

REPUBLIC OF RWANDA



MINISTRY OF HEALTH

**EMERGENCY MEDICAL SERVICES
STRATEGIC PLAN
(2018-2024)**

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Acronyms

AFEM	African Federation for Emergency Medicine
CBHI	Community Based Health Insurance
CHUB	Butare University Teaching Hospital
CHUK	Kigali University Teaching Hospital
CHW	Community Health Workers
DDG	Deputy Director General
DG	Director General
DHIS	District Health Information System
DHS	Demographic and Health Survey
DHU	District Health Unit
DM	Division Manager
EAC	East African Community
ED	Emergency Department
EMR	Electronic Medical Records
EMS	Emergency Medical Services
GSMM	General Senior Management Meeting
HC	Health Center
HF	Health Facility
HH	Household
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HP	Health Post
HSSP	Health Sector Strategic Plan
IHR	International Health Regulations
ISMM	Inner Senior Management Meeting
ITE	Information Technology Equipment
KFH	King Faisal Hospital
KII	Key Informant Interview
KPI	Key Performance Indicator
MDG	Millennium Development Goals
M&E	Monitoring and Evaluation
MIDIMAR	Ministry of Disaster Management and Refugee Affairs
MIFOTRA	Ministry of Public Service and Labour
MINALOC	Ministry of Local Government
MINECOFIN	Ministry of Finance and Economic Planning
MININFRA	Ministry of Infrastructure
MOH	Ministry of Health
NA	Not Available
NCD	Non Communicable Disease
NGO	Non-Governmental Organization
NST	National Strategy for Transformation
OOP	Out Of Pocket (expenditure)
PH	Provincial Hospital
PHECS	Pre-Hospital Emergency Care Services
PPP	Public Private Partnership
RBC	Rwanda Biomedical Centre
RDB	Rwanda Development Board

RH	Referral Hospital
RISA	Rwanda Information Society Authority
RSSB	Rwanda Social Security Board
RURA	Rwanda Utilities Regulatory Authority
RWF	Rwandan Franc
SAMU	Service d'Aide Médicale d'Urgence
SDG	Sustainable Development Goals
SGF	Special Guarantee Fund
SOP	Standard Operating Procedure
SP	Strategic Plan
SWOT	Strengths, Weaknesses, Opportunities and Threats
UHC	Universal Health Coverage
UTH	University Teaching Hospital
WHO	World Health Organization

Foreword

Although progress has been made to develop Emergency Medical Services (EMS) within Rwanda over the last decade, challenges remain. Therefore, the Emergency Medical Services Strategic Plan 2018 – 2024 (EMS SP) has been developed as the guiding document outlining the national strategic direction for all EMS actors, including the private sector, from the entire country to improve emergency health standards at all levels of care over the next six years.

The vision is to reduce mortality and morbidity through provision of high quality and integrated emergency medical services. Therefore, the objective is to build the capacity in terms of leadership and governance, formal emergency care training at all levels, adapted protocols and guidelines, operative standards for 912-call center, sustainable financing and adequate emergency care equipment.

The Strategic Plan builds on lessons learnt and important progress made from the implementation of SAMU SP 2013-2017 and is aligned with the Health Sector Strategic Plan IV (HSSP IV), Vision 2050, National Strategy for Transformation (NST 1), Universal Health Coverage (UHC) and Sustainable Development Goals (SDGs).

In addition, its content reflects a comprehensive analysis of the Rwanda's emergency health sector progress and situation to date. It is also based on technical input from key health sector stakeholders, including the Ministry of Health (MoH), Rwandan Biomedical Center (RBC), health facilities at all levels, health insurance companies, among others.

Finally, for the implementation of the EMS Strategic Plan to be successful, combined efforts from many stakeholders will be needed. I call upon all stakeholders from both Government and non-state actors involved to align their interventions to the new Strategic Plan in order to achieve our target and provide the Rwandan population with a sustainable and integrated emergency medical services system that provides affordable and accessible high quality services.

Diane Gashumba

Dr. Diane GASHUMBA
Minister of Health



Executive Summary

Purpose

Rwanda's Emergency Medical Services Strategic Plan (EMS SP) provides the health sector with a strategy that will highlight its commitments and priorities for the coming six years. It is necessary to provide the framework and guidelines to manage various sets of life threatening emergency conditions in and out of hospital environment during primary medical evacuation and inter-health facilities transfers. The EMS SP will fulfil the country's commitment expressed in Rwanda's Health Sector Strategic Plan IV (HSSP IV), Vision 2050, National Strategy for Transformation (NST 1), Universal Health Coverage (UHC) and Sustainable Development Goals (SDGs).

Methodology

The EMS SP was developed through a consultative process involving key stakeholders, including a desk review, key informant interviews, a stakeholders' workshop and necessary approvals from MoH Senior Leadership.

Situation analysis

In Rwanda, as in much of sub-Saharan Africa, EMS is not fully developed and faces the challenge of limited resources. The Rwandan EMS division at the central level, also known as SAMU (Service d'Aide Médicale d'Urgence), was developed 10 years ago and has seen its resources increased to better manage critical emergency conditions. The EMS division manages the pre-hospital emergency services mainly within the city of Kigali and oversees the health facilities' (HFs) implementation of these services across the country.

Although many advances have been made in EMS in recent years, there are several challenges related to coordination, standardization of EMS throughout the country, resources (financial; drugs and consumables; equipment and infrastructure) and partnerships with national and international stakeholders.

This SP has been developed to address these challenges, with the vision to reduce mortality and morbidity through provision of high quality and integrated emergency medical services. This will be achieved through qualified and committed staff, effective communication and structure, and adequate resources. Below are the six strategic objectives:

1. Achieve **operational effectiveness** by optimizing the EMS organization and structure
2. Provide **high quality** practices and services through developing **standardized processes** and building **staff capacity** at all levels
3. Improve **equity and geographical accessibility** of EMS across the country
4. Achieve **financial sustainability** for EMS at country level
5. Enhance **networks and partnerships** for EMS at international and national levels
6. Establish a robust EMS **monitoring and evaluation framework**

Costing

The strategic plan is projected to cost RWF 21,242,392,569 (21.2 billions) for the 5 years.

Implementation and Monitoring

The Ministry of Health (MoH) will oversee the implementation of this strategic plan. Strong partnerships, community engagement and multisector collaboration will be critical to the implementation of the plan. The current challenges should be addressed as soon as possible to achieve sustainability of the EMS system and improve the quality of care provided to the population. To ensure this strategic plan is implemented, annual operational plans must be developed and monitored. It is important that EMS research and data will inform evidence-based policies and decision-making. Finally, periodic performance reviews - annual, mid-term and end-term (2024) - will serve to inform health policy dialogue, priority setting, resource allocation, timely corrective action and subsequent planning cycles.

1. Introduction

1.1 Purpose

The Emergency Medical Services Strategic Plan (EMS SP) provides the framework and guidelines to effectively manage EMS across the country. It will therefore help to achieve Rwanda's government aspirations, as embodied in HSSP IV and the NST I.

1.2 Scope

This strategic plan gives direction on how the Ministry of Health (MoH) will develop, strengthen, and sustain pre-hospital emergency care and ensure critical emergency health conditions are effectively and efficiently assisted and handed over to fully operational emergency departments and health facilities across the country at all levels. Additionally, this strategic plan will seek to strengthen ambulance management in order to improve quality of services and enable more effective coordination of inter-health facility transfers.

1.3 Methodology

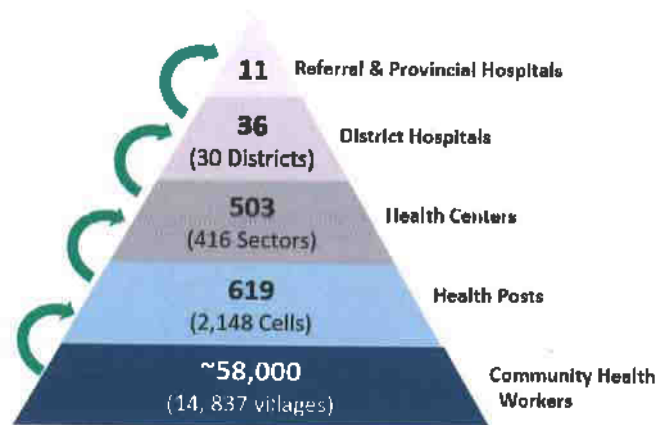
The development of the EMS SP was done through the following process:

- **Desk Review:** Conducted analytical desk reviews to examine national and international literature that helped to elaborate the EMS SP formulation process. Some of the key documents reviewed included the HSSP III and HSSP IV, the Emergency Care in Rwanda Challenges and Ideas, Emergency Medicine Clinical Guidelines, Sub Saharan Emergency Hospital Care 2015, Prehospital trauma care systems, Global Humanitarian Response Plan 2017, HSSP III Mid Term Review final report, and other sources of information (Appendix A).
- **Key Informant Interviews (KIIs):** Conducted KIIs at national level to get qualitative information on existing strategies and the suggested interventions.
- **Consultative Workshop:** Held a three-day consultative workshop to collect inputs and ideas from the participating stakeholders to enrich and guide the development of the EMS Strategic Plan.

2. Health Sector Overview

2.1 Health Sector Background

Patients receive emergency medical services through different levels of care within Rwanda's health system. These levels of care, starting from the most basic care to the most specialized care, are provided through community health workers, health posts, health centers, district hospitals, provincial hospitals and referral hospitals. Through Rwanda's referral system, a patient will be referred to a higher-level institution if the current institution cannot provide the needed level of care.



Additionally, emergency services are included in the package of services at different levels. All hospitals across the country are equipped with emergency departments (EDs) and ambulance services, though some of them are still not standardized. The level of staffing and equipment varies across the hospitals.

Finally, the Government of Rwanda (GoR) is gradually upgrading seven district hospitals (Kibuye, Kibungo, Ruhengeri, Bushenge, Ruhango, Rwamagana and Kinyihira) to referral and provincial in order to serve as referral facilities from district hospitals. These hospitals will provide additional tertiary care services within Rwanda by bringing more specialized inpatients and emergency services closer to the rural population. The plan is to gradually staff and equip these hospitals with capacity to provide care to high risk and critically ill patients to support the existing national referral and university teaching hospitals (King Faisal Hospital (KFH), Rwanda Military Hospital (RMH), University Teaching Hospital of Kigali (CHUK), University Teaching Hospital of Butare (CHUB), and Ndera Neuro Psychiatric Hospital). It is important to highlight that EMS in Rwanda is also provided by private health facilities in line with respective emergency health packages.

2.2 EMS in Health Sector Strategies and Policies

The Ministry of Health (MoH), through the EMS division, is striving toward providing high quality emergency medical services for all Rwandans in a financially sustainable and accessible manner. This means ensuring that all citizens have access to needed emergency medical services (including pre-hospital and in-hospital services) of sufficient quality to be effective while also ensuring that the use of these services does not cause financial hardship to patients. In order to provide this, safe and effective EMS strategies and policies must be developed and implemented to support the delivery of needed emergency medical services.

Rwandan Vision 2050

Vision 2050 highlights the current situation in Rwanda and the goals for 2050. This vision is constituted by five main areas:

1. Quality of Life
2. Modern Infrastructure and livelihoods
3. Transformation for prosperity
4. Values for Vision 2050
5. International cooperation and positioning

Regarding the first area (Quality of Life). Universal **access to quality health care and services, including emergency medical services (EMS)**; quality education; financial services; dignified and SMART housing (with high speed internet); pension, medical insurance and savings; environmentally friendly and climate resilient surroundings. The government has defined the expected standards for all Rwandans:

- Sustained food security and nutrition for all households and age groups
- Universal, sustainable and reliable access to water (in houses) and sanitation
- Affordable, sustainable, reliable and modern energy

National Strategy for Transformation

The implementation instrument for the remainder of Vision 2020 and for the first four years of the journey under Vision 2050 will be the National Strategy for Transformation (NST1). The NST1 presents three pillars for transformation, whose overarching objectives are detailed below:

- **Economic Transformation Pillar:** Accelerate inclusive economic growth and development founded on the Private Sector, knowledge and Rwanda's Natural Resources.
- **Social Transformation Pillar:** Develop Rwandans into a capable and skilled people with quality standards of living and a stable and secure society.
- **Transformational Governance Pillar:** consolidate Good Governance and Justice as, building blocks for equitable and sustainable National Development.

Under each pillar, specific objectives are detailed, as well as key priority areas and lists of strategic interventions. Emergency Medical Services (EMS) are covered under the "Social Transformation Pillar", Priority Area 3, which is to "Enhance demographic dividend through ensuring access to quality health for all", including:

- Increase geographic accessibility by building and rehabilitating hospitals, health centers and health posts
- Enhance strategy to reduce maternal and child mortality
- Increase number and quality of health professionals
- Build centers of excellence to treat major diseases, such as cancer, cardiac diseases, renal diseases, etc.
- Reinforce health insurances, including the community based health insurance (CBHI) scheme
- Promote local manufacturing of medicines and commodities
- Increase health promotion
- Fight drug abuse
- Promote reproductive health and family planning

Health Sector Policy

The Health Sector Policy (2015) gives a general orientation for the sector which are further developed in the various sub-sector policies guiding key health programs and departments. All health sub-sector policies will be updated in line with this policy. The Health Sector Policy is the basis of national health planning and the first point of reference for all actors working in the health sector. The overall aim of this policy is to ensure universal accessibility (in geographical and financial terms) of equitable and affordable quality health services (preventative, curative, rehabilitative and promotional services) for all Rwandans. Key strategic goal listed under this priority area that directly relate to EMS is stated below:

"The quality of pre-hospital care services is another area that needs to be strengthened through increasing the number of competent staff (pre-service and in-service training) and improving infrastructures and equipment, with adequate ambulance vehicles for rapid transportation of patients needing emergency specialized care."

HSSP IV

The Fourth Health Sector Strategic Plan (HSSP IV), covering the period between July 2018 and June 2024, provides strategic guidance to the health sector, operationalizing the strategies delineated in the Vision 2050. The HSSP IV defines the overall objective of the health sector as

follows: “to ensure universal accessibility (in geographical and financial terms) of equitable and affordable quality health services (preventative, curative, rehabilitative and promotional services) for all Rwandans.” To achieve this overall objective, the HSSP IV defines the four following strategic objectives:

1. **Full implementation of the main health programs:** improve demand, access and quality
2. **Strengthen the health systems building blocks:** strengthen policies, resources and management
3. **Strengthen all levels of service delivery:** organize the services effectively at all levels, referrals
4. **Ensure effective governance of the sector:** strengthen decentralization, partnership, private sector coordination, aid effectiveness, and financial management

The HSSP IV defines some specific strategies for emergency medical services (EMS), as detailed below:

Service Delivery – HSSP IV:

- Analyze the performance of the pre-hospital and emergency/ambulance services and the overall referral system from community to national levels
- Establish a regional center of excellence for the pre-hospital and emergencies services
- Strengthen the functional referral system and pre-hospital services
- Ensure standardization/harmonization of medical equipment in all public health facilities
- Upgrade all Emergency Service Units in DHs to competently handle referred emergencies
- Improve management of emergencies and trauma at hospital level

3. Situation Analysis

Emergency Medical Services (EMS) can be defined as "a comprehensive system which provides the arrangements of personnel, facilities and equipment for the effective, coordinated and timely delivery of health and safety services to victims of sudden illness or injury". In Rwanda the EMS begins most of the time with a call of service made to a 912 call center and ends when the patient is delivered to a source of more advanced medical treatment, such as a hospital.

Today's global EMS has advanced so much that it contributes widely to the overall function of health care systems. The World Health Organization regards EMS systems as an integral part of any effective and functional health care system. It is the first point of contact for the majority of people to health care services during emergencies and life-threatening injuries and acts as a gate-keeping step for accessing secondary and tertiary services. Emergency medical care providers around the world have developed an extended role to deal with medical and trauma emergencies utilizing advanced clinical technology. The rapid development of medical technology has also reformed the international EMS systems with the introduction of multifunctional compact monitoring systems making the task of monitoring patients manageable in an uncontrolled environment of pre-hospital settings.

3.1 Current EMS situation in Sub-Saharan Africa

In the past 50 years, health system investments in sub-Saharan Africa have focused on primary care and have substantially increased access to basic curative and preventive services for communicable diseases. Attention is now increasing on emergency care in Africa, which continues to have high mortality rates from acute maternal and non-communicable diseases.

Improvement of quality, access, efficiency, and administration of timely emergency services has been suggested to lead to reduction in mortality and in disability in low-income and middle-income countries. In 2015, the African Federation for Emergency Medicine (AFEM) proposed that at least 80% of any country's population should have access to emergency services by 2030 to reach international targets of universal health care access to essential medical services.

However, it is important to highlight that very few countries of the region have achieved the Abuja declaration target of 15% of government spending on health. Further, as salary and personnel expenditures take up between 60 and 70% of hospital resources, often there is little left for other hospital expenditures. Additionally, many countries in sub-Saharan Africa have a paucity of information about the coverage of hospitals, which makes it difficult to measure access gaps. Such information could be used in combination with population distribution in a spatial domain to identify inequities in access to care.

3.2 Current EMS situation in Rwanda

Although the health sector in Rwanda has made significant progress over the last two decades, the EMS system still faces challenges, including limited resources. In Kigali, Rwanda, 50% of prehospital care provided by the EMS division, the public prehospital system, is for trauma.

Trauma accounts for 13% of all reported deaths (2014).¹ In Kigali, the capital of Rwanda, trauma accounted for 22% of deaths between 2012-2014.²

Currently, the EMS division, also known as SAMU (Service d'Aide Médicale d'Urgence), is based in the Ministry of Health (MoH) with mobile teams in CHUK, Avega and Remera Health Centers (HCs). Right now, the EMS division team is responsible for covering all emergencies for three districts in Kigali City. Since its creation, the EMS division has grown its staff to better manage emergency conditions. It has increased from a team of 12 staff and 4 ambulances to a larger team of 70 staff and 13 fully equipped ambulances, including one boat ambulance in Lake Kivu. In addition, hospital emergency teams have also had a substantial increase in capacity since the last decade, expanding from 70 to 256 ambulances. Although the number of ambulances has significantly increased, the ambulances are aging and approximately half of the fleet needs to be replaced in the short term in order to maintain effective EMS.

As emergencies occur in communities or in health facilities, it is important to consider the capacity to respond to such emergencies. Therefore, in 2015, the Ministry of Health (MoH) in collaboration with Systems Improvement at District Hospitals and Regional Training of Emergency Care (sidHARTE) conducted the Emergency Services Resource Assessment to measure the available capacity in 42 hospitals to handle care of patients with traumatic injuries and emergency conditions. Below are some findings of the assessment:

Availability of emergency services

- All hospitals had emergency departments (EDs) or equivalent Emergency Care Area
- EDs were open 24 hours per day and seven days per week in 90.5% of hospitals
- All hospitals had operating theaters, laboratories, and blood banks permanently available
- Other services like pharmacy, imaging department and outpatient department (OPD) were generally not available on a continuous 24-hour basis

Organization of emergency services

- Triage protocols were in use in 62% of district hospitals
- Triage of medical, surgical, and pediatric patients was generally done in ED in most district hospitals

Human resources; staffing, supervision and training

- ED staffing for a given rotation in a district hospital consisted of approximately two general practitioner physicians and eight nurses
- None of the general practitioner physicians had completed formal EM training
- Some or none of nurses and physicians had received formal training in key EM related clinical skills, such as medical and trauma resuscitation
- At the time of the study, the post-graduate program in Emergency and Critical Care Medicine has started

¹ World Health Organization. *Noncommunicable Diseases Country Profiles: Rwanda*. World Health Organization; 2014.

² Kim WC, Byiringiro JC, Ntakiyiruta G, et al. Vital Statistics: Estimating Injury Mortality in Kigali, Rwanda. *World Journal of Surgery*. 2015

ED infrastructure

- All hospitals had electricity and running water
- Key ED clinical areas (resuscitation room, triage area and isolation room for contagious patients) were lacking in a number of hospitals

Ambulance services

- 98% of hospitals reported having two or more ambulances available
- The ambulance drivers at most district hospitals (87%) had received at least some basic life support training
- All hospitals reported that a nurse or physician always accompanied the patient during transfers
- About two-thirds of hospitals reported that the transportation time to the closest referral hospital was two hours or less
- Most district hospital ambulances were not adequately equipped

Essential medicines and equipment

- Based on a reference checklist of drugs, consumables and equipment; they were available in most of the hospitals, but many of them were not kept in the EDs

Finally, it is important to highlight that in dealing with emergency medical care one of the challenges that care providers and the population meet is financial and geographical accessibility given the socioeconomic and geographical profile of the country. These problems should be addressed as soon as possible to achieve sustainability for the entire national EMS system.

4. SWOT analysis

Based on the current situation of EMS in Rwanda, the main Strengths and Weaknesses were identified, as well as the main Opportunities and Threats. Additionally, the SWOT Analysis takes into account the 6 Health System Building Blocks: 1) Service Delivery (including infrastructure & equipment), 2) Health Workforce, 3) Health Information Systems & Research, 4) Health Products, Medicines & Commodities, 5) Health Financing, and 6) Governance & Leadership. It is important to highlight that some points in the SWOT analysis are cross-cutting but are classified depending on the relevance to each building block. Below is the detail of this analysis:

Strengths	Weaknesses
<ul style="list-style-type: none"> • National network for emergency services • Availability and continuous upgrading of Emergency Departments in hospitals • SAMU as core team in EMS • Committed EMS providers across the country • Innovative technology in EMS • 912 Toll Free line • Policy and guidelines in emergency services • Strongly committed leadership 	<ul style="list-style-type: none"> • Limited clinical and non-clinical EMS training • Insufficient personnel for specific processes • Insufficient EMS M&E system • Inability to accurately locate emergency events • Limited resources (financial, drugs & consumables, equipment, infrastructure) • Ineffective management of ambulances at health facility level • Inefficient coordination and communication across EMS system • Lack of SAMU autonomy
Opportunities	Threats
<ul style="list-style-type: none"> • High medical insurance coverage • Support of Rwandan Government • Increase community involvement in EMS • Effective collaboration with health facilities and other stakeholders 	<ul style="list-style-type: none"> • Insufficient roads and bridges infrastructure given geographical conditions • Limited population awareness • Delay in procurement procedures • Limited financial resources to support EMS needs and services • EMS not clearly defined in benefits packages of health insurers • Lack of budget for communication & command center • Insufficient budget for ambulance replacement • Insufficient recovery processes at health facilities and for pre-hospital services

4.1 Strengths

National network for emergency services

Rwanda currently has an EMS network at the national level. This network includes a well-structured referral system across the country from the community to health facilities at all levels to transfer primary interventions to the nearest and most appropriate health facility. Therefore, this network will be of great help to accelerate and standardize medical processes and interventions in the coming years.

Availability and continuous upgrading of EDs in hospitals

The emergency departments (EDs) exist in all hospitals and are being upgraded to meet standards. All hospitals are pursuing accreditation program to meet standards, including emergency related national and international standards (essential emergency equipment and supplies, ambulance services equipped, ambulance management, guidelines and protocols for safe medication use).

SAMU as core team in EMS

The SAMU team in Rwanda has developed a deep knowledge and understanding of emergency medical services, and it has been operating based on best practices worldwide. Within these practices, it is important to highlight the following:

- Competent and motivated personnel with good experience
- Continuous professional training in pre-hospital care
- Strategic deployment of ambulances and staff
- Standardized data systems
- Research in EMS for quality improvements

SAMU's role can be leveraged to contribute more in capacity building in EMS field. This will include assessment of current gaps at different levels (human resources, equipment, etc.); development of training programs and materials; support the elaboration of continuous capacity development plans (CDP) in EMS; and advocacy and resource mobilization for training in EMS.

Committed EMS providers across the country

Rwanda has a national network of professionals dedicated to improve medical services in the country. This network includes a large range of participants, from community health workers (CHWs) in the villages to highly trained medical doctors, including emergency medical specialists, in the different levels of hospitals and health centers in the country.

Innovative technology in EMS

Within the health sector, Rwanda is improving medical processes and interventions through the use of new technologies. Today, Rwanda uses drones to facilitate blood delivery for transfusions. Therefore, in the following years, the EMS system will continue to look for and expand the use of new technologies to increase the scope and quality of medical services.

912 Toll Free

The medical emergency telephone number is 912, which is free of charge and can be called from everywhere in the country. Currently, the call center in charge of receiving these calls is centralized in Kigali City and is responsible for coordinating the emergency/resuscitation mobile services located in different health facilities all over the country.

Policy and guidelines in emergency services

For a comprehensive approach to Emergency Medical Services (EMS), the MoH has established the first point of reference for all players in EMS at different levels of the health system in the country. The policy sets the objectives, identifies partners, and outlines the role of each level in the health system. The guidelines provide the rules for emergency services and ambulance tariffs, ambulance transfers and ambulances use. Below is the detail of these policy and guidelines:

- Pre-hospital emergency care: Policy and legal framework (2012)
- Ministerial Instructions establishing tariff of medical services in public health facilities (December 2016)
- Rwanda emergency medicine clinical guidelines (2016)
- Authorized Standard Operating Procedures (SOPs): (February 2017)
 - Request for Pre-Hospital Emergency Care Services
 - Maintenance of Medical Equipment
 - Management of Ambulances
 - PHECS Service Payment

Strongly committed leadership

The country, health sector and EMS system have leadership who are highly committed to improving the quality of services in the short, medium and long term for emergency medical interventions. Among the long-term commitments, there is the introduction of a medical specialization in emergency medicine to allow medical doctors to improve emergency medical care. Additionally, this will streamline processes and discussions with other participants or stakeholders and allow EMS teams, both centralized and decentralized, to increase operational efficiency and focus on the daily field activities.

4.2 Weaknesses

Limited clinical and non-clinical EMS training

Given the different resource constraints (financial, human resources, infrastructure) that health facilities and pre-hospitals teams are facing, there is limited training in different types of emergencies and EMS operations. These constraints lead EMS personnel to only having the skills to deal with specific emergencies and lacking a proper and complete training of all types of EMS problems.

Insufficient personnel for specific processes

The EMS system in Rwanda does not have enough staff to perform specific processes. For example, several pre-hospital services do not have fully dedicated staff and are not properly prepared to work on recovery and procurement processes, which is putting the financial sustainability of the system at risk.

Insufficient EMS M&E system

Accurate data collection and daily data registration are essential to ensure the integrity of research, regardless of the specific EMS field of study or data preference (quantitative or qualitative). Currently, EMS daily data collection and reporting is not integrated to HMIS (central M&E system at MoH), which is leading to a lack of information regarding number and type of interventions;

status of ambulances and emergency equipment; time response for primary and secondary interventions and therefore limiting the research and improvements in EMS practices. There is a need to develop a EMS information system that can allow to coordinate or timely monitor patients' referrals at different levels of the health care system.

Inability to accurately locate emergency events

Currently, due to lack of tools and access to new technologies, pre-hospital service teams invest a lot of time in finding the exact location of certain accidents. This causes the response time to be longer and in some cases, the teams arrive late to the scene, creating a barrier to providing timely, quality healthcare services.

Limited resources (Financial, drugs & consumables, equipment, infrastructure)

Currently, most health facilities and pre-hospital services are facing financial constraints. The latest MoH reports show that approximately 57% of hospitals in Rwanda (24 out of 42 hospitals, including referral, provincial and district hospitals) have a budget deficit. This is mainly because salaries represent approximately 40% of the expenses, limiting the access to drugs and consumables to operate on a daily basis in an efficient manner. Regarding pre-hospital services, the EMS division and pre-hospital teams have to work with limited resources, especially financial, given the current situation of certain processes (for example recovery and procurement), which are limiting the EMS division to achieve financial sustainability and effective procurement of medicines and commodities.

Additionally, there is a problem of modernization of medical equipment, communications and infrastructure (for example, old resuscitation equipment in ground ambulances; lack of air ambulances; lack of an ambulance-tracking system; and insufficient computers, mobile devices, other electronic equipment to operate efficiently on a daily basis. Therefore, these have caused an increase in the response time of EMS teams, patients' hospitalization time and quality of services.

Ineffective management of ambulances at health facility level

EMS teams at the health facility level are not fully assigned to EMS specific operations; on a daily basis, EMS teams (staff and ambulance drivers) have to perform pre-hospital operations but also clinical operations. This is leading to an inefficient deployment of EMS mobile teams and an inappropriate training on how to manage and operate emergency medical equipment, like the management of resuscitation and classic ambulances.

Inefficient coordination and communication across EMS system

Currently, inefficient coordination and communication is leading to work in silos with risks of losing time, affecting quality of services, wasting resources due to an ineffective deployment of ambulances and EMS teams, and delivering uncoordinated responses.

Lack of SAMU autonomy

The EMS division (SAMU) is a Division within the MoH and for key functions related to finance, procurement and logistics fall into the Office of Permanent Secretary or Division Manager of Corporate Services. In the current configuration, there are numerous steps and processes which sometimes hampers SAMU operations.

4.3 Opportunities

High medical insurance coverage

Rwanda, unlike many countries in East Africa, has a high rate of people who are insured. The latest reports of MoH in 2017 and the National Institute of Statistics report that the coverage has reached to a 90% of the population nationwide. This provides financial access to healthcare services, including EMS, for the majority of the population, as well as financing for health care providers for EMS at different levels.

Support of Rwandan Government

The Government of Rwanda created the pre-hospital emergency unit (SAMU) in 2007 and has been continuously supporting EMS system by availing budget, human resources, emergency department infrastructure, ambulances, equipment, drugs and consumables. With the support of the government, especially MoH, the relationship with the private sector and public-private-partnerships (PPP) will be leveraged to increase future investment within Rwanda's health system and involve government entities / institutions to streamline processes and strengthen the current EMS system. In addition, MoH will continue developing and sustaining strong partnerships with regional and international EMS organizations or training institutions, such as universities to continue building the capacity of EMS in Rwanda.

Increase community involvement in EMS

Since culturally people in Rwanda are motivated to help their neighbors, there is an opportunity that can be profited in building an accepted pre-hospital emergency care based on the community response, including community health workers, community volunteers and households. There is an opportunity to strengthen their intervention capacity, coordination with existing health facilities and overall awareness. It is important to highlight that there is an opportunity to strengthen the partnership with the existing EMS community volunteers coordinated by the Rwandan Red Cross.

Effective collaboration with HFs, Insurance Companies and other stakeholders

First, there is an opportunity to strengthen the existing collaboration of EMS interventions across the different levels of the health system by improving the coordination of EMS teams, which will be reflected in an improvement in the quality of EMS (timely response, effective referral system, etc.). Second, there is an opportunity for health insurance companies or institutions to cover EMS package at different levels of the health system. Third, there is also an opportunity to increase the cooperation within the framework of pre-hospital and in-hospital emergency care based on memorandums of understanding (MoU) between the Government of Rwanda, through MoH, and organizations with interests in EMS.

4.4 Threats

Insufficient roads and bridges infrastructure given geographical conditions

In some parts of the country, especially in the western and northern provinces that have a mountainous landscape, the infrastructure of roads and bridges in the rural areas is a hindrance to the geographical accessibility. This is complicating the access of ambulances, therefore increasing the response time of primary and secondary interventions.

Limited Population awareness

Currently, there is limited awareness across the Rwandan population about EMS operations. For example, there is a necessity to educate the population about the right attitude in situations of emergency (accident scene, any emergency at community level, etc.), giving priority to ambulances on the road, and calling the 912 only for emergencies.

Delay in procurement procedures

Regarding pre-hospital services, the EMS division has to submit all procurement requests through the MoH, rather than submit these requirements directly to MPPD. Given this situation, there are some delays in procurement of EMS related commodities, limiting EMS teams to operate efficiently on a daily basis.

Limited financial resources to support EMS needs and services

There is a huge financial need for the EMS system and the health sector, especially for purchasing ambulances, building emergency departments and improving emergency equipment. It is necessary to increase the domestic budget dedicated to the health sector to meet the strategic targets of the HSSP IV while the Government continue to mobilize its Development Partners and Private Sector.

EMS not clearly defined in benefits packages of health insurers

EMS services are not well defined in insurance company's benefits packages, leading to a lack of reimbursement for some EMS services, for example pre-hospital emergency services. This is putting the financial sustainability of the EMS system at risk.

Lack of budget for communication & command center

Currently, the 912-Communication & Command Center consists of a couple of computers and mobile phones to manage and monitor all the emergency calls that happen at country level. There is a necessity to invest in upgrading the communication systems to improve communication and coordination of EMS interventions and allow appropriate tracking and dispatching of resources to reduce response times.

Insufficient budget for ambulance replacement

There is a gap in ambulance coverage in relation with the HSSP IV target (1 ambulance per 40,000 inhabitants). Currently, EMS system is serving approximately 51,600 inhabitants per ambulance. Below are the details per province in Rwanda:

- City of Kigali: 1 ambulance per 44,200 inhabitants
- Eastern Province: 1 ambulance per 50,700 inhabitants
- Northern Province: 1 ambulance per 59,200 inhabitants
- Southern Province: 1 ambulance per 57,500 inhabitants
- Western Province: 1 ambulance per 46,600 inhabitants

In addition to that, the existing ambulance fleet consists of some old and inadequately equipped ambulances, especially at the health facility level. Therefore, there is a need to plan and avail budget for ambulance replacement at central and district levels.

Insufficient recovery processes at health facilities and for pre-hospital services

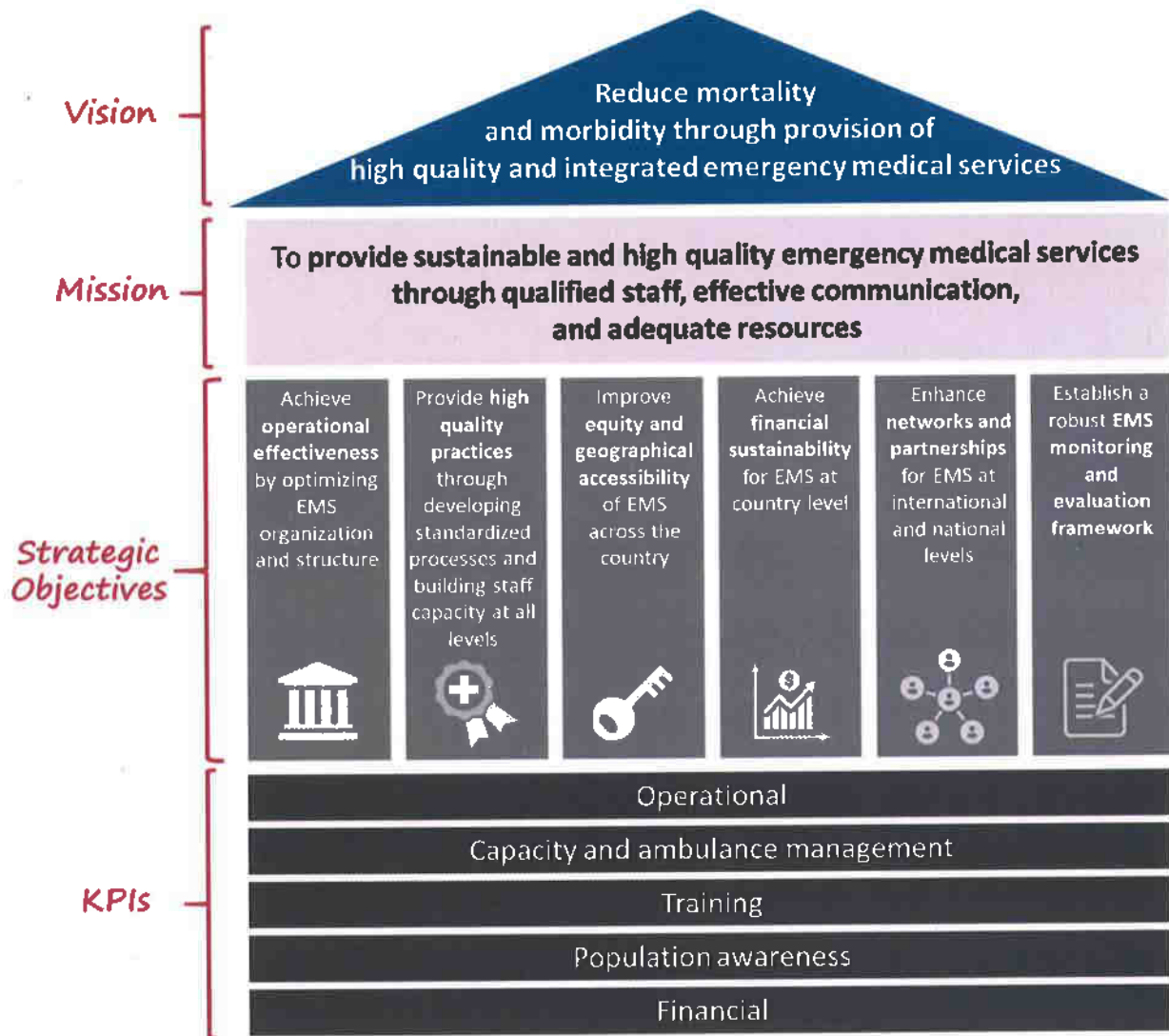
The EMS system is facing a significant challenge to recover revenues for services provided to the population, which hinders EMS system's operations and sustainability. This is driven by two key factors:

1. MoH does not have contracts with insurance companies for services delivered by SAMU, so it is not currently collecting any revenue for these services from any insurance companies. The key insurance companies/institutions in Rwanda are RSSB, MMI, Special Guarantee Fund, and private companies, including SONARWA, SORAS, AAR, Prime, Radiant, UAP, and Britam.
2. There is an insufficient staffing health facilities and lack of staff at the EMS division level to manage the recovery process, including following up on unpaid bills and consolidating the financial reports.

5. Strategic Framework

The goal of the EMS is to improve the quality of patient care to reduce morbidity and mortality. Efforts made toward this goal will include involvement with specific programs such as timely response and ambulance management.

Figure 1: Strategic Framework for EMS



5.1 Vision, mission and values

Vision

The vision is to reduce mortality and morbidity through provision of high quality and integrated emergency medical services

Mission

The mission is to provide sustainable and high quality emergency medical services through qualified staff, effective communication, and adequate resources.

Values

The fulfillment of this mission is based on values and guiding principles, as stated in the Health Sector Policy of 2015, that orient and underlie the provision of health services. These guiding principles are classified in three key orientations:

- People-centered services
- Integrated services
- Sustainable services

5.2. Strategic objectives and key actions

5.2.1 Achieve operational effectiveness by optimizing EMS organization and structure

The MoH established an organized system, which comes to meet various active players already involved in the management of the prehospital and in-hospital emergency care. Below are the key actions that MoH and EMS division need to take in order to achieve operational effectiveness.

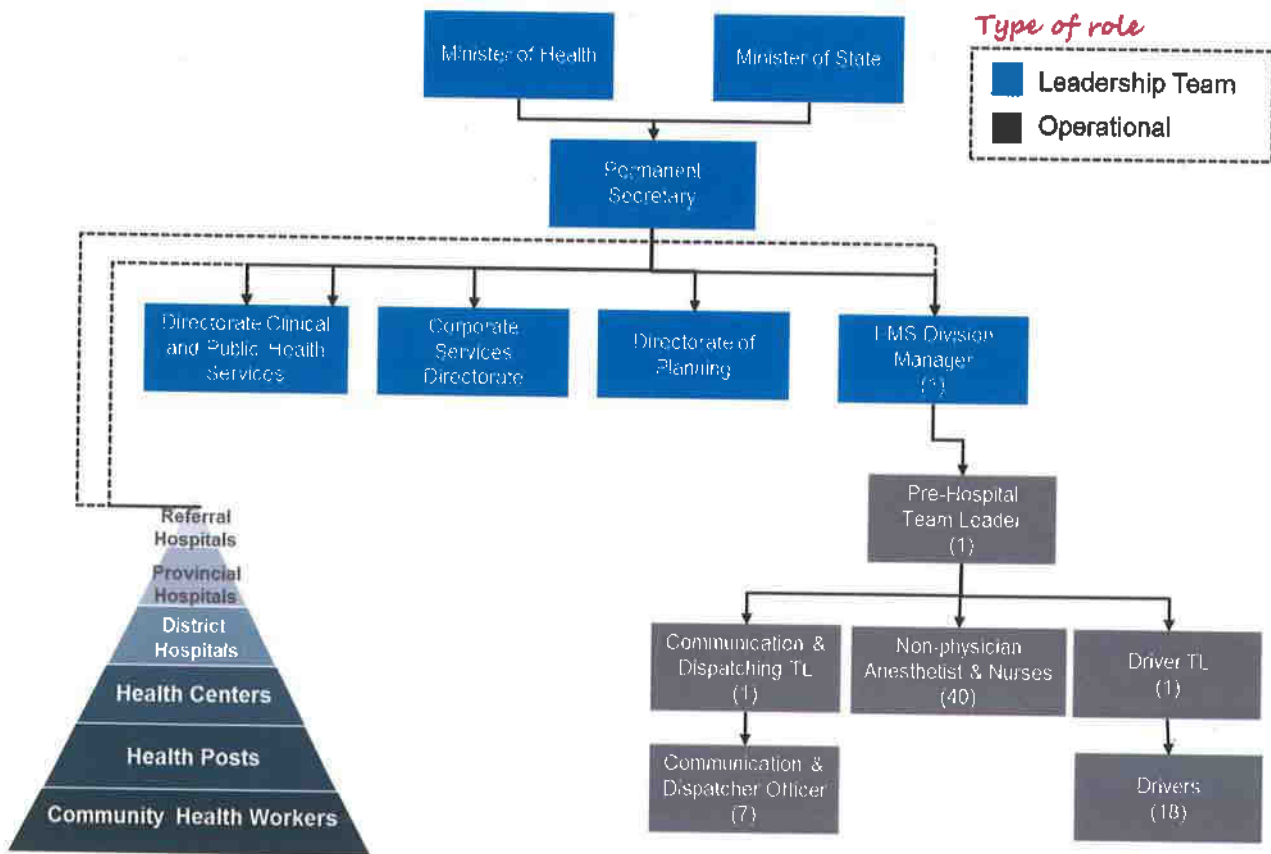
Key Actions:

Governance & Leadership

- **Redesign EMS organizational structure from central to peripheral level:** The Division of Emergency Medical Services (EMS) was created in 2007 as a direct report to the MoH Permanent Secretary, with the main purpose of managing various sets of life threatening emergency conditions in the out of hospital environment during primary medical evacuation and inter-health facilities transfers around the city of Kigali. The EMS division is responsible for providing the policies and guidelines to all EMS teams across the country, especially those teams located in the districts. In addition, the EMS Division has the following interactions with other divisions of the Ministry of Health:
 - **Directorate of Planning, Health Financing and Information Systems:** Oversees the creation and implementation of national health policies, guidelines and plans. Additionally, all procedures related with EMS need to be assessed by this directorate.
 - **Directorate of Clinical and Public Health Services:** As the majority EMS units are based on health facilities that report directly to Clinical Services at MoH, there a need for close collaboration to ensure a timely and effective emergency response.

Below, in Figure 2, is the detail of the current EMS organization.

Figure 2: Current EMS Organization



Proposed EMS Organization in the short-term

In order for the Division to operate more effectively, we advocate that in the short-term, the EMS Division continue to operate and report to the MoH Permanent Secretary but be reinforced with administrative staff and a certain level of power delegation. This means the EMS Division will continue to deliver pre-hospital services and develop and oversee the implementation of policies, guidelines and standards related to EMS across all levels of the health system. In addition, the EMS Division will seek to build sustainable capacity of EMS resources through effective coordination of different EMS actor and resource mobilizations.

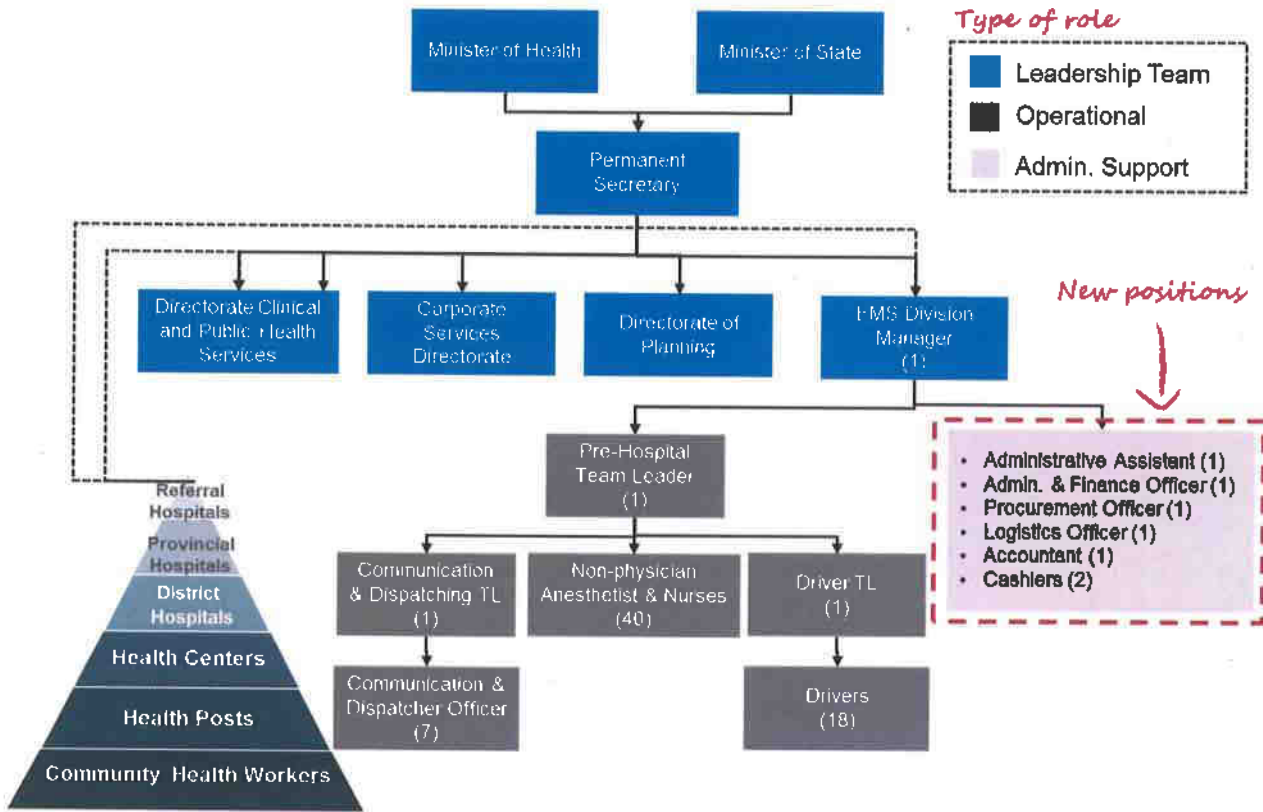
Finally, as mentioned in the vision and mission, financial sustainability is one of the key objectives for the following years. To achieve this and to improve the EMS operations, it is necessary that the EMS system has a certain financial and administrative autonomy to achieve full control of its finance and strengthen the current procurement and recovery processes. Therefore, in terms of administration and finance, the EMS organization needs to incorporate a special team dedicated to these administration processes and tasks. This implies adding 7 more staff to the current structure so the EMS Division can have more control of its processes and financials:

- Administrative and Financer Officer
- Procurement Officer
- Logistics Officer
- Cashiers (2)
- Accountant

- Administrative Assistant

Below, in Figure 3, is the detail of the proposed EMS organization in the short-term.

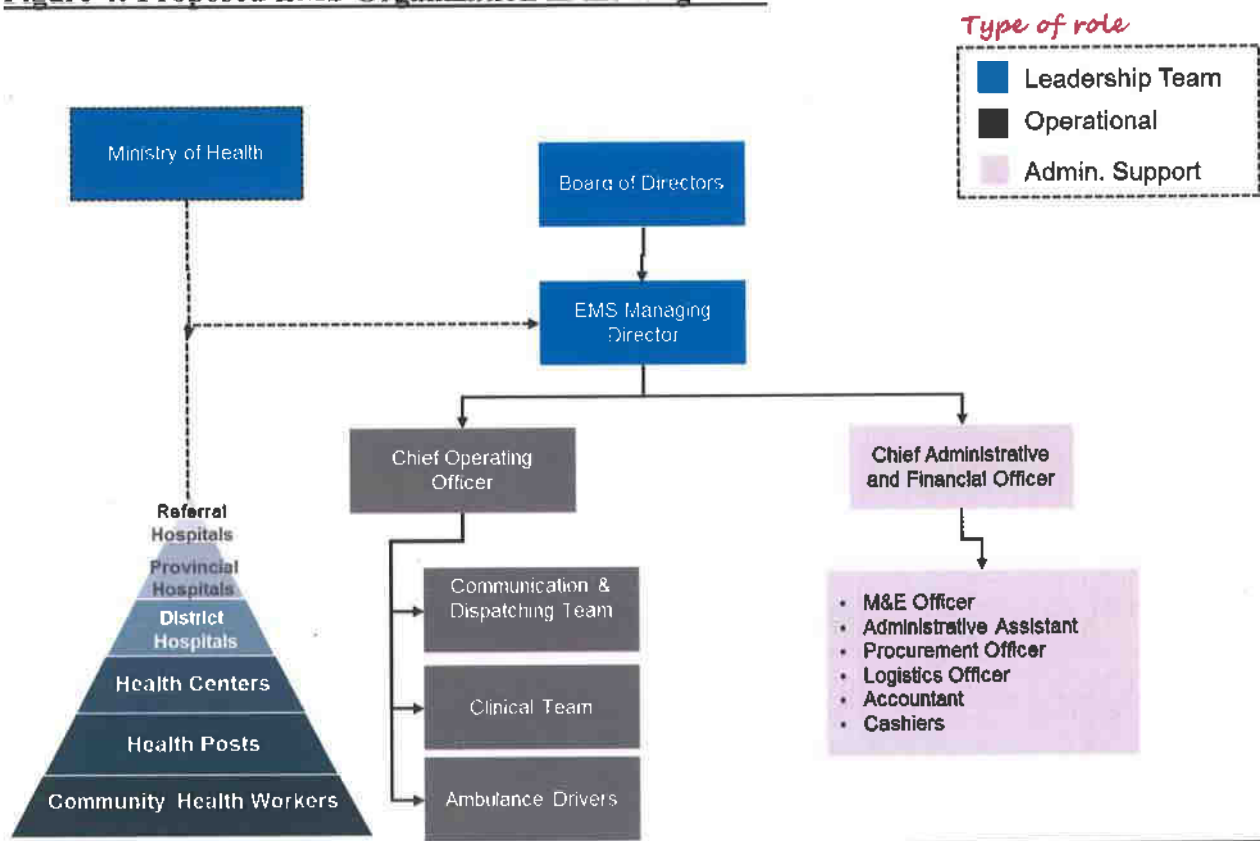
Figure 3: Proposed EMS Organization in the short-term



Proposed EMS Organization in the long-term

It is important to highlight that the proposed organization for the long-term will be reviewed in the upcoming years to comply with actual needs of the country. This new organization will aspire to be more autonomous by reporting indirectly to the Ministry of Health. It will be constituted by a Board of Directors, a Managing Director for all EMS across the country, and a Chief Operating Officer and Chief Administrative and Financial Officer responsible for the operative and administrative tasks respectively. It is understandably a process that will require further consultations with all relevant institutions in due time because of its implications (legal, budget, etc.)

Figure 4: Proposed EMS Organization in the long-term



- Review and strengthen the existing National Policy for Access to Quality Healthcare Services:** Certain requirements and good business practices require that standard and specific policies be developed and maintained to define how an organization conducts business. This is particularly true in the practice of emergency medical services, the organization, the management of first response and ambulance services. The objective of the National Policy for Access to Quality Healthcare Services is to obtain the best practices of healthcare services access, including EMS, for all people in Rwanda in order to promote healthy and productive lives. Nevertheless, there is need to review this policy, so it can provide a clear and appropriate guidance to all Rwanda EMS providers in the development of the procedures needed to operate an EMS system. Below is the detailed of the procedures that need to be reviewed and strengthened in the coming years:

 - Strengthen the existing referral system
 - Increase access to essential emergency medical services for the Rwandan population
 - Guide development of accreditation standards of health care provision, national protocols / standard treatment guidelines hence continuously improving the quality of health services delivery
 - Guide resource allocation in implementing the packages at all health facility levels

- **Strengthen ambulance management by improving ambulance coordination:** In the upcoming 6 years, EMS is aiming to build a management culture based on an effective communication between the Communication & Command Center with EMS teams and health facilities, fast responsiveness to the community, ambulance-tracking system and appropriate use of ambulances. It is important to highlight, that the ambulance-tracking will allow to improve tracking the actual location and ambulances routes in real time. Additionally, the EMS division will continue to expand current alliances with international stakeholders to understand and incorporate best practices to have an appropriate management of ambulances.

Health Information Systems & Research

- **Ensure proper acquisition, operations and maintenance of the communication & command center equipment at all levels:** Currently, the 912-Communication & Command Center is using few mobile telephones to receive emergency calls from the population and dispatch EMS teams across the country. The registration of all emergency calls and interventions is done by using basic excel files with limited capacity. Therefore, it is necessary to expedite upgrading 912-Communication & Command Center, in order to reduce time response for all emergency medical services by:
 - Improving communication with the population, the EMS teams and the HFs, and their coordination
 - Receiving and recording all emergency calls across the country
 - Dispatching and monitoring the adequate resources

5.2.2 Provide high quality practices and services through developing standardized processes and building staff capacity at all levels

Considering the current population in Rwanda and its projection, EMS should evolve accordingly in terms of quality, accessibility and management at all levels across the country. Therefore, it is necessary to increase and properly train the EMS personnel, the number of fully equipped ambulances to meet the emergency medical needs of the population in the upcoming years. Below are the key actions that MoH and EMS division need to take in order to reach this objective.

Key Actions:

Governance & Leadership

- **Develop and avail procedure manual/SOPs for EMS at centralized and decentralized level:** Currently the medical services offered throughout the country vary from one region to another, mainly due to the lack of a procedure manual that contains all the protocols that the EMS staff must follow in a medical emergency. Therefore, in order to provide standardized services throughout the country it is necessary to develop standard operating procedures that explain the different roles and responsibilities that the EMS staff must take depending on the different emergency medical situations they face.
- **Enforce implementation of standardized EMS guidelines, policies and procedures across all levels towards accreditation:** Once the standard operating procedures for EMS are developed and availed, it is necessary to enforce the established policies and

guidelines to optimize the current EMS processes both at a centralized and decentralized level. This activity will involve constant monitoring and effort on the part of the EMS leadership team to achieve rapid adoption and achieve the accreditation EMS goals established by MoH, World Health Organization (WHO) and the International Health Regulation (IHR). After each accreditation assessment, the MoH will analyze the data for these standards. The MoH will collaborate with Rwandan Biomedical Center (RBC) to address identified issues or gaps during integrated supportive supervision (ISS) and facilitation. Below are the main accreditation standards related to EMS:

1. Effective emergency triage: An effective emergency triage process is consistently used to determine patient priority for treatment.
2. Essential emergency equipment and supplies: Emergency personnel, equipment and supplies are available that match the patients' needs.
3. Ambulance services equipped: Ambulance services, which are well equipped and manned by qualified staff, are available to transport emergency patients.

Service Delivery

- **Strengthen EMS capacity at all levels**: In order to strengthen the EMS capacity and deliver high quality services, it is necessary to review the current constraints in the system. As mentioned in the situation and SWOT analysis, it is important to ensure availability of emergency services on a 24-hour basis; reorganization of EDs to have dedicated space for triage, resuscitation, isolation and patient monitoring; availability of drugs, commodities and appropriate equipment in the EDs. Additionally, other departments (lab, imaging, theater, pharmacy) should be equally available to ensure appropriate and timely management of all types of medical emergencies. Workforce is critical in achieving the quality of emergency medical care delivery; therefore, the MoH will ensure the adequate staffing of pre-hospital and in-hospital services. The insufficiency of trained staff in EDs and EMS division will be addressed through formal and professional training. For formal training it will include post-graduate program in emergency medicine and critical care for physicians and non-physicians. And for professional training, it will include emergency medicine specific training for paramedics, ambulance drivers, communication and dispatch staff, among others. Finally, a specific program will be developed for all actors at the community level (Red Cross, community health workers, volunteers in the general population).

5.2.3 Improve equity and geographical accessibility of EMS across the country

The Government of Rwanda has done a great effort by ensuring equitable distribution of health facilities and availing at least five ambulances per district. Nevertheless, some actions have to be taken in the upcoming year in order to improve the current ratio of ground ambulances per population (1/51,600) in 2018 and meet HSSP IV target of 1/40,000 by 2024.

The Ministry of Health must assess the need, plan and mobilize resources considering aspects related to equitable distribution, geographic location of health facilities, population served giving priority to remote rural areas. In the same logic, there are certain regions that their geographic landscape and current infrastructure (roads, electricity and communications networks) represents a challenge that need to be addressed through joint efforts with different stakeholders. Below are

the key actions that MoH and EMS division need to take in order to improve equity and geographical accessibility.

Key Actions:

Service Delivery

- **Improve coordination between pre-hospital teams and health facilities:** The Ministry of Health (MoH) is planning to establish a national communication & command network, centralized at Kigali City, to have the capacity to timely respond any emergency everywhere across the country. Additionally, this will allow the system to have a major control on daily EMS operations, including pre-hospital and inter health facilities emergencies. In addition to using telephones, there is a need to establish a radio network to improve the current communication: 1) between pre-hospital teams and health facilities, and 2) between health facilities.
- **Increase ambulance fleet; emergency equipment and infrastructure:** In order to increase access to medical emergency services, it is necessary to increase the personnel base and equipment that the system currently has. The acquisition of approximately 156 new ambulances to meet the HSSP IV target and demographic growth. Additionally, there is a need to create partnerships with the private sector to ensure adequate air and water emergency response. It is important to highlight that this will depend entirely on the availability of budget (by the government) and the need to explore and expand the current engagement of the private sector in the EMS field. Further, EMS infrastructure should be standardized across health facilities, and infrastructure for EMS division (SAMU) will need to be upgraded.
- **Expand capacity of innovative technologies:** The use and development of new technologies in the health sector is necessary to improve access of EMS services, both in financial and geographic terms. Currently, the use of this type of technology is already available, such as the use of drones for the transportation of blood between hospitals and delivery to distant communities. However, it is necessary to continue searching for new technologies and expand existing technologies to improve the quality of emergency services.

5.2.4 Achieve financial sustainability for EMS at country level

It is important to highlight that key challenges include scarcity of financial funding, inadequate pricing structure for EMS services and inadequate recovery process. The EMS division (SAMU) budget allocation is not sufficient to sustain the increasing EMS needs. In addition to the funding from the MoH budget, for the financial sustainability of the pre-hospital and in-hospital emergency care, the services provided should be reimbursed by patients and health insurances according to intervention package activities. Therefore, there is a need to put in place proper recovery and procurement processes to achieve this strategic objective. Below are the key actions that MoH need to take in order to achieve this financial sustainability.

Key Actions:










Governance & Leadership

- **Strengthen the recovery process for EMS:** Currently, the EMS system is facing a significant challenge to recover revenues for services provided to the population, which hinders EMS operations and sustainability. Below are some proposed solutions to address the challenge:
 - (1) Establish contracts and agreements with insurance companies to cover pre-hospital package.
 - (2) in collaboration with the Ministry of Local Government (MINALOC) raise awareness among the population to pay and carry insurance cards.
 - (3) Recruit and assign adequate recovery personnel at EMS Division and health facilities to manage the recovery processes especially follow up of unpaid bills.Therefore, in the upcoming 6 years, the EMS division will continue to develop standard operating procedures (SOPs) to increase the participation and payments of the population. This will happen by incorporating different government institutions, like Rwanda Police and MINECOFIN to strengthen the current processes. Finally, the EMS division with support of MoH will develop agreements/contracts with insurance companies/institutions to improve the current recovery for pre-hospital services.
- **Streamline and document procurement process for EMS:** The procurement function at MoH is complex and wide-ranging in scope. It is organically linked to the success of the delivery of MoH's program priorities and requires close and constant collaboration with various technical and administrative disciplines within the organization (technical, such as for planning demand, prequalifying products and manufacturers of vaccines and other critical biological and antiviral treatments; and administrative, such as for budgetary and payment procedures). Therefore, the current procurement process makes the purchase and acquisition of drugs and consumables very slow, disabling the EMS teams to operate with efficiency and quality. Therefore, the current process should be reviewed and improved to enable the EMS system to have sufficient drugs and consumables for quality service delivery.
- **Advocate for special mechanism to cover the gap of non-reimbursed emergency care provided:** Currently, the pre-hospital emergency care provided by EMS division is reimbursed at less than 5% according to SAMU monthly management reports. Additionally, emergency patients in health facilities have financial constraints to pay the services provided when they are not insured. Therefore, MoH will collaborate with other institutions including MINALOC, MINECOFIN, etc. to create a special mechanism for reimbursement of EMS.

Health Financing

- **Develop a business model for EMS:** Currently, the EMS Division is facing some challenges regarding its financial sustainability. First, MoH finances it through ordinary budget. Second, due to an unavailability of proper recovery system, the division is failing to recover most of its revenues. Additionally, health facilities experience delays in payments by health insurances and problems to recover payments from uninsured emergency patients. Therefore, a business model is proposed to overcome these challenges and achieve financial sustainability in the upcoming years. The main characteristics of this new business model are the following:

Figure 5: Business Model for the EMS

<p>Key Partnerships </p> <ul style="list-style-type: none"> Government <ul style="list-style-type: none"> - MOH - MINALOC - MINECOFIN Health Professional Bodies (Counsetor & associations) Health Facilities Insurance companies (Public & Private) Private Sector NGOs and CSOs EMS organizations (National & Int'l) <ul style="list-style-type: none"> - For example: Rwanda Red Cross 	<p>Key Activities </p> <ul style="list-style-type: none"> Provide high quality and accessible emergency medical services <p>Key Metrics </p> <ul style="list-style-type: none"> Response Time Ambulance Mgmt Staff Capacity EMS Training Population Awareness EMS recovery 	<p>Value Propositions </p> <ul style="list-style-type: none"> Full support of government Network of emergency services aligned to health sector pyramid (public and private) High quality services at affordable cost 	<p>Customer Relationships </p> <ul style="list-style-type: none"> Common knowledge of 912 Good reputation of EMS across the country <p>Channels </p> <ul style="list-style-type: none"> Communication Center Emergency Operation Center Ambulances MoH digital platforms Media 	<p>Customer Segments </p> <ul style="list-style-type: none"> General population <ul style="list-style-type: none"> - Insured vs uninsured - Urban vs rural - Age - Gender Client institutions
<p>Cost Structure </p> <ul style="list-style-type: none"> Specific agreement / contracts with insurance companies and institutions Creation of a recovery process Full control of EMS finances Public-Private Partnerships 		<p>Revenue Streams </p> <ul style="list-style-type: none"> Insurance companies reimbursement Copayments 100% reimbursement of patient with no insurance Financial support <ul style="list-style-type: none"> - Subsidies to cover social cases - International and national organizations 		
<p>Product-centric</p>		<p>Market-centric</p>		

- **Revise EMS tariffs:** In order to acquire financial sustainability, it is necessary to review the current tariffs of the EMS services, since in certain occasions they are very low, which place the stability of the EMS system and of the health sector at risk in the long term. In the upcoming years, the EMS division will review this gap with the corresponding stakeholders (MoH, MINECOFIN, MINALOC, among others) to estimate an adequate tariff based on real cost to achieve financial sustainability.

5.2.5 Enhance networks and partnerships for EMS at international and national levels

The MoH will review current and potential stakeholders (national and international), create appropriate mechanisms to sustain existing partnerships and initiate new ones. Based on the current analysis situation, it is necessary to prioritize needs within the EMS system to focus the work and efforts to involve stakeholders. Below are the main key actions related to achieve this strategic objective.

Key Actions:

Governance & Leadership

- **Establish a technical working group with stakeholders:** It is critical to sustain existing and initiate new partnerships with all stakeholders involved in EMS operations. Therefore, there is a need to establish a Technical Working Group (TWG) responsible for coordinating, advising and monitoring EMS activities and interventions. The TWG will be comprised of government institutions (MoH, RBC, RDB, among others), health insurance companies, private EMS organizations, UN agencies, other international institutions (Red Cross), EMS experts, among others to increase the engagement and participation of stakeholders.
- **Encourage private sector participation in EMS:** To increase the capacity of the system, the MoH will seek to develop partnerships with private companies for acquisition of new equipment, maintenance of equipment, access to finance, capacity building and management. This will enable increased access and quality for EMS, expand capacity and improve efficiency. Engagement with the private sector will comply with the GoR laws and regulations.
- **Reinforce and streamline activities of stakeholders who deal directly with the community:** It is important to leverage and strengthen the existing community structures, including formal community health workers (CHWs), Red Cross Volunteers, and other stakeholders in order to build strong EMS system at community level. The MoH will continue advocating and mobilizing resources for continuous capacity building of those actors, including specific EMS trainings.
- **Strengthen awareness of EMS:** It is important for the general population and different stakeholders to understand the EMS system, its operations, and the availability and location of services. Therefore, the EMS division with the support of the Ministry of Health (MoH) will develop communication strategies aiming to:
 - Increase EMS knowledge to general public, regarding attitude, available communication channels and actions to be taken in emergency situations
 - Strengthen and create new collaborations between stakeholders in the EMS field
 - Improve current perception of EMS, highlighting the importance and respect to EMS operations and health workers
 - Redesign the current EMS page on the MoH website to incorporate updated information on EMS in Rwanda that allows different stakeholders to know the needs of the EMS system and increase the participation and involvement of more agents

5.2.6 Establish a robust EMS monitoring and evaluation framework

In order to ensure accountability, transparency and results, it is critical to develop and implement a results-based monitoring and evaluation (M&E) systems. Below are the key actions that MoH and EMS division need to take in order to establish a robust EMS monitoring and evaluation framework.

Key Actions:

Governance & Leadership

- **Develop an evaluation and monitoring plan, incorporating international benchmarks to maximize EMS:** It is necessary to start developing an evaluation and

monitoring plan at the national level for the entire EMS system. This will improve control over the performance of the EMS teams, health centers, hospitals and community health workers on a monthly basis to anticipate any potential risks or roadblocks. In addition, the use of international benchmarks will strengthen the evaluation and monitoring program, since it will allow the EMS system defining clear short and long-term goals. It is important to highlight, that the EMS leadership team should look for benchmarks that are closer or more similar to the current situation of the EMS system in Rwanda.

- **Develop and standardize EMS dashboards across all HFs:** After developing a monitoring and evaluation plan for the whole EMS system, it is necessary to develop and standardize the dashboards used at the different health facilities across the country. In the upcoming years, the EMS division will be responsible to develop an evaluation plan to assess the current situation, and understand the challenges and lack of databases with which certain teams or health facilities have to report information on a daily basis.

Health Information Systems & Research

- **Develop and deploy a decentralized EMS database and link to the Health Management Information System:** It is critical to incorporate EMS indicators and data into both Electronic Medical Records (EMR) and the Health Management Information System (HMIS), in order to increase and improve the information quality of the current system. For example, this will improve the completeness and accuracy of registers by systematically reporting on emergency interventions, and on morbidity and mortality cases across the country.
- **Encourage research on EMS to inform policy makers:** Research should be a fundamental pillar to improve EMS operations and inform policy makers of the current situation of EMS in the country. Therefore, the system will build research capacity to EMS staff and interested others, promote the partnership with academic institutions and international research centers, and organize scientific workshops to inform on last improvements.

6. Key Performance Indicators

To accomplish these strategic objectives, it is important that the EMS system in Rwanda define a series of KPIs to monitor the performance and improvement of the system.

KPI	Description	Metric	Target	Frequency	Source
Operational					
Response Type	Number and percentage of complete interventions	<u># of complete interventions</u> # of total interventions	80-90%	Monthly	EMS Division Data
Response Time	Number of minutes to arrive at scene and take patient to HF	Minutes to alert team Minutes to leave to scene Minutes to arrive to scene Minutes to arrive to HF	Alert team: 4:00 Leave to scene: 1:00 Arrive scene: 10:00 Arrive to HF: 45:00	Monthly	EMS Division Data
Accreditation	Process of recognizing a particular status or quality standard	<u># hospitals meeting standards</u> # hospitals assessed	All hospitals to reach level 2 on EMS related standards	Yearly	MoH Accreditation Survey Report
International Health Regulations	All disease outbreaks and public health events to be reported	<u># outbreaks reported</u> total # of outbreaks	100%	Monthly / Quarterly	Qtrly Disease Surveillance Report
Capacity and Ambulance Management					
Ambulance Management	Number of ambulances by provincial and district population	<u>Population</u> # of ambulances by district	40,000 persons per ambulance	Annually	MoH Annual Report
Ambulance Conditions	Percentage of operational units passing the equipment and vehicle standard evaluation system	<u># ambulances passing eval.</u> # of ambulances	80 – 100%	Monthly	HMIS

KPI	Description	Metric	Target	Frequency	Source
Training					
Staff Trained in EMS	Percentage of ED trained staffs passing standard training course	# staff passing EMS courses Total trained staff working in EDs	TBD	Quarterly	Hospital reports
Population Awareness					
EMS Awareness	Percentage of people that remember EMS	# people aware population surveyed	100%	Annually	Survey
Patient Satisfaction	Net Promoter Score of EMS services and staff	% of Promoters - % of Detractors	80 - 100%	Every two years	Survey
Financial					
Gross Profit Margin	Shows if pricing of goods or services is appropriately done	$\frac{\text{Revenue} - \text{Total Cost}}{\text{Revenue}}$	Positive		
Net Profit Margin	Shows which percentage of revenue is profit	$\frac{\text{Net profit}}{\text{Total revenue}}$	Positive		
Recovery of ambulance services	Percentage of amount recovered per month	$\frac{\text{Ambulance revenue recovered}}{\text{Ambulance invoices}}$	80%	Monthly	HMS and EMS Division Management Report

7. Implementation plan

The Ministry of Health (MoH) will oversee the implementation of this strategic plan. Strong partnerships, community engagement and multisector collaboration will be critical to the implementation of the plan. The current challenges should be addressed as soon as possible to achieve sustainability of the EMS system and improve the quality of care provided to the population. To ensure this strategic plan is implemented, annual operational plans must be developed and monitored. It is important that EMS research and data will inform evidence-based policies and decision-making. Finally, periodic performance reviews - annual, mid-term and end-term (2024) - will serve to inform health policy dialogue, priority setting, resource allocation, timely corrective action and subsequent planning cycles. Further, facilities, programs and departments (Clinical Services, NCD Division, hospitals, etc.) shall use this strategic plan while developing their own strategies and operational plans.

Strategic Objective	Key Action	Activity	2018	2019	2020	2021	2022	2023	2024
Achieve operational effectiveness by optimizing EMS organization and structure	Redesign EMS organizational structure from central to peripheral level	Conduct a workshop to analyze EMS system, propose new EMS structure, including advocating for EMS division autonomous management	X	X					
		Conduct workshop to develop legal instruments/tools to enable/enforce implementation of the EMS structure		X	X				
	Review and strengthen the existing National Policy for Access to Quality Healthcare Services	Conduct internal workshop to develop a EMS Policy	X	X					
Conduct consultative workshop with key stakeholders to review EMS Policy			X						
Strengthen ambulance management by improving ambulance coordination	Strengthen ambulance management by improving ambulance coordination	Conduct a dissemination meeting of the EMS Policy		X	X				
		Acquire/procure an effective ambulance management system using ICT solution for tracking and dispatching ambulances			X	X	X	X	X

													X	Conduct field visits to identify the management and coordination capacity gaps at health facilities	X	X	X	X	X	X																																																											
															Establish guidelines for ambulance management and coordination for health facilities																																																																
																																				Disseminate guidelines and conduct trainings for health facilities on ambulance management and coordination																																											
																																																										Procure a communication & command system for EMS system at both centralized and decentralized levels																					
Conduct consultative workshop to disseminate the EMS procedure manual/SOPs																																																																															
																								Conduct regular and planned field for supportive supervision/mentorship (integrated with ISS and DQA)																																																							
																																															Conduct survey/assessment to understand EMS human resource, equipment, infrastructure capacity and gaps																																
Conduct consultative workshop with stakeholders on EMS human resource, equipment, infrastructure capacity and gaps																																																																															
																								Recruit and staff EMS as per norms and to decentralize pre-hospital teams at district levels (based on structure and availability of budget)																																																							
																																															Conduct training for EMS staff																																

	Increase ambulance fleet; emergency equipment and infrastructure	Acquire new ambulances	X	X	X	X	X	X	X
		Acquire drugs & consumables	X						
		Acquire medical equipment for ambulances and EDs	X						
		Acquire offices for EMS Division							
		Build/Rehabilitate ED and other EMS related infrastructure	X	X	X				
	Expand capacity of innovative technologies	Explore and attract Public Private Partnership (PPP) to invest in emergency technologies and air ambulance	X	X	X	X	X	X	X
	Strengthen the recovery process for EMS	Establish contractual frameworks for payment of EMS services by all health insurers and Special Guarantee Fund	X	X					
		Recruit personnel for recovery positions	X						
	Develop a business model for EMS	Organize a workshop to develop a business model for EMS Division for effective operations and optimization of revenue	X	X					
		Conduct feasibility study for private ambulance fleet management	X	X	X	X	X	X	X
	Revise EMS tariffs	Provide data for review of EMS tariff based on real cost of services	X						
	Establish a technical working group with stakeholders	Organize quarterly TWG meetings with stakeholders	X						
	Encourage private sector participation in EMS	Mobilize potential investors in EMS field and attract private partners for PPP on ambulance fleet management in all health facilities		X	X	X	X	X	X
	Reinforce and streamline activities of stakeholders who deal with the community	Organize joint coordination meeting with stakeholders working at community level	X	X	X	X	X	X	X
Achieve financial sustainability for EMS at country level									
Enhance networks and partnerships for EMS at national level									

Establish a robust EMS monitoring and evaluation framework	Strengthen awareness of EMS	Organize Communication in Outreach/community gathering to raise public awareness to general population via media channels (TV, Radio, mobile communication)	X	X	X	X	X	X	X	X	X	X	
		Develop an evaluation and monitoring plan, incorporating international benchmarks to maximize EMS											
	Develop and standardize EMS dashboards across all HF's	Develop and train users in health facilities on EMS M&E dashboards to enhance data use for action											
		Develop and integrate EMS electronic module into existing national reporting platform (HMIS)	X	X									
	Develop and deploy a decentralized EMS database and link to the Health Management Information System	Train heads of EMS units and data managers on EMS Module integrated to HMIS (eLearning)					X	X	X	X	X	X	X
		Mobilize funds to conduct research in partnership with academic institutions and international research centers						X	X	X	X	X	X
	Encourage research on EMS to inform policy makers	Organize annual EMS scientific conference						X	X	X	X	X	X

8. Challenges and mitigation plan

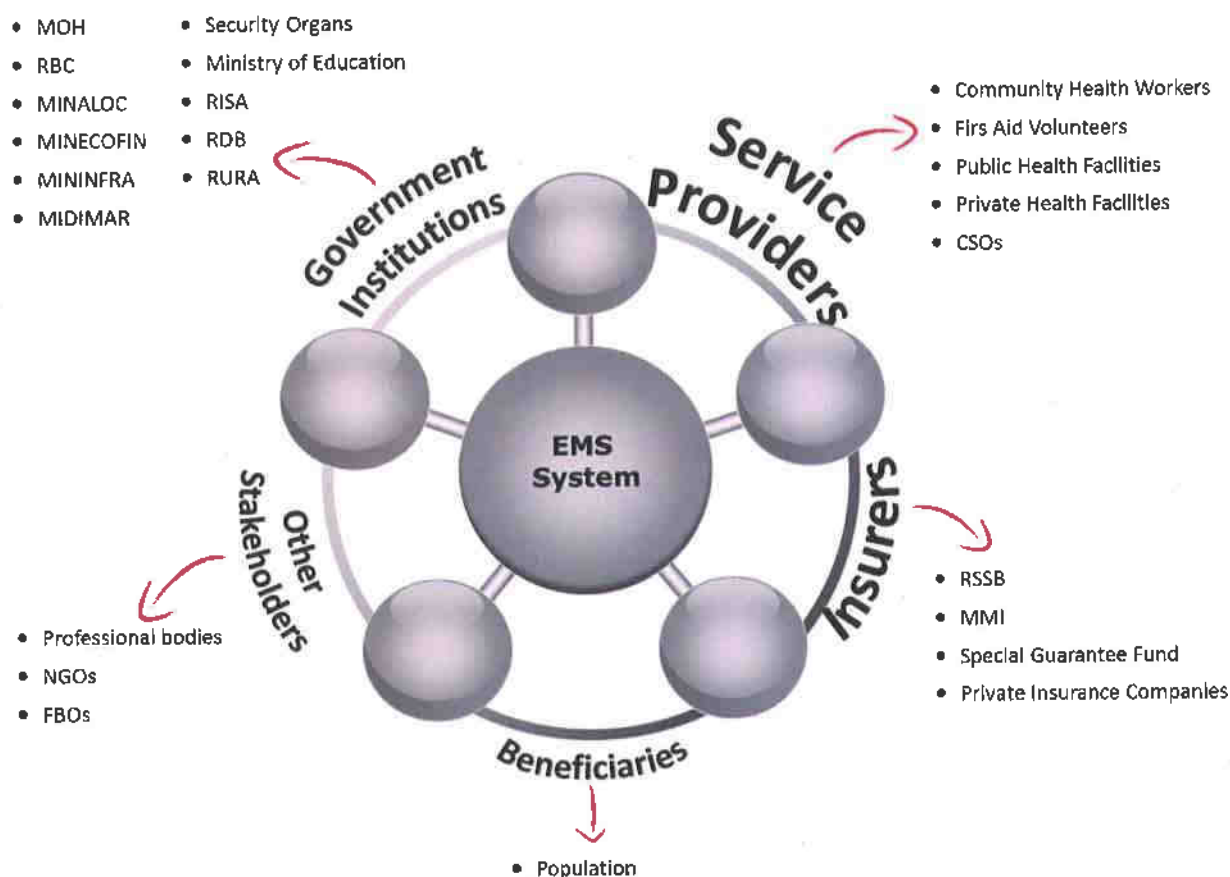
It is anticipated that EMS in Rwanda might face a series of risks during the next 6 years derived mainly from the current problem of capacity building. Below are the main challenges and their potential mitigation plan.

Challenge	Level	Mitigation Plan
<ul style="list-style-type: none"> • Recovery Process <ul style="list-style-type: none"> ○ Lack of staff and systems to process and recover invoices ○ Lack of engagement from public and private insurance companies ○ Lack of documentation (patients don't carry insurance cards) 	<ul style="list-style-type: none"> • High 	<ul style="list-style-type: none"> • Recovery Process <ul style="list-style-type: none"> ○ Hire recovery officers and develop a SOP that align invoices to insurance requirements ○ Arrange meetings and workshops with public (RSSB, MMI) and private sector to improve level of engagement ○ Develop communication plan to sensitize population to carry insurance cards
<ul style="list-style-type: none"> • Ambulance Fleet & Equipment <ul style="list-style-type: none"> ○ Insufficient and aging ambulance fleet across the country 	<ul style="list-style-type: none"> • High 	<ul style="list-style-type: none"> • Ambulance Fleet & Equipment <ul style="list-style-type: none"> ○ Mobilize funding and expedite process to procure new ambulances and new equipment
<ul style="list-style-type: none"> • Upgraded Communication and Command Center <ul style="list-style-type: none"> ○ Insufficient and aging equipment 	<ul style="list-style-type: none"> • Medium 	<ul style="list-style-type: none"> • Upgraded Communication and Command Center <ul style="list-style-type: none"> ○ Mobilize funds for acquisition and expedite upgrading 912-Communication and Command Center ○ Improve communication and coordination with HFs and other partner institutions ○ Ease tracking and dispatching of ambulance to reduce time response
<ul style="list-style-type: none"> • EMS Infrastructure <ul style="list-style-type: none"> ○ Lack of adequate EMS division (SAMU) offices 	<ul style="list-style-type: none"> • Medium 	<ul style="list-style-type: none"> • EMS Infrastructure <ul style="list-style-type: none"> ○ Mobilize funds and assign proper location and establish headquarters
<ul style="list-style-type: none"> • Disturbance Calls <ul style="list-style-type: none"> ○ Disturbance calls represent a significant portion of the total calls 	<ul style="list-style-type: none"> • Low 	<ul style="list-style-type: none"> • Disturbance Calls <ul style="list-style-type: none"> ○ Awareness raising and education of the general population ○ Establish sanctions and enforcement mechanisms in collaboration with the national police

9. Governance and coordination

Five different sets of governing actors can be distinguished. Together they are the stakeholders involved in the governance, implementation and coordination in the health sector. Below is the detail of the proposed roles and responsibilities for the different stakeholders in relation to EMS.

Figure 6: Governance and Coordination



Government institutions

MoH

- Supports, coordinates, and regulates all interventions whose primary objective is to improve the health of the population
 - At central level:
 - Develops policies, strategies and guidelines related to EMS.
 - Defines package of EMS at different levels
 - Regulates and oversees the implementation of EMS at all levels
 - Mobilizes resources for EMS
 - Coordinates partnerships in EMS
 - At provincial and district level:

	<ul style="list-style-type: none"> - Interacts with provincial and district authorities in planning, implementation and monitoring of EMS actions <ul style="list-style-type: none"> • <u>At sector and community level:</u> - Defines packages and monitors the correct implementation of EMS actions - Raises awareness on EMS among the population <ul style="list-style-type: none"> • Participates in the Disaster and Prevention Management Committees
RBC	<ul style="list-style-type: none"> • Coordinates the implementation of EMS related policies, strategies and programs • Coordinates healthcare technology and infrastructure of the health sector, including EMS • Prevents and controls epidemic diseases and other public health emergencies • Raises awareness on EMS among the population (Rwanda Health Communication Center)
MINALOC	<ul style="list-style-type: none"> • Defines the governance structure at all administrative levels • Contributes to raising awareness on EMS • Contributes to coordination and oversight of the implementation of EMS at decentralized level • Participates in the Disaster and Prevention Management Committees
MINECOFIN	<ul style="list-style-type: none"> • Mobilizes and allocates budget to all health programs considering country priorities, including EMS
MININFRA	<ul style="list-style-type: none"> • Defines policies, norms and standards in terms of infrastructure (including health infrastructure) • Regulates the development, acquisition, use, maintenance of infrastructure, including those used in EMS (transport infrastructure network, energy, water, building, communication technology, ambulance and other vehicles, among others)
MIFOTRA	<ul style="list-style-type: none"> • Elaborates labor policies to be implemented in the health sector, including EMS • Oversees the compliance on labor law and approval of structure of public institutions
MIDIMAR	<ul style="list-style-type: none"> • Defines national plan for disasters and establishes coordination between different health actor or government institutions • Takes the lead in formulation, coordination, control, direction of disaster management and supervision of humanitarian assistance in emergency situations • Participates in emergency operations (in situation of disaster, refugees or public health emergencies)

SECURITY ORGANS	<ul style="list-style-type: none"> • Supports and actively participate in the implementation of EMS programs • Enforces laws, including those related to prevention (road safety related laws, etc.)
Ministry of Education	<ul style="list-style-type: none"> • Develops and reviews the implementation of health education sector policies, including EMS • Enacts laws, regulation and guidelines for promotion of education
Universities	<ul style="list-style-type: none"> • Develop and teach health related programs, including EMS, in line with national education standards • Conduct research in collaboration with the health sector, including those related to EMS
MITEC / RISA	<ul style="list-style-type: none"> • Plans and coordinates the implementation of the national ICT, including EMS related ICT for development agenda
RDB	<ul style="list-style-type: none"> • Attracts, promotes and facilitates private investors in different sector, including health sector and EMS
RURA	<ul style="list-style-type: none"> • Defines standards in terms of utilities regulation, including communication infrastructure • Issues permit, authorizations and licenses for radio communications and short codes used for health related programs, including EMS (for example: 912 hotline)

Service Providers

Community service providers	<ul style="list-style-type: none"> • CHWs: Supports in health promotion, preventive and curative programs as the health package defined by the MoH • First aid volunteers/providers: Helps EMS system to provide services at community level in big events with public gathering
Public health facilities	<ul style="list-style-type: none"> • Provides emergency medical services in line with the service package at different levels (For example: Health Posts, HC, District Hospitals, Provincial Hospitals, Referral Hospitals, Teaching Hospitals) as per national standards • Ensures acquisition, proper use and maintenance of infrastructure, including those related to EMS
Private health facilities	<ul style="list-style-type: none"> • Provide emergency medical services in line with the service package by type of facility (For example: Health Posts, Dispensaries, Clinics, Polyclinics, Hospitals) as per national standards
CSOs	<ul style="list-style-type: none"> • Contribute to the health sector by health programs awareness, care provision, technical and financial support

(For example: Rwanda Red Cross, Partners in Health, UNHCR, AHA, etc.)

Insurers

RSSB (RAMA and CBHI)	<ul style="list-style-type: none"> • Manages health insurance scheme for government employees and CBHI members • Reimburses for health services, including EMS
MMI	<ul style="list-style-type: none"> • Manages military medical insurance scheme • Reimburses for health services, including EMS, provided to its members
Special Guarantee Fund	<ul style="list-style-type: none"> • Helps to cover medical expenses, including EMS, for people injured or incapacitated by accidents caused by unknown automobiles or wild animals
Private Insurance	<ul style="list-style-type: none"> • Offers schemes that refund the medical charges incurred by their members due to illness, accident or maternity • Reimburses for health services, including EMS

Beneficiaries

Population	<ul style="list-style-type: none"> • Owns EMS activities; acquires health insurances and basic first aid education, implements preventive measures • Prepays the health insurances and copays the due percentage
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Other Stakeholders

NGOs	<ul style="list-style-type: none"> • Provides technical and financial support to the development of health sector, including EMS • Contributes to awareness raising in health related programs, including EMS
Professional bodies	<ul style="list-style-type: none"> • Regulates education and healthcare practice of health professionals (Licensing and credentials of practitioners)
FBOs	<ul style="list-style-type: none"> • Contributes to the development of health services by creating and managing health facilities in partnership with the government • Contributes to awareness raising in health related programs, including EMS

10. Costing

The EMS Strategic Plan costs estimation was done with a customized excel template considering inputs required to perform selected activities. The entire plan is projected to cost RWF 21,242,392,569 (21.2 billion) for the 5 years. Resources to fund this strategic plan will be mobilized through GoR, development partners, districts, facilities (internally generated revenue) and private sector engagement.

Tables below summarize the estimated cost by strategic objective and activity type

Summary cost by strategic objective

Strategic Objectives	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	Total
1. Achieve operational effectiveness by optimizing EMS organization and structure	1,959,181,715	72,098,684	72,098,684	72,098,684	72,098,684	2,247,576,451
2. Provide high quality practices and services through developing standardized processes and building staff capacity at all levels	2,792,533,384	4,321,487,299	4,268,872,395	3,849,077,866	3,637,949,963	18,869,920,906
3. Achieve financial sustainability for EMS at country level	14,193,508	4,854,176	4,854,176	4,854,176	4,854,176	33,610,212
4. Enhance networks and partnerships for EMS at national level	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	50,000,000
5. Establish a robust EMS monitoring and evaluation framework	1,285,000	20,000,000	-	20,000,000	-	41,285,000
Total	4,777,193,607	4,428,440,159	4,355,825,255	3,956,030,726	3,724,902,823	21,242,392,569

Summary cost by type of activity

Activity type	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	Total
Equipment	3,935,533,231	2,728,337,994	2,908,337,994	2,904,677,994	2,588,614,995	15,065,502,208
Salary	666,590,168	741,725,264	816,860,360	891,995,456	967,130,552	4,084,301,800
Infrastructure	-	769,219,625	491,269,625	-	-	1,260,489,249
Running Costs	65,710,044	65,710,044	65,710,044	65,710,044	65,710,044	328,550,220
Drugs/Consumables	50,000,000	79,800,000	50,000,000	50,000,000	79,800,000	309,600,000
Workshop/Meeting	29,541,032	20,000,000	-	20,000,000	-	69,541,032
Mentorship/Field Visit	8,001,232	8,001,232	8,001,232	8,001,232	8,001,232	40,006,160
Training	5,646,000	5,646,000	5,646,000	5,646,000	5,646,000	28,230,000
Other	16,171,900	10,000,000	10,000,000	10,000,000	10,000,000	56,171,900
Total	4,777,193,607	4,428,440,159	4,355,825,255	3,956,030,726	3,724,902,823	21,242,392,569

11. Appendix

Appendix A: Desk Review

Document Name	Document Description
HSSP3_Final Version	<ul style="list-style-type: none"> Provides strategic guidance to the health sector for six years, between July 2012 and June 2018.
HSSP3_MTR_Final Report	<ul style="list-style-type: none"> Provides the progress made in the implementation of HSSP III; and, determine whether the health sector is achieving set objectives
HSSP4_Rwanda	<ul style="list-style-type: none"> Provides the health sector with a Strategic Plan that will highlight its commitments and priorities for the coming 6 years. It will be fully integrated in the overall economic development plan of the Government
EM Needs assessment for Rwanda	<ul style="list-style-type: none"> Conducts a comprehensive Emergency Medicine Needs Assessment and recommendations for the MoH and Government of Rwanda
Emergency Care in Rwanda Challenges and Ideas	<ul style="list-style-type: none"> Provides ideas to achieve potential goals in the 5 upcoming years
Emergency Medical Services	<ul style="list-style-type: none"> Provides general information of EMS and Ambulance Management in Rwanda
Emergency Medicine Clinical Guidelines	<ul style="list-style-type: none"> Provides basic guidelines that the emergency care provider must employ to identify and address critical illness and foremost
ESRAT National Survey of Districts	<ul style="list-style-type: none"> Provides information to evaluate district hospitals' capacity to care for undifferentiated acute illness
SAMU Policy Design	<ul style="list-style-type: none"> Provides a policy and legal framework for pre-hospital emergencies
Proposal for SAMU Structure	<ul style="list-style-type: none"> Provides potential organization for SAMU, with roles & responsibilities
Global 2017 (Humanitarian Response Plan)	<ul style="list-style-type: none"> Provides country-level planning processes for mapping urgent priorities and calculating funds required to meet humanitarian needs
Burundi 2017 (Humanitarian Response Plan)	<ul style="list-style-type: none"> Provides country-level planning processes for mapping urgent priorities in Burundi

Somalia 2017 (Humanitarian Response Plan)	<ul style="list-style-type: none"> Provides country-level planning processes for mapping urgent priorities in Burundi
Sub Saharan 2015 (Emergency hospital care)	<ul style="list-style-type: none"> Provides country-level planning processes for mapping urgent priorities in EMS for Sub Saharan countries
Tanzania 2018 (Emergency Summary)	<ul style="list-style-type: none"> Provides country-level planning processes for mapping urgent priorities in EMS for Tanzania
EMS Strategic Plan (Virginia)	<ul style="list-style-type: none"> Provides planning processes for mapping urgent priorities in EMS for the state of Virginia
EMS Strategic Plan (Florida)	<ul style="list-style-type: none"> Provides planning processes for mapping urgent priorities in EMS for the state of Virginia
Strategic Planning (Virginia)	<ul style="list-style-type: none"> Provides guidelines of what is and is not in a strategic planning process
Annex Essential Resources	<ul style="list-style-type: none"> Provides a list of essential resources for the delivery of emergency care in hospitals, depending on the type of hospital
Prehospital trauma care systems	<ul style="list-style-type: none"> Provides key elements of organization and oversight, accountability, documentation of care, communications, and important ethical and legal considerations
MESSNAN	<ul style="list-style-type: none"> Provides information about the degree of implementation of SAMU located in the Teaching Hospital of Marrakech (THM) and organizational factors that facilitate/ hinder the implementation of EMAS
EMT trainee handbook	<ul style="list-style-type: none"> Provides general information for EMT training
SAMU Audit issues	<ul style="list-style-type: none"> Provides audit issues highlighted by OAG for the financial year 2016-2017