grants and implementation by a single body can deliver good results. Key among the lessons learned is that the approach permits and promotes effective grant management through transparency, accountability and easy follow-up of all financial transactions among donors, the Ministry of Health and sub-recipients/implementing agencies. The approach also reduces the duplication of activities and targets across grants and sub-recipients and harmonizes project unit costs such as salaries, training, equipment etc. It also reduces transaction costs, by sharing functions that are valid for any kind of health-sector development project, and time spent on recruitment of a new project team and simplifies coordination and reporting systems.

The integration of Minisanté IV into the SPIU has been very positive. For it to be successful, a number of conditions needed to be met, and it was not automatically successful. These included a results-oriented approach, clear leadership and ownership, effective systems and a joint willingness to succeed.

Synergy and commitment from all actors involved in program planning, implementation and oversight functions are critical for the optimal achievement of objectives and targets. Advocacy for program interventions can be increased due to the increased ownership by higher-level authorities in the Ministry of Health. The role of different actors at district level (local leaders, CHWs, social affairs, traditional healers) as well as the technical support and supportive supervision from central level have been instrumental in strengthening the decentralization of quality mental health services.

The process of change and institutional support requires time and involvement as well as the buy-in of all actors. It is a medium- to long-term process that has implications for the need for a long-term funding program (commitment over a longer period) to ensure its sustainability. It requires a clear focus on commonly agreed strategic objectives, which are sometimes blurred by too many operational issues.

Regarding the capacity-building process, lessons learned from program implementation at managerial and technical level are very relevant for ownership, evidence-based policy development and sharing of good practices. Scientific support can be one approach providing minimum implementation conditions. Research is also useful and requires time and expertise to be identified at the onset of the program.
Conclusion and recommendations

This case study looked at how the creation of an SPIU lead to better management of health-sector support programs such as Minisanté IV and how the integration of Minisanté IV into the Ministry of Health’s SPIU contributed to its overall improved management and achievements.

The decision to integrate the Minisanté IV program into the SPIU of the Ministry of Health in July 2012 was a very wise and timely decision by the Steering Committee. It added value to the program, strengthened partner ownership and improved alignment with health-sector priorities, especially in supporting the procurement process. It also increased the visibility of the program in the health sector.

Minisanté IV has implemented all the planned interventions following its full integration into the Ministry of Health’s SPIU. This has come about due to the development of synergies and the synchronization of opportunities through a comprehensive and well-informed planning process focused on real needs and using the most accurate unit costs, which were readily identified through the SPIU.

At district level, some tender processes were slow. The Steering Committee decided that the procurement of infrastructure and medical equipment would be pooled and managed by the SPIU procurement unit and Minisanté IV central management. This allowed increased effectiveness and efficiency.

Existing expertise in public finance management and procurement allowed for the more efficient use of funds through reduced transaction costs and pooled resources, ensuring quicker and time-saving implementation.

It is recommended that measures and strategies such as the SPIU that facilitate the management, disbursement and effective utilization of funds and reduce recurrent management costs should be put in place. Ownership of program implementation should be fostered among the implementing institutions to avoid underutilization of the budget. While the SPIU can be commended for involving the implementing institutions in project ownership, more needs to be done to ensure full participation and ownership, especially of public leaders, during project implementation.

Lastly, the structure of the SPIU as initially approved by the Cabinet is dynamic, and subject to change depending on the needs of the Ministry of Health and its development partners, the size of the portfolio and the type and complexity of interventions. We believe that the establishment of an SPIU comes with numerous challenges; however, they are outweighed by the benefits accruing from its functions, hence we think it is a replicable structure which can be scaled up to other partners, and we recommend it for any country, ministry or institution – especially in low-income countries – wishing to improve the management of its health resources.

To capitalize on and maintain the achievements of Minisanté IV, a new project to be funded by BTC is at threshold stage, based on the good practices developed by integrating the program into an SPIU.

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Annex 1

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Strengthening health systems: evidence-informed approaches and lessons learned from Rwanda shows the lessons learned from a health systems programme that was implemented in Rwanda in 2010 to 2015 with support from the Belgium Development Agency.

The so-called Minisanté IV is based on a ‘double anchorage’ approach: this means that interventions at the decentralized level feed into policy development at the central level, and, in turn, policies developed at the central level can be tested or monitored closely at the decentralized level.

This book shows the results of a capitalization process, which consisted of generating lessons learned and translating them into concrete actions at managerial and technical levels. These lessons learned can be relevant for ownership, evidence-based policy development and sharing of good practices in enhancing quality of care, implementation of specific technical expertise for health systems strengthening and strengthening of health systems management.