National Surgical Care Strategic Plan: Saving Lives Through Safe Surgery II (SaLTS II)

2021–2025

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Abbreviations

APTS- Auditable Pharmaceutical Transactions and Services
ARM- Annual Review Meeting
CED- Chief Executive Director
CME- Continuous Medical Education
CPD- Continuous Professional Development
CRCP- Curative and Rehabilitation Core Processes
CSD- Central Sterilizing Department
CSR- Central Sterilization Room
DHIS- District Health Information System
ECCD- Emergency and Critical Care Directorate
EDHS- Ethiopian Demographic Health Survey
EESC- Emergency and Essential Surgical Care
EHAQ- Ethiopian Hospitals Alliance for Quality
EHSTG- Ethiopian Hospital Service Transformation Guideline
EHSTP- Ethiopian Health Sector Transportation Plan
EPHAQ- Ethiopian Primary Healthcare Alliance of Quality
e-LMIS- Logistics Management Information System
EMR- Electronic Medical Record
ENT- Ear, Nose, Throat
HIT- Health Information Technology
HRIS- Human Resource Information System
HMIS- Health Management Information System
HPMI- Hospital Performance Monitoring and Improvement
HSTP- Health Sector Transformation Plan
HSTQ- Health Service Transformation in Quality
HSQD- Health Service Quality Directorate
IESO- Integrated Emergency Surgery Officer
KPI- Key Performance Indicators
LCoGS- Lancet Commission on Global Surgery
LMIC- Low and middle Income countries
M and E- Monitoring and Evaluation
MEL- Monitoring, Evaluation and Learning
MEMIS- Medical Equipment Management Information System
MoH-Ministry of Health
MSGD- Medical Service General Directorate
NHAs- National Health Accounts
NGO- Non-Governmental Organization
OR-Operation Room
OT- Operation Theater
PACU- Post-anesthesia Care Unit
POMR- Perioperative Mortality Rate
PPP- Public-Private Partnerships
RHB- Regional Health Bureaus
SaLTS-Saving Lives Through Save Surgery
SARA- Service Availability and Readiness Assessment
SASD- Surgical and Anesthesia Service Directorate
SMT- Senior Management Team

SOP- Standard of Procedure
SSC- Surgical Safety Checklist
SSI- Surgical Site Infection
SWOS- Scheduling Management System
SWOT- Strengths, Weaknesses, Opportunities and Threats
ToT- Training of Trainers
WHO- World Health Organization
WISNs- Workload Indicators for Staffing Needs

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Foreword

In 2016, responding to the World Health Assembly resolution (WHA 68/15), Ethiopia has designed the Saving Lives Through Safe Surgery (SaLTS) initiative to make essential and emergency surgical and anesthesia care accessible and affordable as part of the universal health coverage. The initiative was required to reorganize all efforts towards defining a package of essential and emergency surgical care to be available at all levels of the health care delivery system to be accessed equitably by all segments of the population. To further the initiative, the five-year strategy has been launched and executed at all levels of health care delivery by collaborating with all state and non-state actors.

The SaLTS initiative was very helpful in making Essential and Emergency Surgical Care (EESC) a priority at all healthcare system levels. As a result, a team dedicated to coordinating and leading the initiative has been established in the Ministry of Health (MoH), and subnational structures have also created similar structures. In the facilities, the SaLTS committee has been established to guide the surgical services quality improvement in respective facilities. During its implementation period, the workforce training has been expanded and significant numbers of the surgical workforce have been graduated and deployed. Hundreds of primary hospitals have been built and begun to provide the EESC. In addition, there was also a remarkable move towards bringing the EESC to the Primary Health Care Units (PHCU), specifically health centers, evidenced by the construction of 420 operation blocks in health centers throughout the country. However, only about 44 health centers with operation blocks are functional. During this period, the surgical safety and quality matrix has been incorporated into the routine data system, and the performance has been tracked accordingly. The safe surgery checklist has been adopted and introduced in all

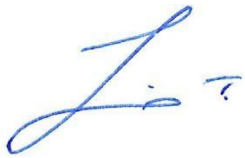
facilities, and its implementation was regularly monitored. Informed of the end-term evaluation result and the global evidence base on improving EESC access, safety, and quality, the MoH initiated the development of the second National Surgical Care Strategic Plan, SaLTS-II, to better lead and coordinate the initiative. The development process followed the participatory approach involving the professional associations, academia and facilities, NGOs, and different directorates in the health ministry.

This strategy aims to reduce surgical-related morbidity and mortality by improving equitable surgical access, efficiency, effectiveness, safety, and people-centeredness of safe surgical care. To achieve the ambitious goal, about 93 interventions have been proposed. The strategy has 13 targets, and its implementation will be monitored continuously. However, the midterm and end- term evaluation will be conducted by an external evaluator.

The MoH extends its strong dedication to improving surgical care in Ethiopia by launching this strategic plan. As a flagship initiative, SaLTS will receive the highest level of attention from the health sector leadership in the times of the HSTP-II execution.

I want to take this opportunity to extend my sincere gratitude to all people and organizations who have keenly participated in the development of this strategic plan.

Looking forward to working with you all on the successful implementation of the strategy.



Lia Tadesse MD, MHA
Minister of Health

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Executive Summary

The National Surgical Care Strategic Plan, Saving Lives Through Safe Surgery II (SaLTS II) 2021–2025, is a continuation of the previous National Surgical Care Strategy (2016–2020). The approach for preparing this strategy document was informed by the previous surgical care strategy implementation. Based on the lessons gathered from the previous National Surgical Care Strategy evaluation, the current National Surgical Care Strategy document establishes a transparent and participatory development process involving various directorates in the Ministry of Health (MoH) and agencies, professional associations, partners, and health facilities.

The development process involved several teams: the strategic plan development and writing team, primarily responsible for the overall drafting of the strategic plan and write up of the document; the technical review team, consisting of members from professional societies and development partners; and key government stakeholders review team who are representatives of relevant directorates in the MoH, who provided technical inputs through consultative workshops and regular meetings.

Extensive consultation of both national and global documents on surgical care informed the formulation of the Ethiopian surgical care framework. Based on the framework, analysis of the state of surgical care in Ethiopia, Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis, and stakeholder analysis were conducted.

The strategy aims to continually improve health outcomes and confidence in the surgical system through the realization of five objectives: (1) ensure equitable access to safe surgical and anesthesia care in Ethiopia, (2) improve efficiency of surgical systems in Ethiopia, (3) improve effectiveness of surgical systems in Ethiopia, (4) improve people-centered surgical care in Ethiopia, and (5) reduce harm arising from surgical care provision in Ethiopia. For all objectives, major activities and targets were prepared. The strategy includes 27 interventions, 93 major activities, and eight targets.

An implementation plan and a detailed monitoring and evaluation plan—with a simplified monitoring and evaluation framework—were prepared. In addition, a detailed operational plan was prepared that delineates when, who, and how the major activities will be tracked and measured. Budgets for each strategic objective and major activity were prepared: a total of 3,209,184,293 ETB (US$69,7641,876) is needed to execute the strategic plan.

Finally, integration of this strategic plan with other technical programs was suggested to facilitate the successful implementation of the National Surgical Care Strategy (2021–2025).

Introduction

Background

Globally, around five billion people lack access to safe, affordable, and timely Emergency and Essential Surgical Care (EESC), leading to preventable mortality and morbidity and avoidable disability and deformity. In 2005, as part of its newly launched initiative to increase access to EESC, the World Health Organization (WHO) published guidelines for cost-effective surgical care interventions, and released a situational analysis tool to assess the availability of EESC and needed inputs at the health facility level in low- and middle-income countries (LMICs). The initiative helped to galvanize global commitment, successfully advocate for the inclusion of EESC in universal health coverage packages, and convene member countries to prioritize surgical care in their national health strategy plans.[1,2]

Improving delivery of EESC in LMICs will require measuring access in terms of capability, capacity, timeliness, safety, and affordability. To support this effort, the Lancet Commission on Global Surgery (LCoGS) identified the follo1wing targets to be achieved by 2030: (1) 80% coverage of essential surgical and anesthesia services per country, (2) at least 20 surgical, anesthesia, and obstetric physicians per 100,000 populations, (3) 5,000 procedures annually per 100,000 populations, and (4) 100% protection against catastrophic expenditure from out-of-pocket payments for surgical and anesthesia care.

The Saving Lives Through Safe Surgery (SaLTS) program (2016–2020), Ethiopia's safe surgery strategic plan, was created to address the huge unmet need for basic surgical care services. The proposed surgical care strategy is well aligned with global and local recommendations, including recommendations by the WHO, the government of Ethiopia's Health Sector Transformation Plan (HSTP) and quality strategy. In line with the country's vision to assure quality and equity of health care, and as part of recognizing the key role that EESC can play in meeting universal health coverage goals, Ethiopia prioritized surgical and anesthesia services as part of the comprehensive primary health care package. The SaLTS II program will remain the national flagship initiative, and will stimulate support from health

[1]World Health Organization (WHO). Surgical care systems strengthening: developing national surgical, obstetric and anesthesia plans. Geneva, 2017;33–38. ISBN 978-92-4-151224-4.

[2]Spiegel DA, Abdullah F, Price RR, Gosselin RA, Bickler SW. World Health Organization Global Initiative for Emergency and Essential Surgical Care: 2011 and beyond. *World Journal of Surgery*. 2013 Jul; 37(7):1462–1469.

leaders and other key stakeholders involved in expanding access to safe surgical care in Ethiopia.[3,4]

This strategy has been instrumental in defining and standardizing the minimum care package needed to expand emergency and essential surgical and anesthesia care. The five strategic objectives are: (1) ensure equitable access to safe surgical and anesthesia care in Ethiopia, (2) improve efficiency of surgical systems in Ethiopia, (3) improve effectiveness of surgical system in Ethiopia, (4) improve people-centered surgical care in Ethiopia, and (5) reduce harm arising from surgical care provision in Ethiopia. Following the call for action in 2015, the LCoGS formulated six metrics to enable countries to measure their surgical and anesthesia care delivery (see Table 1). These surgical and anesthesia care delivery indicators were subsequently accepted by the World Bank for inclusion in the World Development Indicators. They have also been included in the WHO 100 Core Health Indicators. The indicators will be crucial for Ethiopia to measure outcomes of surgical and anesthesia care delivery separately from other indicators, and can be tailored to the Ethiopian context.

Table 1: Surgical and anesthesia care delivery indicators

Indicator	Target
Access to timely essential surgery	A minimum of 80% coverage of essential surgical and anesthesia services per country by 2030
Specialist surgical workforce density	100% of countries with at least 20 surgical, anesthesia, and obstetric physicians per 100,000 population by 2030
Surgical volume	5,000 procedures annually per 100,000 population by 2030 as a measure of met need for surgical and anesthesia care
Perioperative mortality rate (POMR)	80% of countries by 2020 and 100% of countries by 2030 tracking POMR
Protection against impoverishing expenditure	100% protection against impoverishment from out-of-pocket payments for surgical and anesthesia care by 2030

Rational and Scope of the Strategic Plan

Provision of essential surgical care is among the most cost-effective of all health interventions and would avert about 1.5 million deaths each year, or 6%–7% of all preventable deaths in LMICs. In general, the large burden of surgical disorders, cost-effectiveness of essential surgery, and strong public demand for surgical care suggest that financing essential surgical

[3]Ministry of Health of Ethiopia. National Safe Surgery Strategic Plan: Saving Lives Through Safe Surgery (SaLTS) Strategic Plan, 2016–2020. Addis Ababa, Ethiopia, 2016.

[4]Tadesse H, Sibhatu M, Maina E, Bari S, Reynolds C, Richards K, Garringer K. *Savings Lives Through Safe Surgery in Ethiopia: Project Implementation Manual*. Addis Ababa, Ethiopia, 2019.

care along the path to universal health coverage is a wise decision. It would efficiently and equitably provide health benefits and financial protection and would contribute to the development of stronger health systems and the provision of high-quality health care in the nation.

The previous SaLTS strategy focused only on emergency and essential surgical services. However, a recent estimated cost analysis by the MoH demonstrated that the cost of annual outflow from Ethiopia due to medical tourism exceeds US$100 million and implies a high degree of opportunity cost that could be saved and instead brought into the country by making high-end tertiary health services available. Thus, it is more than justifiable to include certain specialty and subspecialty surgeries to be delivered at the community level in selected health care facilities based on feasibility, which would result in a significant economic gain for the country.

Ethiopian Context

Geography and Climate

Ethiopia is located in the North-Eastern part of Africa, also known as the Horn of Africa. It is bordered by Sudan and South Sudan 4pon the west, Eritrea and Djibouti on the northeast, Somalia on the east and southeast, and Kenya on the south. The country occupies an area of 1.1 million square kilometers (sq. km) and bodies of water occupy 7,444 sq. km. Ethiopia is a country with rich geographical diversity. It consists of rugged mountains, flat-topped plateaus, deep gorges, and river valleys. Its erosion, volcanic eruptions, and tectonic movements over the ages have contributed to the nation's diverse topography. More than half of the geographic area of the country lies 1,500 meters (m) above sea level. The highest altitude is at Ras Dashen (4,620 m above sea level), and the lowest is at Danakil (Dallol) Depression (148 m below sea level).

Ethiopia's climate is naturally conditioned and varies greatly across its territories. It comprises all types of climate conditions, temperate on the plateau and hot in the lowlands. Although the country lies within the tropics, its proximity to the equator is counterbalanced by the elevation of the land. The climate in the greater part of Ethiopia is temperate; however, in places below 1,200 m (3,937 feet), the conditions are tropical. In Addis Ababa, the country's capital, elevation ranges from 2,200 to 2,600 m (7,218 to 8,530 feet) and the temperature is typically between 26°C (78.8°F) and 4°C (39.2°F). The weather is usually sunny and dry, but the short (*belg*) rains occur from February to April and the large (*meher*) rains from mid-June to mid-September.

Demographic Profile

Ethiopia is the second most populous country in Africa, following Nigeria, with an estimated population of 110 million people. It is growing fast as compared to the last national census in 2007. This significant growth in the country's population is also directly related to the demand for national medical care, including surgical care.[5]

Conceptual Framework

The surgical care conceptual framework illustrates the key system inputs, processes, as well as possible outcomes and impacts perceived to be achievable by implementing this strategic plan in Ethiopia. It uses the six-plus WHO health systems building blocks as input and the seven intervention pillars as the process to achieve the desired outcome (reduce surgical care-related morbidity and mortality) in Ethiopia.

[5] Ministry of Health of Ethiopia. Health sector transformation plan II. July 2020.

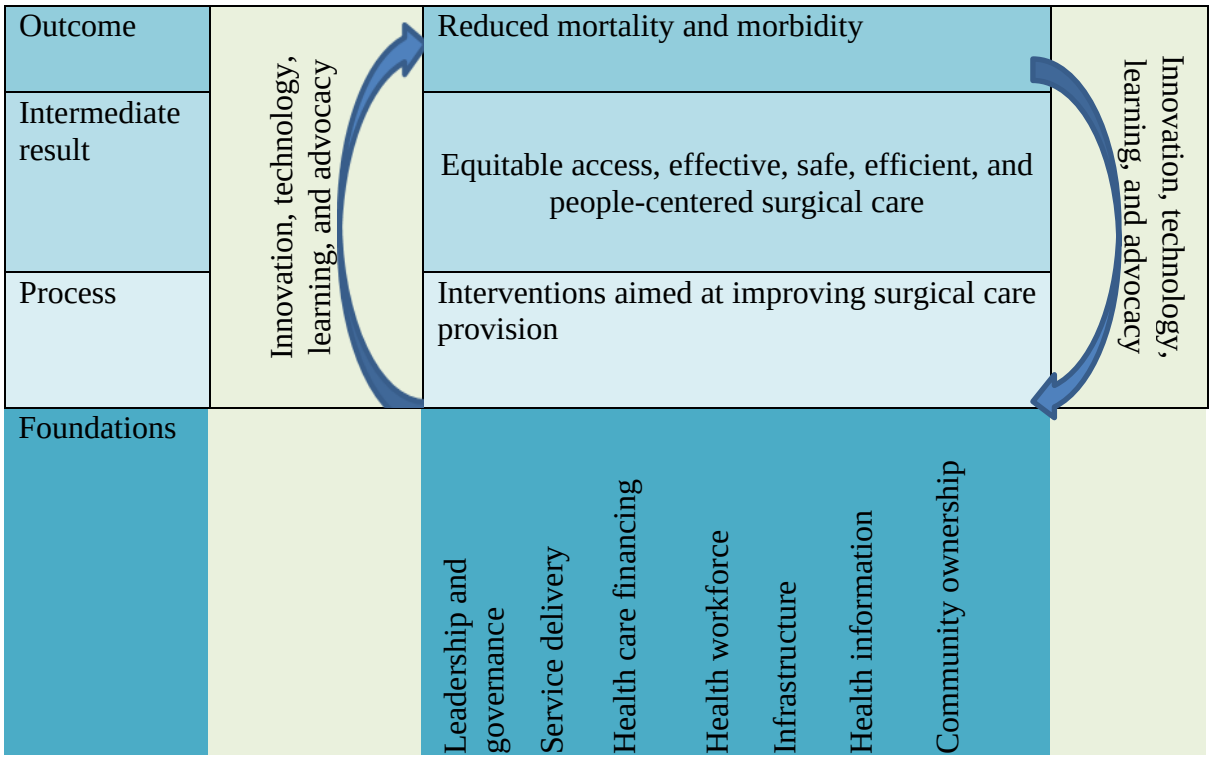


Figure 1: Conceptual framework for strategy development

Table 2: Key domains of the framework

Domain	**Description**
Reduced mortality and morbidity	The reduction of death and morbidity due to surgical care-related illness
Equitable access	Equitable access to essential surgical and anesthesia care regardless of background such as geography, ethnicity, and religion
Effective care	Evidence-based care consistent with current professional knowledge
Efficient	Reduces waste
Safe	Reduces surgical care-related harm
People-centered	An approach to care that consciously adopts the perspectives of individuals, families, and communities, viewing them as both participants and beneficiaries of trusted health systems that respond to their needs and preferences in human and holistic ways
Leadership and governance	A well-structured, effective, and accountable leadership and management system at all levels of the health care system
Health workforce	A well-trained surgical workforce with a professional mix
Healthcare financing	The mobilization, accumulation, and allocation of money to cover the health needs of the people, individually and collectively, in the health system

Infrastructure	All the physical infrastructure, nonmedical equipment, transport, and technology infrastructure (including information and communication technologies) required for effective service delivery
Community ownership	The allowance a community to influence the surgical systems operation and enjoy the benefits arising.

Situational Analysis

This section addresses the current status of surgical service in relation to health care quality. It analyzes the internal and external environments to understand the capabilities, service consumers, and overall environment in the implementation of SaLTS II. The situational analysis employs the Strengths, Weaknesses, Opportunities, and Threats (SWOT) method, using strengths and weaknesses to evaluate the internal situation and opportunities, and using threats to look for external factors that can influence the implementation of SaLTS II either directly or indirectly.

Surgical Care Outcomes

Reducing mortality, suffering, and disability attributed to lack of and unsafe surgical care and increasing positive health markers are the main aim of this strategy. According to the DHIS 2013 Ethiopian calendar (E.C) report, the perioperative mortality rate in Ethiopia is 1.4%—highlighting the need for interventions to improve surgical care.

Equity and Access

In 2013 E.C, 221,260 surgeries were performed—around 192 surgeries per 100,000 populations. Surgical care access is still considered a major problem is Ethiopia. According to the SaLTS I evaluation report, in the surveyed health care facilities, 69,717 surgical procedures were performed in a quarter; of these, 29,515 (42%) and 40,202 (58%) were minor and major surgeries respectively. Over a third (32.2%) of both minor and major surgeries were performed at public specialized hospitals. During the same period, 2.4% and 1% of major surgeries (elective cesarean section) were performed at health center operating room (OR) blocks.

Specialized hospitals also performed nearly half (46.3%) of all cesarean sections. A larger volume of open fracture management was reported in public specialized hospitals (1,162; 49.4%) and private hospitals (785; 33.4%). Public primary hospitals referred 3,540 (41.2%) surgical patients to other health care facilities. Lack of diagnostic modalities (78.6%), lack of skilled professionals (45%), lack of equipment/instruments (50.8%), lack of blood (62.5%), and lack of supply/medication (56.9%) were the most common reasons for surgical referral from public primary hospitals. Electric power interruption was the leading cause of EESC interruption (30.5%), followed by equipment dysfunction (23%) and laundry/Central Sterilization Room dysfunction (14.5%). Average pre-admission waiting time recorded in private hospitals was one and half days, whereas the average pre-admission waiting time in public generalized and specialized hospitals was 38 and 36 days, respectively. On average, clients travel 284.3 km (±198.3) or 28.4 hours to access surgical services at specialized hospitals. Moreover, patients were able to get surgical services at primary hospitals within 49.2 (±39.2) km or 21.3 hours.

The highest proportion of surgical beds allocated out of the total hospitals beds was observed in public generalized hospitals and Addis Ababa health centers with OR blocks, where 23.4% and 22.04% of the total hospital beds were allocated for surgical beds, respectively. Health centers with OR blocks allocated 73% of their total hospital beds for gynecology and obstetrics

wards. Moreover, an exceedingly low ratio of surgical beds to population served was a common feature across all the health care levels (except for private hospitals as they do not have a clearly defined catchment population).

Surgical System Efficiency

In a resource-constrained country like Ethiopia, efficiently utilizing available resources is important. The SaLTS evaluation found that most studied facilities (68.71%) did not have an agreed-on operation timeline as to surgical incision time for the first elective surgical procedure of the operation day. Nearly 60% of the charts reviewed showed that first case incision time was after 8:30 AM. The average turnover time (TOT) for the evaluated public hospitals was 40.5 minutes, while the longest average TOT was observed in private health facilities (79.52 minutes). Similarly, the TOT for 51.48% consecutive surgical charts was more than 30 minutes. The cancellation rate was high for public specialized hospitals: 14.6% of scheduled OR cases experience cancellation (mainly due to medical reasons [28.5%] and shortage of blood and blood products [21%]), while the lowest cancellation rate (3.7%) was for public primary hospitals.

Health centers had no surgeon or obstetrician. Rather, they were exclusively staffed with qualified Integrated Emergency Surgical Officers (IESOs), qualified anesthetists/anesthesia care providers, and nurse anesthetists. Specialized hospitals had a higher number of surgeons (336; 51.1%) compared to other levels. Primary hospitals had considerably fewer obstetricians (16; 4.8%) than private hospitals (77; 23.1%). Public general hospitals and private hospitals both have a high proportion (90%) of functional operating theater (OT) tables. Presence of nonfunctional OT tables was the most frequently listed reason for OT tables not in use in all public hospitals, with a very high proportion (85%) of nonfunctional tables found in public general hospitals. Lack of skilled professionals (80%) and low patient flow contributed to reasons OT tables were not in use in Addis Ababa health center OR blocks and private hospitals, respectively.

Safety

Surgical Safety Checklist (SSC) use has improved over the course of the implementation of the surgical care strategy. The clinical audit data disaggregated by level of care showed that specialized hospitals and health center OR blocks demonstrated the highest percentage of compliant SSC use—58.82% and 67.10%, respectively. The lowest percentage of SSC use was observed in private health facilities; only 22.5% of the charts had SSCs attached and only 60.31% of them were complete. However, compared to the clinical audit findings, a higher SSC use rate was reported through the national data management system, the health management information system (HMIS)/DHIS-2 platform.

Surgical Site Infection (SSI) is a major safety issue and is often underreported by facilitties. The SaLTS I evalaution report shows that of the 1,720 medical records reviewed, only 827 (51.56%) charts demonstrated evaluation of surgical wounds for presence/absence of SSI and documented clinicians' wound assessment findings. The national DHIS-2 database shows the SSI rate is 1.2%. A meta-analysis conducted to determine the prevalence of SSI and associated

factors after cesarean section in Ethiopia showed a 9.7% SSI rate.[6] Both the high rate of SSI and underreporting as well as tracking are indentified as the major gaps.

No anesthesia adverse outcomes were reported at health centers and private hospitals. Low average anesthesia adverse outcomes were found in public primary, generalized, and specialized hospitals. All health care facilities had a high rate of delay in starting surgical procedures.

Foundations of Surgical Care

Leadership and governance, service delivery, health care financing, health workforce, infrastructure, health information, and community ownership are the foundations of high-quality health care.

After the introduction of SaLTS I, a surgical service reform in 2016, significant improvements were seen. Key factors for the success were strong leadership and ownership by the government, and use of existing learning platforms.[7]

Despite the remarkable achivements, a major gap remains in surgical service. According to the SaLTS I evaluation report, health care facilities providing surgical services were poorly staffed with relevant human resources and inadequately equipped with equipment/supplies. Sizable variations in facility readiness were also found among all administrative andfacility level settings. Government hospitals, especially primary hospitals, had fewer surgeons and considerably fewer obstetricians than private hospitals. Most of the health care facilities did not monitor patient readmission. A substantial proportion of the health facilities, especially specialized hospitals and health centers, did not have consistent/regular availability of EESC equipment and supplies.

SWOT Analysis

Table 3: SWOT analysis by WHO building blocks

LEADERSHIP AND GOVERNANCE	
Strengths	**Weaknesses**
• Aligned with policies and strategies—specialty road map, EHSTP, HSTP II (surgical service, emergency, and critical care), and APTS (consumables), EHAQ (human resource	• No structural or functional ownership of surgery and anesthesia in all administrative and facility settings • No clear and accountable governance and management structure for surgical and anesthesia care at all levels • Inadequate coordination, harmony, and synchrony between agencies, directorates, regions, and health facilities • Poor public-private partnership • Poor leadership and management skills

[6] Getaneh T, Negesse A, Dessie G. Prevalence of surgical site infection and its associated factors after cesarean section in Ethiopia: systematic review and meta-analysis. *BMC Pregnancy Childbirth* 2020;20(1):311.
[7] Daniel Bursa, Atlibachew T, Katherine I. Safe Surgery for All: Early lessons from implementing a national government driven surgical plan in Ethiopia 2017 Dec;41(12):3038-3045

redistribution), EPHAQ, EHSTG, and HSTQ • Budget allocation • Actions for standardization—standard regulation (facility standard, licensing, and accreditation) • Partnership enhancement • Improved integrated supportive supervision practice	• Lack of evidence-based decision-making process • Low surgical and anesthesia policy index • Poor awareness of leadership on the significance of surgical and anesthesia care/service • No leadership and managerial accountability • Essential surgical and anesthesia care are not classified as primary health care • Donor-dependent program design, resource, and funding allocation • Inadequate focus on streamlined planning and implementation among MoH directorates and agencies, partners, and regions • Low involvement of patients in decision-making/leadership level • Inequity in leading and implementation capacity among regions and health facilities • Weak implementation capacities among agencies, the MoH, and regional health bureaus (RHBs) • Lack of structural review and adjustment along with the strategic plan
HEALTH WORKFORCE	
Strengths	**Weaknesses**
• Increased focus on continuous professional development (CPD) • Growth of the health workforce	• Inadequate surgical and anesthesia workforce with a wide gap in the global indicator of surgical capacity per population • Absence of fair compensation and incentive package • Uneven distribution of the surgical and anesthesia workforce • No well-justified and need-based launch of programs • Lack of need-based human resource development strategy • Inadequate budget allocation to support the surgical workforce at the facility level • Lack of need-based human resource structure and allocation • Poor retention plan and mechanism • Limited capacity to own and lead some program areas at the national level • Poor provider attitude and low commitment of various stakeholders • High attrition rate and absence of human resources motivation and retention strategy • Weak institutional knowledge management • Weak knowledge generation and use at the national level • Lack of sustainable licensing and relicensing process

	• Surgical workforce is produced without a clear career path or adequate training • Poor staff well-being and burnout management system for the surgical staff • Frustration and grievances among health professionals
SERVICE DELIVERY	
Strengths	**Weaknesses**
• Expanding and decentralizing the blood bank service • Improving the pre-hospital ambulance service and referral system • Improving diagnostic imaging and laboratory facilities • Expanding surgical and anesthesia care service and access to the public • Established a disaster and emergency response team at all levels	• Inequity of access to surgical and anesthesia care • No/poor performance-based appraisals • No standardized/protocol-based surgical and anesthesia care • Lack of service readiness and community needs assessment at the facility level • Lack of patient-centered approach • Accessibility of health service (cost, language, culture, or geography) • No established continuity of care • No service directory • Inadequate availability of clinical service protocols for health facilities • No standardized service assessment tools/checklists or indicators • Current health policy is not enabling
EQUIPMENT AND SUPPLY	
Strengths	**Weaknesses**
• Existence of authority and administrative body to manage equipment, consumables, and supplies • Presence of a national drug and equipment list	• Absence of a comprehensive essential surgical and anesthesia equipment and supplies list • Inadequate long-term prevention maintenance plan • Poorly organized stock management system • Poor capacity of forecasting, quantification procurement, and stock management of supplies and commodities • Weak maintenance capacity (medical equipment) • Low utilization of technology and innovations • Poor equipment maintenance and reengineering • Inadequate budget allocation
INFRASTRUCTURE	
Strengths	**Weaknesses**
• Increased investment in the surgical and anesthesia infrastructure (health centers with an OR facility, general and primary hospitals) • Relative improvement in road, water, and electricity access	• Inadequate health infrastructure • Poor private engagement • No medical science-oriented engineers assigned in developing medical-friendly constructions • All responsible sectors are not coordinated in construction of health facilities • Health professionals are not consulted on designs, and designs do not account for the status of people living in a specific area or climate, or people with special needs

• Relative improvement in diagnostic and imaging modalities	• Absence of continuous preventive and curative infrastructure maintenance
HEALTH INFORMATION SYSTEM	
Strengths	**Weaknesses**
• Existing baseline facility assessment • Presence of national surveys • Presence of DHIS II • Surgery and anesthesia-related evidence generation	• Poor data collection, capturing, and reporting mechanism • Low data quality • Health information performance index is not assessed • Inadequate anesthesia and surgery key performance indicator (KPI) incorporation in national DHIS II • No technology-oriented information gathering and analyzing system • Weak joint planning and monitoring of surgical and anesthesia service performances • Inadequate capacity-building of regional public health research centers • Poor knowledge management system • Poor Health Information Technology (HIT) infrastructure • Not included in woreda-based planning
HEALTH FINANCING	
Strengths	**Weaknesses**
• Growing drug fund revolving capital • Health care financing identified as a priority on the Ethiopia HSTP II	• Inefficient and complicated procurement process • Inadequate health insurance implementation • Allocation of budget below the WHO standard national health expenditure • No sustainability and self-reliant plan • Donor-dependent reform and policy index • Poor resource mapping, mobilization, and use
COMMUNITY	
Strengths	**Weaknesses**
• Improving health-seeking behavior • Initiation of community health insurance • Increased community demand for surgical facilities	• Poor community awareness of surgical and anesthesia care • Low community enrollment in community health insurance • Low community mobilization and engagement • Poor regulation of service delivery to the community (community health insurance agency and hospitals)
Opportunities	**Threats**

• Global focus area and initiative • Establishment of quality control of laboratory service • Expanded medical schools and residency program • Disparity among graduating health professionals • Improving domestic production and import replacement (surgical masks, gloves, and stretchers) • Presence of biomedical engineering training in higher education institutions • Diaspora willingness to participate in health care • Improvements in information and communication technology infrastructure nationally • Advancement of research activities in universities and institutes • Growth in number of HIT professionals • Awareness of the gap between national budget expenditure • Growing urbanization	• Political instability • Low trade agreement involving anesthesia and surgery • Donor fatigue • Occurrence of global pandemics (e.g., COVID-19) and disasters • Migration of highly skilled medical professionals • High investment required for equipment and supplies • Inadequate foreign currency • Interruption of internet services • Rapid population growth • Harmful traditional practices acting as barriers to seeking health services for the community

Stakeholder Analysis

Stakeholders are identified and grouped according to their level of participation, interest, and influence in the national surgical care program. Strategies have been developed to involve and communicate with each stakeholder group throughout the implementation of the SaLTS II strategic plan. Key stakeholders considered to have a critical role in the implementation of the strategic plan are ministry offices, teaching institutions, professionals and professional societies, development partners, private health care institutions, governments, the community, and the media. Greater community and civic society (professional and patient associations) engagement will have a high impact on the achievement of the surgical care strategy.

Alignment among public institutions and partnering with private health facilities will also have a critical impact on the strategic plan's implementation.

Table 4: Stakeholder analysis

Stakeholder	Desired behaviors	Stakeholders' interest	Resistance issues	Institutional response	Engagement strategy	Strategic impact
Community	Health lifestyle, participation, engagement, ownership, health-seeking behavior	Timely surgical and anesthesia care, health education, access to health information, specialized surgical and anesthesia care, affordable care, compassionate surgical and anesthesia care	Attitude toward surgical and anesthesia care, low satisfaction, inappropriate use of alternative medicine	Advocacy, enhancement of quality of surgical and anesthesia care, community mobilization for surgical and anesthesia care	Community forum, community campaigns, strengthening patient associations	High interest, low power
Ministry offices	Development of an industrial park for health, policy support for in-country production as well as tax policy revision for surgical and anesthesia supplies, clear and transparent customs clearance, budget allocation, policy, ensure quality of higher education programs in surgery and anesthesia, increase training sites, encourage research and evidence-based practice	Complete information about surgical and anesthesia care; technical support; evidence presentation about the benefit of in-country manufacturing of surgical and anesthesia supplies; proper budget planning, reporting, and auditing; standardization documentation	Lack of prioritization, limited trained human power to guide surgical and anesthesia supplies, lack of directives, resource limitation, long customs clearance process	Advocacy, proactive collaboration, innovative leadership and management system, health service-oriented policy and directive	Meeting, continuous formal and informal communications, planning, M&E	High interest, high power
Universities (surgical workforce training institutions)	Production of a competent, ethical, and compassionate surgical workforce as well as an adequate number of surgical staff; active engagement in research related to surgical systems; contribution to the development of guidelines and protocols for surgical and anesthesia care	Clear policy direction, clear demand, financial and leadership support	Limited resources	Financial and leadership support of institutions for international collaboration	Curriculum review forums, collaborative meetings	High interest, high power

Stakeholder	Desired behaviors	Stakeholders' interest	Resistance issues	Institutional response	Engagement strategy	Strategic impact
Professionals	Compassionate care, competent and quality surgical and anesthesia care, innovation and problem-solving, system management, ownership of the strategic plan	Continuous professional development/ medical education (CPD/CME); career development, motivation, recognition, and retention package; legal protection; liability insurance; conducive working environment	Poor satisfaction, poor understanding of national context, status quo, burnout	Timely delivery of CPD and CME, responsiveness to surgical workforce inquiries	Consultations, CPD/CME, short/long course trainings, onsite/offsite courses, planning forums	High interest, low power
Development partners (NGOs)	Support of CPD and CME development, assistance in advocacy of surgical and anesthesia care, technical and resource support for implementation of surgical and anesthesia care strategy	Evidence-based problem identification, active participation of the surgical task force and related stakeholders to their program, appreciation and due value for their contribution by regulatory bodies and concerned stake holders, regular reports	Narrow sphere of interest, limited funding, accountability	Clear policy and guidance, regular activity and audit reporting, advocacy	Strategy development, M&E, CPD/CME development	Intermediate interest, high power
Private health care institutions	Quality and affordable surgical and anesthesia care, engagement in public-private partnerships (PPPs), enhance medical tourism	Participatory policies; collaborative stakeholders; disciplined, skilled, and dedicated surgical workforce	Poor resource allocation for equipment and human resources, delay in adopting new policies, limited involvement in teaching-learning process	Advocacy, engagement in policy and strategy development, strong regulation	Partnering, PPPs	High interest, low power

Stakeholder	Desired behaviors	Stakeholders' interest	Resistance issues	Institutional response	Engagement strategy	Strategic impact
Governments (federal, regional, zonal, and woreda)	Ratification of proclamations, policies, and directives; design and implement surgical workforce motivation and retention package; allocate adequate resources for surgical and anesthesia care; restructure organization for surgical systems strengthening	Implementation of proclamations, policies, and directives; safe and quality surgical and anesthesia care provision; planning and reporting	Limited skilled workforce, limited resources, national political context	Establish strong and sustainable capacity-building and M&E systems, conduct regular review meeting for stakeholder engagement, design and implement innovative financing scheme for surgical and anesthesia care	Performance appraisal, experience sharing, policy and strategy familiarization and communication	High interest, high power
Civil society (professional societies, patient associations)	Proactive engagement, ownership, participation	Clear policy guidance, involvement in planning, implementation, and M&E process	Dissatisfaction, poor collaboration and communication, passivity, limited resources	Policy, financial, and leadership support; capacity-building	Annual review meetings, CPD/CME	High interest, low power
Agencies (blood bank, Ethiopian Food, and Drug Authority, Ethiopian Pharmaceutical Supply Agency, health insurance, Ethiopian Public Health	Ensure sustainable availability of pharmaceuticals, equitable and demand-based distribution of pharmaceuticals and devices; ensure quality and safety of imported surgical and anesthesia devices; facilitate donations in a less bureaucratic way; shorten medical product registration process; ensure performance-based licensing (institutions, professionals); develop a standard that can measure the service; accreditation of health facility	Technical support, active engagement	Administrative issues	Act in alignment with the regulatory policy, collaboration with the MoH	Continuous engagement, discussions	High interest, high power

Stakeholder	Desired behaviors	Stakeholders' interest	Resistance issues	Institutional response	Engagement strategy	Strategic impact
Institute)						
Media	Advocacy on surgical and anesthesia care, consultation and review of reports before broadcasting to the community, conducive environment and reporting for community trust related to surgical interventions	Timely reporting, health professional engagement for reports	Medical journalism is not available, incorrect reports, ethical or legal disputes	Advocacy, intersectoral response	Partnering	Low interest, high power

Goal, Strategic Objective, Interventions, and Targets

Vision, Mission, and Guiding Principles

Vision

To realize a healthy, productive, and prosperous society

Mission

To promote the health and well-being of Ethiopians by improving access to quality surgical and anesthesia care

Guiding Principles

- Equity
- Partnership
- Innovation
- People-centered
- Professionalism
- Accountability and transparency

Goal, Strategic Objectives, and Interventions

Goal

Reduce surgical care-related morbidity and mortality

Strategic Objectives and Interventions

Strategic Objective 1: Equitable Access to Safe Surgical and Anesthesia Care in Ethiopia

Description:

Access to EESC has been identified as a critical gap in the development of health systems in LMICs. Recently, the need to develop EESC services has increased as surgically treatable diseases are becoming a great public health burden, particularly in LMICs such as Ethiopia. Ensuring equitable access requires selected and focused interventions to strengthen infrastructure in a way that enables health facilities to provide advanced surgical care close to the community, and by availing a competent, motivated surgical workforce in all corners of the country. Ensuring the uninterrupted supply of medical equipment, essential medications, and other surgical care supplies shall also be the focus area of the equitable access objective.

Strategic interventions:

- Establish an effective leadership and management structure dedicated to overseeing surgical care at the MoH and across all levels of the health system
- Assess and monitor health facilities to ensure they are equipped according to the national standard list of drugs, equipment, and consumables for surgical care at all levels

- Support production and equitable deployment of competent surgical and anesthesia workforce to achieve universal health coverage standards
- Expand essential surgical and anesthesia care and facilities providing this care
- Facilitate basic amenities (water, electricity) in all levels of health facilities
- Strengthen information sharing and communication with relevant stakeholders and the community

Strategic Objective 2: Improve Efficiency of Surgical Systems in Ethiopia

Description:

System efficiency aims to increase productivity with fewer resources, a key intervention in LMICs such as Ethiopia. In the surgical systems process map, inpatient departments and operating theaters are where most surgical care activities are carried out. Similarly, in the surgical system, the most active area of surgical activity is also the weakest link of the system. Hence, identifying interventions that address efficiency gaps and utilize the available scarce resources should be the focus of the surgical care strategy. Designing an efficient system requires having a learning process that advocates for a culture of continuous quality improvement. Building a resilient governance system across all levels of the health system with the capacity for mobilization and engagement of all stakeholders shall also be a focus area to ensure a more efficient surgical system. The core process area that the surgical strategy should address is increasing efficiency by reducing waste and developing an innovative health care financing plan backed by a strong information management system to guide decision-making in the health system.

Strategic interventions:

- Strengthen the Medical Equipment Management Information System (MEMIS) for surgical care
- Redesign the surgical care provision workflow
- Increase the productivity of the surgical workforce
- Standardize common supplies for procedures
- Expand the patient scheduling management system (SWOS)
- Improve surgical volume

Strategic Objective 3: Improve Effectiveness of the Surgical System in Ethiopia

Description:

This objective refers to the improvement of evidence-based practices that are consistent with current professional knowledge. It stresses making available, periodically updating, and improving compliance to clinical guidelines, protocols, and standard operating procedures (SOPs).

Strategic interventions:

- Build capacity of the surgical workforce
- Standardize major (high-priority) essential surgical and anesthesia care

- Update and disseminate clinical guidelines, surgical care guidelines, SOPs, and protocols
- Monitor and improve compliance to surgical care guidelines, SOPs, and protocols
- Institutionalize a perioperative mortality audit system
- Improve surgical data management (data collection, utilization, data quality, and improvements)

Strategic Objective 4: Improve People-Centered Surgical Care in Ethiopia

Description:

This objective targets an approach to surgical care that consciously adopts the perspectives of individuals, caregivers, families, health care providers, and communities as participants in, and beneficiaries of, trusted surgical systems that are organized around the comprehensive needs of people rather than diseases, and respects social preferences. People-centred care also requires that patients have the education and support they need to make decisions and participate in their care and that caregivers can attain maximal function within a supportive working environment. People-centred care is broader than patient- or person-centred care, encompassing not only clinical encounters but also including attention to the health of people in their communities and their crucial role in shaping health policy and health services. Empowering and engaging individuals and families, communities, informal caregivers, and professional associations are key means to meeting this objective.[8]

Strategic interventions:

- Strengthen leadership and management capabilities and partnership skills critical for mobilizing the technical and financial resources needed to strengthen surgical care at all levels of the health system
- Improve awareness and meaningful engagement of key local and global stakeholders to strengthen the implementation of the surgical care strategy
- Strengthen liaison, referral, and pain management services
- Strengthen community-level and pre-hospital surgical emergency, trauma, and ambulance services
- Promote less invasive surgical methods and technologies

Strategic Objective 5: Reduce Harm Arising from Surgical Care Provision in Ethiopia

Description:

When expanding access to EESC, maintaining the quality of care is crucial. The safety of surgical and anesthesia care can be significantly enhanced through the application of several evidence-based interventions. From a safety perspective, standard protocols and safety tools were either not supplied or their use did not adhere to existing safety protocols. Accordingly, improving patient identification, SSIs, falls, and other adverse events is key.

[8] The WHO Framework on integrated, people-centred health services. 2016. World Health Organization, Geneva.

Strategic interventions:

- Develop and introduce occupational safety measures for the surgical workforce (hepatitis vaccine, liability insurance, legal support, medical insurance, adequate personal protective equipment, etc.).
- Strengthen surgical safety practices (patient identification, surgical site marking, surgical team communication, and prevent/reduce SSI, fall, anaesthesia adverse effects, fire)
- Ensure perioperative patient safety and encourage patient/client decision-making capacity (consent form, preconference session, transport protocol, etc.)
- Ensure safe surgery practice through training and medical education

Targets

1. Reduce delay for elective surgery admission from 51 days to 30 days
2. Conduct 2,500 procedures per 100,000 populations by the end of 2025
3. Reduce the perioperative mortality rate to < 2%
4. Achieve 100% tracking of surgical care-related deaths
5. Reduce the SSI rate to < 5%
6. Increase the cesarean section rate from 4% to 10%
7. Provide 100% of woredas access to essential surgical care
8. Reduce anesthesia adverse events by 50%
9. Achieve 100% utilization of the SSC
10. Increase percent of facilities providing basic surgical services from 44% to 80%
11. Reduce the number of clients on the waiting list for elective surgical service by 50%
12. Increase the proportion of health facilities with electricity from 76% to 100%
13. Increase the proportion of health facilities with an improved water supply from 59% to 90%

Implementation Arrangement

Governance Structure

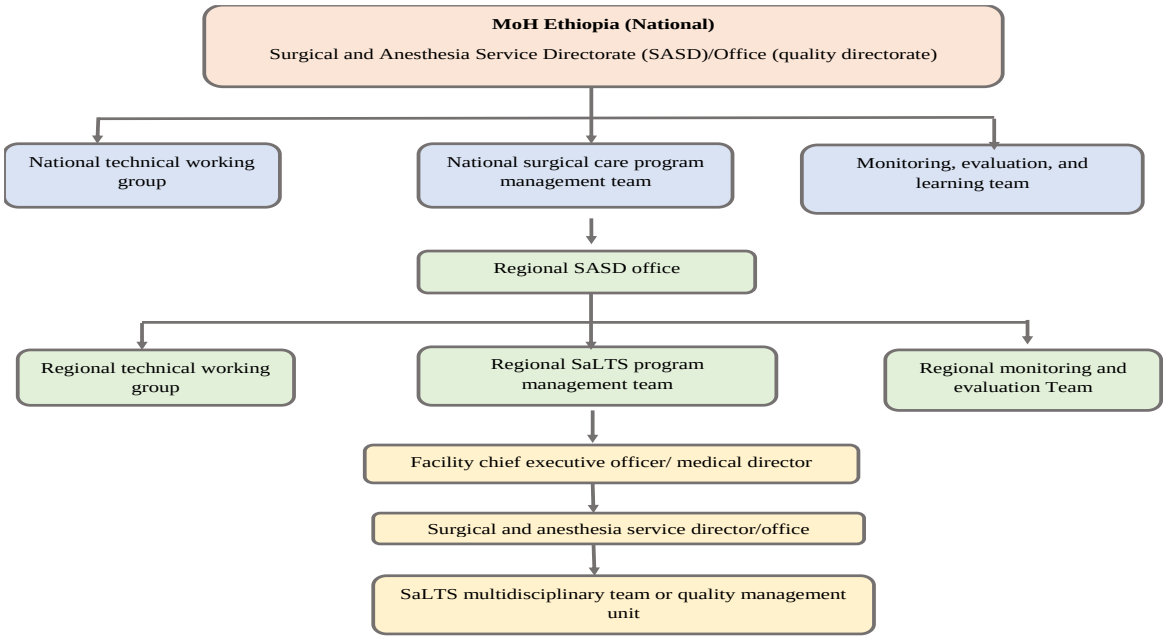
Surgical and Anesthesia Service Directorate (SASD)

The SASD Directorate formed under the Ministry's office will serve as a primary owner and leader of the SaLTS strategic plan. This Directorate serves as a national coordination body that, in collaboration with regional state health bureaus, guides the standardization and operationalization of EESC services across the country. Additionally, it endorses national surgical care plans and mobilizes the necessary budget to operationalize the program. The Ministry will support the establishment or adaptation of a similar structure at subnational levels, including regional health bureaus and zonal/woreda health offices (see Figure 2).

As indicated in the table below, the Directorate will form (1) a program management team, (2) a technical working group, and (3) monitoring, evaluation, and learning (MEL) departments or case teams. The details of the scope of work and accountability mechanisms will be shown in the description of the respective work structures. The major activities of the department/case teams are as follows:

- **SaLTS program management department/case team.** Project management teams for surgical and anesthesia services will be established under the SASD office at all levels of the health system. These teams act as an engine in the implementation of the National Surgical Care Strategy. In addition, the management teams will develop plans according to direction provided by the SASD office and the SaLTS strategic plan. The team takes an active part in the supportive supervision and monitoring and evaluation of activities and gives the necessary feedback to the respective and responsible bodies. The details of the scope of work and accountability mechanisms will be described in the respective description of the work structures.
- **Technical working group.** The SASD office will form a surgical care technical working group at the national and regional/zonal levels whose members may be comprised of complementary MoH directorates and professional societies and multidisciplinary professionals (obstetrics and gynecology, surgery, anesthesia, nursing, midwifery, and M&E, among others). The details of the scope of work and accountability mechanisms will be described in the terms of reference.
- **Monitoring, evaluation, and learning department/case team.** The MEL team will assist the Directorate in tracking program activities, monitoring progress of key surgical care performance indicators, and coordinating supportive supervision and learning activities. The team will prepare annual reports and document best surgical care practices.

Figure 2: Organizational structure for a national surgical and anesthesia care program



Facility Level

Hospital management will establish and organize the facility's surgical and anesthesia services office. A surgeon, gynecologist, or anesthetist/anesthesiologist on the facility staff will lead the office. The office will in turn establish and lead the SaLTS multidisciplinary team. The operation theater manager will serve as team secretary. Each health facility should design jobs based on the need and relevance to the national surgical and anesthesia care and EESC strategic plan.

The SaLTS multidisciplinary team will be represented by staff from the following departments or care processes:

- Surgery department
- Obstetrics-gynecology department
- Operating room (OR) and inpatient surgical wards
- Anesthesia department
- Nursing and midwifery department
- Post-anesthesia care unit (PACU)
- Pharmacy and laboratory departments
- Quality and data management unit

- Support functions including the central sterilizing department (CSD), infection prevention, and biomedical engineering departments

Table 5 summarizes team member leadership roles and responsibilities.

Table 5: SaLTS multidisciplinary team member leadership roles and responsibilities

Health facility structure	Roles and responsibilities
Hospital/health center chief executive officer/clinical director/senior management team (SMT)	• Establish a facility surgical and anesthesia services directorate/office • Assign SaLTS leader, OR manager, and necessary team members • Supervise overall SaLTS activities • Conduct baseline and ongoing assessment • Engage senior professionals in leadership • Allocate and mobilize resources • Evaluate implementation progress • Assess and reward champion provider • Ensure availability of necessary supplies • Ensure the availability and utilization of the WHO safe surgery essential checklist
Facility surgical and anesthesia service directorate/office	• Lead, mobilize, and motivate the facility SaLTS multidisciplinary team • Develop SaLTS-specific action plan for the facility • Ensure that the surgical team works together and feels valued • Review and report collected data monthly • Arrange and undergo a surgical audit of mortality and morbidity • Participate in the SMT representing the surgical team
SaLTS multidisciplinary team	• Support implementation of the facility SaLTS plan • Conduct an ongoing assessment to advise the SMT and provide feedback to service units • Provide training to the clinical and nonclinical surgical staff • Plan and supervise the activity of the respective units • Discuss with the team how to improve the quality of surgical activities • Organize hospital-wide advocacy and communications • Engage in all surgical team meetings

	• Document all activities and submit reports
Full-time OR manager	• Act as a secretary of the SaLTS implementing team • Oversee day-to-day OR activity • Conduct daily supervision of key function units and provide information to the SaLTS coordinating team

Health Centers

To cascade the leadership structure at the health center level, an SASD office will be established under the medical director and led by a surgical team leader/anesthetist/IESO).

Federal Health Facilities

Hospitals under the federal government will directly communicate with the SASD office at the MoH. However, the structure in federal health facilities is similar to hospitals elsewhere.

University Hospitals

University hospitals will establish an SASD office under the chief clinical director or medical service vice provost.

Monitoring and Evaluation

Successful implementation of the surgical and anesthesia care strategy will rely on a robust M&E system. Hence, M&E will be an integral part of the strategy. Continuous monitoring of progress and evaluation of outcomes and impact will support evidence-based decision-making for effective, efficient, and synergistic implementation of programs. Moreover, M&E will be integrated into knowledge management efforts to help document lessons and sharing of experiences both nationally and in the international arena.

Table 6: Key elements of the hospital performance monitoring and improvement framework

Element	Description
Key performance indicators (KPIs) on SaLTS	• A set of core hospital KPIs on SaLTS that meets the needs of governing boards, CRCPs, the MSGD, and the public will streamline reporting processes and prevent duplication of efforts by the different stakeholders. The burden on hospitals will be minimized. • A common set of KPIs on SaLTS will allow tracking of hospital performance in surgery over time, and making comparisons between hospitals and regions. • Governing boards can use the KPIs on SaLTS to monitor hospital performance. Problems will be identified at an early stage, allowing governing boards to take remedial action where necessary. • Hospitals should report their KPIs on SaLTS to the RHB CRCP every month. Comparisons between hospitals can be made, identifying best practices as well as areas needing improvement. • The SaLTS team at the HSQD can review cluster, regional, and hospital performance and identify areas needing additional support.
Site-level indicators	• Site-level indicators are used to monitor the performance of surgical units at each hospital but are not reported to CRCPs and the MSGD. Surgical teams and hospitals will use site-level indicators routinely to improve their performance. The clinical mentors assigned to each cluster will also use the site-level indicators for routine performance improvement.
Supportive supervision site visits	• Supportive supervision site visits to hospitals should be conducted to check (validate) hospital performance concerning the KPIs on SaLTS, identify good practices, and provide supervision and guidance to help hospital surgical units improve areas that require strengthening. • Supervision should be conducted by a team consisting of, for example, cluster mentors, RHB CRCP staff, MSGD staff, staff from other

	hospitals (e.g., CEDs), and other key partners. All stakeholders may delegate relevant experts during supervision visits. • All supervision should be under the direction of the respective CRCP. No stakeholder should conduct supervision without the approval/awareness of the CRCP.
Review meetings	Regional • Review meetings between the CRCP and hospitals (either region-wide or in clusters) will allow for benchmarking and dissemination of good practices. • At each review meeting, hospitals should present a performance report based on their KPIs on SaLTS. Hospitals will have the opportunity to share successes and challenges and to learn from each other. • Regional "all hospital" review meetings can also be used to discuss other relevant topics. National • Review meetings between the MSGD and all regional CRCPs will allow for benchmarking and the dissemination of good practices between regions. • At each review meeting, CRCPs should present a regional performance report based on their KPIs. Regional CRCPs will have the opportunity to share successes and challenges to learn from each other. • MSGD/HSQD/CRCP meetings can also serve as forums to discuss other relevant topics.
Operations research, studies, and evaluation	• Surveys, studies, supervision, and reports will be used to assess the progress made in the implementation of the surgical and anesthesia care interventions, and their outcomes and impact.

The main purpose of the M&E framework is to provide data that are essential to track the progress made in the implementation of surgical and anesthesia care activities; to facilitate proper planning, coordination, and implementation of the surgical and anesthesia care activities; and to ensure accountability of the various stakeholders.

The MEL plan (see Box A) provides a set of indicators to be monitored regularly to show the impact of the surgical and anesthesia care activities. Indicators should be selected that reflect both processes and outcomes.

Box A: Monitoring, Evaluation, and Learning

Monitoring is the systematic and continuous collection of information over time to measure progress or change of an activity or objective, using predefined indicators of progress and/or impact of an intervention.

Evaluation is the process by which one determines if the program achieved its overall and specific objectives. It usually is an assessment at one point in time to determine the impact of the project.

Learning can be defined as a continuous and intentional process of analyzing a wide variety of information sources and knowledge.

Learning is a continuous process of analyzing and interpreting information and knowledge (monitoring data, evaluation findings, innovations, stories, person-to-person exchanges, and new operations research learning) that brings to light new promising practices or calls into question received wisdom. Learning leads to the adaption of strategies and/or activities to sustain the most effective and efficient path to achieving success, as well as the identification of strengths and promising practices to be replicated within the project and beyond.

The purpose of M&E is to routinely generate quality data that provides specific information support to the decision-making process at each level of the health system for improving the performance of emergency surgical and anesthesia care.

Data Sources and Management

Various data sources will be used to monitor the progress of surgical and anesthesia care. For instance, all public and private facilities collect facility-based data through the following systems relevant to surgical and anesthesia care:

Health management information system (HMIS) is the primary source of routine data on health services including referral services, district hospitals, and health centers.

Key performance indicators (KPIs) are the set of indicators with the primary function of assisting hospital SMTs, governing boards, RHBs, and the MoH to oversee hospital operations.

Human Resource Information System (HRIS) has active records of all health workers in the country.

Logistics Management Information System (e-LMIS) provides data on the supply and use of medicines and commodities.

Geographical Information System provides a means of analyzing coverage of general or specific services in relation to needs and how these services are related to communities, each other, and the larger health infrastructure.

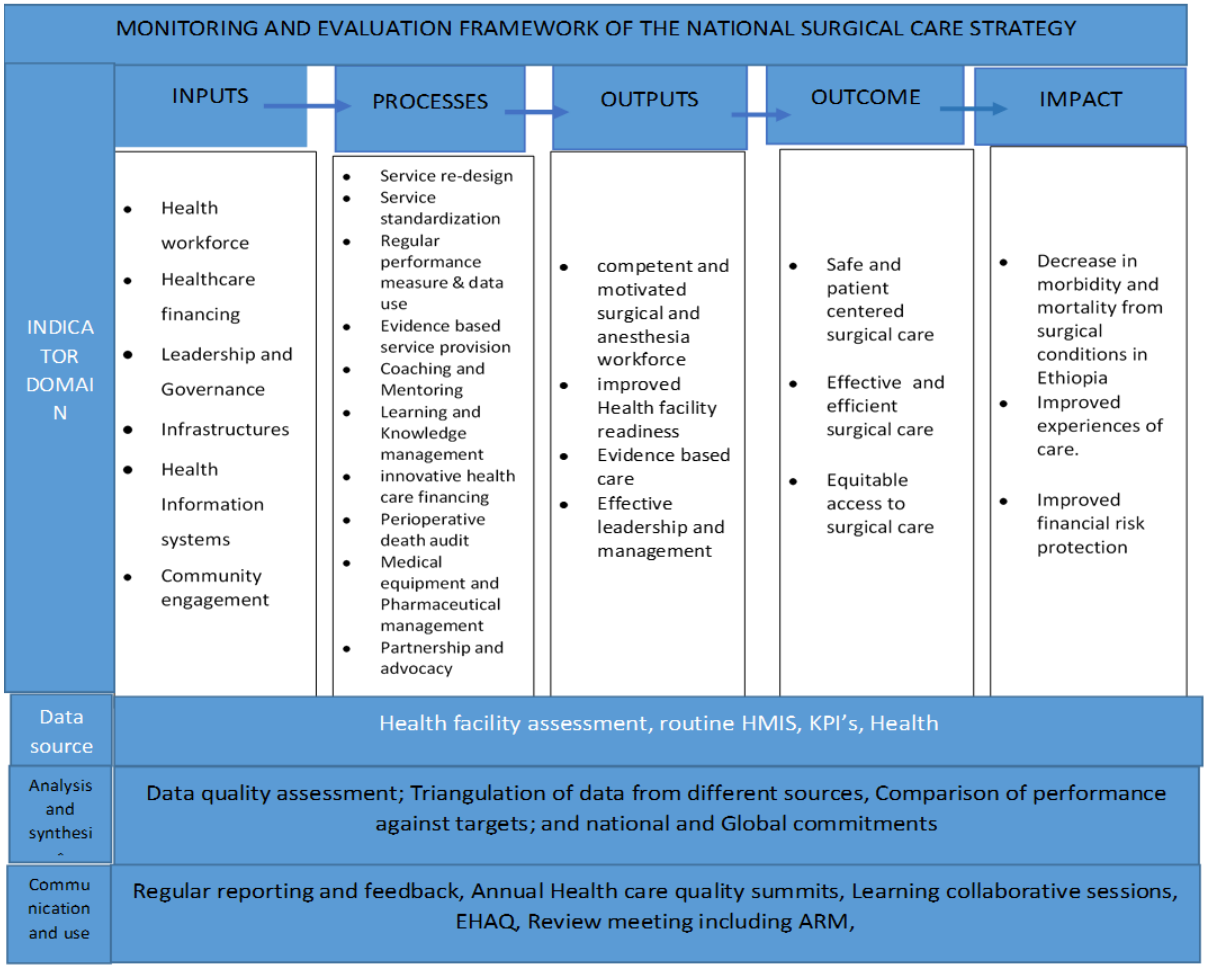
Operations research, studies, and evaluation will be used to assess progress made in the implementation of the surgical and anesthesia care interventions, outcomes, and impacts of interventions.

National Health Accounts (NHAs) provide a direct measurement of burdensome health spending. It will be used to assess the household's protection of surgical care-related impoverishing and catastrophic expenditure.

Service Availability and Readiness Assessment (SARA) provides information on a set of tracer indicators of service availability and readiness. It provides reliable information on service delivery (such as the availability of key human and infrastructural resources), on the availability of basic equipment, basic amenities, essential medicines and diagnostic capacities, and on the readiness of health facilities to provide basic health care interventions relating to basic and comprehensive emergency obstetric care.

Annexes

Annex 1: Logic Model for Monitoring, Evaluation, and Learning



Annex 2: Implementation Plan

Intervention	Major activity	Indicator	Target	Year 1	Year 2	Year 3	Year 4	Year 5
Strategic Objective 1: Access to surgical care								
Establish an effective leadership and management structure dedicated to overseeing surgical care at the MoH and across all levels of the health system	Establish SaLTS leadership structures at the MoH and across all levels of the health system	Established leadership structure (Yes/No)	0		Yes			
	Familiarize stakeholders with the new structure/surgical and anesthesia service directorate/office	Number of advocacy sessions conducted	1		1	-	-	-
	Conduct regular meetings of the technical working group and SaLTS management team	Number of meetings conducted	20	4	4	4	4	4
	Identify and recruit potential members for the leadership and management team	Approved civil service allocated health workforce for surgical service (Yes/No)	Yes	Yes	Yes			
	Assist and empower professional societies to contribute to governance in surgery and anesthesia service	Established surgical consortium (Yes/No)	Yes		Yes	-	-	-
	Ensure proper data management and reporting at all levels	Percentage of facilities with timely and complete DHIS-2 report	92%	82%	92%	92%	92%	92%
Assess and monitor that health facilities are equipped according to the national standard list of drugs, equipment, and consumables for surgical care at all levels	Update the national standard list of equipment, drugs, and consumables for surgical care (emergency, essential, and advanced surgical care)	Number of standard lists updated	1			1	-	-
	Conduct national equipment survey and promote redistribution of resources	Number of national surveys completed	1		1	-	-	-
	Support pre-service and in-service training program to staff to improve their procurement and supply chain management skills	Number of training sessions conducted	6			6		

Intervention	Major activity	Indicator	Target	Year 1	Year 2	Year 3	Year 4	Year 5
	Ensure needs-based distribution and redistribution of medical equipment's for constructed OR blocks	Number of facilities with complete package of surgical medical equipment	250	50	50	50	50	50
Support production and equitable deployment of competent surgical and anesthesia workforce to achieve universal health coverage standards	Conduct regular task analysis and generate evidence to promote and advocate for a new cadre of professionals, which can improve access to surgical care and enhance surgical system efficiency (IESO, OR managers, OR technicians, emergency surgery physicians, carrier pathway and ladder for surgical workforce, etc.)	Number of new surgical cadres/disciplines produced	1		1	-	-	-
	Conduct workload indicators for staffing needs (WISNs), forecast surgical work force requirement, and monitor equitable distribution among regions	Regional surgical work force density per regions identified (Yes/No)	Yes		Yes	-	-	-
Expand essential surgical and anesthesia care and facilities providing this care	Revise standards of surgical care for facilities and apply people-centered principles for renovation or construction	Developed standards (Yes/No)	Yes		-	Yes	-	-
	Develop a guide for regular preventive maintenance of surgical equipment and infrastructure management system for perioperative care	Developed standard/guide (Yes/No)	Yes		-	Yes	-	-
	Mobilize financial, material, and technical resources based on assessment findings and priorities	Resource mobilization done (Yes/No)	Yes	Yes	Yes	-	-	-
	Renovate and build post-anesthesia care units (PACUs) across the country	Number of facilities with PACU	33		16	17	-	-
	Renovate and build surgical, obstetrics, and anesthesia care suites and operating theaters	Number of renovated surgical suites	20			5	10	5
	Establish specialty and subspecialty surgical, obstetrics, and anesthesia units capable of providing advanced surgery across the country	Specialty road map developed (Yes/No)	Yes	Yes	Yes	-	-	-
	Revise OR block design and construction with engagement of relevant stakeholders considering climate, culture, and level of services	Developed standards (Yes/No)	Yes		Yes			

Intervention	Major activity	Indicator	Target	Year 1	Year 2	Year 3	Year 4	Year 5
Facilitate basic amenities (water, electricity) in health facilities at all levels	Ensure availability of alternative water sources	Number of health facilities with alternative water source	40		10	10	10	10
	Ensure availability of uninterrupted electric power supply	Percentage of health facilities with alternative power source	40		10	10	10	10
	Ensure sustainable supply of oxygen	Number of health facilities with oxygen plant	25		2	7	8	8
	Renovate and build new sterilization units across the country	Number of CSRs renovated and built	25		5	7	7	6
Strengthen information sharing and communication with relevant stakeholders and the community	Promote surgical services available using service directory	Number of service directory developed	2		1			1
	Advocate surgical services with local media to increase awareness in surgical access in the community	Number of awareness forums conducted	10	2	2	2	2	2
	Promote telehealth in surgical care	Number of health facilities using telehealth for surgical care	33	5	5	7	8	8
	Promote surgical care health education	Surgical care health education guidance developed (Yes/No)	Yes		Yes			
Strategic Objective 2: Improve efficiency								
Strengthen the medical equipment management information system (MEMIS) for surgical care	Conduct periodic inventory of equipment for surgical care	Number of inventories conducted	5	1	1	1	1	1
	Develop guide for preventive and curative maintenance	Preventive and curative maintenance guideline prepared (Yes/No)	-		Yes			
	Conduct periodic end user training on equipment for surgical care	Number of trainings conducted	20		3	4	5	8

Intervention	Major activity	Indicator	Target	Year 1	Year 2	Year 3	Year 4	Year 5
Redesign the surgical care provision workflow	Assess the current surgical provision workflow	Number of assessment visits conducted	16		16	-	-	-
	Design standardized surgical care provision workflow	Design suitable to workflow (Yes/No)	Yes		Yes	-	-	-
Increase the productivity of the surgical workforce	Implement strategies to enhance productivity of surgical team: plan number of surgeries per surgeon and surgical team considering the case mix (design and implement new productivity matrix tool in EMR established hospitals)	Number of workshops conducted	1		1	-	-	-
	Introduce and implement the new matrix	Number of trainings conducted	7		1	2	2	2
	Design strategy to motivate productive surgical workforce	Motivation strategies designed (Yes/No)	Yes		Yes	-	-	-
	Introduce recognition system for health workforce who use the resources efficiently	Number of awarded teams	76		19	19	19	19
Standardize common supplies for procedures	Develop minimum supply requirement for surgical procedures	Standardization document developed (Yes/No)	Yes		Yes	-	-	-
	Monitor standardized supplies for each procedures	Number of procedures with standardized supply list	22		-	6	7	9
Expand a patient scheduling management system (SWOS)	Develop surgical wait list and OR scheduling guideline	Guideline on surgical wait list and OR scheduling developed (Yes/No)	Yes		Yes	-	-	-
	Scale up the SWOS software to all Ethiopian hospitals	Number of trainings conducted on SWOS software utilization	22		-	6	7	9
Improve surgical volume	Introduce day care surgery guideline	Day care surgery conducted (Yes/No)	1		1	-	-	-

Intervention	Major activity	Indicator	Target	Year 1	Year 2	Year 3	Year 4	Year 5
	Identify health facilities to start day care surgery	Number hospitals assessed for day care surgery readiness	33		17	16	-	-
	Decrease surgical backlog in 10 high-burden Hospitals	Number of health facilities that received support for surgical backlog reduction	20		10	-	10	-
	Decrease surgical backlog caused by lack of supplies for surgical problems related to ENT, plastic ophthalmology, orthopedics, trauma, pediatric neurosurgery, and pelvic organ prolapse	Backlog reduction rate	80%		20%	20%	20%	20%
Strategic Objective 3: Improve effectiveness								
Build capacity of the surgical workforce	Conduct trainings for surgical workforce on surgical care competencies (OR leadership, surgical system management, clinical skills, scheduling, etc.)	Number of surgical workforce trained on surgical care competencies	1,830		330	400	450	650
	Conduct surgical workforce professional development activities	Number of in-service training conducted	30	-	15	15		
	Strengthen clinical and system mentorship, preceptorship, and coaching programs among facilities	Number of mentorship support provided	1,464		264	320	360	520
	Support infrastructure development for teaching and learning materials, including skill development labs and learning technologies for online training and consultation	Number of health facilities supported with skills labs and learning technologies for online training consultations	10			5	5	-
	Support establishment of a model center for the development of surgical care (focusing on surgical clinical skill development, surgical system management, safety and quality management, research work, and grant management)	Number of staff trained on surgical care	630		160	170	150	150
Update and make available clinical guidelines, SOPs, and	Make available and promote awareness of surgical SOPs	Number of health facilities implementing SOPs	53		20	33	-	-

Intervention	Major activity	Indicator	Target	Year 1	Year 2	Year 3	Year 4	Year 5
protocol for surgical care								
Institutionalize perioperative mortality audit system	Develop training package for mortality review	Training package for mortality review developed (Yes/No)	0		Yes	-	-	-
	Provide capacity-building to health facility representatives on perioperative mortality review (ToT)	Number of health facilities with ToT-trained health professionals on POMR	5		5		-	-
	Provide capacity-building to health facility representatives on perioperative mortality review (basic)	Number of health facilities with health professionals trained on POMR	330		33	150	147	
Improve surgical data management (data collection, utilization, data quality, and improvements)	Introduce the new surgical measurements	New surgical measures introduced (Yes/No)	Yes		Yes	-	-	-
	Design capacity-building modality for surgical care-related data management	Number of training sessions conducted on surgical data management	20		6	-	14	-
Monitor and improve compliance to surgical care guidelines, SOP, and protocols	Provide all surgical care-related SOPs, protocols, and guidelines	Number of hospitals provided with SCG, SOPs, and protocols	330		330			-
	Monitor adherence of health facilities to surgical related guidelines	Number of survey visits conducted	33		-	17	16	-
	Evaluate the compliance to surgical policies	Number of evaluation reports	1		-	1	-	-
Standardize major (high-priority) essential surgical and anesthesia care	Conduct standard development workshops	Standardization document developed (Yes/No)	Yes		Yes			-
Strategic Objective 4: Improve people-centred surgical care								

Intervention	Major activity	Indicator	Target	Year 1	Year 2	Year 3	Year 4	Year 5
Strengthen leadership and management capabilities and partnership skills critical for mobilizing technical and financial resources needed to strengthen surgical care at all levels of the health system	Provide and allocate financial support at all levels of the health system	Budget allocated (Yes/No)	Yes		Yes	Yes	Yes	Yes
	Develop guideline for stakeholder engagement policy	Guideline for stakeholder engagement developed (Yes/No)	Yes		-	Yes	-	-
	Design leadership support/training package based on identifying gaps	Training package developed (Yes/No)	Yes		Yes	-	-	-
	Implement leadership support/training package	Number of trainings conducted	36		9	9	9	9
	Identify major leadership gaps using OCA at all levels of surgery and anesthesia service	Number of site assessments conducted	32		16	-	16	-
	Conduct SaLTS mid-term and end-term evaluations	Number of evaluations conducted	2		-	1	-	1
	Conduct regular supervision on SaLTS program	Number of regular supervision conducted	64		16	16	16	16
Improve awareness and meaningful engagement of key local and global stakeholders to strengthen implementation of surgical care strategy	Conduct awareness-creation workshops for targeted stakeholders (professional societies, community and patient associations, media, government offices, etc.) using in-person and virtual platforms, including social media	Number of workshops conducted	1		1	-	-	-
	Develop policy briefs, public communication and branding tools (letters, rollup banners)	Policy brief produced (Yes/No)	Yes		Yes	-	-	-
	Use surgical champions and ambassadors to promote surgical care	Promotions of surgical care champions recognized (Yes/No)	Yes		Yes	Yes	Yes	Yes
	Identify relevant professional networks and scientific conferences to promote surgical care	Number of promotions on SaLTS strategy	4		1	1	1	1

Intervention	Major activity	Indicator	Target	Year 1	Year 2	Year 3	Year 4	Year 5
	strategy and mobilize resources from donor communities							
	Promote PPP model to ensure equitable and affordable surgical care (flagship initiative)	PPP initiated (Yes/No)	0		Yes	Yes	Yes	Yes
Strengthen liaison and referral services	Develop and implement comprehensive surgical referral linkage	Health sector referral policy prepared (Yes/No)	Yes		Yes	-	-	-
Strengthen community-level and pre-hospital surgical emergency, trauma, and ambulance services	Collaborate with ECCD to implement trauma severity scoring and management system	Trauma severity score utilization in emergency and ambulance service system designed and implemented (Yes/No)	0		Yes	-	-	-
	Provide capacity-building training for emergency and ambulance service staffs	Number of capacity-building training sessions conducted	8		-	4	-	4
	Conduct national community surgical need assessment	Assessment conducted (Yes/No)	Yes		Yes	-	-	-

Promote less invasive surgical methods and technologies	Promote minimally invasive surgery	Number of health facilities providing minimally invasive surgery	10			5	5	
	Provide capacity-building for surgical workforce on minimally invasive surgery	Number of surgical workforce on minimal invasive surgery	80			40	40	
	Introduce the public to the advantages of less invasive surgical methods and technologies	Number of public forums conducted	10	2	2	2	2	2
	Ensure implementation of pain management for surgical patients/clients	Number of health facilities adhering to pain management	33	33	33	33	33	33
Strategic Objective 5: Reduce harm								
Develop and introduce occupational safety measures for the surgical workforce	Develop national occupational safety guideline (hepatitis vaccine, liability insurance, legal support, medical insurance, adequate personal protective equipment, etc.)	Occupational safety framework/guideline developed (Yes/No)	Yes		Yes	-	-	Yes
	Provide immunization for COVID-19 and hepatitis vaccination for surgical workforce	COVID-19 immunization support provided (Yes/No)	Yes		Yes	Yes	-	-
Strengthen surgical safety practices (patient identification, surgical site marking, surgical team communication and prevention of SSIs, falls, anesthesia, adverse events, fire)	Improve capacity of surgical workforce on safe surgical practice	SSC utilization rate	32		6	-	13	13
	Support health facilities to implement surgical safety practice guideline	Surgical safety practice guideline developed (Yes/No)	Yes		Yes	-	-	-
	Surgical workforce fire safety training	Number of trained staff on fire safety	73		-	36	17	20
	Train surgical workforce on fire safety and other safety trainings (in-service CPD, pre-service training/curriculum)	Number of facilities that received training on fire and other safety issues	109		55	54		
	Redesign and strengthen systems for risk assessment, incident reporting, and management of adverse events	Number of facilities reporting adverse events	109		33			

	Encourage and support innovative patient safety-related quality improvement projects	Number of safety-related quality improvement projects per facilities	50	10	10	10	10	10

Ensure safe surgery practice through training and medical education	Provide safe anesthesia practice training	Number of ToT training sessions conducted	4		1	1	1	1
	Provide safe obstetric anesthesia training	Number of ToT trainings provided	4		1	1	1	1
	Provide safe OR practice	Number of ToT trainings provided	4		1	1	1	1
	Provide safe pediatric anesthesia practice training	Number of ToT trainings provided	4		1	1	1	1
	Provide support for establishment of surgical skills lab	Number of health facilities supported	10		4	3	3	
	Incorporate surgical safety concepts in pre - service training	Number of health education facilities that incorporate safety concepts in pre-service training	15		5	5	5	
Ensure perioperative patient safety and encourage patient/client decision-making capacity (consent form, preconference session, transport protocol)	Adopt and avail a national surgical consent form translated to local languages	Number of translated consent forms	4		4			
	Ensure proper utilization of consent form	Consent utilization rate	100%	100%	100%	100%	100%	100%
	Ensure proper utilization of pre-anesthesia evaluation	Pre-anesthesia utilization rate	100%	100%	100%	100%	100%	100%
	Support health facilities to develop a patient transport and handover protocol	Health facilities that have developed a handover and transport protocol for surgical patients	33	7	26			

	Standardize and introduce an SSI tracking tool	Number of targeted health facilities tracking SSIs according to developed guidance	109	33	40	36		

Annex 3: Budget Summary

Major activity	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Strategic Objective 1: Access to surgical care	4,989,927	257,162,167	431,476,227	290,985,384	312,501,384	1,297,115,089
Strategic Objective 2: Improve efficiency	9,265,143	154,030,642	102,790,882	147,265,858	110,791,266	524,143,791
Strategic Objective 3: Improve effectiveness	4,761,120	99,864,815	443,026,401	444,193,453	36,511,121	1,028,356,910
Strategic Objective 4: Improve people-centred surgical care	8,655,151	72,952,307	17,417,709	13,878,509	11,663,096	124,566,772
Strategic Objective 5:Reduce harm	5,518,818	86,322,349	60,485,039	57,767,234	24,908,292	235,001,732
Yearly total	**33,190,159**	**670,332,280**	**1,055,196,258**	**954,090,438**	**496,375,159**	**3,209,184,293**

Annex 4: Indicator Matrix

S. N	Indicator	Type of indicator	Level of data collection	Data source	Frequency of data collection	Baseline	Mid-term target (2023)	Final target (2025)
1	Surgical service provision patient satisfaction	Outcome	Health Facility	DHIS-2	Quarterly	44%	49%	54%
2	Surgical volume/100,000 populations	Outcome	Health Facility	DHIS-2	Monthly		1,250	2,500
3	Perioperative mortality rate	Outcome	Health Facility	DHIS-2	Monthly	0.8%	< 4%	<2%
4	Anesthesia adverse events	Outcome	Health Facility	HMIS	Monthly	0.47%	--	--
5	Surgical site infection rate	Outcome	Health Facility	HPMI-Hospital KPI	Monthly	1.7%	< 5%	< 5%
6	Cesarean section rate	Process	Health Facility	HPMI-Hospital KPI	Monthly	4%	7%	10%
7	Proportion of surgical care-related deaths tracked	Process	Health Facility	HPMI-Hospital KPI	Monthly	0%	50%	100%
8	Safe surgery checklist utilization	Process	Health Facility	HPMI-Hospital KPI	Monthly	93%	95%	100%
9	Percentage of population with access to essential surgical care within 2 hours	Process	Health Facility	SARA	Every 2 years		< 4hrs	within 2hrs
10	Number of clients on the wait list for elective surgical service	Process	Health Facility	HMIS	Monthly	TBD	Reduce by 20%	Reduce by 50%
11	Surgical workforce/ 100,000	Input	Population	EDHS	Monthly	1	5	10
12	Percent of facilities providing basic surgical services	Input	Health Facility	SARA	Every 2 years	44%	65%	80%
13	Percent of woredas with access to essential surgical care	Output	Woreda	Admin report	Every 2 years	TBD	90%	100%
14	Proportion of health facilities with electricity 76% to 100%	Input	Health Facility	SARA	Every 2 years	76%	80%	100%
15	Proportion of health facilities with improved water supply from 59% to 90%	Input	Health Facility	SARA	Every 2 years	59%	70%	90%