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MINISTRY OF HEALTH - ETHIOPIA
የዜጎች ጤና ለሃገር ብልፅግና!
HEALTHIER CITIZENS FOR PROSPEROUS NATION!

Federal Democratic Republic of Ethiopia

QUALIFICATION STANDARD

BSC IN ANESTHESIA

ENQF Level VI

Version 01

June 2023

Acknowledgment

This Qualification standard for Bachelor's Degree in Anesthesia Program is developed by Ministry of Health and National Alliance for Quality of Anesthesia Education (NAFQAE) in collaboration with 21 Ethiopian Higher Education Institutions (HEIs) providing Anesthesia Bachelor level training and the Ethiopian Association of Anesthetists (EAA), and the Health Workforce Improvement Program (HWIP).

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INTRODUCTION

During the last twenty years, the education and training system of Ethiopia has undergone several reforms in line with the country's socio-economic development goals. As a result of these reforms, many positive results have been achieved. However, challenges in areas of quality, access, equity, and management, and leadership of education and training remain and need to be addressed to realize the goals of the Growth and Transformation Plan (GTP) and Education Sector Development Program IV (ESDP V). One of the measures being taken to address these challenges is the establishment of the Ethiopian National Qualifications Framework (ENQF).

The ENQF is an instrument for the development, classification, and comparison of Ethiopian qualifications and for the recognition of learning in terms of agreed national standards; through which the sub-sectors of education and training are harmonized; and pathways between them are developed to enhance access and lifelong learning; empower all Ethiopians men and women to contribute to economic transformation.

To become an anesthetist, individuals are required to fulfill specific education and training prerequisites as outlined in the qualification standard. The qualification standard further stipulates that aspiring anesthetist candidates must attain a minimum level of competency in the domains of knowledge, skill, and attitude. This often involves a specified number of clinical hours or a duration of practical experience gained in a clinical setting. A crucial aspect of training for anesthetists is supervised practice across various anesthesia settings, including inpatient, outpatient, and critical care environments. This practical experience is indispensable for anesthetists to acquire the essential skills and become acquainted with the diverse scenarios they may encounter.

The qualification standard incorporates performance assessment criteria to gauge the competency of anesthetists in terms of their knowledge and skills. The standard also underscores the significance of core proficiencies in the field, such as assessing, optimizing, and preparing patients for surgery and anesthesia, proficiently handling anesthesia machinery, equipment, supplies, and monitoring devices, managing patients' airways using different modalities, ensuring safe intraoperative anesthetic management, providing secure postoperative anesthetic care, effective pain management for diverse patient groups, engaging in pre-hospital, emergency, and critical care services, proficiently performing cardiopulmonary resuscitation (CPR), adhering to ethical and legal principles in anesthesia practice, contributing to scientific evidence generation and utilization, and overseeing anesthesia service management within a healthcare facility.

This qualification standard document details the mandatory format, sequencing, wording, and layout for the Ethiopia Qualification Standard which is comprised of ***two*** major sections. The first section entails a ***general qualification*** description structured under the following topics:

- Qualification title
- Level on ENQF
- Level descriptor
- Entry route
- Qualification relevance
- Resource
- List of competencies

The second section of this document focuses on individual ***competency descriptions***. This section is outlined in a standard template structured through the following areas:

- Competency title
- Competency code

- Competency description
- Sub competencies
- Performance criteria

Altogether, the document includes ***11*** competencies, ***56*** sub-competencies, and ***544*** performance criteria structured under the overarching competencies.

CONTENTS

Acrimony

ENQF – Ethiopian National Qualification Framework

ASA - American Society of Anesthesiologists

CPR – Cardiopulmonary Resuscitation

ETA – Education and Training Authority

BSc - Bachelors of Science

IPC - Infection prevention and control

GTP - Growth and Transformation Plan

ESDP V - Education Sector Development Program V

MAC –Monitored Anesthesia Care

PACU – Post Anesthesia Care Unit

PCA – Patient Controlled Analgesia

RHSCs – Regional Health Science College

AAGBI - Association of Anesthetists of Great Britain and Ireland

DAS – Difficult Airway Society

SECTION ONE: GENERAL DESCRIPTION OF QUALIFICATION

Title of qualification

The title for this qualification will be bachelor science degree in Anesthesia in English or "□□□□□ □□□□ □□□ □□□□□□□" in Amharic.

Volume (ECTS)

329ECTS/200CrHrs

Level of Qualification

According to the Ethiopian National Qualification Framework (ENQF), the level designated for this qualification will be LEVEL VI

Qualification Description

A bachelor degree in anesthesia qualification is aimed at equipping learners with the minimum knowledge, skill and attitude required to provide safe, compassionate and respectful perioperative, pre-hospital, emergency and critical care as a member of multidisciplinary team. This qualification enables graduates for general employment/ practice, entry into postgraduate programs and research. It prepares the individuals to multiple responsibilities requiring great autonomy and professional decision-making in patient care. Being qualified in bachelor of anesthesia enables graduates to become knowledgeable, safe and competent practitioners; contributor to the community needs; creative, innovative, sensitive and responsive towards the community; sensitive to culture and environment; responsible to professional, ethical and social norms; good leader communicator and collaborator; problem solver and researcher; and lifelong learner.

Entry requirement

The entry requirements for this qualification will be as follows:

1. Declared requirement for bachelor of anesthesia by authorized university/ school/ department for that academic year; OR
2. Advanced diploma/ level V graduates in Anesthetic nursing with 2-year service and able to pass entry exam of the teaching Institution

Qualification relevance

1. Labor market

1.1. Graduates from this program can be employed by all level of health facilities in all sectors that provide anesthetic, critical care and pain management services, pre-hospital service, higher education institutions (university and RHSCs) and research institutes in accordance to national standards.

1.2. Overseas employment and market for anesthesia graduates is open

2. **Further education/ career path:**

   Any anesthesia bachelor holder can pursue his/her career in any category of anesthesia or related program including a master's degree in public health, perfusionist, respiratory therapy, and biomedical sciences based on their interest.

Resource

1. **Human resource:**
   1.1. A teaching staff with relevant qualifications and academic mix (30% Doctor of Philosophy, 50% Master's degree, and 20% first degree or less)
   1.2. A ratio of academic staff to students of 1:20 for classroom teaching and 1:5 for clinical practice
   1.3. Trained and licensed clinical preceptors/ trainers with at least a bachelor of degree in Anesthesia and with a minimum of 2 years of service in the clinical area
   1.1. Technical/ laboratory assistants that are properly trained to handle simulated teachings in a skills lab
   1.2. Supportive staff to facilitate the learning-teaching process
2. **Skills lab/simulation lab** - adequate space, equipment, simulators, materials and tools necessary to teach the core professional competencies, including biomedical experiments, airway management, regional and general anesthesia, pain management, basic and advanced cardiac life support (child and adult), and patient monitoring.
3. **Clinical teaching** - A dedicated practical teaching health facilities with adequate client caseload and case mix as per the core competencies. Besides, a range of clinical practice sites (primary, secondary, tertiary levels) should be prepared.
4. **Community teaching** - A designated community catchment area for community-based teaching along with a supportive leadership at different levels.

Quality assurance

1. Teaching Institution running the anesthesia program at bachelor degree must meet all ETA basic standards for the qualification,
2. The teaching institution running the anesthesia program must be accredited
3. Teaching institution running the anesthesia program at the bachelor degree level must establish an internal quality assurance and improvement system
4. Availability of approved Qualification standard for the anesthesia program
5. 100% of program learning critical aspect of outcomes must be achieved in the final assessment provided by the teaching Institution
6. Industry interim check
7. In-school exit exams shall be applied to determine graduates' fitness to practice
8. Licensure examination: Authorized institution delegated by the industry must follow all competencies, but in particular, the critical component of the profession must be included to develop licensure exam.

Awarding degree and competencies achieved

Every teaching institution provides:

1. The qualification degree, and
2. Evidence for the accomplishment of critical aspects of competencies for the qualification

List of competencies

Based on a comprehensive examination of both local and international evidence regarding qualification standards, the competencies required for Level VI qualification have been established. Consequently, the 11 competencies expected for individuals who qualify with a Bachelor of Anesthesia degree upon completion are outlined below. The figure also shows the interaction between the above list of competencies is indicated in the below competency network picture.

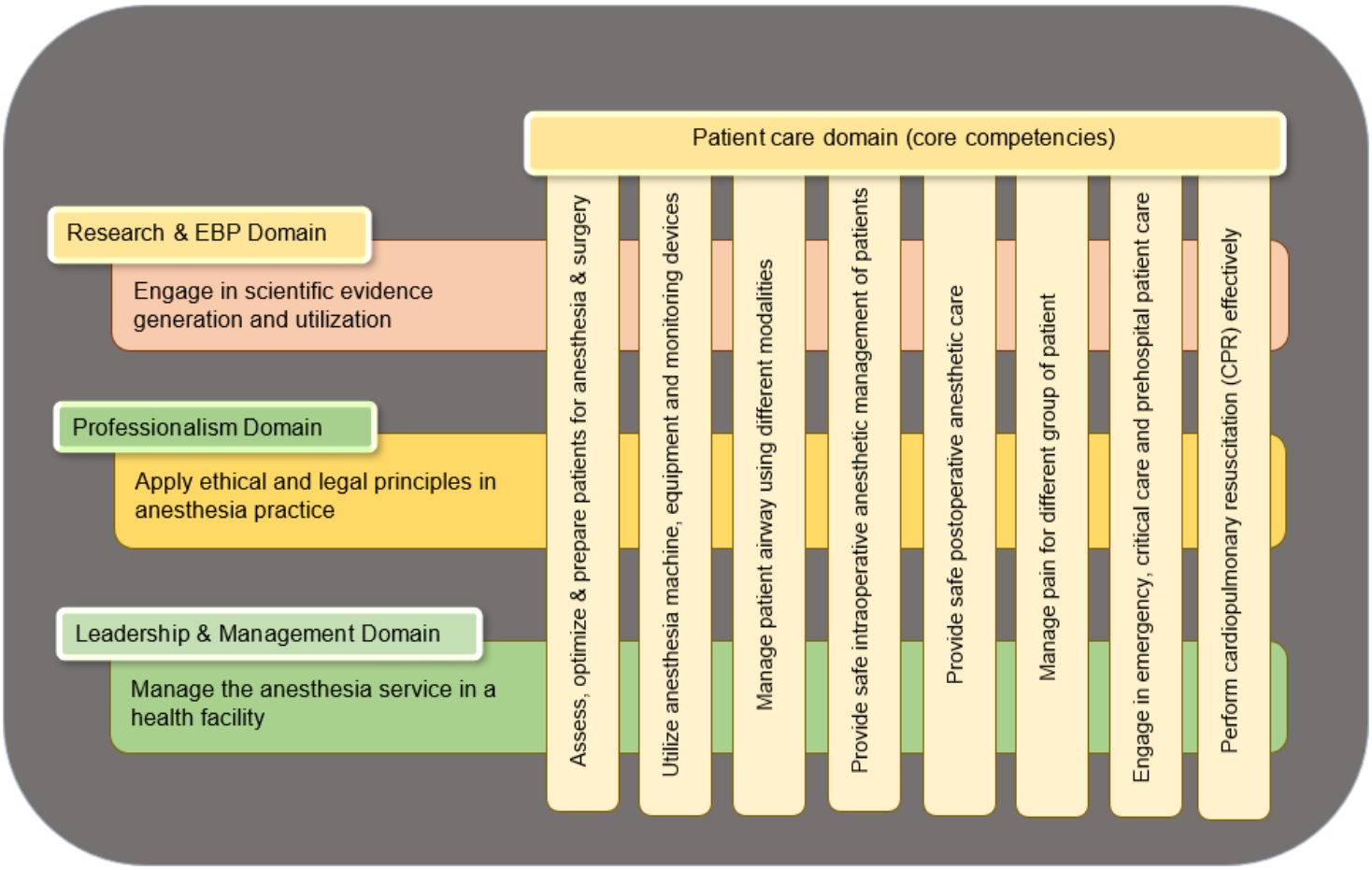

Figure 1: List of the 11 competencies networked each other to demonstrate the interconnection among the Level VI qualification competencies

SECTION TWO: COMPETENCY DESCRIPTION

Qualification Standard: Bachelors of Science (BSc) degree in Anesthesia	
Competency title	Assess, optimize and prepare patients for surgery and anesthesia
Competency code	HLT ANS6 01 0413
Competency description	This competency encompasses the knowledge, skill, and attitude required to take a comprehensive history, perform a relevant physical examination, order and interpret basic laboratory and diagnostic modalities, stratify risk based on these findings, obtain informed consent, and optimize and prepare patients.

Sub competency	Performance Criteria
1. Take comprehensive pre-anesthetic history	**Knowledge** 1.1. Recognize components of pre-anesthetic history ***1.2.*** Identify symptoms of ***common comorbidities*** 1.3. Recognize the effects of routine medications on the body system 1.4. Recognize the interaction between routine medications and anesthetic agents **Skill** 1.5. Perform body system review through history 1.6. Perform chart review for relevant surgical and anesthetic history 1.7. Take a relevant history from adult patients 1.8. Take a relevant history from ***special population*** groups **Attitude** 1.9. Apply principles of effective communication 1.10. Demonstrate motivation, compassionate, and caring behavior
2. Perform a relevant physical examination	**Knowledge** 2.1 Recognize the normal structure and function of body systems 2.2 Identify components of physical examination **Skill** 2.3 Perform body system-based physical examination 2.4 Recognize relevant systemic findings **Attitude** 2.5 Maintain patient autonomy during examination
3. Order and interpret relevant laboratory and	**Knowledge** 3.1 Identify relevant ***laboratory and diagnostic investigations*** as per patient indication

Sub competency	Performance Criteria
diagnostic investigations	**Skill** 3.2 Order relevant laboratory and diagnostic investigations 3.3 Interpret common laboratory and diagnostic investigations **Attitude** 3.4 Demonstrate compassion in avoiding unnecessary investigations
4. Determine the clinical status of a patient	**Knowledge** ***4.1*** Recognize different risk ***scoring and stratification methods*** **Skill** 4.2 Reach on relevant pre-anesthetic diagnosis 4.3 Demonstrate clinical reasoning skill in stratifying the risk of patients based on assessment findings 4.4 Decide patient fitness for anesthesia 4.5 Determine the clinical status of a patient using the American Society of Anesthesiologists (ASA) clinical status classification 4.6 Formulate anesthesia management plan based on pre-anesthetic assessment findings **Attitude** 4.7 Provide adequate information to patients and patient families regarding clinical status (as applied) 4.8 Collaborate as part of a multidisciplinary team member to reach a definitive diagnosis
5. Obtain informed consent	**Knowledge** 5.1 Identify components of informed consent 5.2 Recognize medico-legal requirements for informed consent **Skill** 5.3 Provide appropriate and adequate information on anesthetic management plan including possible advantage, limitation, and adverse events of anesthetic techniques and surgical intervention 5.4 Obtain voluntary informed consent 5.5 Maintain proper documentation **Attitude** 5.6 Ensure patient understanding for informed decision making 5.7 Respect patients', patient families, and other legal body decisions and choices

Sub competency	Performance Criteria
6. Prepare patients for surgery and anesthesia	**Knowledge** 6.1 Recognize the importance of patient and family education and counseling 6.2 Rationalize the need for preoperative cessation of smoking **Skill** 6.3 Discuss patient-specific fasting guidelines with the patient 6.4 Select and administer fluids, premedications, and others including aspiration prophylaxis 6.5 Apply infection prevention strategies including prophylaxis antibiotics 6.6 Decide the administration of common medications preoperatively **Attitude** 6.7 Reassure patients and family about the procedure 6.8 Engage in multidisciplinary teamwork to prepare patients for anesthesia and surgery
7. Optimize unstable patients for anesthesia and surgery	**Knowledge** 7.1 Recognize the importance of patient optimization before anesthesia 7.2 Identify patients who need preoperative optimization 7.3 Identify different types of intravenous fluids with their compositions 7.4 Calculate intravenous fluid requirement based on patient conditions 7.5 Identify fluid and electrolyte disturbances in patients 7.6 Recognize different types of blood and blood products with their composition 7.7 Discuss the impact of comorbidities on anesthesia management and patient outcome **Skill** 7.8 Secure intravenous line for patients who need fluid resuscitation 7.9 Perform other fundamental nursing skills (e.g. catheterization, NGTI) 7.10 Correct fluid and electrolyte imbalance preoperatively 7.11 Administer blood and blood products 7.12 Optimize patients with respiratory system comorbidities 7.13 Optimize patients with cardiovascular system comorbidities 7.14 Optimize patients with endocrine system comorbidities 7.15 Optimize patients with CNS comorbidities 7.16 Optimize patients with renal comorbidities 7.17 Optimize special group of patients before surgery and anesthesia **Attitude** 7.18 Maintain complete and adequate documentation in all stages of patient preparation and optimization 7.19 Respect patient autonomy in all stages of patient optimization

Variable	Range
Common comorbidities	***Common comorbidities*** include: ▪ Hypertension ▪ Diabetic Mellitus ▪ Asthma ▪ Epilepsy
Special population	▪ Pediatric patients ▪ Obstetric patients ▪ Geriatric Patients ▪ Psychiatric patients ▪ Critically ill patients
laboratory and diagnostic investigations	▪ Complete Blood Count ▪ Urine Analysis ▪ X-ray ▪ Coagulation studies ▪ Electrocardiogram
Scoring and stratification methods	Perioperative patient scoring and stratification methods are tools used to assess a patient's overall health status and predict the risk of complications during and after a surgical procedure.

Qualification Standard: Bachelors of Science (BSc) degree in Anesthesia	
Competency title	Utilize anesthesia machine, equipment, supply, and monitoring devices properly
Competency code	HLT ANS6 02 0413
Competency description	This unit describes the knowledge, skills, and attitude required to manage medical gas sources, prepare and utilize anesthesia machine, apply and utilize standard patient monitoring devices across the care continuum, prepare and/ or utilize airway equipment, utilize anesthetic and ancillary equipment, and apply safety measures to manage perioperative hazards.

Sub-competencies	**Performance Criteria**
1. Manage medical gas sources/ supplies according to acceptable practice standards and protocols	**Knowledge** 1.1 Identify sources for medical gases 1.2 Recognize the application of physics in gas compression and delivery 1.3 Identify types of medical gases compressed in cylinders 1.4 Explain the working mechanisms for oxygen concentrators **Skill** 1.5 Apply the safety recommendations for handling medical gas sources 1.6 Check medical cylinders for integrity and pressure 1.7 Store reserve cylinders safely in a designated place with a system of inventory. 1.8 Monitor central pipeline systems for compression pressures and oxygen fractions (FiO_2). 1.9 Detect routine pipeline and cylinder faults and perform troubleshooting procedures as appropriate 1.10 Connect anesthesia machines to medical cylinders correctly. 1.11 Attach pipeline supplies to the anesthesia machine correctly. 1.12 Assemble oxygen concentrator to provide supplemental oxygen to patients through different routes **Attitude** 1.13 Safely handle medical gas sources.

Sub-competencies	Performance Criteria
2. Prepare and utilize anesthesia machine safely	**Knowledge** 2.1 Explain the essential parts of the anesthesia machine 2.2 Explain the safety features of the anesthetic machine 2.3 Identify common ***breathing systems*** with their advantages, limitations, and indications 2.4 State the different Mapleson classifications and their functional characteristics 2.5 Discuss the working mechanism and features of anesthetic machine ventilator 2.6 Recognize the physiologic rationale for using humidification and filtration devices on anesthesia machine and breathing systems 2.7 Recognize the rationale for the use of anesthetic scavenging systems **Skill** 2.8 Troubleshoot routine anesthesia machine failures 2.9 Perform routine anesthesia machine functionality test using AAGBI[1] machine checklist and calibrate if required 2.10 Select and use appropriate breathing system depending on the patient and procedural characteristics 2.11 Utilize anesthesia machines to administer medical gases and volatile/ inhalational anesthetics 2.12 Set and use anesthesia machine ventilators 2.13 Manage hazards of anesthesia machines and breathing systems **Attitude** 2.14 Properly handle anesthesia machines and breathing systems 2.15 Apply the principles of infection prevention and control in using anesthesia machines
3. Apply and utilize standard patient monitoring	**Knowledge** 3.1 Explain the working principles for pulse-oximetry, ECG, and capnography 3.2 Explain the principles of nerve stimulation for neuromuscular monitoring and nerve block purposes **Skill** 3.3 Interpret data outputs from standard monitoring devises 3.4 Correctly apply standard patient monitoring devises routinely 3.5 Utilize gas pressure monitoring devices 3.6 Regularly monitor oxygenation, ventilation, and airway pressures of patients using the minimum recommended devices

[1] Association of Anesthetists of Great Britain and Ireland

Sub-competencies	Performance Criteria
	3.7 Monitor circulation status of patients using sense organs and recommended non-invasive devices 3.8 Monitor body temperature using non-invasive monitoring devises 3.9 Monitor neuromuscular functions using nerve stimulators 3.10 Check the functionality of monitoring devices regularly 3.11 Record patient data appropriately **Attitude** 3.12 Handle patient monitoring devices safely 3.13 Apply the principles of infection prevention and control in using monitoring devices
4. Prepare and/ or utilize airway equipment	**Knowledge** 4.1 Recognize indications for different airway equipment 4.2 Identify parts of airway equipment 4.3 Compare the different types of airway equipment (including advantage, indication, contraindication, and limitation) **Skill** 4.4 Select the right size, and apply facemask appropriately 4.5 Select and apply airways (oropharyngeal and nasopharyngeal) 4.6 Insert supraglottic airway devices effectively 4.7 Assemble and utilize laryngoscopes safely 4.8 Select and utilize tracheal tubes 4.9 Select and prepare lung isolation devices 4.10 Prepare and utilize devices required to manage the difficult airway **Attitude** 4.11 Provide care for different airway equipment 4.12 Apply the principles of infection prevention and control in using airway equipment
5. Utilize ancillary anesthetic equipment & materials safely	**Knowledge** 5.1 Explain the requirement for ancillary anesthetic equipment and materials 5.2 Analyze the clinical indications of relevant ancillary equipment and materials **Skill** 5.3 Select ancillary equipment and materials required per the type of anesthesia planned/ decided 5.4 Check functionality of ancillary equipment and materials and prepare them for utilization 5.5 Process (clean/ disinfect/ sterilize) equipment and materials as per recommended infection prevention and control (IPC) guideline

Sub-competencies	Performance Criteria
	5.6 Return used materials to the storage place at the end of surgery/ anesthesia 5.7 Set up and prepare equipment for target-controlled infusion (as infusion pumps or PCA) **Attitude** 5.8 Comply with institutional policies for the secure handling and management of equipment, material, and medicines, including controlled drugs, 5.9 Maintain clear, accurate, and complete records of equipment functionality and use
6. Apply standard safety measures to manage perioperative hazards	**Knowledge** 6.1 Recognize principles of physics pertinent to the practice of anesthesia **Skill** 6.2 Implement safety measures required during surgical use of equipment, including cauteries and x-ray 6.3 Apply electric safety measures and precautions **Attitude** 6.4 Comply with institutional policies in minimizing perioperative hazards 6.5 Maintain clear, accurate and complete records of perioperative hazards

Qualification Standard: Bachelors of Science (BSc) degree in Anesthesia	
Competency title	Manage patients' airway using different modalities
Competency code	HLT ANS6 03 0413
Competency description	This competency encompasses the knowledge, skill, and attitude required to asses & manage patient's airway using different modalities.

Sub-competencies	Performance Criteria
1. Assess patients' airway using different techniques	**Knowledge** 1.1. Recognize the relevant history of the patient airway 1.2. Identify ***structural predictors*** of difficult airway 1.3. Identify intra-oral anatomic structures 1.4. Explain the impact of respiratory physiology on the technique of airway management 1.5. Identify essential airway management equipment based on specifications, use/ indication, advantage, and limitations **Skill** 1.6. Perform components of airway examination 1.7. Order relevant investigation for airway assessment **1.8.** Determine airway grade/ status using different airway parameters and interpret findings to determine the **level of difficulty** 1.9. Develop an airway management plan **Attitude** 1.10. Maintain patient privacy and confidentiality during airway examination 1.11. Apply principles of effective communication with patients
2. Manage airway using different modalities	**Knowledge** 2.1 Identify basic components of airway management 2.2 Recognize difficulty airway management algorism 2.3 Recognize the differences between adult and pediatric airways 2.4 Recognize the impact of a change in respiratory physiology on technique/ approach to airway management **Skill** 2.5 Select, assemble and prepare necessary airway equipment per the developed management plan 2.6 Place patients on appropriate anatomical position to facilitate the management of airway 2.7 Insert endotracheal tube using a laryngoscope 2.8 Insert supraglottic airway devices

Sub-competencies	Performance Criteria
	2.9 Manage ***difficult airway*** as per the DAS[2] management guideline 2.10 Participate in applying advanced airway management techniques ***2.11*** Manage common airway management ***complications*** 2.12 Plan and provide airway management training to team members **Attitude** 2.13 Demonstrate compassionate, respectful, and caring behavior 2.14 Collaborate with the team during airway management including complications management 2.15 Process contaminated equipment and dispose of body fluids safely following IPC principles

Variable	Range
Structural predictors	Structural predictors of difficult airway include: ▪ Loose teeth ▪ High arching palate ▪ Receding mandible ▪ Short & bull neck ▪ Beard face
Level of difficulty	▪ Difficult mouth opening ▪ Difficult mask ventilation ▪ Difficult laryngoscopy ▪ Difficult intubation
Difficult airway refers to:	▪ Difficult mask ventilation ▪ Difficult laryngoscopy ▪ Difficult Intubation ▪ Difficult surgical airway
Complications	Common complications related to airway management includes (but not limited to) ▪ Laceration of soft tissues ▪ Laryngospasm ▪ Vocal cord paralysis ▪ Dislocation of the arytenoid cartilages or mandible ▪ Perforation of the trachea or the esophagus ▪ Endo-bronchial or esophageal intubation ▪ Dental damage ▪ Hemorrhage ▪ Aspiration of gastric contents or foreign bodies ▪ Increased intracranial or intraocular pressure ▪ Hypoxemia, hypercarbia ▪ Fracture or dislocation of the cervical spine ▪ Spinal cord damage ▪ Trauma to the eye

2 Difficult Airway Society

Qualification Standard: Bachelors of Science (BSc) degree in Anesthesia	
Competency title	Provide safe intraoperative anesthetic management for patients
Competency code	HLT ANS6 04 0413
Competency description	This competency encompasses the knowledge, skills, and attitude required for the intraoperative anesthesia management of general surgery, obstetrics, gynecologic, trauma, orthopedic, pediatrics and neonatal, thoracic emergencies, geriatrics, daycare, neurologic, ophthalmic, ENT, and maxillofacial surgeries.

Sub-competencies	**Performance Criteria**
1. Manage anesthesia for different general surgical procedures	**Knowledge** 1.1 Explain anatomy and physiology relevant to common general surgical procedures 1.2 Recognize the effect of immunosuppression on the anesthetic management of patients undergoing general surgery ***1.3*** Discuss anesthetic consideration for ***common general surgical procedures*** 1.4 Explain the effects of ***different anesthetic drugs*** on endocrine, genitourinary, gastrointestinal, and hepatobiliary systems 1.5 Explain the ***stress responses*** for anesthesia and surgery ***1.6*** Recognize challenges of ***complex gastrointestinal surgeries*** 1.7 Identify different components of ERAS 1.8 Recognize discharge criteria for day-case surgical patients **Skill** 1.9 Select appropriate anesthetic drugs and techniques for common general surgery 1.10 Manage anesthesia for common elective general surgical patients with ASA class III and lower and SHAPE grade of below IV. 1.11 Participate in the anesthetic management of elective surgical patients with ASA physical status of above IV and SHAPE of IV and above. 1.12 Manage intraoperative anesthesia of patients undergoing emergency general surgery. 1.13 Perform ***common regional blocks*** in patients undergoing common general surgery. 1.14 Manage anticipated and sudden ***intraoperative complications*** during common general surgery 1.15 Develop day case patient selection & management protocols 1.16 Demonstrate principles and techniques of ERAS and day case 1.17 Manage anesthesia for day case surgery

Sub-competencies	Performance Criteria
	Attitude 1.18 Maintain compassion and respect throughout the management of patients undergoing general surgical patients 1.19 Demonstrate organizational and managerial skill to lead a day-case surgical unit 1.20 Maintain proper documentation
2. Manage anesthesia for obstetrics and gynecologic surgery	**Knowledge** 2.1 Explain the effects of different physiologic and anatomic changes of pregnancy on the intraoperative anesthetic management 2.2 Explain specific considerations for obstetrics and gynecologic surgery 2.3 Explain common pharmacologic drugs used in the management of labor and delivery 2.4 Identify high-risk pregnancy and associated implications on anesthesia management **Skill** 2.5 Select appropriate anesthetic drugs and techniques for patients undergoing obstetrics and gynecologic surgery 2.6 Position obstetrics and gynecologic patients for surgery and anesthesia 2.7 Manage anesthesia for elective obstetrics and gynecologic surgery in patients with ASA physical status III and lower. 2.8 Participate in the management of anesthesia for elective obstetrics and gynecologic surgery in patients with ASA physical status IV and above 2.9 Manage intraoperative anesthesia for patients undergoing emergency obstetrics and gynecologic surgery. 2.10 Recognize and manage intraoperative complications during obstetrics and gynecologic surgery 2.11 Perform neonatal and maternal resuscitation 2.12 Monitor patients having labor epidural analgesia **Attitude** 2.12 Recognize scope and infrastructure limitations and liaise patients for further care 2.13 Maintain compassion and respect throughout the management of patients undergoing obstetrics and gynecologic surgery 2.14 Maintain proper documentation
3. Manage anesthesia for trauma and orthopedic surgery	**Knowledge** 3.1 Discuss the different types of shock 3.2 Explain specific anesthetic consideration for trauma and orthopedic surgery 3.3 Identify appropriate anesthetic drugs and techniques to be used for patients undergoing trauma and orthopedic surgery

Sub-competencies	Performance Criteria
	3.4 Compare and contrast different types of regional nerve blocks based on indication, contraindication, advantage, and disadvantage 3.5 Explain the pharmacologic mechanism of local anesthetic agents **Skill** 3.6 Apply preventive strategies for common perioperative complication attributable to orthopedic surgery 3.7 Manage anesthesia for patients with different types of shock 3.8 Apply the principles of damage control resuscitative surgery 3.9 Participate in the management of anesthesia for elective orthopedic procedures in patients with ASA physical status III and above 3.10 Prepare relevant equipment required to perform regional nerve blocks 3.11 Perform ***common regional blocks*** for orthopedic surgery 3.12 Select appropriate anesthetic drugs and techniques to be used for burn and plastic 3.13 Manage anesthesia for burn and plastic surgery 3.14 Manage intraoperative complications during plastic and bariatric surgery **Attitude** 3.15 Maintain compassion and respect throughout the management of patients undergoing trauma and orthopedic surgery 3.16 Maintain proper documentation
9. Manage anesthesia for geriatrics patients undergoing surgery	**Knowledge** 4.1 Describe the physiologic, anatomic, and pharmacologic changes associated with aging 4.2 Explain the anesthetic implications of aging **Skill** 4.3 Apply anesthetic considerations during the management of geriatric patients 4.4 Select appropriate anesthetic drugs and techniques to be used for geriatrics patients undergoing surgery 4.5 Manage anesthesia for geriatrics patients with ASA class III and lower who undergo elective surgery. 4.6 Participate in the management of anesthesia for geriatrics patients with ASA physical status IV and above undergoing elective surgery 4.7 Manage intraoperative anesthesia for all geriatrics patients undergoing emergency surgery. **Attitude** 4.8 Maintain compassion and respect throughout the management of geriatric patients undergoing surgery 4.9 Maintain proper documentation

Sub-competencies	Performance Criteria
10. Manage anesthesia for pediatrics surgery	**Knowledge** 5.1 Describe the anatomic, physiological, psychological, and pharmacological differences between children and adults 5.2 Explain specific anesthetic consideration for pediatrics and neonatal surgery **Skill** 5.3 Calculate and administer the required perioperative fluid, blood, and blood products 5.4 Apply the intraoperative patient monitoring devices and utilize them accordingly 5.5 Manage uncooperative child perioperatively, including smooth induction 5.6 Select the appropriate anesthetic drugs and techniques for pediatrics and neonatal patients undergoing surgery 5.7 Apply appropriate anesthetic techniques to a child with difficult intravenous access 5.8 Manage anesthesia for pediatric patients aged 1 year and above with ASA class of III and lower who undergo uncomplicated elective surgery 5.9 Participate in the anesthetic management of pediatric patients with ASA physical status of IV 5.10 Engage in the anesthetic management of neonates and infants undergoing elective surgical procedures 5.11 Manage intraoperative anesthesia for pediatrics and neonatal emergency surgery 5.12 Manage common intraoperative complications during pediatrics surgery 5.13 Perform ***common regional blocks in pediatric*** patients 5.14 Predict difficult pediatric airway, recognize limitations and consider consulting/ referring patients for better care **Attitude** 5.15 Maintain compassion and respect throughout the management of pediatrics and neonatal patients undergoing surgery 5.16 Maintain proper documentation
11. Manage anesthesia for emergency thoracic surgery	**Knowledge** 6.1 Discuss focused preoperative evaluation and preparation for emergency thoracic surgical patients 6.2 Identify peculiar monitoring devices for thoracic surgery 6.3 Explain indications for one-lung intubation 6.4 Discuss anesthesia management for diagnostic thoracic procedures 6.5 Explain normal respiratory mechanics 6.6 Explain the effects of different anesthetic drugs and techniques on respiratory and cardiovascular systems

Sub-competencies	Performance Criteria
	6.7 Recognize the effects of positioning, relaxation, HPV, and anesthesia on respiratory mechanics **Skill** 6.8 Manage fluid and electrolyte balance 6.9 Select the appropriate anesthetic drugs, techniques, and monitoring for patients undergoing emergency thoracic surgery 6.10 Manage intraoperative anesthesia for emergency thoracic surgery. 6.11 Participate in the management of anesthesia for elective thoracic surgical procedures 6.12 Manage ***intraoperative complications*** during thoracic surgery 6.13 Decide when to extubate and discharge emergency thoracic surgical patients from OR **Attitude** 6.14 Maintain compassion and respect throughout the management of patients undergoing thoracic surgery 6.15 Maintain proper documentation
7. Manage anesthesia for ophthalmic surgery	**Knowledge** 7.1 Describe the anatomy and physiology of the eye 7.2 Recognize the interaction between ophthalmic medications and anesthetic agents and adjuvants 7.3 Identify common complications of ophthalmic anesthesia and surgery **Skill** 7.4 Select the appropriate anesthetic drugs and techniques for patients undergoing ophthalmic surgery 7.5 Manage anesthesia for patients with ASA physical status III and lower undergoing elective ophthalmic surgery 7.6 Manage common intraoperative complications during ophthalmic surgery 7.7 Perform common regional blocks for ophthalmic surgery 7.8 Participate in the anesthetic management for patients with ASA physical status IV and above who undergo elective ophthalmic surgery 7.9 Manage intraoperative anesthesia of patients undergoing emergency ophthalmic surgery **Attitude** 7.10 Maintain compassion and respect throughout the management of patients undergoing ophthalmic surgery 7.11 Maintain proper documentation

Sub-competencies	Performance Criteria
12. Manage anesthesia for maxillofacial and ENT surgery	**Knowledge** 8.1 Explain the specific considerations of maxillofacial and ENT surgery 8.2 Recognize challenges of maxillofacial and ENT surgeries 8.3 Decide airway management modality before inducing anesthesia 8.4 Recognize the effect of chemo- and radiotherapy on airway management 8.5 Recognize concomitant comorbidities for pediatric patients coming for ENT surgery **Skill** 8.6 Select appropriate anesthetic drugs and techniques for patients undergoing maxillofacial and ENT surgery 8.7 Manage anesthesia for patients with ASA class III and lower who undergo uncomplicated elective maxillofacial and ENT surgeries. 8.8 Participate in the anesthetic management of patients with ASA physical status IV and above for elective maxillofacial and ENT surgery 8.9 Manage intraoperative anesthesia for patients undergoing emergency maxillofacial and ENT surgery. 8.10 Manage anticipated and sudden intraoperative complications during maxillofacial and ENT surgery **Attitude** 8.11 Maintain compassion and respect throughout the management of patients undergoing maxillofacial and ENT surgery 8.12 Maintain proper documentation
13. Manage anesthesia for neurosurgery	**Knowledge** 9.1 Explain clinically relevant anatomy and physiology of the central nervous system 9.2 Identify the mechanism and clinical features for raised ICP 9.3 Explain the effects of different anesthetic drugs and techniques on ICP 9.4 Discuss the effect of different neurosurgical positioning in anesthetic management **Skill** 9.5 Select appropriate anesthetic drugs and techniques for patients undergoing neurosurgery 9.6 Participate in the application and interpretation of findings of invasive monitoring during neurosurgery 9.7 Manage anesthesia for patients with ASA class II and lower and SHAPE grade of III and lower undergoing uncomplicated elective neurosurgery, except posterior fossa surgery 9.8 Participate in the management of anesthesia for elective neurosurgery in patients with ASA physical status IV and above

Sub-competencies	Performance Criteria
	9.9 Manage intraoperative anesthesia for patients undergoing emergency neurosurgery 9.10 Manage ***intraoperative complications*** during neurosurgery **Attitude** 9.11 Maintain compassion and respect throughout the management of patients undergoing neurosurgery 9.12 Maintain proper documentation
10. Manage remote anesthesia	**Knowledge** 10.1 Identify peculiar challenges and safety risks associated with remote anesthesia **Skill** 10.2 Perform pre-procedural risk assessment for procedural sedation 10.3 Select a conducive environment for procedural sedation 10.4 Select appropriate drugs and techniques for procedural sedation 10.5 Manage anesthesia for monitored anesthesia care (MAC) 10.6 Manage *complications* during remote anesthesia **Attitude** 10.7 Function as integral member of multidisciplinary team

Variable	Range
common general surgical procedures	Common general surgical procedures includes but not limited to: ▪ Appendectomy ▪ Cholecystectomy ▪ Hernia repair ▪ Gastrointestinal surgery (e.g., colectomy, gastrectomy, esophagectomy, etc.) ▪ Pancreatectomy ▪ Splenectomy ▪ Thyroidectomy ▪ Bariatric surgery ▪ Colorectal surgery ▪ Breast surgery (e.g., mastectomy, lumpectomy, etc.) ▪ Hemorrhoidectomy ▪ Laparoscopic surgery ▪ Abdominal exploration and laparotomy ▪ Lymph node biopsy and removal ▪ Skin lesion removal ▪ Varicose vein surgery ▪ Wound debridement and closure ▪ Endocrine surgery (e.g., adrenalectomy, parathyroidectomy, etc.)

different anesthetic drugs	1.18 Explain the effects of ***different anesthetic drugs*** on endocrine, genitourinary, gastrointestinal, and hepatobiliary systems 1.19 Explain the ***stress responses*** for anesthesia and surgery ***1.20*** Recognize challenges of ***complex gastrointestinal surgeries*** 1.21 Identify different components of ERAS 1.22 Recognize discharge criteria for day-case surgical patients
stress responses	The stress response involves the activation of the sympathetic nervous system and the release of certain hormones, such as cortisol, epinephrine, and norepinephrine.
Complex gastrointestinal surgeries	***Complex gastrointestinal surgeries includes but not limited to:*** ▪ Pancreaticoduodenectomy (Whipple procedure) ▪ Esophagectomy ▪ Gastrectomy ▪ Colectomy ▪ Liver resection ▪ Small bowel resection ▪ Splenectomy ▪ Bariatric surgery ▪ Bowel obstruction surgery
Common intraoperative complications	Common intraoperative complications include (but not limited to) ▪ Hypoxia, ▪ Hypoglycemia, ▪ Bronchospasm, ▪ Bleeding, ▪ Hypo/hypertension, ▪ Brady/tachycardia, ▪ Shock and ▪ Cardiac arrest.
Common regional blocks for orthopedic surgery	Common regional blocks for orthopedic surgery include: ▪ Central neuraxial regional blocks: spinal and caudal ▪ Upper extremity blocks: axillary, elbow, wrist, and digital blocks ▪ Lower extremity blocks: saphenous and ankle blocks ▪ Common trunk blocks: superficial cervical plexus, transverse abdominis plane (TAP) block, rectus sheath, and hernia block

Common regional blocks in pediatrics	Common regional block includes ▪ Caudal Block ▪ Hernia Block ▪ Penile Block ▪ Local Anesthetic Infilitrations

Qualification Standard: Bachelors of Science (BSc) degree in Anesthesia	
Competency title	Provide safe postoperative anesthetic care
Competency code	HLT ANS6 05 0413
Competency description	This competency encompasses the knowledge, skill, and attitude required to engage in postoperative care of a surgical patient, handover the patient to a respective unit, monitor the clinical status of a patient, manage common postoperative complications and determine patient's discharge from PACU.

Sub-competencies	Performance Criteria
1. Provide postoperative care of a surgical patient	**Knowledge** 1.1 Recognize components of postoperative care 1.2 Identify extubation criteria at the end of surgery and anesthesia 1.3 Determine patient admission criteria for PACU **Skill** 1.4 Develop a postoperative management plan 1.5 Determine fitness for extubation 1.6 Perform safe extubation ***1.7*** Provide ***routine postoperative care*** 1.8 Provide postoperative care for a special group of patients **Attitude** 1.9 Demonstrate compassion and respect throughout the postoperative care. 1.10 Maintain complete and adequate documentation throughout the postoperative caregiving
2. Handover patient to respective unit postoperatively	**Knowledge** 2.1 Identify relevant variables to be communicated **Skill** 2.2 Deliver relevant information to the post-operative team 2.3 Conduct safe patient transfer to PACU **Attitude** 2.4 Maintain patient autonomy during patient transfer and handover. 2.5 Inform family members about the condition of the patient during transfer 2.6 Maintain complete and adequate documentation
3. Monitor clinical status of a patient	**Knowledge** 3.1 Identify systems/ variables to be monitored in the postoperative period 3.2 Recognize acceptable range/ value of monitoring variables

Sub-competencies	Performance Criteria
	Skill 3.3 Check and prepare equipment and monitoring for post-anesthesia care 3.4 Apply standard monitoring devices to the patient 3.5 Interpret and utilize patient data from monitoring devices **Attitude** 3.6 Maintain complete and adequate documentation 3.7 Provide timely and appropriate response for the monitoring data deviated from the expected range
4. Manage common postoperative complications	**Knowledge** 4.1 Recognize common postoperative complications 4.2 Identify management modalities for common postoperative complications **Skill** 4.3 Manage safely common postoperative complications 4.4 Communicate with other team members, patient, and families as needed **Attitude** 4.5 Maintain complete and adequate documentation 4.6 Demonstrate compassion and respect patient autonomy
5. Engage in the patient discharge process from PACU	**Knowledge** 5.1 Identify discharge criteria of surgical patients from post-anesthesia care unit (PACU) to respective units **Skill** 5.2 Engage in the decision-making process to discharge patients' from PACU 5.3 Involve in safe patient transfer from PACU to respective units. **Attitude** 5.4 Maintain complete and adequate documentation 5.5 Function as part of a multi-disciplinary post-operative team to hasten effective patient transfer from PACU

Variable	Range
Routine postoperative care	Routine postoperative care include: ▪ Monitoring of patient's vital sign ▪ Pain management ▪ Management of postoperative nausea and vomiting ▪ Follow-up

Qualification Standard: Bachelors of Science (BSc) degree in Anesthesia	
Competency title	Manage pain for different patient groups
Competency code	HLT ANS6 06 0413
Competency description	This unit describes the knowledge, skills, and attitude required to assess and manage pain.

Sub-competencies	Performance Criteria
1. Assess acute and chronic pain	**Knowledge** 1.1 Recognize the impact of pain on different body systems 1.2 Describe assessment methods of pain for different age groups 1.3 Explain the importance of the psychosocial aspects of pain **Skill** 1.4 Take targeted history for patients with pain 1.5 Perform physical examination for all adult patients with pain 1.6 Assess acute pain for special groups 1.7 Formulate differential diagnoses of acute and chronic pain syndromes 1.8 Diagnose common types of acute pain 1.9 Monitor patients pain management effectiveness regularly **Attitude** 1.10 Demonstrate CRC while assessing pain 1.11 Maintain documentation of pain severity and the provided management
2. Manage acute pain	**Knowledge** 2.1 Describe the pharmacokinetics and pharmacodynamics of commonly used drugs for pain treatment 2.2 Describe pain pathway 2.3 Identify appropriate diagnostic Modalities 2.4 Recognize efficacy of current medication regimen 2.5 Explain the principles of pain management 2.6 Explain multimodal analgesia with WHO analgesic ladder 2.7 Recognize complications related to pain management **Skill** 2.8 Manage acute pain using different modalities 2.9 Implement non-interventional pain treatment plans **Attitude** 2.10 Consult with other team members regarding pain management as appropriate

Sub-competencies	Performance Criteria
	2.10 Engage in coordination of care for patients with complex pain problems
3. Engage in the management of chronic and cancer pain	**Knowledge** 3.1 Recognize the requirement for the multidisciplinary management of chronic pain 3.2 Explain the role of social, rehabilitation, and other support services **Skill** 3.3 Engage in the assessment and perioperative management of pain in the opioid-dependent patient 3.4 Diagnose common types of chronic pain syndromes 3.5 Engage in the management of patients with chronic pain syndromes 3.6 Engage in the application principles of palliative care **Attitude** 3.7 Demonstrate compassionate, respectful, and caring behavior during pain management 3.8 Engage in a multidisciplinary approach in the management of pain
4. Apply different regional blocks for pain management service	**Knowledge** 4.1 Define the different types of regional anesthesia for pain management 4.2 Describe clinically relevant anatomy for performing regional anesthesia 4.3 Describe pain pathways and dermatomes 4.4 Explain pharmacology of local anesthetics for regional anesthesia **Skill** 4.5 Calculate the required volume, dosage, and concentrations of local anesthetics and adjuvants 4.6 Select different options of regional anesthesia in appropriate clinical contexts 4.7 Apply appropriate infection prevention techniques during regional blocks 4.8 Perform regional blocks as a component of multimodal analgesia 4.9 Determine the effectiveness of regional blocks 4.10 Coordinate multidisciplinary surgical team members during regional blocks 4.11 Monitor patients with regional anesthesia postoperatively **Attitude** 4.12 Demonstrate effective communication skills with team and patients 4.13 Maintain complete and adequate documentation

Qualification Standard: Bachelors of Science (BSc) degree in Anesthesia	
Competency title	Engage in pre-hospital, emergency, and critical care services
Competency code	HLT ANS6 07 0413
Competency description	This competency encompasses the role of anesthetists in the assessment and management of emergency and critically ill patients in prehospital, emergency department, and critical care settings.

Sub-competencies	Performance Criteria
1. Engage in the initial assessment and stabilization of critically ill patients during out-of-hospital care and transport	**Knowledge** 1.1 Describe pre-hospital emergency care 1.2 Recognize critically ill patients 1.3 Recognize risks associated with a prolonged patient transfer, including but not exclusively physical, psychological, and organizational 1.4 Identify the roles and responsibilities of team members during the transfer of patients 1.5 Describe different stabilization technique during transport of a critically ill patient 1.6 Identify Risks/benefits of patient transfer by air/ land 1.7 Recognize the need for patient stabilization before the transfer, as well as the limited nature of possible interventions during prolonged transport **Skill** 1.8 Engage in prioritizing early treatment of critically ill patients in a pre-hospital setting 1.9 Monitor condition of patients during transportation 1.10 Apply special precautions during transfer and intubation of trauma patients **Attitude** 1.11 Work as a member of a multidisciplinary team in pre-hospital care and transportation 1.12 Communicate with patient, families, relatives, and legal guardians
2. Engage in the clinical management of patients during intra-/ inter-hospital transfer	**Knowledge** 2.1 Recognize increased risk involved with critical care interventions in isolated environments **Skill** 2.2 Prepare optimal triage to receive patients

Sub-competencies	Performance Criteria
	2.3 Recognize problems encountered during retrieval of victims from the scene 2.4 Provide safe and effective clinical care to a wide range of complex cases, both adults and children, requiring retrieval/transfer **Attitude** 2.5 Demonstrate effective communication and 2.6 Maintain clear and concise documentation at all stages of patient transfer
3. Assess emergency and critically ill patients who need immediate attention	**Knowledge** 3.1 Discuss how to calculate and record the National Early Warning Score (NEWS) of a patient 3.2 Describe the goals of initial assessment and monitoring of critically ill patients 3.3 Identify danger (warning) signs in critically ill patients 3.4 Discuss the setups of intensive care unit (ICU) 3.5 Discuss indications for endotracheal intubation of critically ill patients 3.6 Discuss patient admission and discharge criteria to and from intensive care unit (ICU) 3.7 Discuss common causes of ICU admission 3.8 Explain the principles of the primary survey 3.9 Explain the principles of a secondary survey during patient assessments 3.10 Explain special considerations during the assessment of pediatric critically ill patients 3.11 Explain special considerations during the assessment of obstetric critically ill patients **Skill** 3.12 Engage in initial assessment and monitoring of critically ill patients 3.13 Engage in the decision of patient admission to ICU 3.14 Evaluate the need for intubation of critically ill patients 3.15 Assess severity of illness using different severity of illness scoring systems 3.16 Assess a patient's condition rapidly and accurately using the ABCDE approach in emergency 3.17 Determine the degree of illness of a patient using an Early Warning Scores (NEWS) **Attitude** 3.18 Respect the autonomy of patients while assessing emergency patients 3.19 Show companion to patient and family while caring for critically ill patients 3.20 Comply with institutional infection prevention and control guidelines

Sub-competencies	Performance Criteria
	3.21 Collaborate with multi-disciplinary teams during assessment of emergency and critically ill patients
4. Engage in management of emergency patients who need immediate attention	**Knowledge** 4.1 Identify common causes of airway obstruction in critical patients 4.2 Identify common causes of breathing problem in critically ill patients 4.3 Discuss common causes of cardiovascular problems in critically ill patients **Skill** 4.4 Manage airway in patients with compromised airway 4.5 Engage in the management of breathing problems 4.6 Engage in the management of life-threatening conditions identified during ABCDE assessment in critical 4.7 Engage in the management of in resuscitation and stabilization of patients admitted to the emergency department according to priority 4.8 Participate in the primary and secondary survey of emergency patients 4.9 Contribute to the application of special precautions need during the management of obstetric patients admitted to the emergency department 4.10 Participate in the application of special precautions needed during the management of pediatric patients admitted to the emergency department **Attitude** 4.11 Show compassion to patient and family during the management of emergency patients 4.12 Comply with institutional infection prevention and control guidelines 4.13 Collaborate with multi-disciplinary teams during assessment of emergency and critically ill patients
5. Engage in the management of critically ill patients (who are admitted to ICU)	**Knowledge** 5.1 Identify principles of management of critically ill patients 5.2 Explain indications for mechanical ventilation in ICU 5.3 Discuss different modes of ventilation in ICU 5.4 Explain principles of mechanical ventilators 5.5 Explain criteria for weaning from mechanical ventilators 5.6 Explain commonly used vasopressor and inotropic medications in ICU 5.7 Discuss common causes of respiratory failure **Skill** 5.8 Manage immediate life-threatening conditions (ABCDE) according to priority 5.9 Engage in early intervention of critically ill patients to correct physiological abnormalities

Sub-competencies	Performance Criteria
	5.10 Engage in the general care of critically ill patients using guidelines and/or mnemonics 5.11 Apply different settings of ventilation according to indication **Attitude** 5.12 Show compassion to patient and family while caring for critically ill patients

Qualification Standard: Bachelors of Science (BSc) degree in Anesthesia	
Competency title	Perform cardiopulmonary resuscitation (CPR) effectively
Competency code	HLT ANS6 08 0413
Competency description	This competency encompasses the knowledge, skill, and personal competence required to recognize peri-arrest patients, to perform basic and advanced life support, and provide post-resuscitation care.

Sub-competencies	Performance Criteria
1. Recognize critically ill patients early before cardiac arrest happens	**Knowledge** 1.1 Recognize deteriorating (peri-arrest) patients early 1.2 Discuss the importance of regular assessment of simple vital signs for early recognition of critically ill patients 1.3 Recognize the importance of early identification of deteriorating patients in the prevention of mortality **Skill** 1.4 Determine the urgency of clinical response needed for a patient using the Early warning score (EWS) scoring system 1.5 Assess and manage life-threatening conditions (the 4H and 4T) in critically ill patients using the ABCDE approach **Attitude** 1.6 Show compassion to patient and family while caring for critically ill patients 1.7 Ensure personal safety while caring for peri-arrest patients 1.8 Collaborate with multi-disciplinary teams during care of peri-arrest patients
2. Perform basic life support effectively	**Knowledge** 2.1 Identify components of basic life support (BLS) 2.2 describe current recommendation of compression and ventilation ratio for adults during CPR 2.3 Discuss current BLS algorithms **Skill** 2.4 Check signs of life in critically ill patients appropriately 2.5 Demonstrate effective chest compression and ventilation techniques during cardiac arrest 2.6 Apply special precautions necessary during cardio pulmonary resuscitation of special group of patients **Attitude**

Sub-competencies	Performance Criteria
	2.7 Show compassion to patient and family while caring for critically ill patients 2.8 Comply with institutional infection prevention and control guidelines 2.9 Collaborate with multi-disciplinary teams during care of peri-arrest patients
3. Perform Advanced Life Support effectively	**Knowledge** 3.1 Identify components of advanced life support (ALS) interventions 3.2 Recognize common ECG rhythms seen during cardiac arrest 3.3 Discuss special precautions necessary in the resuscitation of a special group of patients **Skill** 3.4 Apply special precautions necessary during cardiopulmonary resuscitation of a special group of patients 3.5 Apply precautionary measures needed during defibrillation of a patients **Attitude** 3.6 Show compassion to patient and family while caring for critically ill patients 3.7 Comply with institutional infection prevention and control guidelines 3.8 Collaborate with multi-disciplinary teams during care of peri-arrest patients 3.9 Apply medico-legal issues related to resuscitation
4. Provide post-resuscitation care for patients who achieve ROSC	**Knowledge** 4.1 Identify possible causes of cardiac arrest 4.2 Recognize complication of cardiac arrest **Skill** 4.3 Assess patients regularly using the ABCDE approach 4.4 Manage airway and ventilation problems 4.5 Manage hemodynamic problems 4.6 Diagnose and Control Glycemic abnormalities **Attitude** 4.7 Maintain appropriate documentation throughout the peri-arrest period 4.8 Collaborate with multi-disciplinary teams during care of peri-arrest patients 4.9 Show compassion to patient and family while caring for critically ill patients

Qualification Standard: Bachelors of Science (BSc) degree in Anesthesia	
Competency title	Apply ethical and legal principles in anesthesia practice
Competency code	HLT ANS6 09 0413
Competency description	This competency describes the knowledge, skills, and attitude required to apply and monitor compliance with legal and ethical principles relevant to the practice of anesthesia and critical care.

Sub-competencies	Performance Criteria
1. Apply the legal framework to anesthesia practice	**Knowledge** 1.1 Define medical ethics 1.2 Explain the relationship between ethics and law 1.3 Describe the principles of ethics 1.4 Explain the nature of confidentiality 1.5 Describe law, including legal processes, principles, and penalties in medical practice **Skill** 1.6 Apply concepts of negligence, the duty of care, and vicarious liability to anesthesia practice 1.7 Solve ethical dilemma and uncertainties **Attitude** 1.8 Maintain patient's privacy and confidentiality
2. Apply ethical principles to patient care	**Knowledge** 2.1 Recognize the concept and principles of medical ethics and their place in anesthesia practice. **Skill** 2.2 Demonstrate ethical anesthesia practice during interactions with patients and their families/ attendants and colleagues. 2.3 Apply ethical principles during patient care. **Attitude** 2.4 Implement strategies to resolve ethical issues 2.5 Deliver patient-centered anesthetic care
3. Perform within the scope of Anesthesia practice	**Knowledge** 3.1 Recognize implications of malpractice per the national code of conduct and ethics for Ethiopian registered anesthetists **Skill**

Sub-competencies	Performance Criteria
	3.2 Apply codes of ethics and conduct in the practice of anesthesia per the national guideline 3.3 Practice within the defined scope of professional requirements for BSc in anesthetist per the FMoH standard. **Attitude** 3.4 Maintain documentation
4. Support the rights, interests, and needs of patients and their family	**Knowledge** 4.1 Recognize the rights, interests, and needs of patients and their family **Skill** 4.2 Comply with legal responsibilities and duty of care requirements in all anesthesia practice including interactions with patients, their families, and attendants. 4.3 Support patient's rights, interests, and decisions 4.4 Encourage patients to exercise their right to make informed decisions about planned anesthetic care **Attitude** 4.5 Demonstrate respect and support for the dignity of patients and their family members 4.6 Apply principles of SPIKES model during breaking bad news

Qualification Standard: Bachelors of Science (BSc) degree in Anesthesia	
Competency title	Participate in scientific evidence generation and utilization
Competency code	HLT ANS6 10 0413
Competency description	This unit describes the knowledge, skills, and attitude required to participate in scientific evidence generation and utilization relevant to anesthesia.

Sub-competencies	Performance Criteria
1. Engage in the conduct of research relevant to surgical services	**Knowledge** 1.1 Explain the commonly employed quantitative research designs 1.2 Recognize the components of a research proposal and thesis 1.3 Describe the differences between books and journals as sources of information **Skill** 1.4 Determine the priority health problems requiring a research 1.5 Develop research proposal 1.6 Engage in conducting a research project 1.7 Develop research report 1.8 Disseminate findings of a research **Attitude** 1.9 Adhere to the principle of biomedical ethics during the conducted research
2. Apply the principles of evidence-based practice	**Knowledge** 2.1 Identify appropriate online resources to find credible information 2.2 Recognize the ***tools*** for critical appraisal **Skill** 2.3 Appraise published articles critically 2.4 Utilize critically appraised literature 2.5 Implement appraised evidence to clinical practice (EBP) 2.6 Engage in the development and implementation of clinical practice guidelines and protocols **Attitude** 2.7 Exhibit reflective practice 2.8 Transfer learning to other colleagues

Sub-competencies	Performance Criteria
3. Conduct a clinical audit and need assessment	**Knowledge** 3.1 Identify the best practice principles of clinical audit 3.2 Identify appropriate audit topics **Skill** 3.3 Choose appropriate audit standards and methodologies 3.4 Undertake need assessment 3.5 Conduct clinical audit **Attitude** 3.6 Adhere to the principle of biomedical ethics during a clinical audit

Qualification Standard: Bachelors of Science (BSc) degree in Anesthesia	
Competency title	Manage anesthesia service in a health facility
Competency code	HLT ANS6 11 0413
Competency description	This unit describes the knowledge, skills, and attitude required to effectively lead and manage anesthesia service in a facility.

Sub-competencies	Performance Criteria
1. Check equipment functionality and conduct routine maintenance	**Knowledge** 1.1. Recognize the need for an inventory of essential equipment and drugs required for anesthesia practice **Skill** 1.2. Check availability of minimum equipment requirements as per the national FMOH perioperative guideline 1.3. Maintain safety of the operation room for regular conduct of anesthesia 1.4. Assure clean and safe storage of anesthetic equipment. 1.5. Report and arrange repairs of hazardous, damaged, or faulty equipment timely. 1.6. Ensure proper disposal of disposable items **Attitude** 1.7. Demonstrate commitment to minimize unnecessary costs through advocating safe handling of anesthetic equipment
2. Maintain adequate stock levels of consumable anesthesia items	**Knowledge** 2.1 Identify consumable and non-consumable anesthesia items **Skill** 2.2 Check stock levels regularly and take appropriate action to maintain anesthetic supply 2.3 Report unavailability of stock to relevant personnel timely 2.4 Engage in the supply chain management team 2.5 Perform safe disposal of the expired stock following the facility guideline 2.6 Serve as a member of institutional drug therapeutic committee (DTC) **Attitude** 2.7 Demonstrate efficient use of medical resources used in anesthesia practice 2.8 Establish the essence of teamwork in ensuring effective supply chain management 2.9 Maintain adequate and timely documentation regarding stock levels

Sub-competencies	Performance Criteria
3. Implement planned maintenance	**Knowledge** 3.1 Identify maintenance procedures and appropriate documentation 3.2 Identify faulty anesthetic equipment requiring biomedical professional intervention **Skill** 3.3 Consult biomedical professionals for the maintenance of faulty equipment. 3.4 Monitor regular maintenance of anesthetic equipment as per the recommendation of the manufacturer. 3.5 Conduct user-level regular servicing to anesthesia equipment. 3.6 Produce updated maintenance records. **Attitude** 3.7 Establish effective communication with other stakeholders
4. Provide orientations and training to multidisciplinary team members on relevant topics	**Knowledge** 4.1 Rationalize the need for continuous professional development 4.2 Identify effective strategies to teach/ orient team members **Skill** 4.3 Engage in conducting a training need assessment 4.4 Plan and prepare training sessions for team members on selected relevant topics 4.5 Provide targeted training/ orientation to other members of the multidisciplinary team on selected topics 4.6 Engage in evaluating the effectiveness of a training intervention **Attitude** 4.7 Demonstrate commitment to lifelong learning
5. Develop, implement and monitor overall anesthesia service plan in a facility	**Knowledge** 5.1 Recognize the principles of effective leadership and management 5.2 Explain basic principles of monitoring and evaluation 5.3 Recognize the central role of patient and the public in determining direction and priorities in service delivery **Skill** 5.4 Develop anesthesia service work plan 5.5 Prioritize short and long term plans for the service in consultation with multidisciplinary team members 5.6 Apply principles of effective leadership and management to handle busy operating sessions 5.7 Implement planned anesthesia services properly

Sub-competencies	Performance Criteria
	5.8 Monitor and evaluate anesthesia service periodically as per the facility M&E tool derived from the plan 5.9 Monitor resource utilization as per the plan and organizational policy 5.10 Take appropriate and corrective measures to solve problems encountered 5.11 Monitor and review quality of service using a range of appropriate frameworks 5.12 Update service delivery procedures 5.13 Establish feedback mechanism process by involving all perioperative team members and other relevant stakeholders 5.14 Disseminate results of quality reviews to relevant stakeholders using different mechanisms 5.15 Engage as a member of different clinical and academic leadership positions 5.16 Lead anesthesia workforce, including conflict resolution **Attitude** 5.17 Collaborate with coworkers to reach a reasonable decision during difficult circumstances 5.18 Function effectively as part of a multi-disciplinary team member 5.19 Function as an important role model for others
6. Adapt and implement quality improvement and assurance framework for quality anesthesia service delivery	**Knowledge** 6.1 Identify facility barriers or issues that affect the delivery of quality anesthesia service. 6.2 Identify threats to quality using quality review findings 6.3 Identify opportunities for continuous improvement. 6.4 Identify anesthesia service standards **Skill** 6.5 Establish quality service standards through collaboration with surgical team members. 6.6 Develop strategies for the delivery of high-quality anesthesia service. 6.7 Ensure involvement of all stakeholders in quality improvement processes. **Attitude** 6.8 Conduct regular discussions with surgical team members to incorporate necessary changes into strategies for continuous improvement.

~ END ~

ANNEX

ANNEX 1:

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ANNEX 2: TEAM OF QUALIFICATION STANDARD DEVELOPERS

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