



Republic of Rwanda
Ministry of Health

RWANDA PERIOPERATIVE HEALTHCARE STRATEGIC PLAN 2026-2030



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List of Acronyms

NSOAP	National Surgical, Obstetric, and Anaesthesia Plan
CBHI	Community-Based Health Insurance
CHW	Community Health Workers
ECO	Emergency, Critical, and Operative
HSSP V	Health Sector Strategic Plan V
ICU	Intensive Care Unit
L2TH	Level 2 Teaching Hospital
LCoGS	Lancet Commission on Global Surgery
LMICs	Low- and Middle-Income Countries
MMR	Maternal Mortality Rate
NCDs	Non-Communicable Diseases
NGO	Non-Government Organization
NPAs	Non-Physician Anaesthesia Providers
OR	Operative Room
PHC	Primary Health Care
PPP	Public Private Partnership
RSS	Rwanda Surgical Society
UGHE	University of Global Health Equity
UHC	Universal Health Coverage
WHA	World Health Assembly
WHO	World Health Organization
LCA	Life Cycle Assessment
GWP	Global Warming Potential
NST 2	Second National Strategy for Transformation

Preface

The Government of Rwanda remains steadfast in its commitment to ensuring that all Rwandans have equitable access to safe, high-quality, and efficient healthcare services. A critical aspect of this commitment is optimizing perioperative care across our health facilities, which is essential for improving surgical outcomes and enhancing patient safety.

Rwanda Perioperative Healthcare Strategic Plan 2026–2030 outlines a roadmap for transforming perioperative care nationwide. The plan emphasizes key priorities, including improving surgical safety, strengthening anesthesia, promoting patient-centered care, and enhancing perioperative care coordination. It also highlights the importance of workforce training, the integration of advanced technologies, and the development of innovative solutions to address existing challenges in healthcare access and quality. I urge all healthcare providers and stakeholders to support the effective implementation of this plan as we continue to build a stronger, more equitable health system that meets the needs of all Rwandans.

Dr Sabin NSANZIMANA
Minister of Health



Executive Summary

Context

Surgical, obstetric, and anaesthesia (SOA) care are essential for a strong health system and achieving Universal Health Coverage. Since launching the Rwanda National Surgical, Obstetric, and Anaesthesia Plan (NSOAP) 2018–2024, Rwanda has made significant progress in expanding infrastructure, workforce, and service delivery, though challenges remain in workforce density, rural equity, and sustainable financing.

Lancet Commission on Global Surgery Performance and 2030 Targets

LCoGS Indicators	Baseline (2017)	Achievement 2023	Targets 2030
2 Hour Access (%)	100	100	100
Surgical Volume	786	1,788	5,000
SOA/100,000	1,006	3	12
POMR Tracking (%)	76.2	95	100
Catastrophic Expenditure Protection	90	95	100
Impoverishing Expenditure Protection	90	95	100

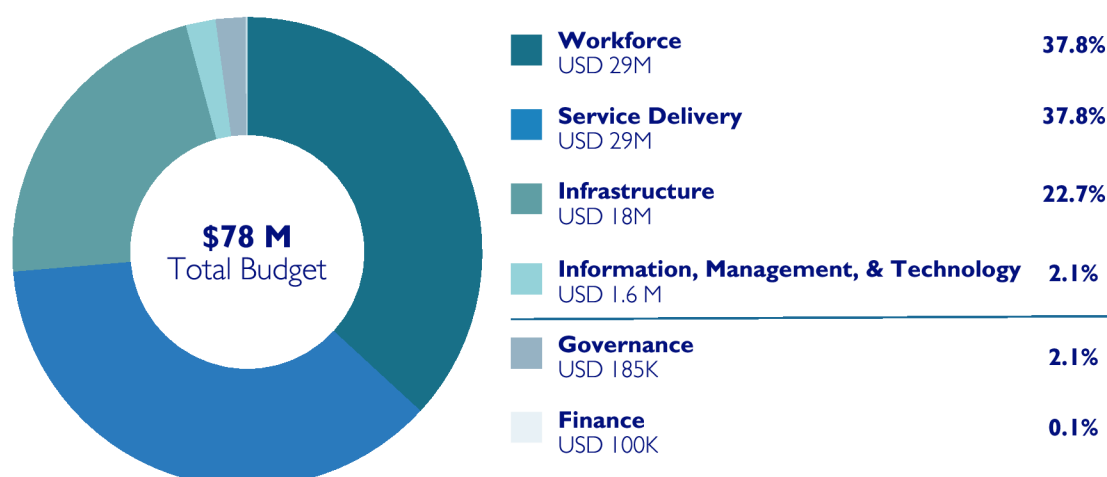
Vision

To ensure that all Rwandans, regardless of location or income, have access to safe, affordable, and high-quality perioperative healthcare as a vital component of UHC and national development.

Strategic Objectives



Total Budget



Background

Surgical, obstetric, and anaesthesia (SOA) care are essential to any functioning health system, yet billions of people worldwide cannot access them. The Lancet Commission on Global Surgery (LCoGS) exposed the scale of this crisis and called on countries to develop national surgical plans as the primary tool for closing the gap..

The LCoGS report comprehensively evaluated the global state of surgical care. (1) It exposed significant gaps in access, quality, and equity, particularly in low- and middle-income countries (LMICs):



THE ACCESS GAP

- 5 Billion people worldwide lack access to safe, timely, and affordable surgical care
- 143 Million additional surgical procedures needed every year in LMICs



THE WORKFORCE GAP

- SOA providers in many LMICs are less than 5 per 100,000 — far below the recommended 20 per 100,000



THE FINANCIAL IMPACT

- 33 Million people face catastrophic health costs from surgery annually
- 48 Million people pushed into poverty each year due to surgical costs



THE DATA GAP

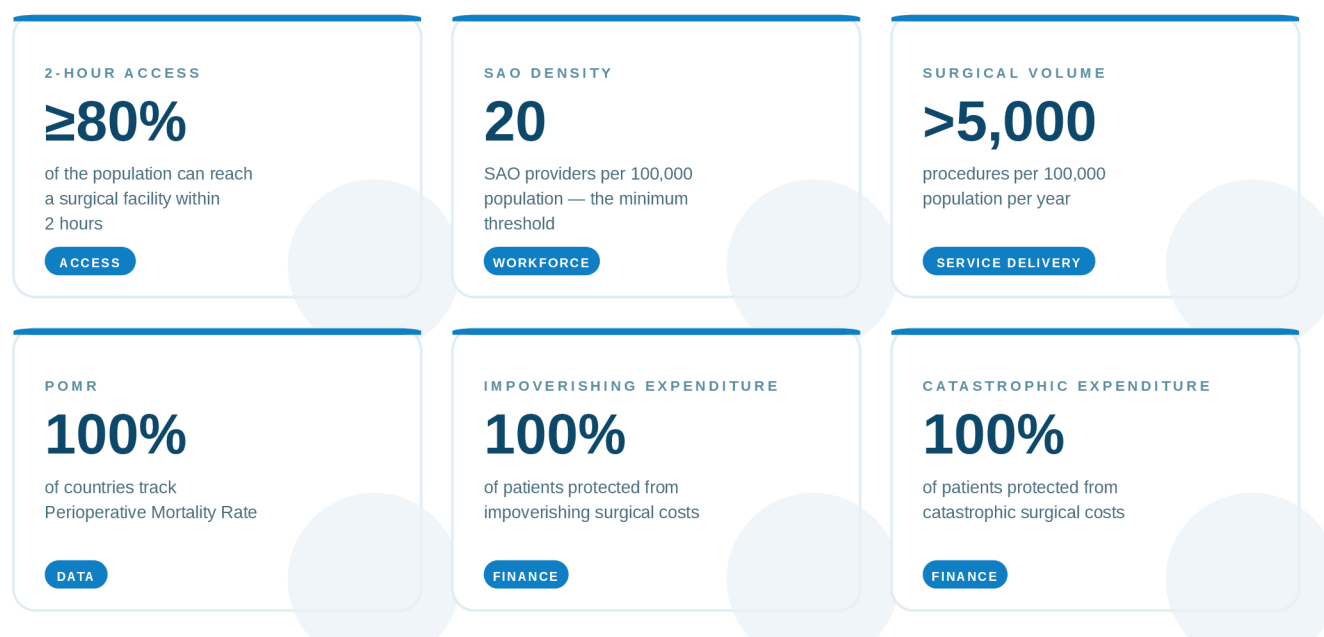
- Fewer than 30% of countries routinely report surgical volume or outcomes

The publication of the LCoGS report sparked a worldwide initiative to enhance access to surgical care. (1) This was further accentuated by the adoption of World Health Assembly (WHA) Resolution 68.15 on Essential and Emergency Surgical Care in 2015 and WHA 76.2 on Integrated Emergency, Critical, and Operative Care in 2023 which highlighted the growing acknowledgment of surgical care as a vital component of universal health coverage (UHC) and the significance of surgical services within the Primary Health Care (PHC) system. (1,2)

Background

The National Surgical, Obstetric, and Anaesthesia Plan framework was introduced by LCoGS to facilitate the systematic and efficient expansion of safe, timely, and affordable surgical care. This framework provides guidelines across six crucial areas that are essential for developing robust surgical systems: infrastructure, workforce, service delivery, information management, financing, and governance. Additionally, it presents six quantifiable indicators for evaluating and tracking access and quality of surgical care. These indicators were designed to be easily collected while providing valuable insights into the effectiveness of the surgical system:

Figure 1. Lancet Commission on Global Surgery Core Key Performance Indicators for Monitoring Surgical Systems



The LCoGS emphasized that surgical care must be recognized as an indivisible and indispensable component of the health system, acknowledging its essential role in ensuring universal health coverage. (1) To operationalize this vision in LMICs, the LCoGS recommended developing **strategic, country-led, evidenced-based, surgical healthcare plans**. Identified as a continental priority by African member states through the Pan African Surgical Healthcare Forum, national surgical healthcare plans/policies serve as roadmaps that align national surgical priorities with broader health goals, ensuring that investments in surgery are cost-effective, sustainable, and integrated within existing health systems. (1,4)

Rwanda has been an active participant in these global commitments, reflecting the country's dedication to expanding equitable access to safe, high-quality surgical and emergency care as part of UHC. This commitment is embodied in the Rwanda Perioperative Healthcare Strategic Plan 2026–2030, a nationally owned, evidence-based roadmap to systematically strengthen Rwanda's surgical system across all levels of care.

Rwanda Context

Rwanda is a landlocked country in the Great Lakes region of East Africa. (Figure 2) It shares borders with Uganda to the north, Tanzania to the east, Burundi to the south, and the Democratic Republic of Congo to the west. Despite its compact geographic size of approximately 26,338 square kilometres, Rwanda is one of Africa's most densely populated countries, with 503 inhabitants per square kilometre. (3)

Figure 2. Rwanda Geographic Overview and Key Population Statistics



TOTAL POPULATION (2025)

13.25M

Total Population

POPULATION UNDER 5

1.9M

Children under 5 years

POPULATION DENSITY

503/km²

Population Density

RURAL POPULATION

82%

Share of rural population
18% urban

Rwanda Context

The country's socio-economic indicators over the past 10 years reflect Rwanda's commitment to inclusive national development, and create the socioeconomic conditions necessary for a strong, equitable, and sustainable surgical system:

Table 1: Core socioeconomic and health sector performance indicators

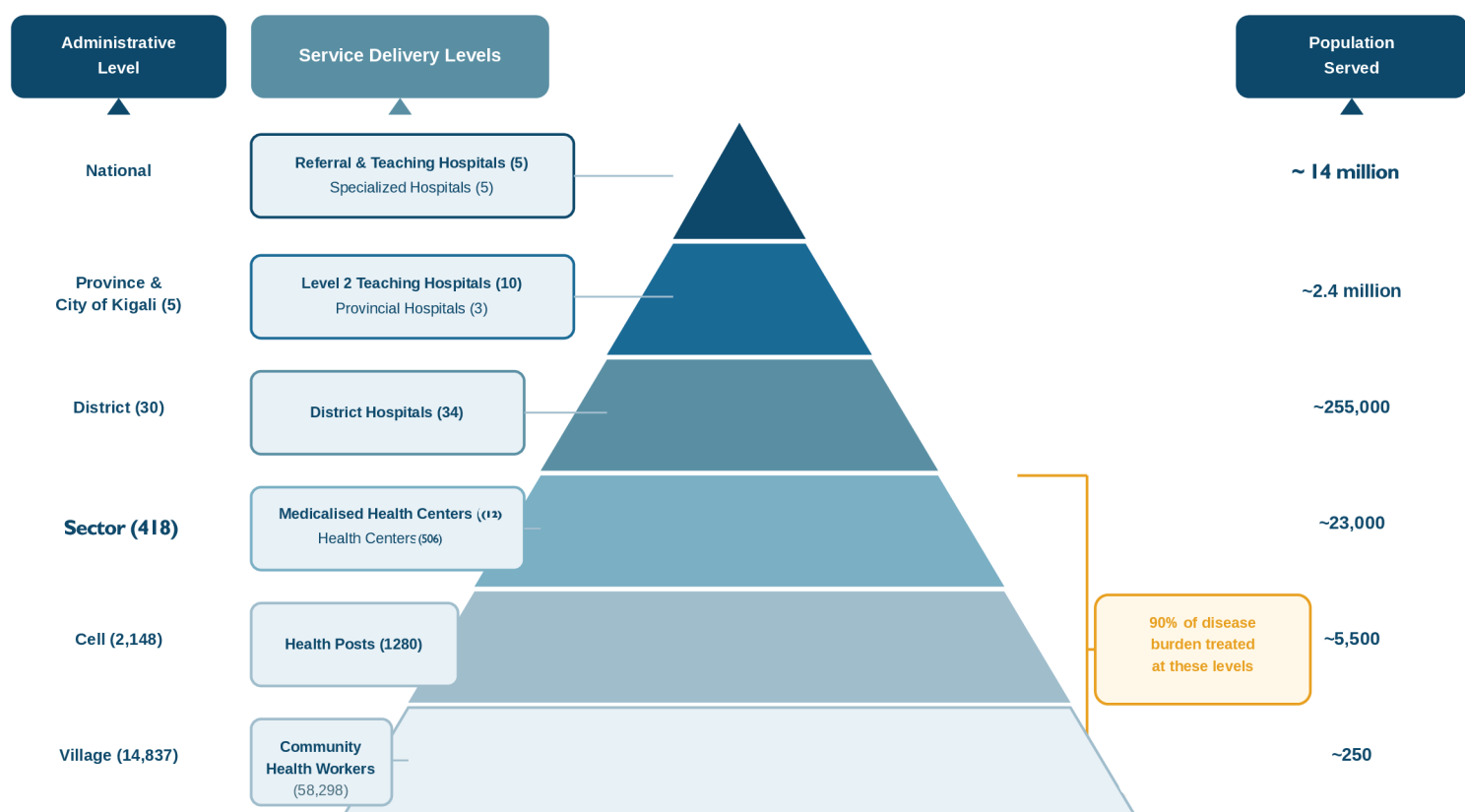
		2015		2025	
	Life Expectancy	65.4 yrs	↑	69.6 yrs	+4.2 years
	Infant Mortality per 1,000 live births	32	↓	27	-35%
	Maternal Mortality Ratio per 100,000 live births	210	↓	149	-50%
	Crude Death Rate per 1,000 population	6.13	↓	4.84	-21%
	Adult Literacy Rate age 15+	71.2%	↑	79%	+7.8 pts
	GDP per Capita USD	\$734	↑	\$1,010	+38%
	GNI per Capita USD	\$710	↑	\$980	+38%
	Sex Ratio	48.5M/51.5F	→	48.5M/51.5F	Stable
	CBHI Coverage Community-Based Health Insurance	75%	↑	83.5%	+8.5 pts

State of Surgical System in Rwanda

Healthcare Service Delivery Structure and Integration of Surgical Services

Rwanda's pyramidal healthcare system comprises four levels: community, primary, secondary, and tertiary care (Figure 3). At the community level, the base consists of over 58,000 community health workers (CHWs) providing crucial preventive and basic health services. The primary level comprises health posts, health centres, and medicalized health centres, which serve as initial contact points for healthcare and offer essential outpatient and antenatal care services. The secondary level consists of district hospitals and specialized hospitals, which provide more advanced medical care, including surgical and anaesthesia services. The tertiary level comprises referral, provincial, and teaching hospitals, offering specialized and highly advanced medical care and training. Obstetric care starts at the primary level, and surgical services are integrated at medicalized health centres. Mainstream surgical and anaesthesia services are integrated at the secondary level. This hierarchical approach ensures a proper continuum of care and equitable healthcare access across Rwanda, with a referral system that addresses complex health needs. (4)

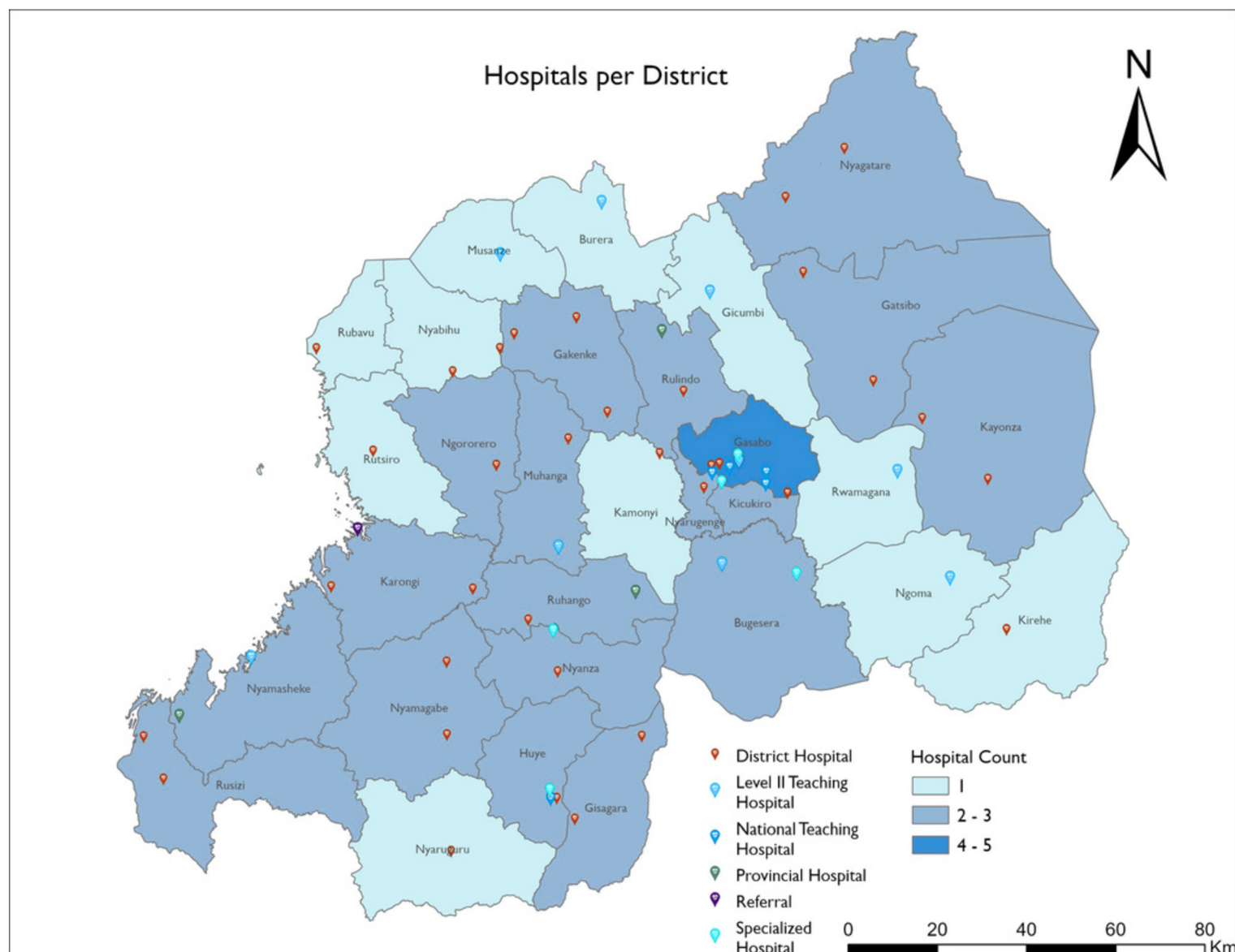
Figure 3: Rwanda's health facility pyramid and service delivery structure



State of Surgical System in Rwanda

Rwanda's health system is structured across multiple levels of care, including 34 district hospitals, 10 Level II teaching hospitals, 3 provincial hospitals, 5 referral and teaching hospitals, and 5 specialized hospitals. (Figure 4)

Figure 4: Distribution of hospitals across Rwanda's administrative districts



State of Surgical System in Rwanda

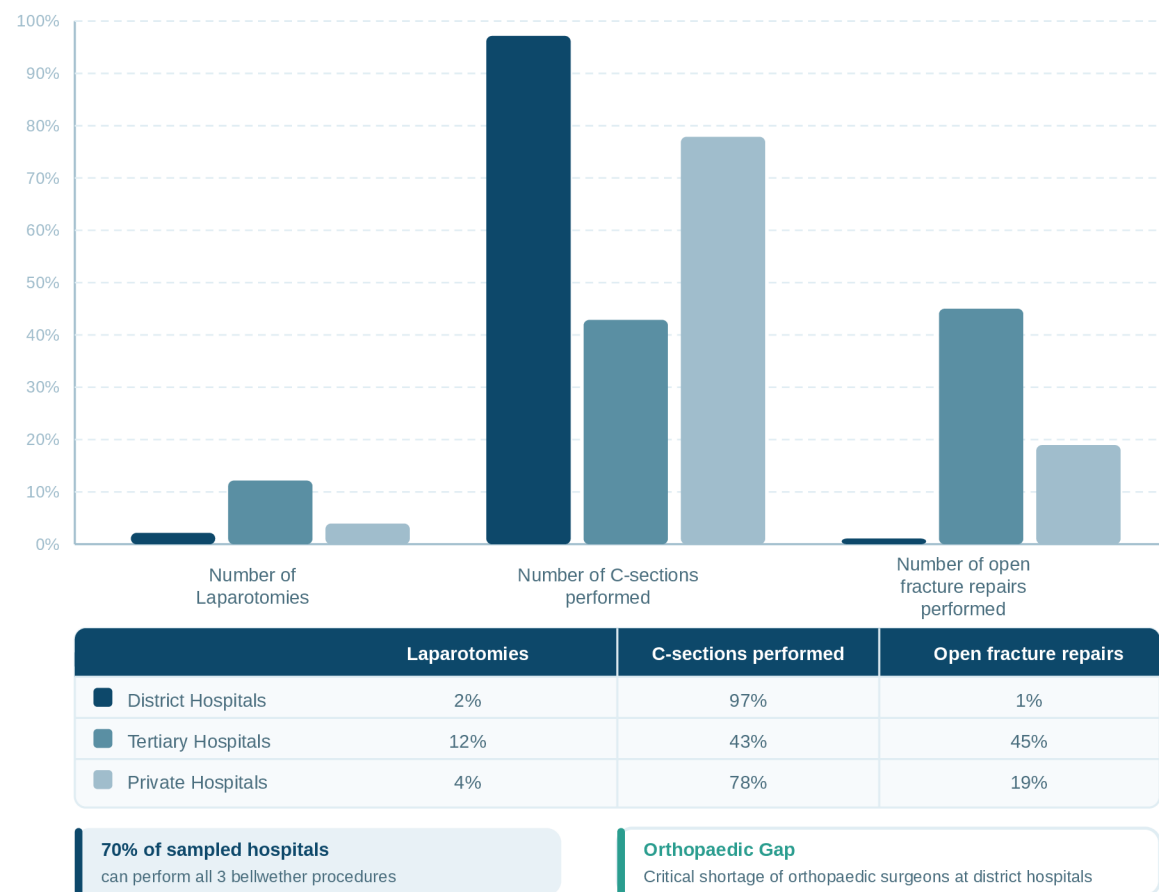
Health System Capacity to Perform Surgical Procedures

Bellwether procedures are a set of three procedures (caesarean section, laparotomy, and open fracture management) proposed by the LCoGS as indicators of a health facility's capacity to deliver essential surgical care. Healthcare facilities in Rwanda have shown progress in expanding access to these procedures, with 70% of sampled hospitals capable of providing the full range of bellwether procedures. (5)

In 2023, district hospitals performed a significant number of caesarean sections (73,983) and laparotomies (1,383) but managed comparatively fewer open fractures (417) (Figure 5). Notably, laparotomy services provided in district hospitals were concentrated in a few facilities where general surgeons are deployed, such as Ruhengeri Regional Referral Hospital (RH) (257), Kibogora District Hospital (DH) (160), Mugonero DH (152), Kibagabaga DH (138), Gisenyi DH (110), and Kibungo RH (100). (5)

The low volume of open fracture management reflects the shortage of orthopaedic surgeons, which limits the capacity of district hospitals to handle trauma and other surgical emergencies. In contrast, tertiary and level two teaching hospitals demonstrated a more balanced surgical profile, with a relatively high number of open fracture management procedures, consistent with their referral roles and higher surgical capabilities.

Figure 5: Bellwether procedure volume by hospital level



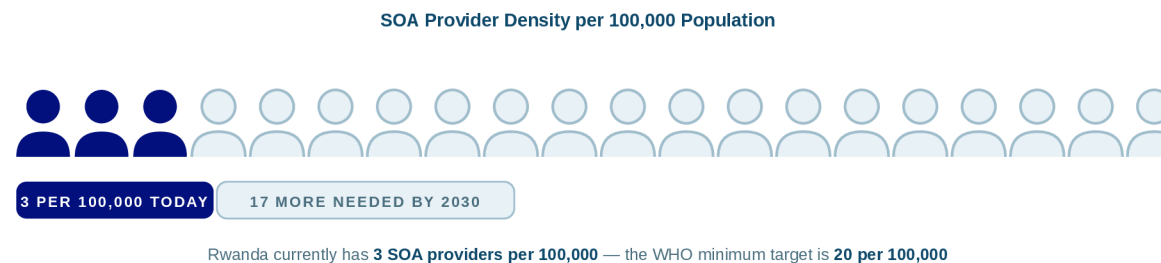
Overall, these patterns indicate a substantial reliance on district hospitals for maternal health services. At the same time, complex and trauma-related procedures remain concentrated in higher-level facilities, highlighting both the progress made and the remaining gaps in achieving equitable access to essential surgical care across Rwanda.

State of Surgical System in Rwanda

Surgical Workforce: Specialist Surgeon, Obstetrician, and Anaesthesiologist Density

The Ministry of Health has set a target of 20 SOA specialists per 100,000 people, in line with the minimum recommended by the World Health Organization (WHO) and the LCoGS. For Rwanda's estimated population of 13.2 million, the country requires at least 2,640 SOA providers. Current availability, however, stands at only 416 providers nationwide, equivalent to a ratio of 3 providers per 100,000 population.

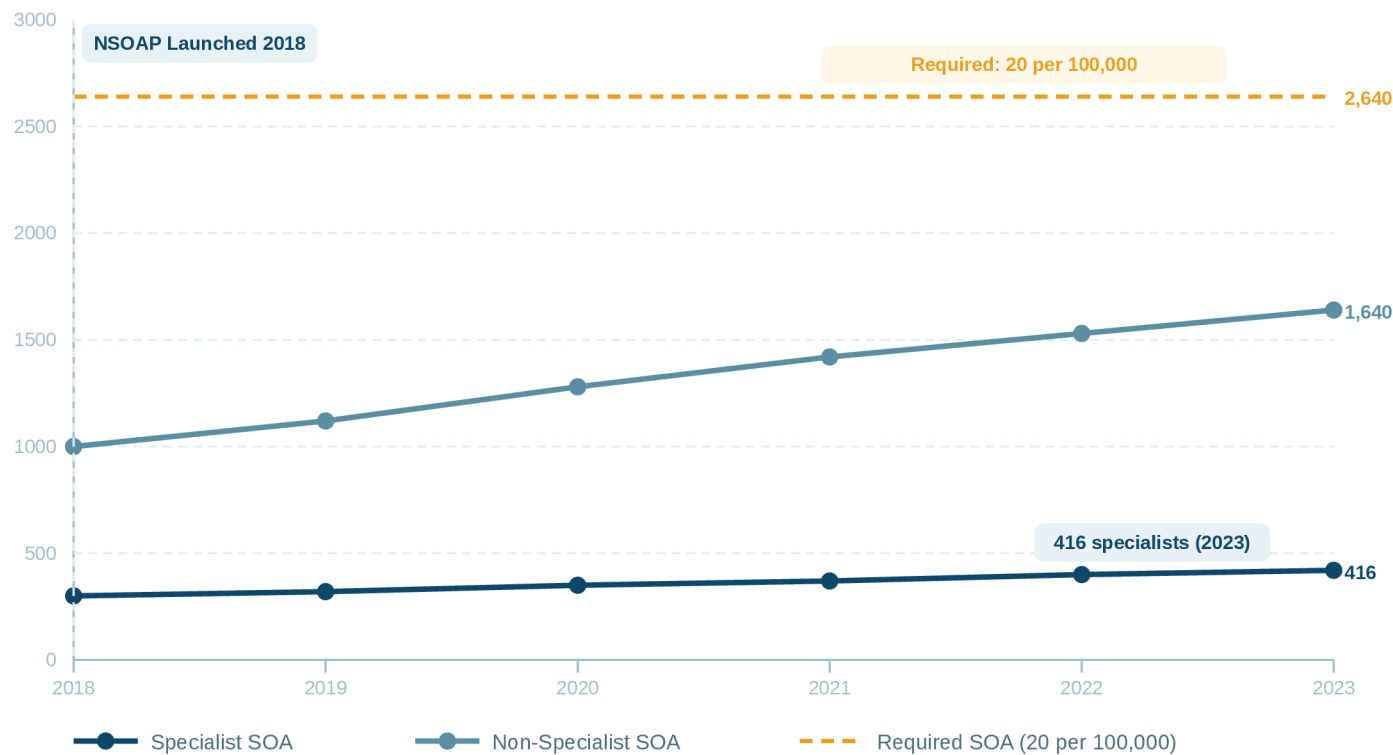
Figure 6: Rwanda's SOA provider density per 100,000 population



The distribution of this limited surgical workforce is also uneven, with 26% (n=110) based in district hospitals, 46% (n=193) in tertiary hospitals, and 28% (n=113) in private hospitals. Tertiary and private hospitals host most specialist physicians, reflecting an urban and institutional concentration of expertise.

Despite initiatives to expand the SOA workforce, Rwanda remains significantly below its national and international targets, with the current ratio falling short of the desired 16 SOA providers per 100,000 by 2024 and the longer-term goal of 20 SOA providers per 100,000 people by 2030.

Figure 7: Specialist surgical, anaesthesia, and obstetric provider and non-specialist surgical provider trends over 5 years (2018-2023)



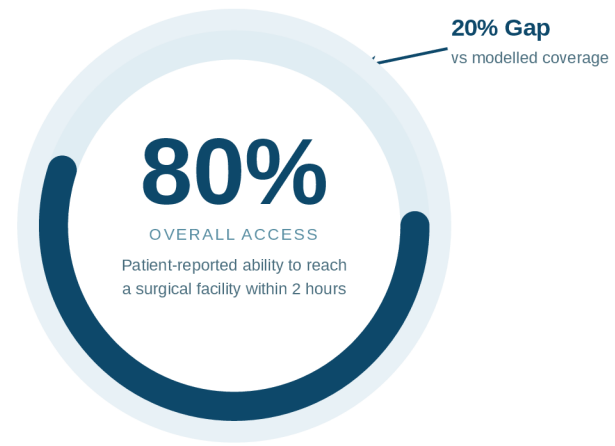
State of Surgical System in Rwanda

Geospatial Access to Surgical Facilities

According to the 2018–2024 NSOAP four-year review, Rwanda met the Ministry of Health’s 2024 target of ensuring 100% of the population lives within a two-hour drive of a hospital capable of performing bellwether procedures. While this marks strong progress in expanding surgical access, patient-reported data shows gaps: perceived two-hour accessibility was 80% for public hospitals and 99% for private hospitals (Figure 8).

Addressing these discrepancies will be key to translating geographic coverage into equitable and functional access to essential surgical care.

Figure 8: Average percentage of patients reporting the ability to reach a hospital within two hours

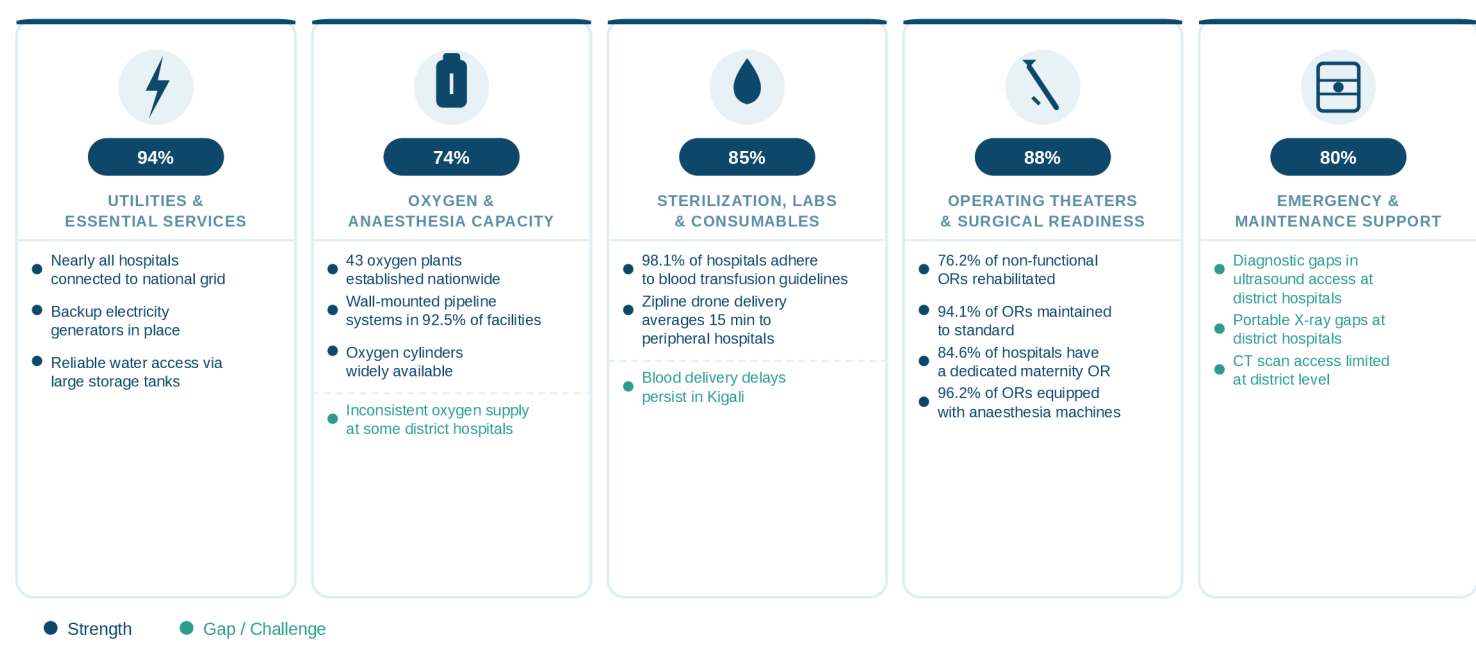


BY FACILITY TYPE	
District Hospital	80%
Provincial/Referral Hospital	80%
Tertiary Hospital	80%
Private Hospital	99%

Surgical Healthcare Infrastructure

Rwanda has achieved notable progress in strengthening its surgical infrastructure, reaching an average performance of 87.6% across all domains. (Figure 9) Key lingering challenges noted are especially for emergency & maintenance support as well as oxygen & anaesthesia capacity: The NSOAP 2018-2024 Four-Year Review Report, available on the Ministry of Health website, offers a comprehensive evaluation of the current state of surgical care in Rwanda. It highlights existing strengths of the system, persisting gaps, emerging challenges, and lessons learned from implementation.

Figure 9: Overview of surgical infrastructure performance by domain, including 2024 percentage target performance



State of Surgical System in Rwanda

State of Anaesthesia and Critical Care in Rwanda

**Workforce**

Rwanda’s anaesthesia workforce has undergone considerable evolution over the years, yet critical gaps persist with an overall anaesthesia workforce density of approximately 1.5 per 100,000 population, far below the World Federation of Societies of Anesthesiologists (WFSA) recommended minimum of 5 per 100,000. While training programs have expanded, significant geographic disparities persist, with most providers concentrated in urban centres, whereas rural areas continue to experience limited coverage.

Figure 10: Overview of Rwanda’s Anaesthesia Workforce Density



**Infrastructure**

While referral hospitals are generally well-equipped with reliable systems and resources, many district hospitals continue to face significant challenges, including inconsistent oxygen supply, outdated anaesthesia machines, and limited biomedical engineering support for equipment maintenance. The aging of essential equipment further compounds these issues, particularly in facilities where regular servicing is unavailable. Strengthening anaesthesia infrastructure through investment in reliable oxygen systems, modern equipment, and sustainable biomedical support is therefore crucial to ensuring safe anaesthesia practices and improving patient outcomes nationwide.

**Surgical Volume**

Improvements in anaesthesia safety must match corresponding efforts to expand surgical volume. Although Rwanda has made commendable progress through standardized preparation protocols and enhanced transfusion safety, persistent gaps remain in workforce capacity, supply chain reliability, monitoring systems, and post-operative recovery care. The LCoGS recommends achieving at least 5,000 procedures per 100,000 population annually, accompanied by near-zero perioperative mortality. Without strong anaesthesia systems, increases in surgical volume risk being undermined by preventable morbidity and mortality.

**Perioperative Safety**

Perioperative safety also extends into post-anaesthesia recovery and critical care, yet most district hospitals lack adequately equipped post-anaesthesia care units (PACUs) and intensive care units (ICUs). These limitations hinder the effective management of complications and compromise the overall quality and safety of care. Expanding PACU and ICU infrastructure across all levels of care is essential to strengthening Rwanda’s surgical system and enhancing its capacity to handle both routine and emergency cases.

Sustained improvements in anaesthesia safety require robust governance and quality assurance mechanisms. Integrating anaesthesia-specific indicators into national frameworks, such as the Rwanda Perioperative Healthcare Strategic Plan 2026-2030, will foster accountability and continuous improvement. Strengthened governance structures, standardized quality assurance systems, and systematic monitoring of anaesthesia performance will help institutionalize safety gains and align these efforts with Rwanda’s broader agenda for strengthening its surgical system.

Policy and Strategic Environment

Rwanda has various policy documents, directives, and initiatives to guide improvements on the healthcare front. These policies, principles, and guidelines are derived from international guidelines and systems that align a country's efforts with global priorities. The previous NSOAP mirrored essential global strategies, such as the LCoGS Global Surgery 2030 framework, to guide targets and outline implementation plans.

The Rwanda Perioperative Healthcare Strategic Plan 2026-2030 is a strategic policy that is integrated into existing national strategies through overarching principles, integrated structures, and aligned outputs, with multiple cross-cutting action points.

[International Policies & Guidelines](#)

International resolutions, policies, and guidelines have direct and indirect impacts on Rwanda's healthcare environment. The multifaceted nature of surgical delivery makes it a horizontal process rather than a vertical program, closely related to other essential healthcare systems. The policies below represent the most important documents that directly affect the implementation of this plan.

WHA Resolution 76.2 (2023)

This resolution highlighted that emergency, critical, and operative care form a continuous spectrum of services, extending from the community level to health centres, primary care clinics, and hospitals. The integrated planning and implementation of these services can enhance their efficiency and effectiveness. (2)

African Health Strategy 2030

This strategy prioritizes addressing crucial healthcare challenges, including healthcare infrastructure, data utilization, and the social determinants of disease. Improving these healthcare domains will benefit the overall surgical care system and decrease morbidity and mortality rates. (7)

WHO Global Strategy on Digital Health 2020–2025

Rwanda has tailored these international guidelines to the local context to maximize the benefits of the information technology revolution in improving healthcare service delivery and patient monitoring. The recent launch of EMR will integrate surgical indicators to facilitate proper monitoring of perioperative healthcare indicators. (11)

Pan-African Surgical Healthcare Forum — Kigali Consensus 2024

Forty African member states convened in Kigali in 2023 and 2024. This strategic plan aligns with consensus prioritization of national surgical healthcare plans, acceleration of progress towards UHC, emphasis on innovative health information management systems, and a focus on capacity building, quality of care, and sustainability. (4)

Policy and Strategic Environment

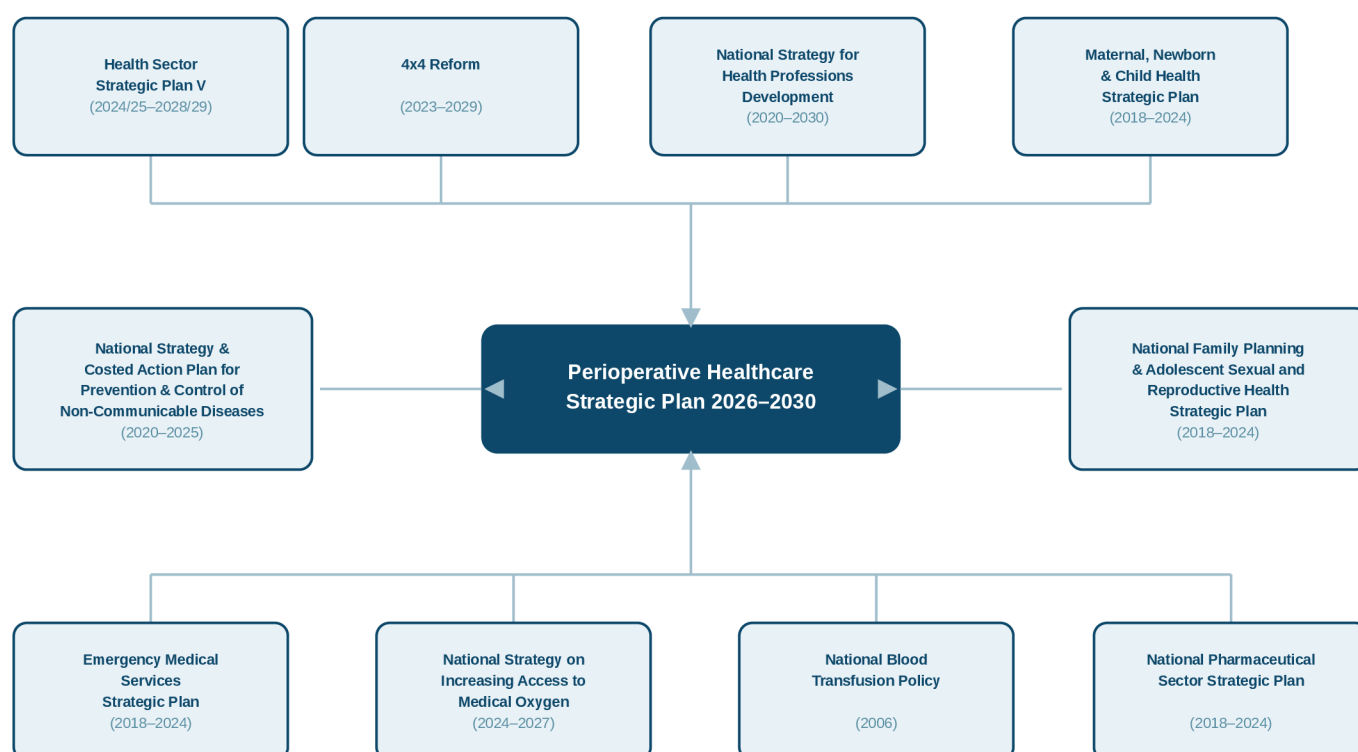
National Policies & Guidelines

Rwanda's perioperative plan is deeply embedded within the national policy landscape. Operative and perioperative care is crosscutting by nature, integral to all health service delivery, from cancer care and NCDs to pharmaceuticals and blood transfusion. (9)

Policies and Strategic Plans associated with this plan are as follows:

- Health Sector Strategic Plan V (2024/25-2028/29)
- 4x4 Reform
- National Strategy for Health Professions Development (2020-2030)
- Maternal, Newborn, and Child Health Strategic Plan (2018-2024)
- National Strategy and Costed Action Plan for the Prevention and Control of Non-Communicable Diseases (2020-2025)
- Rwanda's Emergency Medical Services Strategic Plan (2018-2024)
- National Strategy on Increasing Access to Medical Oxygen in Rwanda (2024-2027)
- National Blood Transfusion Policy (2006)
- National Pharmaceutical Sector Strategic Plan (2018-2024)
- National Family Planning and Adolescent Sexual and Reproductive Health Strategic Plan (2018-2024)

Figure 11: Integration of national health plans and policies within the Rwanda perioperative healthcare strategic plan 2026-2030



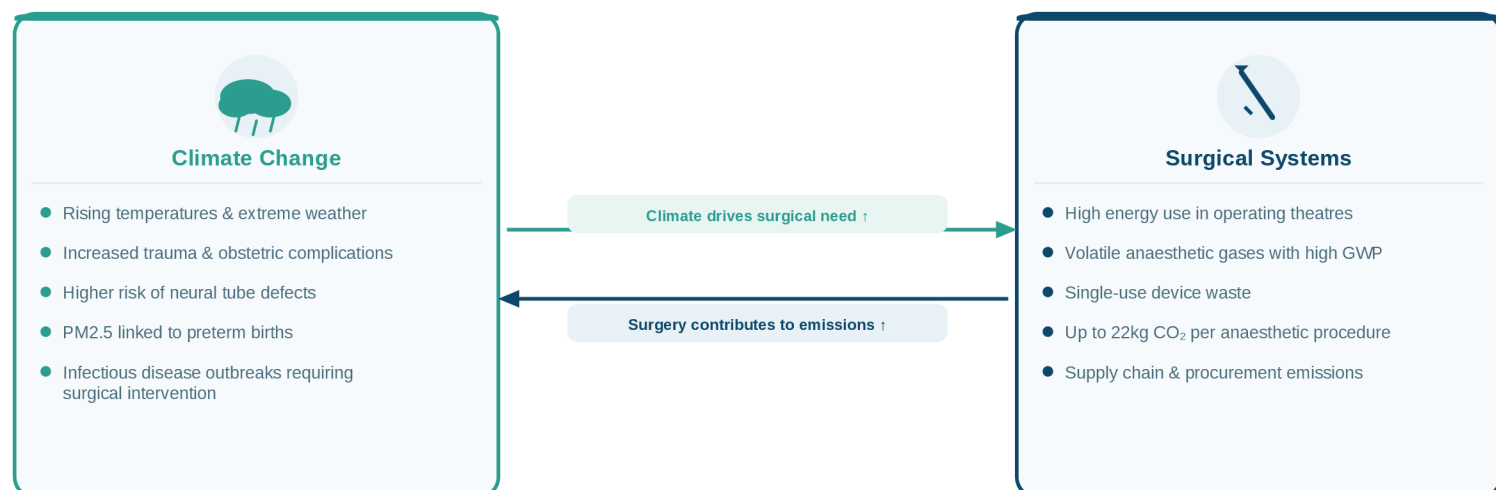
In addition, several complementary strategies and strategic documents are currently under development, including those for maternal, neonatal, and child health; emergency response; and primary health care. All of these align under a unified health policy framework. Consequently, certain thematic areas, such as obstetrics & Gynecology and nursing, are not extensively elaborated on in this document, as they will be fully addressed within their respective strategic frameworks.

Climate Resilience and Environmental Sustainability

Climate change is increasingly recognized as both a driver of surgical need and a challenge to the sustainability of surgical systems worldwide. Evidence suggests that climate change contributes to a higher burden of disease requiring surgical care, while surgical delivery itself also significantly contributes to greenhouse gas emissions. Roa et al. (2020) highlight that climate change amplifies the urgency of access to surgical, and anaesthesia (SOA) services, especially in LMICs where health systems are more vulnerable. (10) Rising temperatures and extreme weather events not only disrupt the surgical system but also increase conditions such as trauma complications and infectious disease outbreaks that require surgical intervention. For example, high ambient temperatures have been linked to an increased risk of neural tube defects, and nearly one in five preterm births globally is associated with exposure to fine particulate matter (tiny particles in the air with a diameter of 2.5 micrometers or smaller - PM2.5) attributed to human activity. (9,11) These findings illustrate the dual vulnerability and responsibility of surgical systems in the context of climate change.

Surgical systems also contribute significantly to environmental degradation. Operating theatres are among the most energy-intensive areas of hospitals, and studies have shown that surgical services are associated with high carbon footprints, particularly from the use of volatile anaesthetic gases. MacNeil et al. (2017) found that a single general anaesthetic procedure can emit up to 22kg of CO₂ equivalents and has an extremely high global warming potential, making their continued use a climate concern. (12) These findings highlight the need for national surgical planning to integrate adaptation and mitigation strategies.

Figure 12: Dual Vulnerability & Responsibility of Climate Change & Surgical Systems



Climate Resilience and Environmental Sustainability

As Rwanda actively scales surgical care under universal health coverage, climate resilience within the Perioperative Healthcare Strategic Plan 2026-2030 offers a critical opportunity. Interventions at the infrastructure level, such as constructing energy-efficient surgical facilities using the Excellence in Design for Greater Efficiencies (EDGE) or Leadership in Energy and Environmental Design (LEED) standards, incorporating natural lighting, water-saving fixtures, and low-CO₂ materials, can reduce both operational costs and emissions. Expanding sterilization capacity to support reusable instruments and exploring regulatory frameworks for reprocessing align with Rwanda's national sustainability goals while reducing waste. These interventions are practical, cost-conscious, and position the health sector as a leader in Rwanda's green growth agenda.

By embedding climate resiliency across infrastructure, service delivery, information systems, finance, and governance, Rwanda's perioperative healthcare plan can serve as a model for how surgical system strengthening can simultaneously advance health equity and climate action.

Strategic Objectives for Climate Resilience and Environmental Sustainability



01

Green Infrastructure

Construct energy-efficient surgical facilities built to EDGE or LEED standards, incorporating natural lighting, water-saving fixtures, and low-CO₂ materials to reduce both operational costs and emissions.



02

Sustainable Service Delivery

Reduce the global warming potential of anaesthetic gases, promote sustainable anaesthesia practices, and expand telemedicine for pre- and post-operative care to reduce travel-related emissions and improve access.



03

Climate Metrics & Information Systems

Integrate climate indicators into surgical information systems, creating pathways to innovations that positively impact climate change across the surgical ecosystem and support evidence-based sustainability decisions.

Digital Health and Technology in Perioperative Healthcare

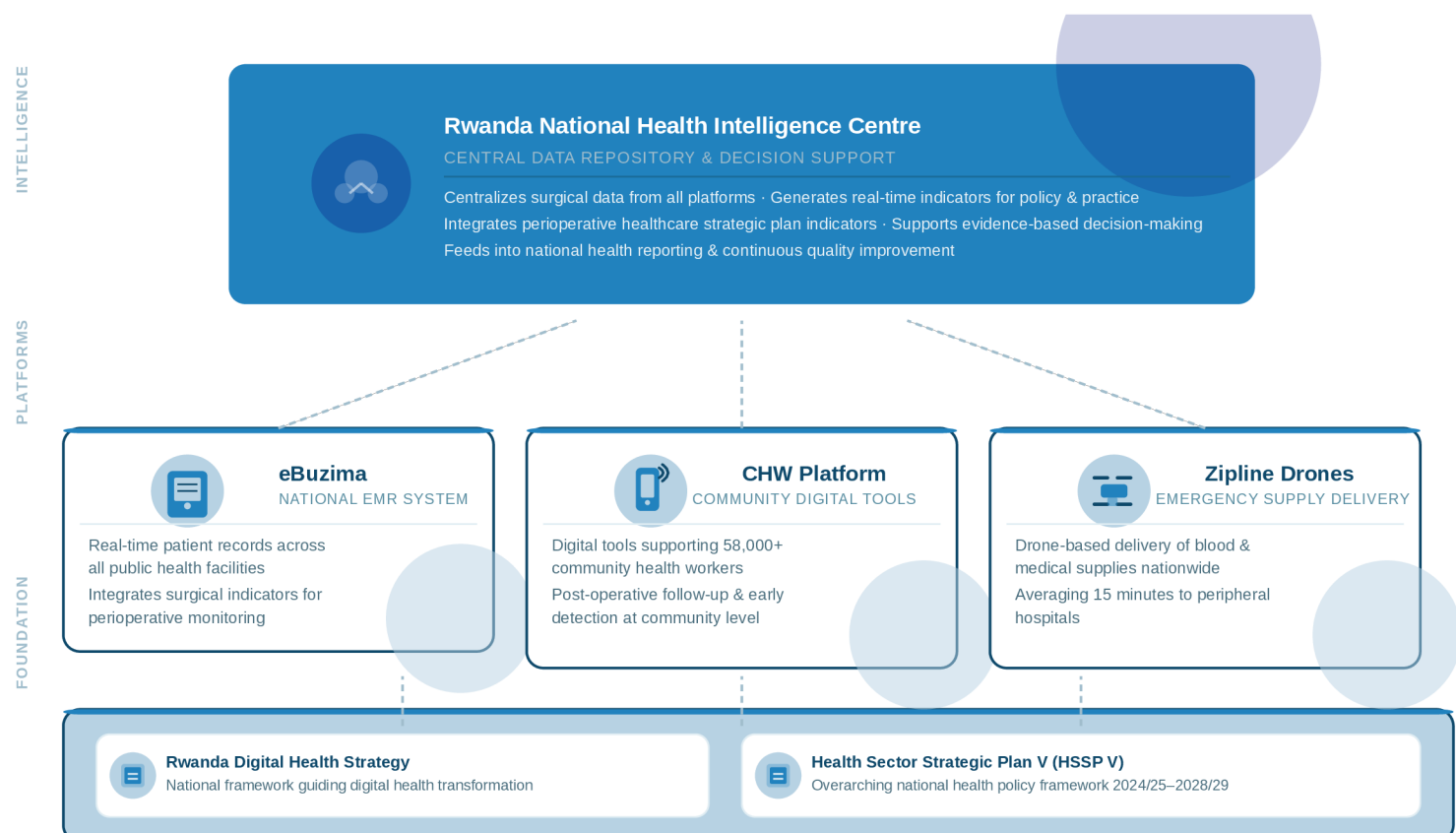
Digital health is an indispensable driver of health systems strengthening in LMICs. For surgical and anaesthesia care, digital innovations can address three enduring challenges: inequitable access to specialists, fragmented data for decision-making, gaps in workforce training and retention.

Rwanda has made significant strides in digital health by pioneering EMR, a national health information system, deploying Zipline drones for emergency blood delivery, and embedding digital solutions into CHW platforms. These efforts have demonstrated that Rwanda can lead the way in leveraging digital health for Universal Health Coverage.

Evidence from both Rwanda and other LMICs demonstrates that digital platforms can reduce referral delays, strengthen postoperative follow-up, and generate real-time indicators that feed directly into performance improvement cycles. (13)

Rwanda's digital ecosystem is more advanced than many LMICs. National strategies, such as the Rwanda Digital Health Strategy and the Health Sector Strategic Plan V, emphasize interoperability, patient-centred data flow, and the integration of community-level tools.

Figure 13: Health & Technology in Surgery - Rwanda's Ecosystem Architecture



Digital Health and Technology in Perioperative Healthcare

Rwanda Perioperative Healthcare Strategic Plan 2026-2030 provides an opportunity to consolidate these gains and extend them to surgical healthcare, where telemedicine, artificial intelligence (AI), electronic medical records (EMRs), and digital education can transform care delivery, improve quality, and strengthen governance.

Strategic Objectives for Digital Health

- **01**
Integrate surgical healthcare indicators into national HMIS/eBuzima
To enable real-time dashboards for volume, safety, and outcomes — integrating perioperative indicators into national data platforms and the Rwanda National Health Intelligence Centre to support evidence-based decision-making nationwide.
- **02**
Expand digital service delivery
Through telemedicine, tele-mentoring, and remote perioperative monitoring to reduce referral delays, strengthen postoperative follow-up, and generate real-time indicators that feed directly into performance improvement cycles.
- **03**
Strengthen community-based digital follow-up
Using CHWs and AI-assisted tools for post-caesarean and postoperative wound monitoring to enable early detection of complications and improve continuity of care at the community level across all districts in Rwanda.
- **04**
Digitize perioperative workflows
Including OR logbooks, anaesthesia records, and referral pathways to improve data quality, reduce manual reporting burden, and enable real-time monitoring of surgical activity across all levels of the health system.
- **05**
Advance digital workforce capacity
Through simulation, AI-driven learning, and interprofessional online CME to expand access to continuous professional development for surgical, anaesthetic, and nursing providers at all levels of the health system.
- **06**
Promote equitable access
By ensuring rural facilities and marginalized groups benefit from digital solutions — prioritizing last-mile connectivity, inclusive design, and community-level digital tools in all digital health deployments across Rwanda.
- **07**
Establish governance and financing frameworks
To ensure sustainability, data protection, and the ethical use of AI in surgical care — including regulatory frameworks, financing mechanisms, and accountability structures for all digital health investments in perioperative care.

Strategic Plan Development Process

The development of Rwanda's Perioperative Healthcare Strategic Plan 2026–2030 was characterized by robust governmental ownership and institutional backing, spearheaded by the Ministry of Health in collaboration with the Rwanda Surgical Society and Operation Smile (Figure 14).



Strategic Plan Development Process

05

Costing and budgeting: alignment with the broader national health financing plan

Costing and budgeting: alignment with the broader national health financing plan
A dedicated costing and budgeting phase ensued, integrating the perioperative healthcare strategic plan into Rwanda's Health Resource Tracker and Partnerships Management Platform to enhance alignment and resource mobilization. Critical assumptions and sustainability considerations were incorporated into the policy framework, and the draft plan underwent national validation during a stakeholder workshop.

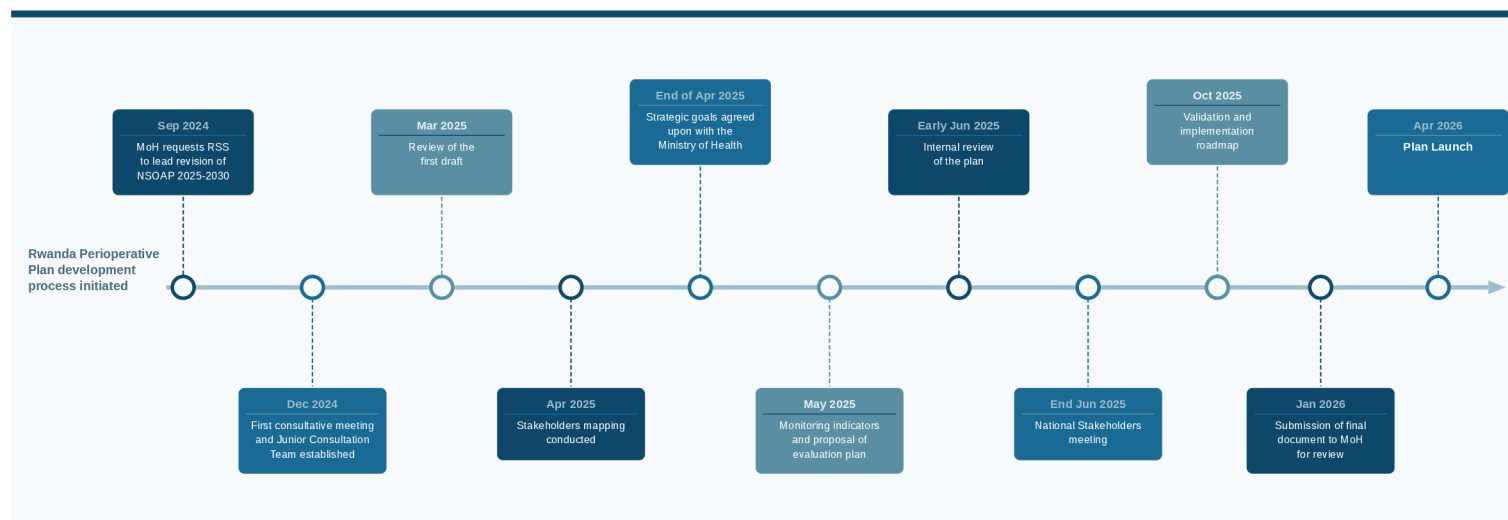
06

Implementation

The final steps include the phased implementation of key innovations and the scaling up of the plan through coordinated national efforts.

Rwanda Perioperative Healthcare Strategic Plan 2026-2030 Development Process

Figure 14: Rwanda perioperative healthcare strategic plan 2026-2030 development process



Strategic Direction

Rationale of the Plan

Over the past five years, Rwanda's healthcare system has made significant advancements in enhancing healthcare delivery, with the surgical care system evolving concurrently. This Peri-operative Healthcare Strategic Plan aims to capitalize on these achievements by optimizing the benefits of recent improvements. Building on this momentum, the Perioperative Healthcare Strategic Plan 2026-2030 aims to further decentralize surgical service delivery, enhance surgical education, and expand the utilization of health data systems, thereby transforming the broader surgical landscape nationwide. A key rationale for this plan is to ensure alignment with Rwanda's current health sector policies and ambitious national objectives. The government's commitment to expanding the health workforce, as exemplified by the "4x4" strategy aimed at meeting the WHO minimum workforce threshold by 2030, presents a critical opportunity. The strategic plan is designed to complement and operationalize such initiatives, ensuring that surgical, and anaesthesia services are fully integrated within broader system reforms to achieve sustainable, equitable, and high-quality care.

Purpose of the Plan

Rwanda's Perioperative Healthcare Strategic Plan 2026-2030 aims to build on the gains made during the first plan and introduce key revisions, enabling the next phase to capitalize on rapid technological advancements and innovations. This phase also aims to align with the current Rwandan policies for sustained progress.

Vision

To guarantee that all Rwandans, irrespective of their location or income, have access to safe, affordable, and high-quality surgical, and anaesthesia care as a vital component of UHC and national development.

Mission

To enhance Rwanda's surgical system by building on past achievements, incorporating new technologies, and aligning with national health policies. This will be accomplished through:

01



Improved infrastructure and emergency readiness to meet the minimum standards across all levels of health systems

02



Expanding and decentralizing quality surgical care services

03



Improving surgical information systems, quality, and research

Strategic Framework

Overview

The strategic goals of this strategic plan reflect Rwanda's ambition to build a stronger, more equitable, and more responsive surgical healthcare system. They are grounded in national health priorities, including the 4x4 reform, and informed by global best practices. These goals provide a clear direction for improving access to surgical, and anaesthetic care by addressing key system gaps and ensuring that services are safe, timely, and affordable for all Rwandans. The goals are designed to work across multiple levels of the health system, from community health workers and primary health centers to tertiary referral hospitals. They emphasize the importance of decentralizing services, strengthening data systems, building local research capacity, and promoting sustainable financing mechanisms, with the goal of ensuring that all facilities are better equipped, staffed, and supported to deliver essential surgical care.

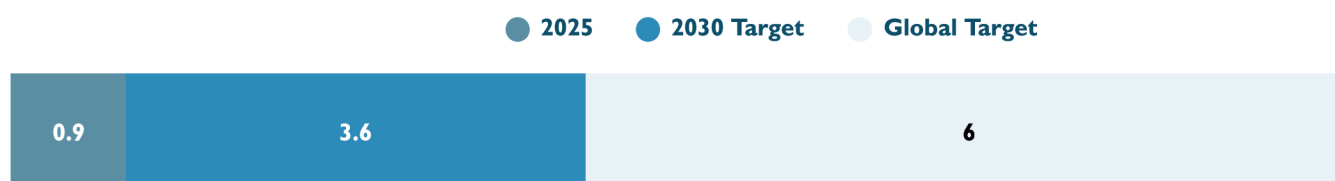
These goals will guide the coordinated actions of government institutions, partners, and healthcare providers throughout the implementation period. Through these strategic goals, Rwanda commits to advancing health equity, reducing preventable surgical deaths and disabilities, and integrating surgical care as a core component of universal health coverage.

Infrastructure

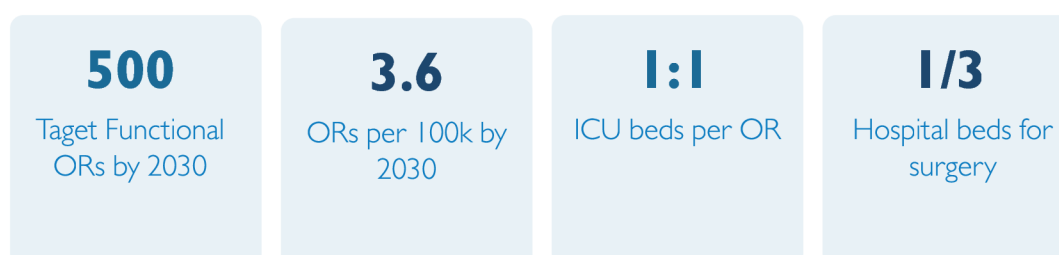
The Rwanda Perioperative Healthcare Strategic Plan 2026-2030 aims to expand and equitably distribute infrastructure across all levels of health facilities in Rwanda. Currently, there are only 127 functional operating rooms (ORs), giving a ratio of 0.9 per 100,000 people, far below the global target of 6 per 100,000. To close this gap, Rwanda plans to quadruple its operating room capacity to 500 functional operating rooms (3.6 per 100,000) by 2030, using a distribution model that accounts for the location of surgical specialists across tertiary, secondary, and private facilities. The plan also prioritizes increasing and expanding ORs and ICU capacity, with specific targets aligned with international standards (e.g., 1 ICU bed per OR or 15% of hospital beds).

In addition, the strategy calls for designating one-third of all hospital beds specifically for surgical patients, reflecting the global burden, where surgical conditions account for approximately 30% of total disease.

Operating Rooms per 100,000 population



Key Targets by 2030



Infrastructure: Goals and Objectives

Infrastructure Target Highlights

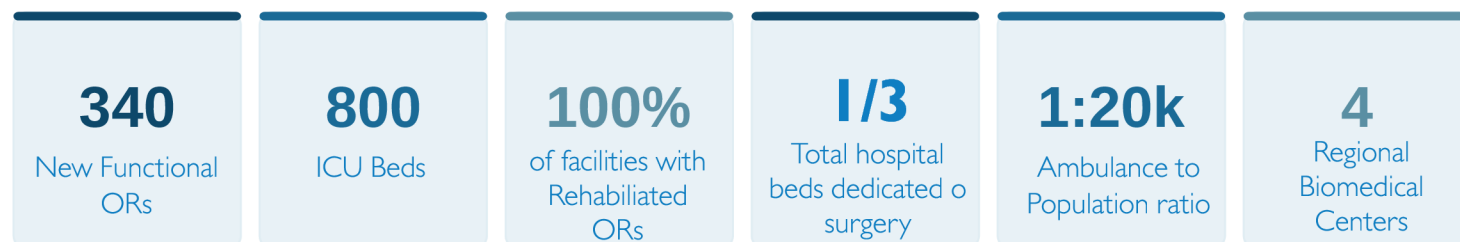


Table 2: Infrastructure strategic goals, objectives, and activities

Domain: Infrastructure and Equipment

Strategic Goal 1: Strengthen surgical infrastructure and emergency and trauma readiness		
Objective 1.1 Expand and equitably distribute surgical infrastructure across all facility levels		
Activities	Verifiable Indicators	Target
Ensure that new operating rooms (ORs) are built to increase capacity and volume of surgical procedures (using 4x4 reform model)	Number of new ORs built nationally	340 new functional ORs across all public and private healthcare facilities
Ensure that new operating rooms (ORs) are built to increase capacity and volume of surgical procedures (using 4x4 reform model)	Proportion of tertiary-level hospitals with functioning OR	30 functional ORs per public tertiary level hospital
Ensure all level 2 teaching hospitals have well-functioning ORs	Proportion of level 2 teaching hospitals with functioning OR	10 functional ORs per public level 2 teaching hospital
Ensure all district hospitals have well-functioning ORs	Proportion of the district hospitals with functioning OR	4 functional ORs per public district hospital
Ensure that private hospitals have functioning ORs needed in Rwanda	Proportion of private hospitals with functioning operating rooms	5 ORs per private hospital. 100% functional
Ensure that existing ORs are rehabilitated to meet the minimum standard	Proportion of facilities with rehabilitated ORs	100%
Ensure that intensive care units (ICUs) are built to achieve safe surgery	Number of new ICU beds	800 ICU beds across all public and private healthcare facilities
Ensure that all tertiary-level hospitals have ICU beds	Proportion of ICU beds per tertiary-level hospital	30 ICU beds per public tertiary level hospital
Ensure that all level 2 teaching hospitals have ICU beds	Proportion of ICU beds per level 2 teaching hospital	10 ICU beds per public level 2 teaching hospital



Infrastructure: Goals and Objectives

Objective 1.1 Expand and equitably distribute surgical infrastructure across all facility levels		
Activities	Verifiable Indicators	Target
Ensure that district hospitals have ICU beds	Proportion of ICU beds per district hospital	4 ICU beds per public district hospital
Ensure all facilities have dedicated surgical beds	Proportion of surgical beds per total bed capacity in a health facility	1/3 of the total hospital beds dedicated to surgery
Regular biomedical maintenance in hospitals	Number of regional biomedical workshops established	4 regional biomedical workshops
Objective 1.2: Ensure availability and accessibility of essential surgical and diagnostic equipment		
Expand national ambulance coverage and referral networks	Two-hour ambulance coverage; Ambulance to population ratio	100 % Coverage. 1 ambulance per 20,000 population
Ensure that all tertiary-level hospitals have advanced diagnostic and therapeutic equipment	Number of equipments available per tertiary-level hospital	1 MRI scanner 2 CT scanner 2 X-ray and 2 portable X-ray 2 C-arm 2 Mammography ≥5Ultrasound 1 Fluoroscopy Mammography
Ensure that all level 2 teaching hospitals have moderate diagnostic and therapeutic equipment	Number of equipment available per level 2 teaching hospital	1 CT scanner 2 X-ray and 1 portable X-ray 1 C-arm 2 Mammography ≥3Ultrasound 1 Fluoroscopy Mammography
Ensure that all district hospitals and private hospitals basic standard diagnostics and therapeutic equipment	Number of equipment available per district hospital and private hospital	1 X-ray and 1 portable X-ray 1 C-ARM ≥3Ultrasound



Infrastructure: Goals and Objectives

Activities	Verifiable Indicators	Target
Objective 1.3 Develop green, resource-efficient surgical infrastructure		
Construct energy-efficient surgical facilities	1. Number of surgical facilities meeting green building standards 2. Number of energy-saving lighting and skylights to provide daylight to the top floor area 3. Presence of features like aerators and auto shut-off faucets to reduce water consumption 4. Use of construction materials such as recycled steel-clad sandwich panels on the roof to cut embodied energy in materials (promotes circular economy) 5. Quantity of locally sourced construction materials and use of low-CO₂ cement 6. Reduced window-to-wall ratio (WWR), reflective paint/tiles for the roof, insulated roof and external walls (reduce heat gain, reducing need for cooling)	All new constructed and renovated hospitals
Streamlining instrumentation and minimizing single-use devices	1. Number of surgical facilities using reusable vs Single Use Devices 2. Amount of Investment in sterilization infrastructure and workforce 3. Number of opportunities for incorporation of reusable devices 4. Number of policies for tax and reimbursement incentives for healthcare facilities that invest in reusable instrumentation and sterilization	57 hospitals (All facilities)
Explore opportunities for reprocessing single use equipment with manufacturers	Number of devices that transition from single use to reusable	50%

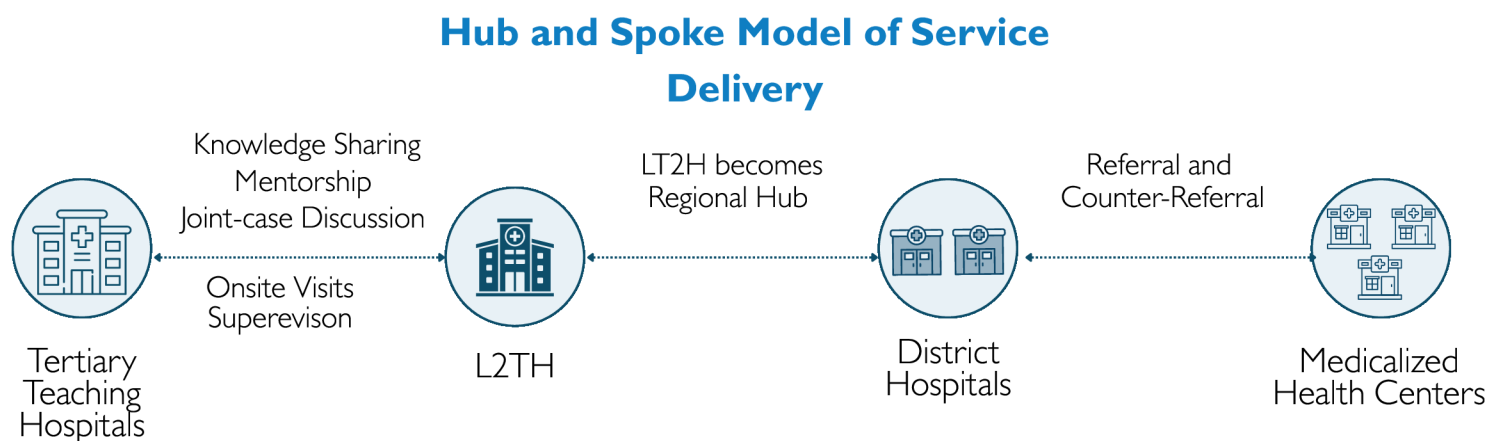


Service Delivery: Goals and Objectives

Service Delivery

The Rwanda Perioperative Healthcare Strategic Plan 2026-2030 aims to strengthen surgical service delivery by ensuring that all district hospitals and medicalized health centres are equipped to provide essential surgical care. This will help decentralize services, reduce delays, and bring timely surgical interventions closer to the population. A significant innovation in this domain is the hub-and-spoke model, which establishes a structured partnership between tertiary teaching hospitals (hubs) and level 2 teaching hospitals (spokes). This model will facilitate knowledge sharing, mentorship, and coordinated patient care through joint case discussions, on-site visits, and supervision.

Importantly, level 2 teaching hospitals that improve capacity through a formal accreditation process will progressively become regional hubs, each supporting a network of district hospitals as spokes. In parallel, hospital-based surgical in-reach programs will address existing backlogs. At the same time, enhanced supervisory activities and a streamlined referral and counter-referral system will ensure consistency and continuity of care. These service delivery strategies will create a more connected, resilient, and equitable surgical system across Rwanda.



Service Delivery: Goals and Objectives

Service Delivery Target Highlights

100%	6	6	70%	4,000	30%
District hospitals providing essential surgical care	Surgical outreaches per year per hub	In-reach programs per year	Eligible pop. screened for cancer	CHWs trained per year	Consultations via telemedicine

Table 3: Service delivery strategic goals, objectives, and activities

Domain: Service Delivery

Strategic Goal 2: Expand and decentralize quality surgical services		
Objective 2.1 Increase access to surgical care at all levels of health care through decentralization		
Activities	Verifiable Indicators	Target
Ensure that all district hospitals provide essential surgical care per World Bank Disease Control Priorities 3 list of procedures	Number of district hospitals providing essential surgical care	All district hospitals
Ensure that all medicalized health centres provide basic surgical care	Number of medicalized health centres providing basic surgical care	All medicalized health centres
Ensure that new fellowships are established to develop new surgical sub-specialties	The number of surgical sub-specialties developed	10 new sub-specialties
Establishing the hub-and-spoke model to increase knowledge sharing and surgical volume develop Ministerial instruction	Number of specialties with hub-and-spoke models established and implemented	1 hub-spoke mode established per specialty
	Number of surgical outreaches	6 surgical outreaches per hub per year
Hospital-based surgical in-reach (bringing in patients from peripheral facilities with their surgical providers for complex case management, surgical education and training, to increase operative volume and reduce backlog at peripheral facilities)	Number of in-reach campaigns at the tertiary facility level	6 in-reach programs per year



Service Delivery: Goals and Objectives

Objective 2.1 Increase access to surgical care at all levels of health care through decentralization		
Activities	Verifiable Indicators	Target
Improve the referral and counter-referral system	Number of facilities using a standardized referral system	All facilities
	Percentage reduction in referral delays beyond 4 hours	100% reduction in average delay beyond 4 hours
Enhanced mentorship activities across different levels of hospitals.	Number of mentorship visits received per facility	6 mentorship visits performed per facility annually
Expand screening and early detection activities for priority cancers, including breast and prostate cancers.	Percentage of the eligible population screened for breast, and prostate cancer	70% of the eligible population
	Number of health facilities providing routine screening services	All level two teaching and Tertiary level hospital
	Number of awareness campaigns conducted on cancer screening	50 campaigns nationally
Ensure training of community health workers (CHWs) on raising community awareness, early detection of emergency and surgical cases, and enhancing post-operative follow-up care	Number of CHWs trained	4,000 CHWs per year
Objective 2.2 Promote environmentally sustainable surgical service delivery		
Implement telemedicine for pre-/post-operative care	Number of eligible consultations conducted via telemedicine	30% of all consultation conducted via telemedicine
Build capacity for office-based procedures	Number of facilities with capacity for office-based procedures	Tertiary level hospitals and level 2 teaching



Service Delivery: Goals and Objectives

Objective 2.2 Promote environmentally sustainable surgical service delivery		
Activities	Verifiable Indicators	Target
Make consideration for the reduction of Global Warming Potential (GWP) of anaesthetic gases and sustainability in anaesthesia delivery	1.The number of hospitals that reduce the use of volatile anaesthetic agents 2.Number of hospitals that install low-fresh gas flow, closed circuit delivery, anaesthesia gas scavenging systems 3.Number of hospitals that have phased out high-GWP anaesthetic gases such as desflurane and halothane, and have adopted lower-GWP alternatives such as Sevoflurane	57 hospitals (all facilities)
Integrated emergency disaster response with routine surgical system strengthening	Number of emergency disaster response programs in trauma and emergency departments	Emergency disaster programs



Workforce: Goals and Objectives

Workforce

The Rwanda Perioperative Healthcare Strategic Plan 2026-2030 sets a clear direction to expand Rwanda's surgical workforce through the "4x4 model", which aims to quadruple the number of SOA providers alongside the entire health workforce within the next five years. This model aligns with the global goal of reaching a benchmark of 20-40 SOA providers per 100,000 population.

Targeted investments in postgraduate education are scaling up specialty and sub-specialty training in general surgery, orthopedics, pediatric surgery, anaesthesiology, and critical care. Dedicated fellowship pathways in trauma, colorectal surgery, vascular surgery, and perioperative nursing are being established to strengthen national capacity to manage complex surgical needs.

In parallel, the plan promotes task-sharing and decentralized skill development by championing the training of general practitioners in emergency surgery at district and level 2 teaching hospitals, upgrading non-physician anaesthetists (NPAAs), and expanding the nurse anaesthetist workforce. Standardized comprehensive training programs for paramedics will be rolled out, targeting consistent annual outputs and long-term retention. A comprehensive workforce retention strategy will underpin these efforts. This retention strategy is designed to ensure that newly trained personnel are supported, equitably deployed, and retained within the health system, thus protecting the national investment in workforce expansion and strengthening long-term service continuity.

Workforce Target Highlights

854

Surgical
Specialists

800

Non-Physician
Anaesthetists

3,310

200 Paramedics

3,310

Nurses
(Allcategories)

Workforce: Goals and Objectives

Table 4: Workforce strategic goals, objectives, and activities

Domain: Workforce

Strategic Goal 1: Strengthen and equitably distribute the surgical workforce through targeted expansion, capacity-building, and retention programs

Objective 3.1 Scale surgical, anaesthesia and nursing specialties, and emergency and essential surgical care.

Activities	Verifiable Indicators	Target
Expand surgical speciality and sub-specialities	Specialty Training	
	Number of general surgeons trained	300 general surgeons
	Number of orthopaedic surgeons trained	200 orthopaedic surgeons
	Number of paediatric surgeons trained	70 paediatric surgeons
	Number of urology surgeons trained	50 urologists
	Number of neurosurgeons trained	50 neurosurgeons
	Number of plastic surgeons trained	24 plastic surgeons
	Number of ENT surgeons trained	50 ENT surgeons
	Number of ophthalmologists trained	50 ophthalmologists
	Number of maxillofacial surgeons trained	50 maxillofacial surgeons



Workforce: Goals and Objectives

Objective 3.1 Scale surgical, anaesthesia and nursing specialties, and emergency and essential surgical care.

Activities	Verifiable Indicators	Target
Expand surgical speciality and sub-specialities	Subs-specialty Training	
	Cardiothoracic surgery	10 cardiothoracic surgeons
	Breast reconstruction surgery	10 breast surgeons
	Colorectal surgery	10 colorectal surgeons
	Trauma and critical surgical care	10 trauma and critical care surgeons
	Vascular surgery	10 vascular surgeons
	Hepatobiliary and pancreatic surgery	10 hepatobiliary and pancreatic surgeons
	Transplant surgery	10 transplant surgeons
	Minimally invasive surgery	10 minimally invasive surgeons
	Surgical oncology	10 surgical oncologists
	Neurosurgery specialties (endovascular, functional neurosurgery, paediatric)	10 sub-specialist neurosurgeons
Expand anaesthesia specialties and sub-specialities	Anaesthesia Residency Programs	
	Number of anaesthesiologists	200 anaesthesiologists
	Number of non-physician anaesthesiologists (NPAs)	800 NPAs
	Number of critical care providers	53 critical providers



Workforce: Goals and Objectives

Objective 3.1 Scale surgical, anaesthesia and nursing specialties, and emergency and essential surgical care (EESC) training

Activities	Verifiable Indicators	Target
Expand anaesthesia specialties and sub-specialties	Anaesthesia Sub-Specialty Training	
	Paediatric anaesthesia	10 paediatric anaesthesiologists
	Local, regional anaesthesia, and pain management	10 pain management specialists
	Intensive and critical care	10 intensive and critical care specialists
	Cardiac anaesthesia and critical care	10 cardiac anaesthesiologists
Expand nursing training and speciality training	Number of perioperative care nurses	700 OB/Gyn service providers
	Number of medical-surgical nurses	3,200 medical-surgical nurses
	Number of critical care and trauma nurses	100 critical care and trauma nurses
	Number of neuro-critical care nurses	10 neuro-critical care nurses

Objective 3.1 Scale surgical, anaesthesia and nursing specialties, and emergency and essential surgical care (EESC) training

Activities	Verifiable Indicators	Target
Scale emergency and essential surgical care training through task sharing	Number of general practitioners appointed in surgical care (house officer in surgery)	4 house officers/district hospital and L2TH
	Number of NPAs trained	2000 NPAs
	Number of nurses and other health professionals trained for anaesthesia care (nurse anaesthetist)	500 nurse anaesthetists
Develop and implement standardized training programs for paramedics (including emergency resuscitation and basic surgical care)	Number of paramedics trained per year	200 paramedics per year
Ensure that maximum retention programs are established	Percentage of workforce retained per specialty	100% trained



Finance: Goals and Objectives

Finance

The Perioperative Healthcare Strategic Plan 2026-2030 prioritizes the expansion of surgical services under the Community-Based Health Insurance (CBHI) scheme as a core strategy for advancing UHC. By covering a broader range of essential and emergency surgical procedures, CBHI can significantly reduce out-of-pocket spending and ensure that cost is no longer a barrier to accessing timely surgical care.

To strengthen this financing model, the Perioperative Healthcare Strategic Plan 2026-2030 promotes the active involvement of the private sector through public-private partnerships (PPPs), and various domains, such as infrastructure and service delivery, will significantly benefit. These partnerships will support the accreditation and integration of private hospitals into the CBHI system, enabling them to deliver insured surgical services to a broader population. Increasing private facilities that accept CBHI not only expands geographical access to care but also relieves pressure on the public sector. Together, these approaches aim to build a more inclusive and sustainable financing system, one that leverages both public and private capacity to deliver equitable surgical care for all Rwandans.

Surgical Financing Strategy



OOP

Reduce out-of-pocket
spending on surgery

PPPs

Public-private
partnerships enabled

100%

Private hospitals eligible
for CBHI accreditation

Equitable

Surgical care for
all Rwandans

Goal: A sustainable, inclusive, financing system that leverages public and private capacity to deliver equitable care for all Rwandans

Finance Target Highlights

100%

Surgical services
covered by
CBHI

100%

Facilities with no
stock-outs

70%

Private hospitals
accepting CBHI

5

Climate smart
innovations

1

Emergency
disaster programs
funded

Finance Goals and Objectives

Table 5: Surgical financial investment goals, objectives, and activities

Domain: Finance

Strategic Goal 4: Expand and decentralize quality surgical services		
Objective 4.1 Improve the affordability of surgical services		
Activities	Verifiable Indicators	Target
Provide health facilities with an adequate supply of essential medications, consumables, and surgical services	Percentage of health facilities with no stock-out	100% of facilities with no stockout
To expand the surgical services covered by community-based health insurance	Proportion of surgical services covered by community-based health insurance	100%
Ensure Rwandans are protected against catastrophic and impoverishing expenditures due to surgical interventions	Proportion of the population protected against catastrophic expenses and impoverishing expenses	100%
Perform long-term financial and environmental cost-effectiveness analysis to guide policy and decisions	Number of policies and decisions guided by the cost-effectiveness analysis	3 innovative policies or guidelines for investing in the surgical ecosystem
Invest in disaster response funds for the development of trauma systems	Number of trauma systems and emergency programs that support disaster response operations and training	1 emergency disaster programs
Invest in innovations in the surgical system that impact climate change	Number of innovations in the surgical healthcare system that positively impact climate change, and the value of the return on the investment	5 innovations including: 1. Greener anaesthesia 2. Reusing, reducing, recycling consumables and instruments 3. Energy-efficient operating theatres and infrastructure 4. Sustainable procurement and supply-chain thinking (to reduce Scope 3 indirect emissions from the supply chain) 5. Green surgery checklists, culture and education



Finance Goals and Objectives

Objective 4.1 Improve the affordability of surgical services		
Activities	Verifiable Indicators	Target
Leverage the Loss and Damage Fund (LDF; COP27) to finance climate-resilient SOA	1. Amount of LDF resources mobilized for SOA sector 2. Number of surgical facilities upgraded or constructed with LDF support 3.% of investments meeting EDGE/green certification	1 approved LDF project towards sustainable SOA system.



Governance, Leadership and Research

Robust governance structures, strong leadership, and reliable data systems are crucial for guiding surgical policy and practice. Under the Rwanda Perioperative Healthcare Strategic Plan 2026-2030, Rwanda aims to strengthen its surgical information systems by establishing a centralized surgical data repository to support evidence-based decision-making. Key surgical indicators will be integrated into the national health management information system (HMIS) and electronic medical records platform to ensure harmonized reporting and accessibility across facilities.

To complement this, the strategic plan focuses on strengthening surgical research capacity. National surgical research hubs will be established to coordinate and support ongoing research initiatives. Surgical teams will benefit from training in research methodology and scientific writing to increase hospital-level participation in operational research. Regular knowledge-sharing forums and symposia will foster collaboration, peer learning, and dissemination of findings across the system. In addition, the plan supports the development of local policy briefs and operational research projects.

Digital health and technology offer Rwanda a unique opportunity to leapfrog constraints in surgical and anaesthetic care. Building on its existing strengths in digital health, Rwanda can integrate AI-assisted postoperative monitoring, expand telemedicine services for rural patients, digitize perioperative workflows, and establish real-time dashboards for informed decision-making. By embedding digital solutions into service delivery, workforce training, and governance, Rwanda can strengthen its position as a continental leader in digital-enabled surgical equity.



Governance, Research, and Leadership Goals and Objectives

Governance, Leadership & Research Target Highlights



Table 6: Governance, leadership, and research goals, objectives, and activities

Domain: Governance, Leadership, and Research

Strategic Goal 5: Improving surgical information systems and research		
Objective 5.1 Improving surgical information systems quality and research		
Activities	Verifiable Indicators	Target
Establish a centralized surgical data repository as part of Rwanda National Health Intelligence Centre to inform policy and practice	Percentage of hospitals reporting surgical data to the centralized repository	100%
Conduct regular surgical data quality assessments and feedback sessions	Number of data quality review meetings held annually	2/year
Train hospital staff in surgical data reporting	Number of trained staff in surgical data management	1/facility
Objective 5.2 Strengthening research capacity and learning platforms in surgery		
Establish national research hubs or focal points in teaching hospitals	Number of research hubs	1/tertiary hospital 1/L2TH
	Number of surgical research projects completed annually	200/year
	Number of research papers published	100



Governance, Research, and Leadership Goals and Objectives

Objective 5.2 Strengthening research capacity and learning platforms in surgery		
Activities	Verifiable Indicators	Target
Provide research methods and scientific writing training for surgical teams	Percentage of hospitals participating in research training	100%
Facilitate knowledge-sharing workshops and symposia on surgical systems	Number of national surgical research forums or workshops held per year	4 national surgical research forums
Support local operational research projects and policy briefs development	Percentage of surgical professionals completing continuing professional development (CPD)	100%
Accessibility of the grant to promote surgical practices and interventions	Number of grants won per specialty	1 grant per specialty per year
Conduct Life Cycle Assessment (LCA) research of different surgical procedures/products to serve as a policy decision support tool	Number of surgical procedures for which LCAs have been conducted, and their Global Warming Potential (GWP) and Primary Energy (PE) potential determined	80% of surgical procedures
Objective 3.3 Advance sustainable surgical care through supportive policies, innovation, and stakeholder collaboration.		
Establish a Technical Working Group to ensure continuous follow-up and effective implementation of sustainability measures in surgical healthcare.	Number of technical working group meetings convened, and follow-up reports produced on sustainability in surgical healthcare	1 technical working group per quarter
Develop policies that support and promote sustainability	Number and trajectory of government-supported sustainability measures in the surgical health system	100%



Governance, Leadership, and Research

The successful implementation of the Rwanda Perioperative Healthcare Strategic Plan 2026-2030 requires a robust governance structure, clear leadership mandates, and a research agenda driven by local priorities. This section outlines the multi-level governance framework, specifies key leadership roles, and details the strategic approach to embedding research and learning within the national surgical system.

National Governance Structure

To facilitate the implementation of the Perioperative Healthcare Strategic Plan 2026-2030, a multi-sectoral Technical working group will be established under the endorsement of the Ministry of Health's Department of Planning. The TWG will serve as the primary governing body for implementing the plan. This TWG will comprise senior representatives from the Ministry of Health (MoH) and national professional societies, including those in surgery, anaesthesia, and nursing, along with leadership from both public and private hospitals, with the authority to make policy decisions and allocate resources. Academic institutions and key development partners will also be included.

MoH

- Chair: HoD public and clinical services
- Heads of other relevant departments

National professional societies

- Rwanda Surgical Society (RSS)
- Rwanda Society of Anaesthesiologists and Critical Care (RSACC)
- Rwanda Society of Nurses and Midwives Council

Academic and teaching hospitals

- Representatives from the University of Rwanda College of Medicine and Health Sciences (UR-CMHS)
- Representatives from the University of Global Health Equity (UGHE)
- Chief Executive Officers (or Medical Directors) from the University Teaching Hospital of Kigali (CHUK) and Butare (CHUB), KingFaisal Hospital (KFH), and Rwanda Military Hospital (RMH)
- A regional representative from a level 2 teaching hospital (i.e., each province represented)
- A representative from the community health workers

Academic and teaching hospitals

- Senior representatives from 2 key implementing partners (e.g., WHO, UNICEF, key surgical NGOs like Operation Smile, Kids OR) on a 2-year rotating basis

Governance, Leadership, and Research

Governance of the Hub-and-Spoke Model

The hub-and-spoke model requires a distinct operational governance structure to ensure effective mentorship, quality control, and bidirectional communication between facilities.



Hub hospital leadership:

- Each designated tertiary hospital (hub) will establish a Surgical System Steering Committee, chaired by the Hospital CEO or Medical Director.
- This committee will include the heads of surgery, anaesthesia, nursing, and the hospital data manager.
- Responsibilities: Develop annual outreach and mentorship plans for their spoke hospitals; monitor the quality of surgical care within the network; manage the referral and counter-referral system for complex cases; and report on the network's performance to the TWG



Spoke hospital leadership:

- Each district or level 2 teaching hospital (spoke) will designate a Surgical Care Focal Person (e.g., a senior medical officer or surgeon).
- Responsibilities: Serve as the primary liaison with the hub, coordinate visiting specialist teams, implement quality improvement initiatives based on hub feedback, and ensure accurate collection and reporting of data on surgical outcomes.



Joint governance:

- Memorandum of Understanding (MoU): Formal MoUs between hubs and spokes will be established, clearly defining the roles, responsibilities, and expectations of each party, endorsed by the TWG.
- Quarterly performance reviews: Representatives from the hub and all its spokes will meet to review clinical outcomes, referral patterns, equipment functionality, and training needs, creating a closed-loop feedback system for the network

In accordance with its mandate, the technical working group will oversee the development of the National Perioperative Healthcare Research Agenda, which guides data generation, research priorities, and system innovation. A consultative meeting was scheduled in the first year of implementation to establish this agenda, engaging researchers, clinicians, health system experts, program managers, and community representatives. The objective was to produce evidence that directly informs implementation, identifies emerging challenges, and facilitates continuous quality improvement. The primary research areas encompassed access to surgical care, treatment delays, workforce challenges, surgical safety, and financial risk protection.

Governance, Leadership, and Research

Governance of National Perioperative Healthcare Research Agenda and Knowledge Management

This research agenda aims to advance the integration of core Perioperative Healthcare Strategic Plan indicators within both operational and academic research frameworks. Indicators such as surgical volume, perioperative mortality rate (POMR), referral turnaround time, and availability of essential procedures will be incorporated into hospital-based research and postgraduate training programs. Collaborations with universities, teaching hospitals, and non-governmental organizations will be fostered to include these indicators in clinical audits, quality improvement initiatives, and dissertation projects, thereby enhancing the national evidence base for strengthening surgical systems.

Integrating Research into Practice:



Research hubs: Tertiary and teaching hospitals will be supported to function as research hubs, integrating perioperative indicator tracking (e.g., perioperative mortality rate) into clinical audits and student research projects.



Spoke hospital leadership: Training in research methodology, data analysis, and scientific writing will be provided to surgical teams at all levels.



Knowledge dissemination: Findings will be shared through annual national surgical symposia, policy briefs, and peer-reviewed publications, ensuring that learning is captured and used to inform policy and practice.

Reporting and Dissemination of Perioperative Healthcare Plan Knowledge Products

To ensure transparency and stakeholder engagement, the TWG will disseminate annual reports encapsulating its governance activities, implementation progress, and research outcomes. The reports will be disseminated through policy briefs, online platforms, and technical working groups. By reinforcing leadership with a robust evidence-based culture, this governance model aims to cultivate a responsive, adaptive, and accountable system for surgical care in the country, thereby supporting a long-term vision of universal access to safe, timely, and affordable surgical services.

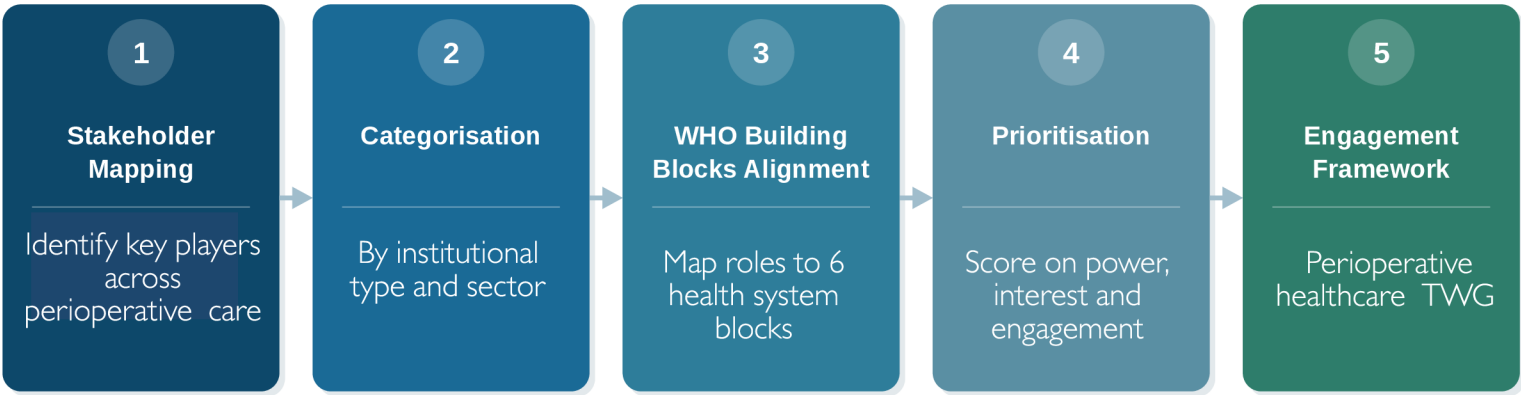
Stakeholder Analysis and Role Definition

To support the development of the Rwanda Perioperative Healthcare Strategic Plan 2026-2030, a comprehensive stakeholder mapping exercise was conducted to identify and categorize key players involved in perioperative healthcare in Rwanda. This initiative aimed to ensure inclusive engagement and strategic alignment across various sectors. Stakeholders were categorized by institutional type, including universities, government entities, non-governmental organizations and civil society organizations, professional societies, and public-private partnerships. Each was evaluated based on its contribution to one or more of the WHO’s six health system building blocks. The stakeholders’ roles were then aligned with one or more of the health systems’ building blocks to emphasize their functional significance. This initial mapping provided a structured overview of the institutional landscape that shapes surgical care. To enhance engagement strategies, a consensus-building process was undertaken to prioritize stakeholders using five key criteria: their knowledge of national surgical healthcare planning, level of support, priority for engagement, current involvement, and decision-making power. A ‘level of power over level of interest’ chart was created.

Following this assessment, stakeholders were categorized into four main groups: the Ministry of Health and its affiliated bodies; academic institutions and teaching hospitals (both tertiary and Level 2); and non-governmental organizations and civil society groups that represent patients and local communities (Table 7).

The process of stakeholder engagement, with clearly defined roles and responsibilities, will be spearheaded by perioperative Technical Working Group, which will ensure that engagement is not merely a formal exercise but a dynamic, results-oriented process. In the short term, this structure will help to mobilize stakeholders around immediate priorities such as resource allocation, training, infrastructure readiness, and regulatory alignment. Over the long term, the same mechanisms will foster sustained collaboration, accountability, and knowledge exchange among diverse actors, thereby supporting the full implementation of the strategic plan and ensuring proper follow-up of planned activities.

Stakeholder Engagement Process



Stakeholder Analysis and Role Definition

Table 7: Stakeholders' Institution Categories

Category	Institution Name
Ministry of health and its affiliated bodies	Rwanda Biomedical Central
	Rwanda Social Security Board
	Rwanda Medical Supply Ltd.
	Rwanda Food and Drug Authority
Universities and Hospitals	University of Rwanda
	University of Global Health Equity/Centre for Equity in Global Surgery*
	University Teaching Hospital of Kigali
	University Teaching Hospital, Butare
	King Faisal Hospital/Africa Health Science University*
	Level II teaching Hospitals and District Hospitals
	The College of Surgeons of East Central and southern Africa
	Rwanda Military Referral and Teaching Hospital
Professional societies	Rwanda Surgical Society
	Rwanda Medical and Dental Council
	Rwanda Nurses and Midwives Union
	Rwanda Society of Anaesthesia and Critical Care
	Rwanda Association of Non-Physician Anaesthetists
	Rwanda Allied Health Professions Council

Monitoring Plan

A robust Monitoring and Evaluation (M&E) framework is essential for tracking the progress of the Rwanda Perioperative Healthcare Strategic Plan 2026-2030, ensuring accountability, facilitating learning, and enabling evidence-based adaptations throughout its implementation. This M&E plan outlines a systematic approach to data collection, analysis, dissemination, and utilization, ensuring the plan remains a dynamic and effective tool for strengthening Rwanda's surgical system.

M&E Framework and Frequency

The M&E system will operate at three levels, each with a defined frequency to ensure timely information flow:



Annual Monitoring: Comprehensive data collection against all verifiable indicators (listed below) will occur annually. This will provide a standard yearly snapshot of progress and serve as the basis for the Annual Rwanda Perioperative Healthcare Strategic Plan Progress Report.



Biannual Review Meetings: TWG will convene every six months to review interim progress reports, analyse emerging data, and address implementation bottlenecks. These meetings are critical for making mid-course corrections.



Real-Time Data Integration: Key process indicators (e.g., surgical volume, checklist compliance) will be integrated into the HMIS/EMR platform for near real-time tracking by hospital managers and district health teams, enabling immediate local-level action. The long-term objective is to integrate these indicators into Rwanda's national health outcome metrics and digital reporting platforms.

The M&E system will employ the following metrics to benchmark progress and identify barriers to implementing the Rwanda perioperative healthcare strategic plan.

Core Indicators and Monitoring Schedule

Indicators are aligned with the strategic goals and objectives of the Rwanda Perioperative Healthcare Strategic Plan 2026-2030. The following table outlines the key indicators to be monitored, their frequency, data sources, and responsible entities.

Monitoring Plan

Table 8: Core indicators for monitoring perioperative healthcare strategic plan

Indicators	Definition	Frequency of monitoring	Data source
2 hours access	The proportion of the population that can access, within 2 hours, a facility capable of conducting the three bellwether procedures	Per year	HMIS/EMR
Surgical Volume	The number of procedures done in an operating theatre, per 100,000 population per year	Per year	HMIS/EMR
Total patients currently on waiting list	Monthly count of patients waiting for surgery, calculated as D1 (waiting < 1 month) + D2 (waiting > 1 month), including Major/Minor disaggregation	Monthly	HMIS
Total patients on waiting list < 1 month	Monthly count of patients waiting for surgery for less than one month	Monthly	HMIS
Proportion of the waiting list who are short wait (< 1 month)	This indicator measures the proportion of the surgical waiting list whose waiting time is less than one month. Each month it is calculated by dividing the number of patients waiting under one month (D1) by the total number of patients on the waiting list (D1 + D2) and expressing the result as a percentage	Monthly	HMIS
Proportion of waiting list > 1 month (at-risk backlog)	Monthly percentage of the surgical waiting list with wait > 1 month. Numerator = D2; Denominator = D1 + D2	Monthly	HMIS
SOA/100,000	The number of specialist surgical, obstetric, and anaesthesia (SOA) physicians/providers who are working per 100,000 population	Per year	HMIS/EMR
POMR tracking	The Perioperative Mortality Rate (POMR) is the number of all-cause deaths (intraoperative + postoperative) within 30 days of a procedure divided by the total operative volume.	Per year	HMIS/EMR
Catastrophic expenditures Protection	The proportion of the population is at risk of catastrophic expenditure if they require a surgical procedure	Per year	RSSB



Monitoring Plan

Indicators	Definition	Frequency of monitoring	Data source
Impoverishing expenditures protection	The proportion of the population at risk of falling below the poverty line due to paying for surgical care	Per year	RSSB
Intra-operative mortality rate	Deaths occurring in the operating room during the surgical procedure	Monthly	HMIS/EMR
Perioperative mortality rate (POMR)	All-cause mortality during surgery or within 30 days of a surgical procedure (any cause).	Monthly	HMIS/EMR EMR/registers
Post-operative mortality (30-day)	Deaths occurring within 30 days following a surgical procedure, regardless of cause	Monthly	HMIS/EMR EMR/registers
Return to theatre within 24 hours	Unplanned re-operations within 24 hours of index surgery	Monthly	HMIS/EMR
Surgical site infection (SSI) rate	Proportion of operations complicated by SSI within 30 days (or 90 days if implant)	Monthly	HMIS/EMR EMR/registers
Transfusion reaction rate	Rate of adverse transfusion reactions among surgical patients	Monthly	HMIS/EMR EMR/registers
Unplanned readmission within 30 days (surgery)	Readmissions to the hospital within 30 days related to the index surgical admission	Monthly	HMIS/ EMR/registers
Average length of stay (surgical)	Mean length of stay for surgical inpatients (days)	Monthly	HMIS/ EMR/registers
Operating room utilization rate	Percentage of scheduled OR time used for patient cases.	Monthly	HMIS/ EMR/registers
Prophylactic antibiotic timing compliance	Antibiotic given within 60 minutes prior to incision (120 min for vancomycin/fluoroquinolones).	Monthly	HMIS/ EMR/registers
Surgical bed occupancy rate	Average daily occupancy of surgical ward beds.	Monthly	HMIS/ EMR/registers
Surgical cancellation rate (day-of-surgery)	Share of elective surgeries cancelled on the day of surgery.	Monthly	HMIS/ EMR/registers



Monitoring Plan

Table 9: Rwanda perioperative healthcare strategic plan 2026-2030 monitoring and evaluation framework

Objective	Key Performance Indicator (KPI)	Baseline (2024/25)	2030 Target	Freq.	Data source	Responsible Entity
Goal 1: Strengthen Infrastructure & Readiness						
Obj 1.1: Expand OR capacity	Number of functional operating rooms (ORs) per 100,000 population	0.9	12	Annual	MoH Infrastructure Registry	MoH (Planning Unit)
Obj 1.1: Readiness of essential surgical equipment items reported as functional	The proportion of essential surgical equipment is functional	NA	100%	Annual	HMIS	Hospitals, MoH M&E, RBC MTD
Obj 1.1: Expand ICU capacity	Number of functional ICU beds	62	800	Annual	Hospital reports, MoH	MoH Clinical Services
Obj 1.2: Improve diagnostic access	Number of hospitals with a CT scanner	4	15 (All L2THs and Tertiary Hospitals)	Annual	Equipment audit reports	RBC/ RFDA
Goal 2: Expand & Decentralize Services						
Obj 2.1: Decentralize surgical care	% of District Hospitals performing all three bellwether procedures	60%	100%	Annual	HMIS (surgical volume data)	Hospitals, RBC
Obj 2.1: Implement Hub-Spoke model	Number of functional Hub-Spoke partnerships established	0	10	Annual	Program activity reports	Tertiary hospitals, MoH
Obj 2.2: Improve affordability	% of population protected from catastrophic expenditure for surgery	90%	100%	Biennial	Household health surveys	NISR, RSSB



Monitoring Plan

Objective	Key Performance Indicator (KPI)	Baseline (2024/25)	2030 Target	Freq.	Data source	Responsible Entity
Goal 3: Strengthen Workforce						
Obj 3.1: Scale specialist training	Density of SOA specialists per 100,000 population	3	20	Annual	HRH Registry, professional councils	MoH (HRH unit), UR/ CMHS
Obj 3.1: Scale task-sharing	Number of certified non-physician anaesthetists (NPAs)	600	2000	Quarterly	HMIS	Moh, HWD, and hospitals
Goal 4: Improve Info Systems & Research						
Obj 4.1: Strengthen data systems	% of hospitals reporting complete surgical data to HMIS	(To be set)	> 90%	Quarterly	HMIS/ EMR reports	MoH M&E Unit, Digital MoH
Obj 4.2: Enhance research	Number of peer-reviewed surgical system publications by Rwandan first authors	N/A	100	Annual	Publication Databases	RSS, academic institutions
Goal 5: Ensure timely, equitable, and safe surgical care						
Obj 5.1: Increase timely access to essential surgery by reducing the proportion of patients waiting >1 month to below X% within 5 years	Proportion of the waiting list who are short-wait (<1 month)	N/A	10%	Annual	HMIS	Hospital, MoH, CPHS, MoH-M&E



Data Dissemination and Learning Strategy

Collecting data is only valuable if it is effectively communicated and used to inform decision-making. We will employ a multi-tiered dissemination strategy:

Rwanda Perioperative Healthcare Strategic Plan Annual Progress Report: A comprehensive report will be published annually, summarizing progress against all targets, highlighting successes, analysing challenges, and outlining key lessons learned. This report will be publicly available on the Ministry of Health website.

Biannual policy briefs: Concise, actionable policy briefs will be produced for senior MoH leadership and partners after each Biannual Review Meeting. These briefs will focus on immediate recommendations for addressing bottlenecks.

Integrated national reporting: Rwanda Perioperative Healthcare Strategic Plan indicators will be incorporated into the annual HSSP V Joint Review Mission and the Health Statistics Yearbook, ensuring surgery is visible in national health reporting.

Knowledge-sharing platforms: Findings will be disseminated through:

National Surgical Symposium

An annual conference to present research, share best practices, and foster collaboration among clinicians, researchers, and policymakers.

Digital Platforms

Dedicated sections on the MoH and Rwanda Surgical Society websites and newsletters will share updates and success stories.

Technical Working Groups

Regular meetings of clinical TWGs will use the data to inform clinical policy and training guidelines.

Feedback Loops for Adaptive Management

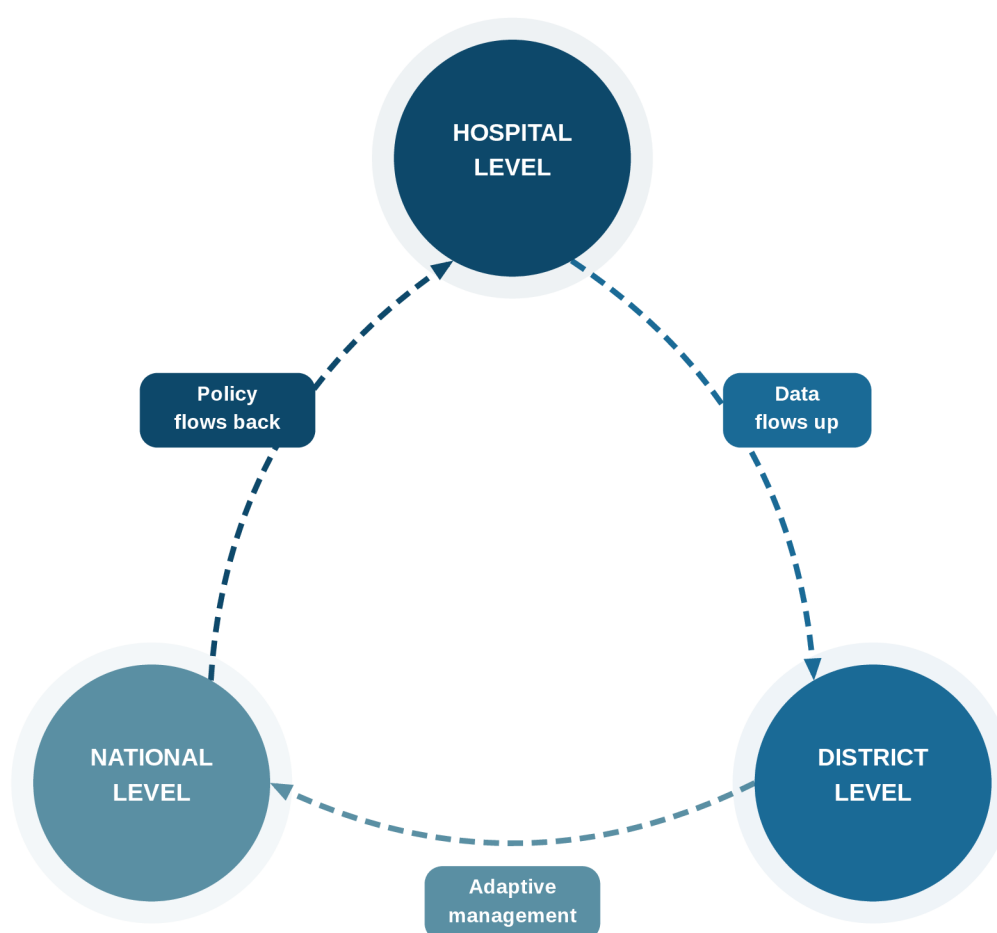
The M&E system is designed to be a learning tool, not just a reporting exercise. The following feedback loops will ensure data informs implementation:

Hospital to district level: Real-time HMIS data on surgical volumes and outcomes will enable hospital managers to promptly identify and resolve local issues (e.g., equipment breakdowns, supply stockouts).

District to national level (biannual reviews): Surgical technical working group biannual review meetings are the primary forum for adaptive management. Progress data will be presented, and TWG is empowered to:

- Reallocate resources to underperforming areas.
- Revise strategies or timelines based on evidence.
- Address systemic barriers identified through the data.

From national to hospital level: Policy changes and guidance issued by the MoH as a result of annual and biannual reviews will be formally communicated to all facilities, ensuring that learning leads to action across the entire system.



Financing the Perioperative Strategic Plan

Rwanda's Perioperative Healthcare Strategic Plan (RPHS) 2026-2030 is designed to be integrated, catalytic, and sustainable. Instead of functioning as a standalone, vertically funded initiative, it will be primarily financed by aligning with existing national health financing streams. Targeted external investments will supplement surgical-specific activities, enabling access to funding for infrastructure, workforce development, and service delivery. This approach promotes sustainability, avoids duplication, and enhances the overall impact of health sector investments.

The investment will be mobilized through a blended finance model with four primary pillars:



Integrated National Financing: The investments will be embedded within existing government and partner health system programs, ensuring alignment with Universal Health Coverage (UHC).

- **HSSP V alignment:** Funding integrated across infrastructure (ORs, ICUs), workforce (training through the 4×4 Health Workforce Reform), and service delivery (expansion of surgical services at district hospitals and medicalized health centres).
- **CBHI:** Expansion of the surgical benefits package financed through Community-Based Health Insurance.
- **National program synergies:** Co-financing through related strategies, including the NCD strategy (cancer screening and surgery), EMS expansion (ambulance coverage), and investments in oxygen and blood transfusion services.

Targeted external investment and public-private partnerships: Focused external financing will support activities that require specialized expertise, capital, or accelerated scale-up.

- **Surgical infrastructure and equipment:** Partnerships to support the design, equipping, and maintenance of operating theatres and essential surgical equipment.
- **Workforce development:** Targeted scholarships and partnerships to expand specialty training and fellowships in priority surgical fields.
- **Public-private partnerships (PPPs):** Collaboration with private providers to expand surgical service delivery capacity and strengthen equipment maintenance systems.

Financing the Perioperative Strategic Plan

Innovative and blended finance mechanisms: New financing approaches will be explored to strengthen long-term sustainability and reduce reliance on traditional donor funding.

- **Development impact financing:** Mobilizing upfront capital from investors with repayments linked to verified health outcomes.
- **Surgical equity fund:** Establishing a national fund to attract government, donor, philanthropic, and diaspora investments for surgical innovation, research, and technology adoption.
- **Health-promoting taxes:** Potential earmarking of revenues from taxes on harmful products to support surgical system strengthening and NCD-related care.

Targeted external investment and public-private partnerships: Focused external financing will support activities that require specialized expertise, capital, or accelerated scale-up.

- The government of Rwanda, through the Ministry of Health, will provide a direct budgetary allocation for the core coordination, governance, monitoring, evaluation, and secretariat functions of the Perioperative Healthcare Strategic Plan 2026-2030. This demonstrates national ownership and ensures accountability for the implementation of the plan. This funding will also cover essential activities not covered by other streams, such as national surgical audits and maintaining the surgical data repository.

Perioperative Healthcare Strategic Plan Cost

The Perioperative Healthcare Strategic Plan 2026-2030 costing plan was formulated to align with the nation's overarching health objectives, outlined in the Health Sector Strategic Plan 5. Acknowledging the critical role of perioperative services in mitigating preventable mortality and enhancing population health, this cost plan outlines the financial investments necessary to expand and sustain essential SOA care at all levels of the healthcare system.

The cost methodology was predicated on the HSSP V framework. The unit costs for services, equipment, training, supervision, and other inputs were derived from expert consensus and multiplied by the estimated quantities based on needs and service delivery targets. Considering that the HSSP V is currently being implemented and is based on various consultative meetings, numerous activities highlighted herein are already underway. The cost of Perioperative Healthcare Strategic Plan will be entirely managed by the Ministry of Health (MoH).

Table 10: Rwanda perioperative healthcare strategic plan 2026-2030 Costing

Domain	2026 (USD)	2027 (USD)	2028 (USD)	2029 (USD)	2030 (USD)	Total (USD)	% of PHSP to HSSP
Infrastructure	5,468,322	3,367,258	3,449,606	3,370,467	1,789,485	17,779,345	1.0%
Service Delivery	5,397,253	5,602,348	5,815,258	6,036,217	6,265,650	29,116,650	2.3%
Workforce	5,495,003	5,703,813	5,920,558	6,145,539	1,979,069	29,643,984	3.2%
Information, Management & Technology	303,524	315,058	327,030	339,457	352,356	1,637,427	0.7%
Governance	27,283	30,080	35,945	40,881	50,890	185,082	5.7%
Finance	18,512	19,216	19,946	20,740	21,490	99,870	2.2%
TOTAL	16,709,899	15,037,775	15,568,325	16,287,470	14,858,888	78,462,359	1.83%

All figures in USD. Source: Rwanda Perioperative Healthcare Strategic Plan 2026-2030 Costing Plan.

78.5M USD

The total cost of the Perioperative Healthcare Strategic Plan (2026-2030).

1.89%

This total percentage cost of Perioperative Healthcare Strategic Plan of the total budget of the HSSP V.

Collaborators

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